

RHODE ISLAND'S 2030 BLUE ECONOMY ACTION PLAN



Presented by



Grow Blue

THE BLUE ECONOMY PARTNERSHIP FOR RHODE ISLAND

CONTENTS

The Blue Economy can bring both economic prosperity and environmental protection for coastal areas.

Cover photo by Beau Jones:
Waterfront business and seaport,
Warren Rhode Island.

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Photo of Coastal Erosion study by Beau Jones for URI's *Momentum: Research and Innovation* magazine

**THE BLUE ECONOMY IS AT ONCE BOTH A LEGACY
ECONOMIC DRIVER, EMPLOYING MORE THAN 36,500,
AND AN ECONOMIC OPPORTUNITY OF THE FUTURE.**

“Various Blue Economy industry sectors are creating good jobs for a range of skill levels and can be Rhode Island’s path to equitable economic opportunity.”



Flux Marine demonstrates one of the company’s batter-powered outboard motors.

EXECUTIVE SUMMARY

Rhode Island’s Leadership Moment in the Blue Economy

Rhode Islanders have long benefited from their proximity to the ocean and numerous waterways. The next two to three years can be a time of critical inflection when the community moves from an opportunistic use of these assets to a strategic leadership approach, from a disconnected distribution of economic impact to securing equitable prosperity for individuals across the state with an emphasis on historically marginalized populations.

Known as the Ocean State, Rhode Island, and its leaders, should focus on their strengths in the Blue Economy sector rather than being caught in the endless introduction of “the next big economic development opportunity.” **The Blue Economy is the big economic development opportunity.** The Blue Economy is at once both a legacy economic driver, employing more than 36,500, and an economic opportunity of the future. This opportunity takes advantage of the state’s longstanding assets and infrastructure, while focusing on inclusive stakeholder-led strategies and on actions that welcome all.

To date, much activity occurs in this sector, but it is under-resourced, disjointed, and at times conflicting due to a lack of coordination. This weakens Rhode Island’s position in the regional, national, and global market. With sustained and properly resourced leadership, Rhode Island can scale its existing activities and provide immediate impact for thousands of the state’s residents.

Worldwide, economic and political leaders recognize that the Blue Economy is poised for growth. From renewable energy to increased food opportunities, from systems innovation to adaptation and resilience in the face of climate change, the Blue Economy can bring both economic prosperity and environmental protection for coastal areas. Various Blue Economy industry sectors are creating good jobs for a range of skill levels and can be Rhode Island’s path to equitable economic opportunity.

This Blue Economy Action Plan identifies sixteen specific actions, drawn from thoughts shared by a broad range of community partners, that Rhode Island can take to claim its leadership position in this emerging sector. It also identifies the need for a coordinated effort going forward and advocates for the creation of a Blue Economy Partnership.

ACKNOWLEDGMENTS

Blue Economy Partnership Project Core Team

The Core Team, which included 32 industry stakeholders, served as the advisory body over this strategic planning effort. The team convened 4 times throughout the project to establish goals, drive forward recommendations, and refine the plan's final recommendations. The team was funded in part by the RI Blue Economy Tech Cluster's (RI BETC's) Build Back Better Phase 1 award, and formed as an expansion of the initial working group body of the 2022 Build Back Better Regional Challenge Phase 2 Grant application.



CORE TEAM MEMBERS

Paula Bontempi – *University of Rhode Island*
Drew Carey – *Inspire Environmental*
Patrick Crowley – *AFL-CIO*
Erin Donovan-Boyle – *Greater Newport Chamber of Commerce*
Brian Dursi – *Rhode Island Marine Trades Association*
Katharine Flynn, *University of Rhode Island*
Julietta Georgakis – *Commerce Rhode Island*
Tom Giordano – *Partnership for Rhode Island*
Bobby Gondola – *Community College of Rhode Island*
Terry Gray – *Rhode Island Department of Environmental Management*
Neil Hamel – *Ørsted*
Steve Heath - *FabNewport*
Adam Isaacs-Falbel – *Commerce Rhode Island*
Jason Kelly – *Moran Shipping*
Elizabeth Lynn – *VanBueren Charitable Foundation*
Wendy Mackie – *Two Bridges LLC*
Molly Donohue Magee – *SENEDIA*
Anthony Marchese – *University of Rhode Island*
Joe Masino – *Rhode Island Senate*
Jen McCann – *University of Rhode Island*
Oscar Mejias – *Rhode Island Hispanic Chamber of Commerce*
Jim Miller – *University of Rhode Island*
Jim Owens – *Nautilus Defense*
Nina Pande – *Skills for Rhode Island's Future*
Alissa Peterson – *SeaAhead*
Tom Pearce – *Rhode Island Office of Postsecondary Commissioner*
Stephen Piper – *IBM*
Lisa Ranglin – *Rhode Island Black Business Association*
Chelsea Siefert – *Quonset Development Corporation*
Toby Stapleton – *Blue Venture Forum*
Jonathan Stone – *Save the Bay*
Brian Williams – *Roger Williams University*



ACKNOWLEDGEMENTS

BLUE ECONOMY **SPRINT TEAMS**

Sprint Teams served as community-focused ideation groups to create innovative solutions and action-items for the planning team to push forward into this Action Plan. Eight different Sprint Teams convened throughout the planning process, bringing forward opportunities, issues, ideas, and expertise. More than 250 people participated across these Sprint Team engagements in December 2022 and February 2023.

COMMUNITY ENGAGEMENT

During this project, the Grow Blue team also met individually with additional stakeholders from diverse backgrounds and organizations, who all had different levels of awareness of the blue economy. These discussions were listening sessions and opportunities to strategize ways to raise awareness of the economic development benefits for all Rhode Islanders. These discussions will help inform Grow Blue as we work with partners to develop inclusive community engagement strategies. This feedback will shape future outreach efforts, and we are grateful to each stakeholder for sharing their input and guidance and the time spent talking to our team members.



This report was funded by the US Economic Development Administration through a Phase 1 Build Back Better Regional Challenge planning grant.

The University of Rhode Island Research Foundation as recipient of this grant has been leading the State's Blue Economy-related efforts including commissioning this Blue Economy Action Plan. The URI Research Foundation promotes industry/academic collaboration and the development of new technology ventures to support economic growth and job creation in Rhode Island, the U.S., and the world. Christian Cowan, Peter Rumsey, Christine Smith, Erik Brine and Susan Daly comprised the team contributing to this project.



Newport Waterfront, Rhode Island



Sailing Team, Newport Harbor, Rhode Island

We are grateful for additional support for this project from the following key partners:

PARTNERSHIP FOR RHODE ISLAND

The Partnership for Rhode Island is a nonprofit CEO roundtable made up of the state's largest employers and focused on initiatives in K-12 Education, Infrastructure, Workforce Development and Business & Investment Attraction.

THE RHODE ISLAND COMMERCE CORPORATION

The Rhode Island Commerce Corporation works with public, private and nonprofit partners to create the conditions for businesses in all sectors to thrive and to improve the quality of life for our citizens by promoting the state's long-term economic health and prosperity. We offer business assistance, access to funding and red tape reduction for companies of all sizes.

Consulting support for the project was provided by the following companies:

RICH OVERMOYER, FOURTH ECONOMY CONSULTING

Fourth Economy is a national community and economic development consulting firm. Powered by a vision for an economy that serves the people, our approach is centered on principles of competitiveness, equity and resilience. We partner with communities and organizations, public and private, who are ready for change to equip them with the tools and innovative solutions to create strategic, resilient, and equitable communities and organizations.

RELE ABIADE, ONE RHODE CONSULTING

One Rhode Consulting provides strategic consulting services to businesses, non-profits, and government entities as they develop or expand projects, programs, and special initiatives. We specialize in deploying mission-driven strategies, encouraging collaboration, and convening diverse voices to achieve the best possible outcomes.

RALPH TAVARES, HUCKLE INCLUSIVE

Huckel Inclusive provides clients with strategic diversity and inclusion consulting services representing best practices and innovation from a highly-skilled team of change-makers harnessing practical experience and passion, with a specialty in LGBTQ+ topics. In addition to strategic consulting services, Huckel Inclusive is experienced in providing curriculum development for organizational change, workshop facilitation, executive coaching, and more.

GOALS

The URI Research Foundation (URIRF) convened and catalyzed this strategic planning effort in collaboration with coalition partners to complete the Build Back Better Regional Challenge (BBBRC) Phase 1 planning efforts, leveraging the remarkable momentum developed during development of a BBBRC Phase 2 Grant BBBRC application. This strategic planning effort had two primary goals:

1. Define a growth strategy for RI's Blue Economy through a set of specific actions that RI stakeholders can take to advance Blue Economy opportunities and bridge gaps. Actions can take the form of program development, infrastructure building, wider community engagement, and policy/ regulatory asks - to name a few examples.
2. Explore the formation of a Blue Economy Partnership that leverages all of the energy and most importantly co-operation during the BBBRC process to create long-lasting organizational capacity to advance Blue Economy opportunities, be an advocate for the various component sectors, continue to convene community partners and advise Rhode Island's elected officials and stakeholders on the opportunities and needs for growth in this cluster.

Throughout this strategic planning effort, an overarching new goal for Rhode Island's Blue Economy emerged around forming a real economic opportunity for all that leverages existing funding streams, programs, and assets to:

- Drive a scalable economy backed with both internal and external momentum;
- Build a diverse industry base that creates commercial resilience and growth;
- Create a job market that represents opportunity for a diverse array of residents with job and career opportunities for all;
- Convene community members to ensure a comprehensive, strategic use of existing assets and partnerships;
- Develop a shared message of what the Blue Economy is and how it can achieve prosperity.



**ACTIONS CAN
TAKE THE FORM
OF PROGRAM
DEVELOPMENT,
INFRASTRUCTURE
BUILDING, WIDER
COMMUNITY
ENGAGEMENT,
AND POLICY/
REGULATORY ASKS**



Providence, Rhode Island Waterfront



Young oysters at *Salt Pond Oysters* in South Kingstown.



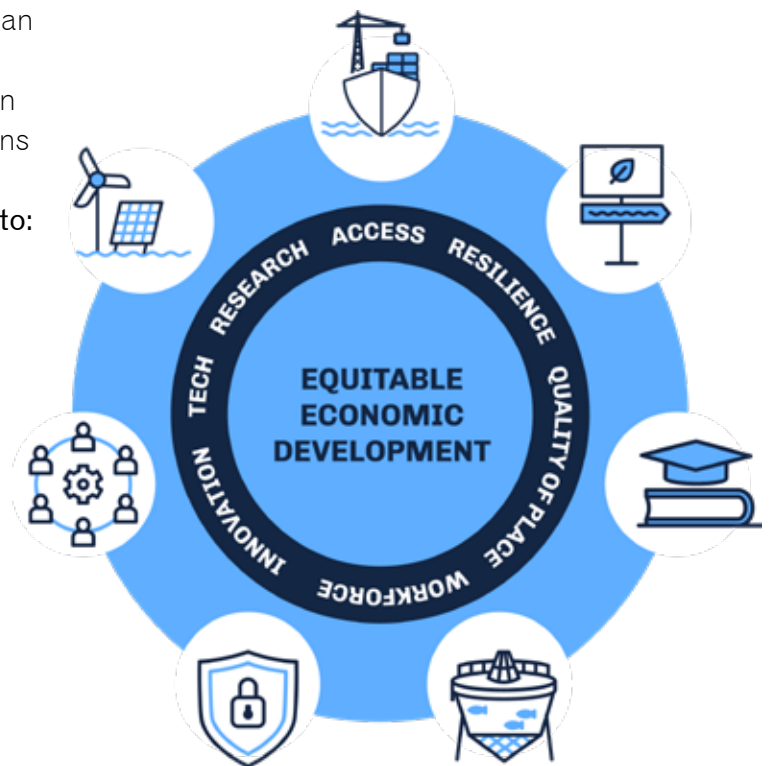
WHAT IS THE BLUE ECONOMY?

INDUSTRY OVERVIEW

With the ocean covering 71% of the Earth's surface, human life and commercial activity are inextricably linked to the water. The global ocean economy is worth over \$2.5 trillion annually and growing according to a recent United Nations Conference on Trade and Development (2021) Industries contributing to this impact include, but are not limited to:

- **PORTS AND SHIPPING**
- **TOURISM AND RECREATION**
- **OFFSHORE RENEWABLE ENERGY**
- **EDUCATION AND TRAINING**
- **AQUACULTURE AND FISHERIES**
- **MARINE TRADES**
- **DEFENSE**

(Source: URI Coastal Resource Center, JMcCann)





With the ocean covering 71% of the Earth's surface, human life and commercial activity are inextricably linked to the water.

Newport Harbor, photo by Beau Jones

This large economic impact is often driven by industry clusters, or “geographic concentrations of interconnected companies and institutions in a particular field.” In coastal areas across the US, Blue Economy industry clusters are driven by population and activity centers, robust natural assets, and critical infrastructure for commerce, R&D, and collaboration. Often supported by public-private partnerships and other authorities, industry clusters support local and state economies, drive innovative thinking, and position the US as a leader in Blue Economy activity alongside the likes of China, the European Union, and Mexico.

The US's Blue Economy continues to grow at a rate 2x faster than the national economy as a whole, presenting an opportunity for American coastal communities to continue capturing the growing market share of jobs, business, and general productivity. These businesses range from fishermen and conservation labs to innovative aquaculture researchers and offshore wind turbine producers. As America's Blue Economy clusters continue to compete and grow in tandem, geographic areas become increasingly impactful due to overall productivity and specializations in specific forms of research, production, and technology.





In Rhode Island

In Rhode Island, we define the Blue Economy as “the sustainable use of the ocean and our water assets to create a resilient economy and good paying jobs”.

THIS BLUE ECONOMY INCLUDES, BUT IS NOT LIMITED TO:

- **The people working to build and maintain offshore wind turbines.**
- **The people sustainably fishing and harvesting food from the ocean.**
- **The people working to protect coastal communities from climate change.**
- **The people serving others as they experience our water-based recreational assets and communities.**
- **The people working in our defense sector to protect our citizens, coastlines and critical assets.**
- **The people working at our ports and those that support them.**
- **The people building boats as well as advanced manned and unmanned underwater vehicles.**

While Rhode Island has historically benefited from the ocean, we see an opportunity to act more strategically in this next chapter. The Blue Economy opportunity can be both economically impactful and inclusive if we execute a series of actions defined in the Action Plan.



Number of jobs in the Blue Economy across the US's Coastal Communities (2018).

BY THE NUMBERS

The total impact of the Rhode Island Blue Economy is estimated to be \$5.2 billion and more than 36,500 jobs.

The table below defines the direct value and employment across aquaculture, defense, fisheries, marine trades and hotel and lodging. This definition includes federal data from the Economics: National Ocean Watch (ENOW) program gathered by the National Oceanic and Atmospheric Administration (NOAA), as well as data defined and gathered by Rhode Islanders in sectors with no significant overlap with federal data.

SECTOR	VALUE	JOBS	DESCRIPTION	SOURCE
Aquaculture	\$6.95 million (farm gate)	222	Farm gate for shellfish aquaculture	CRMC 2021
Defense	\$3.16 billion (direct effect)	16,011	Federally funded defense activities and industries.	SENEDIA 2017
Fisheries and Related (net of charter)	\$151.5 million (direct effect)	2,965	Harvesting and processing capacity of the fishing industry, in addition to support businesses and organizations. No charter.	Sproul, T., personal communication, Nov. 5, 2019
Marine Trades	\$1.45 billion (direct effect)	13,337	Boat building, repair, and retail industries, diving and marine construction industries, and select tourism and recreation industries, including charter.	Sproul 2018a, 2018b, 2018c
Hotels and Lodging (coastal communities)	\$428 million (direct effect)	3,999	Hotel and lodging establishments located in Rhode Island zip codes adjacent to the coast.	
TOTAL	\$5.2 billion	36,534		

McCann, J., Poli, S., Kennedy, S., O'Neill, E., Robadue, D., and Kotowicz, D. (2020). The Value of Rhode Island's Blue Economy. Coastal Resources Center and Rhode Island Sea Grant College Program, Graduate School of Oceanography, University of Rhode Island.

THE BLUE ECONOMY IS AN IMPORTANT ECONOMIC DRIVER TO THE STATE OF RHODE ISLAND, INCLUDING THE FOLLOWING JOB AND PRODUCTIVITY IMPACTS:

- **JOBS:** Employment within the Blue Economy represents 5.7% of Rhode Island's overall employment – nearly twice the concentration of Blue Economy workers of Massachusetts, Connecticut, California, and Texas.
- **GDP:** The Blue Economy is responsible for 8.8% of Rhode Island's overall gross domestic product (GDP).
- **PRODUCTIVITY:** Because the Blue Economy contributes a higher share of state GDP (8.8%) than the employment share of Blue Economy workers (5.7%), Blue Economy jobs generate more economic impact than those of an average worker, “produc[ing] a higher value-add per employee than the economy as a whole.”



McCann, J., Poli, S., Kennedy, S., O'Neill, E., Robadue, D., and Kotowicz, D. (2020). The Value of Rhode Island's Blue Economy. Coastal Resources Center and Rhode Island Sea Grant College Program, Graduate School of Oceanography, University of Rhode Island.



GROW BLUE

THE BLUE ECONOMY PARTNERSHIP

The Grow Blue Partnership will serve in response to the feedback from more than 250 Rhode Islanders who have participated in the development of the Blue Economy Action Plan 2030 and advocated for a coordinated effort going forward. These blue economy actors shared their interest in having some entity support a variety of needed roles including:

- **COALITION BUILDING TO CREATE OPPORTUNITIES FOR INCREASED COLLABORATION.**
- **CENTRALIZING RESOURCES AND PROVIDING PUBLIC ACCESS TO ALL.**
- **MARKETING RI'S BLUE ECONOMY ASSETS TO DIVERSE AUDIENCES.**
- **COLLABORATING FOR IMPACT THROUGH THE STATE AND ACROSS STATE LINES.**
- **PROVIDING A RESOURCE FOR GUIDING COMPETING PRIORITIES OR GAPS BETWEEN SECTORS.**

WHAT IS THE STRUCTURE?

Core partners deliberated and determined that a two-phase approach to launching the Grow Blue Partnership was the most optimal.

PHASE 1:

Grow Blue Partnership will launch with an independent Advisory Board and staffed as an initiative of the URI Research Foundation. The Advisory Board will include a diverse group of industry and community leaders representing the interests of all Rhode Islanders.

Launching an Advisory Board supported by the URI Research Foundation will require the Foundation to secure new funding in order to support a two-year effort to transition the initial Board into a new independent nonprofit organization for the future. These funds should support an estimated 2.5 FTE staffing level that will include a Project Lead, Coordinator and Communications/logistics support. They will also support the continued industry liaison role being led by the URI Coastal Resource Center.

PHASE 2:

The current plan envisions that the Grow Blue Partnership will evolve into a separate nonprofit organization. The establishment of a separate nonprofit organization will allow for an increased level of service and an increase in impact potential. Centralizing this work in a dedicated organization will allow for the eventual execution of some of the recommended actions that currently lack an existing lead organization and will take time to develop.



WHAT ARE THE VALUES?

- **DIVERSE, EQUITABLE, AND INCLUSIVE:** Ensure the opportunity to access Blue Economy benefits is available to all, with a recognition of the need to eliminate barriers, build trust, and listen to the input of our most vulnerable and disadvantaged communities.
- **INTERDISCIPLINARY:** While taking pride in our “small state” status, our size requires us to foster collaboration and leverage resources in order to realize an oversized impact.
- **INTENTIONAL:** As we focus on connecting our communities with our Blue Economy assets and defined actions, we must work collaboratively to identify and pursue key resources from outside and within the state.
- **ADVOCACY:** The partnership will advocate for those individuals and organizations in the Blue Economy that do not have a centralized body to advocate for themselves.
- **BALANCE:** The Blue Economy provides many opportunities to balance economic prosperity with environmental protections and social justice.

WHAT DOES THE PARTNERSHIP DO?

In addition to the actions recommended in the Blue Economy Action Plan 2030, the Grow Blue Partnership will advance five key actions identified as opportunities and needs by community stakeholders.

1. Act in partnership with RI Commerce and Compete RI as a facilitator of information on upcoming and current funding opportunities from Federal, State and other entities.
2. Embed equity into Grow Blue communications, stakeholder and community involvement, and access with the goal of eliminating economic and social disparities.
3. Serve as a network to centralize marketing and engagement efforts of the Blue Economy to expand our message from a local one to a national brand. Utilize this neutral organization to build trust and support throughout the state.
4. Identify and map all Blue Economy assets across the state and region. Provide them to the public as a resource to support collaboration. Identify the gaps to inform strategic planning efforts for the future.
5. Serve to identify and advise on cross-sector opportunities and intersections between efforts that can lead to greater economic and community impact.

GROW BLUE 2030

THE BLUE ECONOMY ACTION PLAN



Photo courtesy of URI's Coastal Resources Center and Rhode Island Sea Grant College Program

WORKFORCE AND TALENT DEVELOPMENT

The industry sectors that comprise the Blue Economy employ 36k+ today and are poised for significant growth. The job opportunities in the Blue Economy will require a range of skill and education levels. Entry level jobs can support people early in their careers and people that are transitioning between sectors. In addition to new jobs being created, the sector needs replacement workers as many people are nearing retirement age. A focus on preparing individuals for these existing jobs along with future opportunities can build on the growing number of training and education programs, laying the groundwork for future expansion and collaboration.

GROWTH FOR TODAY

1. Create a statewide Blue Economy Workforce Development Coalition.
2. Create a Blue Economy Jobs Training to Career Unified Service Offering.
3. Recognize and Celebrate the Legacy of the Blue Economy.

GROWTH FOR TOMORROW

1. Invest in early-learning education efforts (K-8) and high school that provide all RI youth with tangible, impactful experiences on the water.
2. Develop a Blue Economy Jobs Now curriculum set that prioritizes delivery in disadvantaged school districts.
3. Create a Blue Economy Jobs Hub and Campaign with jobs, training, profiles etc.



Jaia Robotics photo by Rupert Whitely



Photo courtesy of URI's Coastal Resources Center and Rhode Island Sea Grant College Program. IYRS School of Technology and Trades.

**EMPLOYERS IN THE
BLUE ECONOMY IN
RHODE ISLAND ARE
ALREADY PROVIDING A
SIGNIFICANT SOURCE OF
EMPLOYMENT ACROSS A
RANGE OF SECTORS.**

BUSINESS GROWTH AND INVESTMENT

As noted in the industry overview section, employers in the Blue Economy in Rhode Island are already providing a significant source of employment across a range of sectors. As these companies grow and adapt to changing market opportunities, they can benefit from a supportive network of organizations aligned to focus on their needs. In addition, as Rhode Island's reputation as a home to successful Blue Economy endeavors grows, we will see new companies set up operations in the state. Helping their leadership teams and employees quickly connect to the Blue Economy community will be imperative to their success.



Captain Dave Monti, left, owner of a Rhode Island fishing charter boat



ALIGNING ON BUSINESS GROWTH

1. Establish a committee within the Grow Blue Partnership to lead coordinated business growth and expansion efforts for Rhode Island's Blue Economy.
2. Remove business start and growth barriers in the Blue Economy.

ATTRACTING AND RETAINING BLUE ECONOMY BUSINESSES

1. Develop a Concierge Service for Blue Economy business retention, expansion, and attraction in Rhode Island.

CAPTURE CAPITAL INVESTMENT

1. Advocate for resources and funding on a state and national level.
2. Invest in climate adaptation and mitigation strategies to protect Rhode Island's coast and physical assets.



Salt Pond Oysters



Galilee, Photo by Krisanne Murray

INFRASTRUCTURE AND ACCESS

A variety of critical infrastructures and assets support Rhode Island's Blue Economy, none more so than working waterfronts. Waterfronts are critical pieces of recreation and industry for residents, fishermen, entrepreneurs, and corporations alike to share. Blue Economy stakeholders believe a critical step towards a stronger sector is to capture and understand the current state of these waterfronts: how are Rhode Island's coastlines used? Who is using them? Are there opportunities for growth, optimization, or a more equitable distribution across different industries and uses? As the purposes of physical assets across the state are better understood, the state and

its numerous Blue Economy partners can begin to take concrete actions towards enhanced collaboration in Research and Development (R&D). Actions for successful R&D that grows Rhode Island's Blue Economy and establishes the state as an international sector leader include unlocking collaborative incentives, building co-use workspace and assets, and innovating on open-source data. Efforts will also include education of public officials and community leaders and advocacy for the needs of water-based businesses.



Downtown Providence waterfront

MAKING WATERFRONTS WORK

1. Develop a working waterfront plan that ensures a diverse mix of businesses and sectors have affordable access to needed commercial waterfront and dock space.
2. Perform a fit-gap analysis to better understand what businesses and assets are currently utilizing waterfront space, what commercial entities are missing, and where waterfront access may be expanded for businesses.

CATALYZING COLLABORATIVE R&D

1. Develop a physical hub for Blue Economy R&D, in partnership with industry officials and higher-education institutions.
2. Create digital, open-source assets that allow for increased efficiency in multiple Blue Economy partners moving towards 'smart' assets.
3. Motivate industry leaders to collaborate on activities and initiatives that grow the Blue Economy through clearer value propositions, knowledge-sharing opportunities, and alignment on broader statewide economic goals.



IMPLEMENTATION FOR **IMPACT**

THIS ACTION PLAN OFFERS TWO PRIMARY IMPLEMENTATION PRIORITIES:

1. Launch the Grow Blue Partnership and define the first-year actions that it can lead.
2. Prioritize the Blue Economy Action Plan opportunities and needs through broad-based community engagement.

The Grow Blue Partnership and Action Plan opportunities can solidify Rhode island's leadership position in the Blue Economy sector and most importantly make an impact in the following ways:

ACTION	IMPACT
Educate Rhode Island residents to the career opportunities in the sector	<ul style="list-style-type: none"> • Increase in employment in the Blue Economy • Increase in jobs held by historically disadvantaged populations
Promote Rhode Island Blue Economy assets to a regional and global audience	<ul style="list-style-type: none"> • Increase in inbound inquiries from business and individuals looking to locate or collaborate with RI assets
Prepare RI projects and initiatives for federal, state and private investment	<ul style="list-style-type: none"> • Increase in the number of projects advancing • Increase in federal funding being allocated to projects/ initiatives in the state
Foster adaptation and mitigation strategies to protect our assets	<ul style="list-style-type: none"> • Increase in local, state, federal and private funding to support adaptation and mitigation efforts



Grow Blue

THE BLUE ECONOMY PARTNERSHIP FOR RHODE ISLAND



FROM PLANNING TO IMPLEMENTATION: THE NEXT PHASE

The time is now. That is the recurrent theme that was voiced by Blue Economy stakeholders throughout the planning process at both the Core and Sprint Team sessions. In the following section, we share concepts that were advanced by community members including their thoughts on why these actions are needed and who should be involved in implementation. We also share potential metrics around success and impact that could be utilized and examples of promising practices that we can look to as we develop these programs.

IMPLEMENTATION STEPS FOR THE GROW BLUE PARTNERSHIP

Now that the community has come to a consensus on the need for a permanent Blue Economy Partnership and a broad outline of 16 Action Steps, the formal Grow Blue Partnership will be launched using a two-phase approach. During the first phase, a group of individuals representing a diverse range of interests across the Blue Economy will be appointed to commence a more detailed planning process to ensure each of the 16 action items can be launched into economically impactful and inclusive initiatives. This stage will begin the work to identify entities to implement the recommended action items, establish timelines, identify funding, and define expected outcomes and metrics to measure success. During this initial phase, the Partnership will also begin to advance five key actions areas identified as opportunities and needs by community stakeholders. Details on these appear in the section below.

In the initial Planning Phase, the URI Research Foundation (URIRF) will seek funding to serve as organizer and coordinator for the Partnership. As part of its work, URIRF will also guide the transition of the temporary Advisory Board into a permanent body that can provide long-term fidelity, build community momentum, and broaden and deepen participation of community partners to ensure we are well positioned for growth.

Beavertail, Jamestown, RI

FIVE KEY ACTIONS FOR THE GROW BLUE PARTNERSHIP TO ADDRESS:

1. ACT IN PARTNERSHIP WITH RI COMMERCE AND COMPETE RI AS A FACILITATOR OF INFORMATION ON UPCOMING AND CURRENT FUNDING OPPORTUNITIES FROM FEDERAL, STATE AND OTHER ENTITIES.

- Establish a section on GrowBlue.org that will list blue economy related funding opportunities provided by the federal government, non-profits and other funders.
- Work with community organizations and others to ensure these funding opportunities are broadly distributed.
- Work with Compete RI to ensure entities wishing to pursue funding receive the support required to submit a competitive application.

2. EMBED EQUITY INTO GROW BLUE COMMUNICATIONS, STAKEHOLDER AND COMMUNITY INVOLVEMENT, AND ACCESS WITH THE GOAL OF ELIMINATING ECONOMIC AND SOCIAL DISPARITIES.

- Advocate for investments in education and opportunities for extended learning experiences, especially in under- resourced or marginalized communities.
- Raise awareness regarding all aspects of Blue Economy sectors both legacy and emerging.
- Serve as a champion for accessible and affordable transportation for historically disadvantaged entrepreneurs to the innovation hubs and resources already established in the state, such as SeaAhead, 401 Tech Bridge, MassChallenge, RIHub, and others.
- Develop robust, formalized programming, storytelling, and curriculum to ensure all of Rhode Island's youth, especially from disadvantaged communities, have exposure and access to water-related activities in order to feel a physical connection to the ocean.

3. SERVE AS A NETWORK TO CENTRALIZE MARKETING AND ENGAGEMENT EFFORTS OF THE BLUE ECONOMY TO EXPAND OUR MESSAGE FROM A LOCAL ONE TO A NATIONAL BRAND UTILIZING THIS NEUTRAL ORGANIZATION TO BUILD TRUST AND SUPPORT THROUGHOUT THE STATE.

- Strive to make Rhode Island's Blue Economy a recognized leader amongst peers throughout the country.
- Partner with existing groups that have trust in a variety of communities.
- Invest in education on benefits and risks associated with various Blue Economy sectors.
- Highlight and share career opportunities.
- Explore strategic marketing opportunities for products such as seafood.



**RAISE
AWARENESS
REGARDING ALL
ASPECTS OF
BLUE ECONOMY
SECTORS BOTH
LEGACY AND
EMERGING.**



4. IDENTIFY AND MAP ALL BLUE ECONOMY ASSETS ACROSS THE STATE AND REGION. PROVIDE THEM TO THE PUBLIC AS A RESOURCE TO SUPPORT COLLABORATION AND IDENTIFY THE GAPS TO INFORM STRATEGIC PLANNING EFFORTS FOR THE FUTURE.

- Centralize resources and assets in a database, organized by categories such as education, economic, community, and workforce development, marketing, investment capital etc, with links to information about each. Foster open-source data, and avenues for businesses and partners to seek collaboration.
- Use this mapping exercise to undertake a larger gap analysis. Once we map out the functionality/assets/capabilities that we have in the state and do so against a mature vision of what we are to become, it should be apparent the deficiencies and shortcomings that make up our missing components. The Blue Economy Action Plan 2030 has started this process and it is ready to evolve.
- Improve cross-state border relations to foster increased organizational collaboration, especially throughout New England and other leading Blue Economy locations.

5. SERVE TO IDENTIFY AND ADVISE ON CROSS SECTOR OPPORTUNITIES AND INTERSECTIONS BETWEEN EFFORTS THAT CAN LEAD TO GREATER ECONOMIC AND COMMUNITY IMPACT.

- Develop a “Bay” coordinator role that allows businesses and startups to access the Bay without creating conflicts as more opportunities start growing.
- Lead in the development of standards for unmanned/underwater systems and vehicles. RI can lead in the development of standards, the testing at various RI sites and the certification of products.
- Serve as a convener to address difficulties around permitting in the Bay.
- Encourage increased public shoreline access.



IMPLEMENTATION STEPS FOR THE RHODE ISLAND 2030 BLUE ECONOMY ACTION PLAN

Here in Rhode Island, the Ocean State, legacy industries including fishing, boatbuilding and marine trades are combining with the emerging offshore renewable energy industry and exciting new advanced ocean technologies to create powerful intersections that will guide our economy into the future. The Grow Blue Action Plan proposes 16 Action Steps that when taken will invest in our workforce, strengthen our business development and improve our infrastructure to ensure we are ready for this economic growth. Following are specific steps to take to move forward on these Action Items and ensure we as a State are well positioned for future growth and prosperity. Each Action Item lists specific implementations steps that were suggested by participants in the Sprint Team meetings.



WORKFORCE AND TALENT DEVELOPMENT

The industry sectors that comprise the Blue Economy provide more than 36,000 jobs today and are poised for significant future growth. The job opportunities in the Blue Economy will require a range of skill and education levels. Entry level jobs can support people early in their careers and people that are transitioning between sectors. In addition to new jobs being created, there is a need for replacement workers as many people are nearing retirement age. A focus on preparing individuals for these existing jobs and the future opportunities must build on the growing number of training and education programs with a focus on scaling successful efforts and working collaboratively as a community to create new ones.

HERE IN RHODE ISLAND, THE OCEAN STATE, LEGACY INDUSTRIES INCLUDING FISHING, BOATBUILDING AND MARINE TRADES ARE COMBINING WITH THE EMERGING OFFSHORE RENEWABLE ENERGY INDUSTRY AND EXCITING NEW ADVANCED OCEAN TECHNOLOGIES TO CREATE POWERFUL INTERSECTIONS THAT WILL GUIDE OUR ECONOMY INTO THE FUTURE.

GROWTH FOR TODAY

CREATE A STATEWIDE BLUE ECONOMY WORKFORCE DEVELOPMENT COALITION:



Educational institutions and workforce training providers are responding to constituent desires for the development of new programs. Without coordination there will be duplication of efforts and gaps in what is available to respond to the growing job market. Potential leadership for these efforts include the Governor's Workforce Board, Real Jobs Rhode Island and the Rhode Island Department of Education. Success of the Coalition will be measured by the ability to fill gaps in the training continuum. Suggestions from the community included:

- Create a dedicated Blue Economy Workforce Development Coalition and launch a cohesive strategy to get all Blue Economy stakeholders on the same page in terms of workforce development policies, goals, and initiatives.
- Emphasize alignment will be required by the primary workforce development providers.
- Recruit employers to be Blue Economy Champions and encourage employer commitments to providing training for entry-level to incumbent workers.
- Demonstrate Workforce Readiness requirements for the leading Blue Economy growth occupations.

A PROMISING PRACTICE THAT SHOULD BE REVIEWED is the MIT Sea Grant which develops K-12 programs for educators and students to introduce engineering design principles, physics, and coastal, biological and marine sciences with the goal of creating a diverse workforce able to address critical local, regional, and national needs and to position students to advance and benefit from Blue Economy sectors.

CREATE A BLUE ECONOMY JOBS TRAINING TO CAREER UNIFIED SERVICE OFFERING:

As the Blue Economy evolves there will be many opportunities to support workers to advance their careers and earning potential through Blue Economy jobs. Creating a clear pathway to those jobs will limit the risk and encourage greater interest. Real Jobs RI and relevant Real Jobs RI Partnerships are the natural leaders for this effort. Success will be measured by growth in year over year tracking of "good jobs" (family-sustaining, high-wage and with a pathway to a full-time career), an increase in access to these jobs by BIPOC Rhode Islanders, and increased employee engagement, program participation, onboarding & retention. Suggestions from the community included:

- Create a new worker/entry-level workforce program for adults of all ages, functioning as a pre-apprenticeship training program as well as a train-to-work program designed to provide basic safety, terminology, tool-handling skills, as well as bite-sized training in various aspects of working in the marine trades and composites industries.
- Develop integrated credentialing in Blue Economy Growth Sectors that allows for tracking and stacking of credentials.
- Develop a collective impact model for the Blue Economy to align providers with a clear set of goals and provide better tracking of outcome impact data.
- Build on the momentum and experience of WindWinRI and Westerly Education Center
- Connect with Community Based Organizations on how to recruit and support their residents and constituents during training and accessing Blue Economy jobs.

AN EXAMPLE OF A PROMISING PRACTICE IS the Offshore Wind Energy Career Pathway Training system for youth and adults established six years ago by the North Kingstown Chamber of Commerce. To date, they have designed and executed the nation's first and so far only offshore wind energy high school certification with five RI participating high schools. They've provided SPRAT working at heights certification for dozens of workers and continue to provide these training.



RECOGNIZE AND CELEBRATE THE LEGACY OF THE BLUE ECONOMY:

Throughout history the use of water assets has evolved and supported generations of residents. A new chapter is being written and the history and opportunity can be celebrated together. The GrowBlue Partnership is a good candidate to spearhead this effort. Impact will be measured by an increase in recognition and inclusion of diverse histories in the Blue Economy and a decrease in the disagreements over economic priorities within the sector. Suggestions from the community included:

- Develop a program that recognizes the historic leadership and contributions of individuals working in water-based industries and communities.
- Gain social approval for building out ocean-based renewable energy, both from the general public and groups that have a vested interest in natural resources but have been traditionally excluded from such conversations, like Indigenous People of Rhode Island; it is also useful to talk early and often to primary and secondary students about the role of renewable energy and its importance.
- Prioritize awareness building and trust building between historically underrepresented (minority and women) individuals and the defense innovation sector, especially through new approaches to meet people where they are will be needed to fill the workforce gap.

THERE ARE MANY EXAMPLES OF COMMUNITIES CELEBRATING THEIR ECONOMIC HERITAGE.

Gloucester, MA has recently launched the Gloucester400, a 400-year anniversary celebration of the founding of the community. The effort seeks to tell the stories of 400 people and organizations who have contributed to the community and honor them.



Gloucester400, a 400-year anniversary celebration of the founding of the community

GROWTH FOR TOMORROW

INVEST IN EARLY-LEARNING EDUCATION EFFORTS (K-8) AND HIGH SCHOOL THAT PROVIDE ALL RI YOUTH WITH TANGIBLE, IMPACTFUL EXPERIENCES ON THE WATER:

A love for the water develops at a young age – all RI youth should have the opportunity to experience the water in 'The Ocean State'. This will support a greater appreciation for the opportunity of the Blue Economy and respect for Ocean health preservation. The RI Department of Education should lead this effort and can measure success by the increase in the percentage of residents who have experienced water education and recreation. Suggestions from the community included:



- Use on-water experiential learning programs through the URI Bay Campus targeted to middle and high school students in historically marginalized communities within the state, giving Rhode Island's youth more consistent access to water-related activities through enhanced programming, funding, and storytelling. Recognize that shoreline access is a form of environmental justice.
- Embed water experiences into school and extracurricular activities for all RI youth, regardless of geography, that can help build long-term equity in the Blue Economy. Continue on the water education topic and equal opportunity for underserved communities, perhaps making swim lessons mandatory skills/programs and experiential learning opportunities as part of the curricula in schools as early as possible.



Project O in Connecticut

AN EXAMPLE OF A PROMISING PRACTICE is Project O in Connecticut which builds funding for these activities into school budgets. In Rhode Island the communities of Newport and Bristol work with local partners to offer water-based educational activities for their students.

DEVELOP A BLUE ECONOMY JOBS NOW CURRICULUM SET THAT FOCUSES ON OFFSHORE WIND, SHIPBUILDING, ENVIRONMENTAL ENGINEERING, MODERN AQUACULTURE AND FISHING, AND STEM WHILE PRIORITIZING DISADVANTAGED SCHOOL DISTRICTS:

Rhode Island is at an inflection point as there will soon be a rapid increase in the number of Blue Economy jobs. It is important at this stage to support efficiency and clarity in education and training offerings. Potential leadership for this effort includes the Governor's Workforce Board and Real Jobs RI, RI Department of Education and Skills for RI. Success will be measured by the number of youth accessing waterfront activities through school annually, increased diversity of youth experiencing the waterfront through school, growth of Rhode Island's Blue Economy worker pipeline and the number of high school and college vocational programs and certificate programs that lead to Blue Economy jobs developed. Suggestions from the community included:



- Scale existing educational courses and training related to activities such as offshore wind, shipbuilding, environmental engineering, and modern aquaculture and fishing to ensure an equitable economic impact in the state.
- Build the pipeline of education and skills development for defense-related careers - from K-12 STEM to apprenticeships, internships, shadowing, and mentorships.
- Enhance focus on the local workforce development aspect of offshore wind growth.
- Partner with out of school programs including: Girl and Boy Scouts, Providence After School Alliance, FABLAB
- Coordinate with Providence, Pawtucket, and Central Falls school programs and Blue Economy companies and facilitate collaboration with non-coastal communities.
- Increase the level of early learner education in STEM to ensure long-term economic equity in the defense sector workforce.
- Identify the skills and competencies needed to fulfill the jobs in the Blue Economy.
- Address the historic education disparities that have impacted disadvantaged populations, through the Blue Economy lens.

THERE ARE EXISTING PROMISING PRACTICES THAT CAN BE DUPLICATED. For example, the Port of Los Angeles' AltaSea, its Blue Economy R&D group, leads the regional Blue Economy sector's workforce development and educational initiative. By serving as a digital hub for educational resources, lesson plans, and instructional videos relevant to the local Blue Economy, AltaSea serves as a free resource for shaping a local workforce.



Port of Los Angeles' AltaSea



CREATE A BLUE ECONOMY JOBS HUB AND CAMPAIGN:

Creating clearly understood definitions of Blue Economy jobs and the resources to access them is imperative to seeing economic growth in RI. Partners for this effort include the Governor's Workforce Board, RI Marine Trades Association, SENEDIA, Community College of Rhode Island and the University of Rhode Island. Metrics might include the number of mentorships, number of job openings, jobs created, net revenue, measures of employee engagement, program participation, onboarding & retention, etc. Suggestions from the community included:

- Develop a clearinghouse of information by making public information about current initiatives, education opportunities, a shared calendar for job training, etc. and making meaningful and measurable metrics, and tracking those metrics, a key piece of collected and shared information.
- Develop resources for specific users (such as Resources/programming for K-12 educators) that look a lot different than resources for small businesses, which look a lot different than those intended for secondary education certifications.
- Map all education and workforce development programs related to the Blue Economy and create a centralized hub of this information. This will lead to better coordination among programs and demonstrate to potential participants how they relate (through a visual map of pathways) and are funded.

A PROMISING PRACTICE IS the TMA Blue Tech Blue Economy Education Collaborative that connects and leverages efforts in the San Diego Blue Tech Cluster to help develop a skilled workforce. They support students, potential employees, and member organizations by regularly convening organizations working on ocean and water industry education and cataloging best practices for Blue Economy sector educational and workforce development programs. They also maintain a Blue Economy Job Board.



TMA Blue Tech Blue Economy Education Collaborative



BUSINESS GROWTH AND INVESTMENT

As noted in the industry overview section, the Blue Economy in Rhode Island is already a significant source of employment across a range of sectors and their related employers. As these companies adapt to changing market opportunities and grow, they can benefit from a supportive network of organizations aligned to focus on their needs. In addition, as Rhode Island's reputation as a home to successful Blue Economy endeavors grows, we will see new companies set up operations in the state. Helping their leadership teams and employees quickly get connected to the Blue Economy community will be imperative to their success.

ALIGNING ON BUSINESS GROWTH

ESTABLISH A COMMITTEE WITHIN THE GROW BLUE PARTNERSHIP TO LEAD COORDINATED BUSINESS GROWTH AND EXPANSION EFFORTS FOR RHODE ISLAND'S BLUE ECONOMY:

Creating a representative body dedicated to business growth within the Grow Blue initiative will ensure that, among other priorities, this remains a focus. Assigning responsibility to this neutral group will ensure that a proactive work plan is established and that there is follow through. One centralized body could ensure that interests across the state and the region are aligned. This committee would be able to capture and respond to all aspects of Rhode Island's Blue Economy business-related ventures, creating alignment for efficiency and prosperity. The establishment of this committee is expected to generate connections amongst business leadership within the state at all levels; this could lead to new partnerships. This could be led by RI Commerce which could measure impact by increased connections amongst Blue Economy business leaders, the number of new partnerships and collaborative efforts, and the development of a cohesive messaging throughout the state, region, and country around Blue Economy initiatives. Suggestions from the community included:

- Ensure that the committee is representative of Rhode Island industries, people, and cultural diversity.
- Share quarterly updates about business resources and opportunities with the Grow Blue audience and Rhode Island on the Grow Blue website and social media platforms.
- Develop a strategic plan to map priorities for business and capital support needed in Rhode Island.

22 STATES HAVE OFFICES OF OUTDOOR RECREATION or a similar entity, including Maine, New Hampshire, and Vermont. Several of these states contain ocean coastline that drives their outdoor economy activities.



REMOVE BUSINESS START AND GROWTH BARRIERS IN THE BLUE ECONOMY:

Founding and growing businesses related to the Blue Economy in Rhode Island will ensure the longevity and impact of the sector. Removing barriers to entry to creating and evolving these businesses will afford more residents access to opportunities. An equitable approach will allow women and BIPOC communities — who have historically had less access to the startup space — the opportunity to thrive. Enacting legislation at the state level to encourage funders to pursue investment in RI start-ups, investing in the programs and infrastructure to make the state a favorable environment for startups, and increasing the incubation space necessary to house start-ups will increase the number of Blue Economy startups funded and jobs created. Doing this work in an equitable way could also see an increase in the number of women- and/or BIPOC-owned businesses. Creating easier access to starting and growing Blue Economy businesses would also result in sector-wide impact, building the knowledge base and talent pipelines to sustain future growth. Rhode Island investors, Chambers of Commerce and the Grow Blue Partnership are potential leads for this effort. Impact could be measured by whether the goals mentioned above are reached. Suggestions from the community included:



- Identify and map all investment opportunities to share publicly on the Grow Blue website and social accounts to create transparency in the available resources to business owners.
- Work with city and state governments to make the licensing and permitting process more streamlined for small businesses.
- Specify diversity, equity, and inclusion considerations by developing strategies to address historical inequities with access to capital and resources to start and scale a business, specifically for the BIPOC community, first-generation immigrants, indigenous communities, and working-class individuals.
- Host events that promote building a network and access to funding resources in the Blue Economy business sectors.

RHODE ISLAND ALREADY HAS SOME PROMISING PRACTICES

and has the opportunity to expand some of its own efforts. RI Hub's Young Entrepreneurs! Summit featured educational workshops, networking sessions, and speakers culminating in an idea showcase and pitch to compete for funding and SeaAhead, National Grid and the Cambridge Innovation Center recently hosted the BlueGreen Innovation Challenge to 'support novel approaches to interconnected challenges in Rhode Island.' This competition included thousands of dollars worth of prizes for budding Blue Economy startups. Also, the Blue Venture Forum is a local non-profit that 'connects existing blue technology companies, investors, and resource providers with emerging blue technology firms.'



RI Hub's Young Entrepreneurs

ATTRACTING AND RETAINING BLUE ECONOMY BUSINESSES

DEVELOP A CONCIERGE SERVICE FOR BLUE ECONOMY BUSINESS RETENTION, EXPANSION, AND ATTRACTION IN RHODE ISLAND:

In order to sustainably invest in and grow the Blue Economy in Rhode Island, the state needs to continuously focus on those businesses that operate within it. Assisting existing businesses stay in the state and have the opportunity and the support needed to grow, while also catering to out of state businesses that are a good fit for the Blue Economy will ensure that business growth remains strong in Rhode Island. This must be done in an informed and strategic way to ensure long-term success. RI Commerce, RI Commodores and the Grow Blue Partnership are potential leaders. Success could be measured by the number of Blue Economy businesses in Rhode Island, the size of Blue Economy businesses and the number of Blue Economy jobs in the state. Suggestions from stakeholders included:

- Create a service that physically welcomes in prospective and new companies, executives, and workers that offers information, tours around key assets, and connections with people in the industry.
- Support a business retention, attraction and expansion calling program that visits with Blue Economy businesses and serves as a connective resource. Ongoing feedback will allow Grow Blue to identify unique market segments and the individualized capital, funding, resource, and infrastructure approach needed for business scalability and the integration of equity and inclusion by developing strategies to support BIPOC, first-generation immigrants, indigenous peoples, and working-class business owners. This will also provide information on the need for nuanced approaches to ensure equitable access to opportunities throughout Rhode Island.
- Develop an ongoing marketing and communications plan to share Rhode Island's strategy to grow businesses within the Blue Economy.

PROMISING PRACTICES INCLUDE

Southern Mississippi's Gulf Blue Navigator is a six-month incubation program for late-stage Blue Economy startups that aims to provide access to expertise, collaboration, research, testing, light manufacturing, funding, and physical infrastructure that accelerates time-to-revenue. Key resources include access to state-of-the-art research facilities, wet labs, co-working space, networking, and year-round access to warm coastal waters. Also, Washington Maritime Blue, the state of Washington's Blue Economy partnership, hosts the One Ocean Innovation Accelerator, a 12-week educational program focused on attracting international Blue Economy startups to the state. By connecting founders with resources, mentors, and investors, the group aims to give international companies a 'soft landing' in Washington.



Southern Mississippi's Gulf Blue Navigator is a six-month incubation program for late-stage Blue Economy startups like SeaTrac featured above.



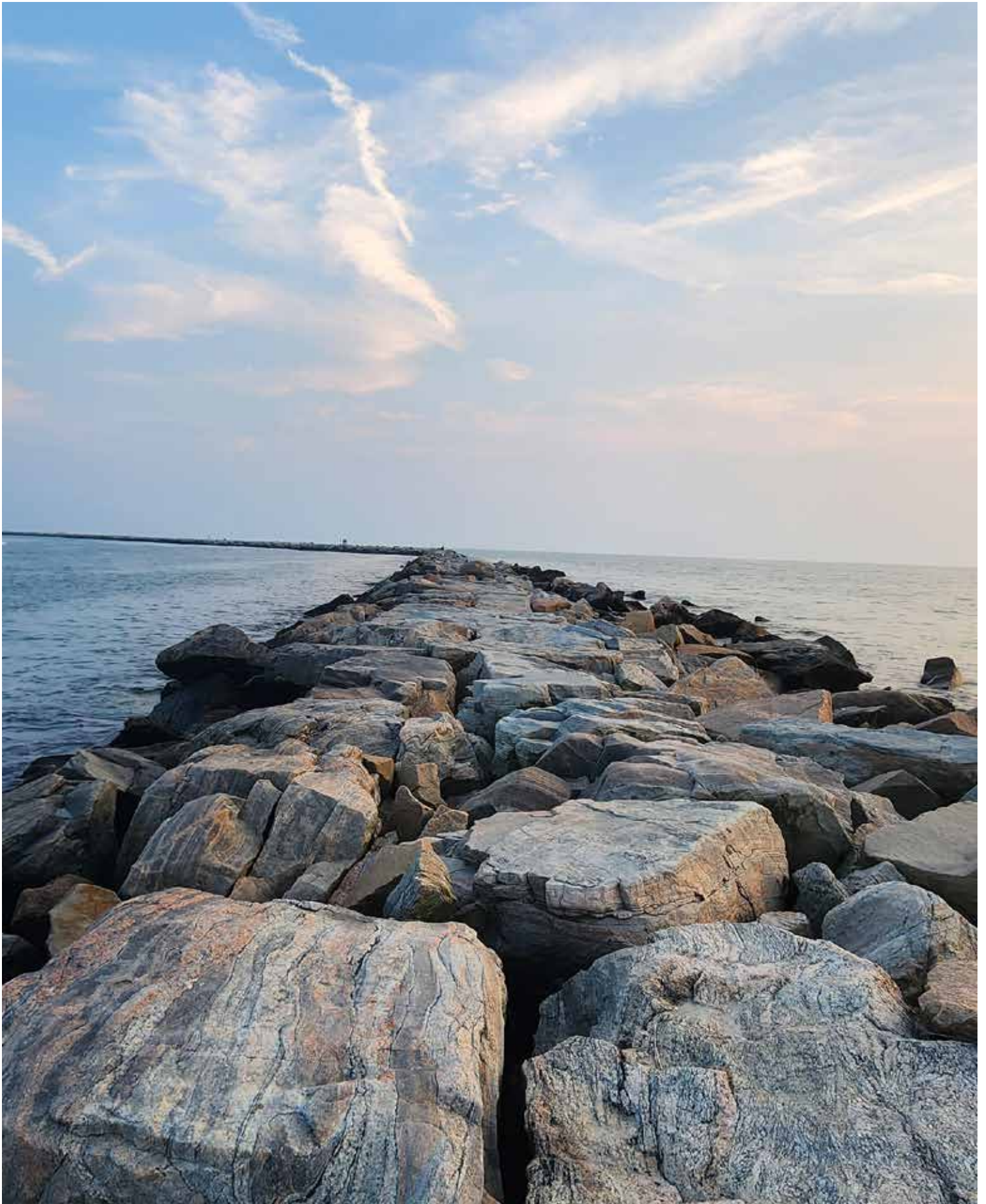
CAPTURE CAPITAL INVESTMENT

ADVOCATE FOR RESOURCES AND FUNDING ON A STATE AND NATIONAL LEVEL:

Pursuing federal and state funding is, similar to investment priorities, currently happening in a siloed fashion, lacking consensus and coordination. Ensuring that the state as a whole is coordinating on pursuing these public funding opportunities will improve chances of successfully accessing funds by presenting a united front to funding decision-makers. These funds can then be used to pursue the priorities identified to sustain and grow the various aspects of the Blue Economy within Rhode Island, like workforce development, business growth, and infrastructure investment. A cohesive strategy for pursuing state and federal funds will present a united front in the “ask” for funds, creating a greater chance of success than multiple siloed efforts. By coordinating Blue Economy initiatives and investments that could benefit from public dollars, Grow Blue and its partners can prioritize which uses will yield the greatest benefit to the state as a whole and pursue funds accordingly. Being more strategic about advocating for federal and state funds will ensure that these dollars are leveraged to create the greatest amount of impact for the state. RI Commerce, Grow Blue, local chambers, industry organizations and our federal delegation are potential leaders for this effort. Suggestions from our stakeholders included:

- Share investment priorities and opportunities regularly with state and federal agencies to promote and advocate for Rhode Island's Blue Economy and policies to support business attraction and growth within the state.
- Communicate priorities to legislators to secure state and federal funding.
- Encourage state funding for programs and infrastructure that make RI a favorable environment for start-ups and the talent needed to sustain start-ups.
- Discuss how statewide Blue Economy efforts aim to address climate-related goals, including reducing statewide greenhouse gas emissions, increasing energy generation from renewable energy, reducing notable pollutants, and improving the state's water quality. Blue economy investments will not proceed unless they meet these criteria.
- Enact legislation at the state level to encourage funders to pursue investment in RI start-ups, as through incentive programs.

THE NORTH SHORE BLUE ECONOMY INITIATIVE, a byproduct of UMass Amherst, is a network of Blue Economy stakeholders that acts as a vehicle for securing state and federal funding for climate mitigation efforts relevant to the Blue Economy. The Initiative pairs adaptation and mitigation efforts with a suite of other services, including R&D, coalition building, and branding efforts for the Blue Economy. The U.S. Department of Energy's Wind Energy Technologies Office is supporting a \$41 million national offshore wind R&D consortium that is administered by the New York State Energy Research and Development Authority. The State of Indiana has seen an \$84m investment into the WestGate Crane Technology Park, in partnership with the defense sector, to accelerate the re-shoring of semiconductor research and manufacturing in the U.S. This investment from four semiconductor companies will create nearly 550 jobs from \$300m of investment in the coming years, supported by a \$10m state grant.



West Jetty wall, Harbor of Refuge, Galilee, Photo: Krisanne Murray

INVEST IN CLIMATE ADAPTATION AND MITIGATION STRATEGIES TO PROTECT RHODE ISLAND'S COAST AND PHYSICAL ASSETS:

Creating a strategy that underscores the balance of environmental preservation with socioeconomic prosperity will be crucial to continuing to grow the Blue Economy in a way that is sustainable and intentional. Investing now in protecting the state's natural resources will improve the state's resilience to future climate and disaster-related shocks and ensure that businesses that rely on these resources will remain able to do so in the future. Partners in this effort could include the RI Infrastructure Bank, Coastal Resource Management, the Department of Environmental Management and the Grow Blue Partnership. Impact could be measured by monitoring of environmental degradation and the receipt of increased funds for mitigation strategies in low to moderate income neighborhoods. Suggestions from the community included:

- Create a communication campaign to address the need for a smart growth approach to expanding the Blue Economy. For example, an increase in the shipping industry, without accompanying decarbonization of marine transport, could exacerbate negative climate change impacts; increased coastal tourism could translate to increased development pressures on environmentally sensitive lands/marshes/waters.
- Develop incentives for businesses, municipalities, and others to integrate climate change planning into their activities. Prioritize disadvantaged neighborhoods.

EXAMPLES OF PROMISING PRACTICES include

the Greater New Orleans Inc.'s Coastal Environment Programs work to position the region's coast to remain active as a commercial hub for the Blue Economy. The organization's primary environmental directive is protecting local assets and businesses, ensuring the region's large economic sector is preserved through advocating for coastal restoration, flood mitigation tactics, and better water management. At a larger scale, the Great Blue Wall (GBW) Initiative, a primarily-African led program, aims to reverse natural losses in coastal communities to drive the Blue Economy's potential. The program creates a regional network of large-scale marine conservation areas near coastal communities across Africa, maintaining the natural resources that bring local workers their livelihoods. Naval Weapons Station Yorktown, which is experiencing climate-related flooding and erosion, will receive funding to restore and stabilize coastal land and shoreline using artificial oyster reefs through the Department of Defense's Readiness and Environmental Protection Integration Program.



Great Blue Wall (GBW) Initiative, a primarily-African led program, Fishing in the Indian Ocean, Maputo, Mozambique. Photo: Stvolin, Shutterstock

CREATING A STRATEGY THAT UNDERSCORES THE BALANCE OF ENVIRONMENTAL PRESERVATION WITH SOCIOECONOMIC PROSPERITY WILL BE CRUCIAL TO CONTINUING TO GROW THE BLUE ECONOMY

INFRASTRUCTURE AND ACCESS

A variety of critical infrastructures and assets support Rhode Island's Blue Economy, none more so than working waterfronts. Waterfronts are critical pieces of recreation and industry for residents, fishermen, entrepreneurs, and corporations alike to share. Blue Economy stakeholders believe a critical step towards a stronger sector is to understand what is already happening at these waterfronts: how are Rhode Island's coastlines used? Who is using them? Are there opportunities for growth, optimization, or a more equitable distribution across different industries and uses? As the purposes of physical assets across the state are better understood, the state and its plethora of Blue Economy partners can begin to take concrete actions towards enhanced collaboration in Research and Development (R&D). For successful R&D that grows Rhode Island's Blue Economy and establishes the state as an international sector leader, multiple actions must be undertaken. Strong incentives for collaboration are required for the government and the private sector to not only coexist, but work in tandem. These collaborations can further benefit from shared space to create usable, accessible assets and ideas that can be shared across open-source platforms. For Rhode Island's Blue Economy to flourish, a more intentional strategy is needed to not only get individuals and businesses the resources they need along the water, but to create a landscape of physical and digital assets that benefit the state's economy as a whole.

MAKING WATERFRONTS WORK

DEVELOP A WORKING WATERFRONT PLAN THAT ENSURES A DIVERSE MIX OF BUSINESSES AND SECTORS HAVE AFFORDABLE ACCESS TO NEEDED COMMERCIAL WATERFRONT AND DOCK SPACE:

A working waterfront plan is a necessary planning component for a state that relies so heavily on its coastline and waterfront property to drive economic activity. A working waterfront plan can paint a picture of the Blue Economy in Rhode Island, provide a 'State of the Waterfront' update on current happenings, and drive future strategy development to ensure productivity, equity in access, and coastal protection across the state. Entities to lead this effort include the Grow Blue Partnership the Department of Environmental Management, Rhode Island Sea Grant, Rhode Island Coastal Resources Management Council and RI Commerce. Success can be measured by development of a map of waterfront assets and uses to apply towards decision-making around funding, policy, and commercial activity and a strategic plan to drive forward Rhode Island's waterfront towards more efficient commercial and recreational uses. Suggestions from the community included:

- Engage with key state leaders, private businesses in multiple sectors, and communities on the water to develop a mutual understanding of the 'State of the Waterfront'. Gather data on the impact of Rhode Island's waterfront.
- Develop a clear understanding of areas that should be preserved for working waterfronts, areas that are best used for recreation, and specific harbors that are best suited for new development
- Understand how waterfronts can better support legacy businesses, such as fishermen and shipbuilders, as well as larger modern businesses such as offshore wind farms.

NEW YORK CITY'S COMPREHENSIVE 10-YEAR WATERFRONT PLAN exhibits a strong example of a locale taking on the task of better understanding and strategizing their future waterfront uses and the Port of San Francisco Waterfront Plan takes an asset-based approach to comprehending waterfront uses and shifts in policy and investment to create certain outcomes.



Image Credit: Economic Development Council



Providence waterfront

A WORKING WATERFRONT PLAN CAN PAINT A PICTURE OF THE BLUE ECONOMY IN RHODE ISLAND, PROVIDE A ‘STATE OF THE WATERFRONT’ UPDATE ON CURRENT HAPPENINGS, AND DRIVE FUTURE STRATEGY DEVELOPMENT TO ENSURE PRODUCTIVITY, EQUITY IN ACCESS, AND COASTAL PROTECTION ACROSS THE STATE.

PERFORM A FIT-GAP ANALYSIS TO BETTER UNDERSTAND WHAT BUSINESSES AND ASSETS ARE CURRENTLY UTILIZING WATERFRONT SPACE, WHAT COMMERCIAL ENTITIES ARE MISSING, AND WHERE WATERFRONT ACCESS MAY BE EXPANDED FOR BUSINESSES:



Waterfront space is critical for the success of many Blue Economy businesses. In order for the state to better understand who is utilizing waterfront space for recreational, commercial, and industrial spaces, a robust analysis must be taken on. This analysis will yield findings relevant to utilization by sector, business size, business age, product and/or byproduct of the activity, and the pricing of waterfront space. Entities to lead this effort include the Grow Blue Partnership, the Department of Environmental Management, Rhode Island Sea Grant, Rhode Island Coastal Resources Management Council, RI Commerce and the Rhode Island Marine Trades Association. Impact can be measured by the development of an understanding of what industries, activities, and forms of capital that are either present or missing from Rhode Island's working waterfront space, a clear picture of how effective/ ineffective waterfront policies and programs are across the state and the ability to drive equity on the waterfront by filling in existing gaps. Suggestions from the community included:

- Clearly define categories of "Assets"; should include businesses engaged in various subsets of the blue economy.
- Go town to town and city to city to identify who is in the ecosystem.
- Someone must physically gather assets and build a directory that is relevant and understandable.
- Once there is a better understanding of ownership and current use options, develop a model of the carrying capacity of these areas. What types of business/ jobs can they support and are changes needed to strike a balance? What are coastal resilience implications for all uses?

MILWAUKEE'S URBAN WATER TRAIL – Gap Analysis Study provides a strong example of how to plan for users when understanding the multitude of needs along a waterfront property. The Central Coast (CA) Emerging Industries Waterfront Siting, Infrastructure Study, and Gap Analysis is a larger planning effort that includes a fit-gap analysis to understand the water infrastructure necessary to accommodate multiple uses.



Guided kayak tours on the Milwaukee River introduce locals and visitors to the Brew City's history. | Credit: KEVIN J. MIYAZAKI

CATALYZING COLLABORATIVE R&D

DEVELOP A PHYSICAL HUB FOR BLUE ECONOMY R&D, IN PARTNERSHIP WITH INDUSTRY OFFICIALS AND HIGHER-EDUCATIONAL INSTITUTIONS:

While Rhode Island has a variety of innovation spokes across the state, it lacks a centralized hub that catalyzes the bright minds behind ideas, businesses, and strategies. A physical hub for Blue Economy R&D can house a multitude of partners in innovation, ideation, and product development that help better not only the state's economy, but the state's international reputation as it pertains to the Blue Economy. Partners may include higher-education leaders, investors, engineers, entrepreneurs, nonprofit support groups, and government leaders. Potential leadership for this effort includes the Grow Blue Partnership, Rhode Island's ports, 401 Tech Bridge, URI Bay Campus, SeaAhead, University Network of Innovation & Entrepreneurship and Naval Station Newport. The impact would be a collaborative space for knowledge-sharing, ideating, and prototyping technologies and products that benefit both Blue Economy businesses and the statewide economy as a whole, a centralized collection of patents relevant to the Blue Economy and the ability to drive innovation across companies, educational institutions, and government. Suggestions from the community included:



- Engage R&D partners on a key location for mutual collaboration and co-working.
- Develop a plan to understand the resource needs and purpose of a physical, shared R&D facility.
- Gather investment and buy-in from private businesses, the state government, and research institutions with a vested interest in Blue Economy-specific R&D.
- Prioritize an 'Ultimate Lab' that allows for state-of-the-art research and development (R&D) activities in the state, attracting out-of-town investors, visitors, and the development of case studies on Rhode Island's successes.

THE PORT OF LOS ANGELES' ALTASEA, ITS BLUE ECONOMY R&D GROUP, is developing a \$12m innovation campus that will be one of the nation's largest ocean R&D centers. Also, Massachusetts's Woods Hole Oceanographic Institution hosts a variety of centralized R&D activities as part of its broader goal to be a worldwide leader in ocean discovery and education. Specific specialization exists in Marine Robotics.



Digital rendering by Tetra Tech of AltaSea at the Port of Los Angeles



CREATE DIGITAL, OPEN-SOURCE ASSETS THAT ALLOW FOR INCREASED EFFICIENCY IN MULTIPLE BLUE ECONOMY PARTNERS MOVING TOWARDS ‘SMART’ ASSETS:

Open-source data, shared amongst industry partners, educational institutions, nonprofits, and entrepreneurs, is a key missing piece of Rhode Island’s current Blue Economy equation. Shared data and resources not only breed efficiency and collaboration, it can also support Rhode Island in modernizing its Blue Economy and achieving notoriety for innovative digital efforts. By facilitating knowledge sharing activities, an open-source data hub can drive R&D across partners and institutions. This effort could be led by the Grow Blue Partnership, 401 Tech Bridge, private businesses Polaris MEP, NOAA and Educational Institutions. The impact of this effort would be shareable data products that create industry collaboration and assists entrepreneurs in starting up Blue Economy businesses, a digital model of what Rhode Island’s Blue Economy looks like and use cases for specific assets. Suggestions from the community included:

- Understand who is in charge of open-source data management for Rhode Island’s ‘smart’ Blue Economy assets.
- Create a digital platform for Blue Economy partners in Rhode Island to share data and use cases.
- Figure out how to motivate individual assets to join and share data.
- Create a physical database of assets that includes categories, links to open-source data, and avenues for businesses/partners to seek collaboration with specific listings.
- Explore a fully developed digital twin of Rhode Island’s tech-enabled Blue Economy assets, including multiple projects that utilize this data for the growth of the statewide and regional Blue Economy.

THE PRESENTATION “DATA ANALYTICS AT MIDDLEBURY’S CENTER FOR THE BLUE ECONOMY” provides an example of best practices in data management for multiple collaborators across the Blue Economy. Also, the European Union invested in a fully functional Digital Twin of the Ocean, catalyzing a variety of different workflows in marine and oceanographic R&D by continent-wide scientist.



Maersk Drilling ship.



MOTIVATE INDUSTRY LEADERS TO COLLABORATE ON ACTIVITIES AND INITIATIVES THAT GROW THE BLUE ECONOMY THROUGH CLEARER VALUE PROPOSITIONS, KNOWLEDGE-SHARING OPPORTUNITIES, AND ALIGNMENT ON BROADER STATEWIDE ECONOMIC GOALS:

Individual stakeholders, organizations, and companies within Rhode Island’s Blue Economy often act solely out of their own interest – a common phenomenon in the world of commerce. However, many entities are open to partnership and collaboration; they simply need a broader vision and value proposition to do so. By creating a method of convening, sharing knowledge, and understanding the state’s Blue Economy opportunities, stakeholders can come together and collaborate on programs, grant applications, product developments, and more. Where Rhode Island lacks cohesive buy-in within the Blue Economy, Grow Blue can be the incentive partners are looking for to work together. This effort could be led by the Grow Blue Partnership, State Government, Private businesses, Educational Institutions and Nonprofits. The resulting impact would be an agile, robust coalition that drives collective goals, programs, and successes for the state’s Blue Economy and Knowledge-sharing events that enhance a broader understanding and productivity within the Blue Economy. Suggestions from the community included:

- Understand the “incentives to unlocking collaboration” for Blue Economy stakeholders and partners.
- Engage industry partners, government leaders, nonprofits, and educational institutions to drive relationship-building and knowledge sharing.
- Consistently convene Blue Economy stakeholders for educational and commercial opportunities through Grow Blue.

MASSACHUSETTS’ NORTH SHORE BLUE ECONOMY INITIATIVE has consistently convened Blue Economy stakeholders to strategize, share news and findings, and collaborate on projects that drive the local economy forward and San Diego’s Waitt Institute hosts Blue Economy events and inspires a collaborative approach to R&D as an industry leader in innovation and knowledge-sharing.



Massachusetts’ North Shore Blue Economy Initiative

THE BLUE ECONOMY PARTNERSHIP WILL FOCUS ON THESE AREAS:



OPPORTUNITIES AND ISSUES

There are \$100's of millions in Federal funding that is available to support the growth of the Blue Economy

To date RI has a 'local' story to tell - it is not yet national.

There is no strong affiliation of leadership to champion the Blue Economy efforts.

There are too many disconnected activities that tend to compete more than collaborate. There is a need for intersections between initiatives and groups

There is an opportunity for the Blue Economy to support employment opportunities that bridge the economic disparity gap.

The Blue Economy Action Plan defines a set of short to longer-term actions for RI to take to secure a prosperous and resilient Blue Economy

GOALS/ OBJECTIVES

Increase proactive pursuit of federal funding opportunities to draw in an oversized share of funding.

Solidify RI as a recognized national leader in Blue Economy sector development (on the map!)

Create a Network of committed organizations and leaders that are able to advance opportunities and tackle issues

Foster a collaborative and supportive Blue Economy network

Enable all Blue Economy initiatives to explore and implement strategies focused on disadvantaged people.

Educate, advocate, and continue to define the opportunities and needs.

IMPACTS

\$100M in five years to support infrastructure, innovation and workforce development.

Stakeholders, investors, and businesses from outside RI come to locate, collaborate, innovate, and grow

Over 100 Blue Economy Champions are secured in the first 24 months.

An effective website (based on traffic) and outbound email that provides weekly updates to the Blue Economy community, actions are initiated as a result

A defined DEIB plan within each initiative, program, and organization in the Blue Economy.

A faster % increase in Blue Economy employment versus the overall RI economy.



URI ONR Nautilus launching Hercules

THE BLUE ECONOMY IN RHODE ISLAND

THE FUTURE OF RHODE ISLAND IS BRIGHT BLUE AND THE FOLLOWING INFORMATION HIGHLIGHTS SOME OF THE BLUE ECONOMY ACTIONS THAT ARE ALREADY UNDERWAY IN OUR STATE AND REGION. MUCH OF THIS INFORMATION WAS GATHERED FROM OUR COMMUNITY PARTNERS WHO ATTENDED THE SPRINT MEETINGS. AS SUCH, THE LISTING IS REPRESENTATIVE AND NOT EXHAUSTIVE -- A KEY RECOMMENDATION OF THIS REPORT IS TO DEVELOP A COMPREHENSIVE LISTING THAT CAN DOCUMENT ALL BLUE ECONOMY ACTIVITIES AS THEY EVOLVE AND SCALE.



Governor Dan McKee, U.S. Senators Jack Reed and Sheldon Whitehouse, U.S. Representative Seth Magaziner, and Providence Mayor Brett P. Smiley today joined Ørsted and Eversource, and other local leaders at the developers' ProvPort offshore wind construction hub to celebrate the launch of Revolution Wind's advanced foundation components construction – and the successful completion of South Fork Wind's components.

BLUE TECH INNOVATION ECOSYSTEM

FUNDING PROGRAMS

- SeaAhead, in partnership with National Grid and the Cambridge Innovation Center, recently hosted the BlueGreen Innovation Challenge to 'support novel approaches to interconnected challenges in Rhode Island.' This competition included thousands of dollars' worth of prizes for budding Blue Economy startups.
- Recent grant applications have seen Rhode Island request almost \$10m for programming related to workforce development in this sector, ensuring state residents are equitably equipped to handle jobs relevant to offshore wind, smart ports, and technological innovation
- Blue economy business plan competitions are operating in the state, and a number of the state's innovation hubs provide business/startup training and resources; Mass Challenge is a notable incubator program. The Office of Naval Research has also funded a 401 TechBridge and MassChallenge collaboration in Rhode Island.
- State funding for workforce development is provided through Rhode Island Department of Labor and Training (DLT) and the Governor's Workforce Board (GWB), including DLT's Real Jobs Rhode Island, and GWB's Real Skills for Youth.
- The Blue Venture Forum is a local non-profit that 'connects existing blue technology companies, investors, and resource providers with emerging blue technology firms.' An in-person forum will assist companies looking to connect, scale, and even exit.

PHYSICAL ASSETS

- Rhode Island residents recently voted 'yes' on Question 1 to improve the University of Rhode Island's Narragansett Bay Campus and its ability to lead in Blue Economy-related R&D. The campus will receive \$100m in bonded capital investment from the state to create a thriving, modern Bay Campus that will spur critical job creation and economic development.
- URI seeks to develop the concept of the RI Blue Technology Innovation Center (BTIC), an office facility(ies) and incubation space(s) meant to will bring together 'globally leading Blue Technology accelerators, venture capital, startup ventures, research faculty, ocean, and coastal resilience experts, and nonprofits in one facility.'

WORKFORCE PROGRAMS

- Governor McKee, in partnership with Ørsted and Eversource, recently announced \$1m worth of new workforce development programs to help transition local workers into roles in the offshore wind sector.
- The Rhode Island Marine Trade Association (RIMTA) is offering 'pizza delivery' training to help people transition careers. It serves as a new worker/entry-level workforce program for adults of all ages, functioning as a pre-apprenticeship training program and a train-to-work program designed to provide basic safety, terminology, tool-handling skills, and bite-sized training in various aspects of working in the marine trades and composites industries.
- Community College of Rhode Island (CCRI) is training on-site for employer certifications in areas such as business and technology, manufacturing and trades, and renewable energy.
- The IYRS School of Technology & Trades is offering post-secondary programs in areas including boat building & restoration, marine systems, and more.
- Leadership Rhode Island and The Rhode Island Foundation exist as tangible organizational assets supporting blue tech innovation in the region.

YOUTH ACTIVITIES

- Local zoo and aquarium outreach programs provide experiential learning opportunities, including Mystic Aquariums education programs.
- Roger Williams University has developed a wind energy lesson plan that is being used in grammar schools.
- FabNewport Summer Experience is a six-week immersive experience that exposes students to a range of Blue Economy and innovation opportunities.
- Rhode Island Environmental Education Association works to provide transferable Blue and Green Economy skills to K-12 students in formal and informal learning settings.
- Sail Newport offers after-school marine exploration programs for middle schoolers in Newport.
- WindWin RI supports development of the future wind energy workforce by offering an Offshore Wind Energy Certification program for high school students.
- Fab Newport, Providence Young Makers, and Young Voices all offer after-school programs for youth looking to learn blue tech skills.
- STEM Advantage RI is preparing K-12 students in transferable STEM skills, career exploration, academic enrichment, and social-emotional learning.
- The Conanicut Sailing Foundation runs a sailing and marine education summer camp for children ages 5-16.

INFRASTRUCTURE FOR INNOVATION AND BUSINESS

FUNDING PROGRAMS

- Rhode Island will receive a minimum of \$100m from the Department of Commerce's National Telecommunications and Information Administration (NTIA) as well as the \$25M from US Treasury's Capital Projects Fund (CPF) to enhance broadband access and close the digital divide. In November, the State received its initial payments of over \$5.5M for planning, infrastructure deployment, and adoption programs. RI Commerce, the effort's leader, recently released its Strategic Broadband Plan.

- Federal funding through the CHIPS and Science Act is designed to boost domestic competitiveness and innovation, spurring local investment in innovation and business.



TESTING POOL: Naval Undersea Warfare Center Division Newport employees submerge an unmanned underwater vehicle in a testing pool at the facility. / COURTESY NAVAL UNDERSEA WARFARE CENTER DIVISION NEWPORT

PHYSICAL ASSETS

- Rhode Island residents recently voted 'yes' on Question 1 to improve the University of Rhode Island's Narragansett Bay Campus and its ability to lead in Blue Economy-related R&D. The campus will receive \$100m in capital investment from the state to create a thriving, modern Bay Campus that will spur critical job creation and economic development, drive innovation, and create sustainable and equitable career opportunities for all Rhode Islanders.
- Existing incubators and co-working spaces, such as Social Enterprise Greenhouse, Innovate Newport, Biz Bodega and RIHub, are valuable pieces of Rhode Island's entrepreneurial ecosystem infrastructure. These physical spaces help drive connectivity, knowledge sharing, funding opportunities, and business growth.
- The Narragansett Bay aims to develop into a 'SmartBay', a \$25m project that 'will create and leverage the next generation of maritime technology, sensing, and telecommunications equipment to enable accurate climate change forecast models, clean energy transportation, autonomous shipping, undersea communications, and robotic sensors and vehicles.
- The South Quay Marine Terminal is building out a modern, intermodal port terminal that can handle multiple cargo types, serve as a critical component of the state's supply chain, and help seize the state market share of the growing offshore wind sector.
- RI C-AIM is a shared data platform and program creating autonomous buoys for marine studies.
- Incubators, Accelerators: 401 TechBridge, Innovate Newport, Hope & Main.
- Locations: Naval Undersea Warfare Center Test Range, University of Rhode Island Narragansett Bay Campus, Quonset Business Park, Providence Port expansion, Community College of Rhode Island Newport Campus, Fort Adams, Fort Getty, Fort Wetherall, Port of Davisville.
- Organizations: US Sailing, New England Institute of Technology, Clean Ocean Access, Narragansett Bay Estuary Program, Providence Resilience Partnership.

ADAPTATION & MITIGATION

LEGISLATION, PLANNING EFFORTS, AND POLICY

- Rhode Island has passed numerous policies and comprehensive planning efforts relevant to climate change in recent years, including the Rhode Island Climate Risk Reduction Act (2010), Resilient Rhode Island Act (2014), Greenhouse Gas Emissions Reduction Plan (2016), Resilient Rhody (2018), and Act on Climate (2021). These policies and plans revolve around emission reduction goals, coastal restoration efforts, and better stormwater management and flood mitigation funding.
- In June 2022, Governor Mckee signed legislation ensuring that the state will completely offset its electricity use with renewable energy by 2033.
- Statewide Blue Economy efforts aim to satisfy numerous climate-related goals, including reducing statewide greenhouse gas emissions, increasing energy generation from renewable energy, reducing notable pollutants, and improving the state's water quality.
- Longer-term statewide climate strategies include pursuing a net-zero emissions standard by 2050, improving the resilience of the local water supply, strengthening post-storm recovery for ports, improving statewide infrastructure in and around coastal wetlands, and ensuring beaches are preserved for both ecosystem and community health.

PHYSICAL ASSETS

- Organizations: Providence Resilience Partnership, Nature Conservancy, Providence Foundation, Providence Racial and Environmental Justice Committee, Woonasquatucket River Watershed, Narragansett Bay Commission, Rhode Island Black Business Association, Rhode Island League of Cities and Towns, Social Enterprise Greenhouse
- Locations: Roger Williams University, Pawtucket Transit Oriented District

OCEAN-BASED RENEWABLE ENERGY

LEGISLATION, PLANNING EFFORTS, AND POLICY

- Rhode Island is on track to have 100% of its electricity supplied by renewable energy sources by 2033, the fastest timeline of any state. Ocean-based renewables such as offshore wind will be a large part of this transition, with the industry already established and growing in the state.
- There is a clear state-level commitment to advancing ocean-based renewable energy, with Governor Dan McKee signing into law historic clean energy legislation that seeks to expand the state's offshore wind resources by requiring market-competitive procurement of between 600 and 1,000 megawatts of offshore wind capacity.



PHYSICAL ASSETS

- The offshore wind energy company Ørsted is building a new regional offshore wind construction hub in Providence, an initial scope of work that has already created 40 local jobs. The hub will serve as a critical manufacturing business in Rhode Island's Blue Economy.
- Offshore Wind Organizations: Ørsted, Block Island - Deepwater Wind
- Offshore Wind Supports: RI CRMC Wind Energy, WindWinRI, INSPIRE Environmental
- Supply Chain Supports: SeaAhead, 401 Tech Bridge, RI Hub, URI Narragansett Bay Campus

WORKFORCE PROGRAMS

- Governor McKee, in partnership with Ørsted and Eversource, recently announced \$1m worth of new workforce development programs to help transition local workers into roles in the offshore wind sector. The training partnership will establish the State's first Global Wind Organization (GWO) training certificate program at the Community College of Rhode Island's Flanagan campus in Lincoln.
- RIMTA offers a Marine Trades & Composite Pre-Apprenticeship Training Program to prepare future workers for a job in manufacturing and other marine industries.
- Local university programs: Bristol Community College's National Offshore Wind Institute; University of Rhode Island's Energy Fellows Program; Community College of Rhode Island's Global Wind Organization Basic Safety Training; Roger Williams University's Sustainable Studies Program

YOUTH ACTIVITIES

- Local zoo and aquarium outreach programs provide experiential learning opportunities, including Mystic Aquariums education programs.
- Roger Williams University has developed a wind energy lesson plan that is being used in grammar schools.
- WindWin RI supports development of the future wind energy workforce by offering an Offshore Wind Energy Certification program for high school students, among other activities.

DEFENSE SECTOR RESILIENCE

LEGISLATION, PLANNING EFFORTS, AND POLICY

- Naval Station Newport has partnered with the City of Newport and the University of Rhode Island to address military resilience and planning for crucial infrastructure in the face of climate change.

FUNDING PROGRAMS

- In November, SENEDIA announced a \$20.4 million contract extension from the Department of Defense (DoD) to continue its submarine shipbuilding workforce efforts.



Naval Station Newport - The U.S. Naval War College is located at Naval Station (NAVSTA) Newport, home to more than 42 naval and defense commands and activities. Newport is the Navy's premier site for training and educating officers, officer candidates, senior enlisted personnel and midshipman candidates, as well as conducting evaluation of advanced undersea warfare and development systems.

PHYSICAL ASSETS

- The Naval Undersea Warfare Center is a leader in undersea systems and is testing unmanned vehicles in Rhode Island's Narragansett Bay, as well as other research and development projects.
- The NavalX Tech Bridges is a connected network that enhances collaboration between Naval Labs, industry, academia, and other military branches. 401 Tech Bridge was the first entity to partner with the Department of the Navy's NavalX Tech Bridges initiative. The collaboration is now a national model for the 12 NavalX Tech Bridge sites across the country.
- The Defense Entrepreneurs Forum has recently established a presence in Rhode Island and is collaborating with RI Hub, a business incubator.
- SEA Share is in development, and will provide Secure Email Access (SEA) in the URI Ocean Robotics Building scheduled to open within two years.
- The Undersea Technology Innovation Consortium based in Middletown, RI provides a national community of resources and relationships to accelerate undersea/maritime technology innovation and facilitate related research and workforce development.
- Narragansett Bay Test Range is a world-class test and evaluation facility and in-water test range that supports research and development, and engineering and analysis of underwater, surface and aerial vehicles and related technologies in a realistic, operational environment.
- The Blue Innovation Symposium is the premier event in New England for connecting the marine technology industry for education, networking and facilitating partnering opportunities. The conference brings together a broad spectrum of representatives of the marine technology industry from the US and beyond.
- RISE-UP is a newly formed initiative between University of Rhode Island entrepreneurial programs and partnered with the University of Alaska and the University of Hawaii to address the need for dual-use solutions in the Department of Defense and Blue Economy ecosystems.
- The Advanced Naval Technology Exercise (ANTX) has provided an opportunity for getting emerging blue economy tech in front of defense-related customers in collaboration with URI and Quonset Development Corporation.



At *Salt Pond Oysters* an upweller is used to pump nutrients and water through to the oysters so they grow.



Matunuck Oyster Farms

AQUACULTURES & FISHERIES

LEGISLATION, PLANNING EFFORTS, AND POLICY

- Longer-term statewide climate strategies include pursuing a net-zero emissions standard by 2050, improving the resilience of the local water supply, strengthening post-storm recovery for ports and other critical components of the supply chain, improving statewide infrastructure in and around coastal wetlands, and ensuring beaches and natural barriers are preserved for both ecosystem and community health.
- Government agencies, from the Department of Environmental Management (DEM) to the US Department of Agriculture (USDA), are playing an active role in spurring this growth and towards best practices in the industry.
- Relish Rhody 2.0, a refresh to the state's food system strategy first developed in 2017, is presently underway with a delivery date in 2024. This planning effort will include a statewide plan for fisheries and aquaculture in the context of the food system.

FUNDING PROGRAMS

- The Rhode Island Local Agriculture & Seafood Act Grants Program actively grows statewide innovation surrounding ocean fishing, shellfish farms, wastewater management, kelp growth, and more.

PHYSICAL ASSETS

- Two fisheries-related investments have been proposed in Rhode Island by the University of Rhode Island: the Smart Shellfish Hatchery would work to bring together local companies, academic institutions, and nonprofits to advance research and development and productivity in shellfish seed production; the Scarborough Wastewater Treatment Facility in Narragansett would see expanded capacity to deal with wastewater.



- The USDA National Cold Water Marine Aquaculture Center, in partnership with local groups throughout Rhode Island, is working to increase the state's potential for oyster breeding.
- Organizations: The Nature Conservancy, Seafood for All, Coastal Resources Management Council, Commercial Fisheries Center, Save The Bay

WORKFORCE PROGRAMS

- Local universities, like Roger Williams University, are committed to providing workforce development through marine expertise programs that include aquaculture, fisheries health and science, and aquatic animal disease marine research and genomics. These programs aim to build out a more capable local workforce in the Blue Economy.
- Training and non-formal education for farmers, other residents of rural communities, and people living in urban areas is provided through the University of Rhode Island.
- Shellfish RI operates a Farm Worker Training Program in aquaculture at the Education Exchange, providing much needed training for entry level workers.

SUSTAINABLE TOURISM, OUTDOOR RECREATION, AND MARINE TRADES

LEGISLATION, PLANNING EFFORTS, AND POLICY

- Block Island recently commissioned research regarding the impacts of tourism on the community and the risks associated with 'over tourism', defined as congestion or overcrowding from an excess of tourists, resulting in conflicts with locals. A set of considerations were provided relative to water, land use, housing, waste management, and other systems impacted by tourism.
- The Sustainable Tourism Lab, hosted by the Blackstone Valley Tourism Council, and work performed by GrowSmart RI have worked to define sustainable tourism opportunities in economic development.
- Ocean State Outdoors was adopted in 2019 as the State's Comprehensive Outdoor Recreation Plan. This plan, developed by Statewide Planning in Concert with the Department of Environmental Management, sets out a set of goals and priorities to support existing and grow new outdoor resources.



FUNDING PROGRAMS

- RI Commerce is currently piloting the development of new shoulder season (the off-season from November to April) events.



IYRS Composites Technology graduates have successful careers building everything from custom power yachts to wind turbines, America's Cup foiling sailboats to surfboards.

PHYSICAL ASSETS

- Ocean-related Tourism: Fishing charters, Freedom Boat Club, leisure boating, super yachts, short-day charters, ferry system.
- Place and Cultural Tourism: Lighthouse tours, beaches, Castle Hill Inn, National Sailing Hall of Fame, Herreshoff Marine Museum
- Outdoor Recreation: RI Blueways Alliance, The Kayak Centre, BeaverTail State Park, Matunuck Oyster Bar, cycling paths, Arcadia Management Area
- Events: Newport International Boat Show, Narragansett Blessing of the Fleet, the Ocean Race, annual regattas, Newport Folk Festival, Newport Jazz Festival
- Organizations: RI Commerce, Rhode Island Farm Bureau, local tourism Councils, local chambers of commerce, Saltwater Anglers Association, Rhode Island Party & Charter Boat Association, Safe Harbor Marinas, Rhode Island Fast Ferry, Blackstone Valley Explorer, Save The Bay

WORKFORCE PROGRAMS

- The IYRS School of Technology & Trades is offering post-secondary programs in areas including boat building & restoration, marine systems, and more.
- The Rhode Island Department of Environmental Management offers a Green Certification Program to assist restaurants, hotels, golf courses, and other businesses in becoming more sustainable.
- The Education Exchange offers workforce training in hospitality, boat safety and basic boat mechanics, and classes to receive a master captains license.

YOUTH ACTIVITIES

- Stages of Freedom offers programs to give youth of color free swim lessons and empower them in the water.
- The Ripples Swim School, local YMCAs, and other programs give children the opportunity to learn to swim and appreciate the water.

- The Woonasquatucket River Watershed Council provides environmental education resources to all levels of students around the Woonasquatucket River.
- Sail Newport offers after-school marine exploration programs for middle schoolers in Newport.
- Save The Bay offers Summer BayCamps that provide hands-on exploration of the Narragansett Bay for children.
- The Paul Cuffee School provides maritime lessons for their students, with water education being a central element in their curriculum.
- The Conanicut Sailing Foundation runs a sailing and marine education summer camp for children ages 5-16.

WORKFORCE AND TALENT DEVELOPMENT

WORKFORCE PROGRAMS

- Governor McKee, in partnership with Ørsted and Eversource, recently announced \$1m worth of new workforce development programs to help transition local workers into roles in the offshore wind sector.
- A network of local trade schools and workforce education centers, including IYRS School of Technology and Trades, Woonsocket Education Center, and Minorities in Aquaculture, are working to improve access to workforce training with a Blue Economy-focused lens.
- Recent grant applications have seen Rhode Island request almost \$10m for programming related to workforce development in this sector, ensuring state residents are equitably equipped to handle jobs relevant to offshore wind, smart ports, and technological innovation.
- Real Jobs Rhode Island, a demand-driven workforce development initiative from the Governor’s Work Board, currently has 60 partnerships with local employers, training providers, and community organizations and has trained over 29,649 individuals and placed over 13,296 jobseekers since 2015.
- Local universities, like Roger Williams University, are committed to providing workforce development through marine expertise programs that include aquaculture, fisheries health and science, and aquatic animal disease marine research and genomics. These programs aim to build out a more capable local workforce in the Blue Economy.
- More than \$16 million has been awarded to the University of Rhode Island (URI) for research projects and workforce development from the National Institute for Undersea Vehicle Technology (NIUVT), a partnership between URI, the University of Connecticut, and General Dynamics Electric Boat. With \$5.5 million allocated for 20 projects in 2022, NIUVT works to build a local workforce by preparing students for defense sector careers



NUWC Collaboration, Bermuda/BIOS December 2020

YOUTH ACTIVITIES

- Organizations like STEM Advantage RI, Westerly Education Center, and WindWin RI are preparing K-12 students for careers in STEM through informal education, career exploration, academic enrichment, mentoring programs, and partnerships with local high schools to create an early workforce pipeline.

CALL TO ACTION

Here in Rhode Island, the Ocean State, legacy industries including fishing, boatbuilding and marine trades are combining with the emerging offshore renewable energy industry and exciting new advanced ocean technologies to create powerful intersections that will guide our economy into the future. The Grow Blue Action Plan 2030 proposes 16 Action Steps that when taken will improve our physical infrastructure, invest in our workforce and strengthen our business development initiatives to ensure we are ready for this economic growth. Over 250 Rhode Islanders representing business, nonprofits and government agencies guided the development of these Action Steps and will now work as a Blue Economy Partnership to see them adopted. Ready to join us? To learn more on how you can be part of this effort and add your voice to our story, visit www.growblue.org.

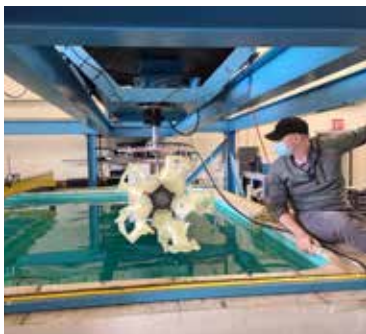


Photo courtesy of URI's Coastal Resources Center and Rhode Island Sea Grant College Program

APPENDIX

BUILD BACK BETTER REGIONAL CHALLENGE PROJECTS

In December 2021, the Rhode Island Blue Economy Technology Cluster (RIBETC) received a Phase 1 Build Back Better Regional Challenge Planning Grant from the US Economic Development Administration to support a 24-month effort to convene regional Blue Economy community stakeholders with the aim of identifying inclusive strategies that, when implemented, would transform the local economy, create good-paying jobs, jumpstart emerging industries and prepare the workforce for the future. More than one hundred community partners representing industry, government and the non-profit sector collaborated on which projects to include in a Phase 2 proposal. From this process four project areas emerged. While Rhode Island did not receive funding for a Phase 2 award, community members remain dedicated to the projects and each has continued to advance. These efforts include:



PROJECT: SMARTBAY

SmartBay is an infrastructure platform that spans all seven sub-industries of RI's definition of the Blue Economy. Designed as a marquee project, it will develop and deploy a key Narragansett Bay-based platform that will create and leverage the next generation of maritime technology, sensing, and telecommunications equipment to enable accurate climate change forecast models, clean energy transportation, autonomous shipping, undersea communications, and robotic sensors and vehicles. SmartBay is predicated on five years of planning, prototyping, and testing supported by the EPSCoR Track I award to URI, which will prove invaluable in SmartBay's design, build, and launch.



PROJECT: BLUE TECHNOLOGY INNOVATION CENTER

The Blue Technology Innovation Center will establish and accelerate RI's innovation environment. It will bring together the world's leading Blue Tech accelerators, venture capital, startups, industry, academia, ocean and coastal resilience experts, and nonprofits. This unique collection of expertise and programs will enable RI to become one of the foremost ocean-related innovation hubs in the world and a premier location to locate, start, and grow a company within this sector. The Center's network of Programs and People, particularly a Blue Minority Business Accelerator, will support innovation in Blue Tech for people historically underrepresented from tech jobs and tech business ownership.



PROJECT: OCEAN-BASED RENEWABLES

The Offshore Wind (OSW) capacity on the East Coast is projected to reach 20 GW by 2035. The sector is expected to create 20K-35K full-time jobs on the East Coast by 2028, with associated capital investments estimated at over \$70B.

RI is the geographic center of the East Coast waterfront, making the State the most financially sound and operationally efficient location to support OSW construction, assembly, deployment, operations, and maintenance. The two OSW projects, the South Quay Marine Terminal (SQMT) and the Quonset Multi-Modal Offshore Wind Transport and Training Center (QMT2 C) will address the region's needs for deep water port capacity to support OSW plant construction and assembly, and for a multimodal operational transport and training hub. These projects will leverage SmartBay and the innovation ecosystem supported by the BTIC to attract OSW companies, and will also be supported by OSW-specific workforce programs and the newly created Southern New England OSW Partnership.

PROJECT: AQUACULTURE AND FISHERIES

RI is proposing two tech-based investments to improve productivity and increase output in areas where it has a competitive advantage. The Smart Shellfish Hatchery will be one of the specialized innovation nodes in the BTIC's network, bringing together local companies, academic institutions, and nonprofits to advance research and development (R&D) and productivity in shellfish seed production. The Hatchery will interface with SmartBay's sensor network and help protect its underwater equipment by using some of the Hatchery's oysters, forming a truly symbiotic relationship.



RI has also identified an opportunity to unburden its squid producers and processors, who land over half of the East Coast's squid catch but cannot scale their operations due to the state's lack of wastewater processing infrastructure. This effort will solve this constraint by increasing the wastewater processing capacity at the existing Scarborough Wastewater Treatment Facility in Narragansett. This improvement is expected to increase local squid processing capacity of at least another 20M pounds annually and increase jobs for fishermen and processors. Both investments will contribute towards greater food security in RI, and supply the growing demand across the East Coast, taking advantage of RI's

uniquely favorable regulatory landscape that allows out of state shipping.



Photo courtesy of URI's Coastal Resources Center and Rhode Island Sea Grant College Program



THE BLUE
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AT ONCE BOTH
A LEGACY
ECONOMIC
DRIVER,
EMPLOYING
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