(1) Executive Summary of Component Project

Autonomous Marine Systems Rapid Prototyping Centers (AMS-RPC), co-led by Quonset Development Corporation (QDC) and Blue Robotics Lab (BRL), accelerates U.S. leadership in autonomous maritime technology by developing two interdependent waterfront facilities at distinct locations support coordinated, end-to-end "build-test-refine" prototyping: the Rhode Island Research, Acceleration, Demonstration, and Experimentation (RADE) Center and the BRL. Ocean technology companies struggle because fabrication, simulation, system integration and secure testing are costly and fragmented. AMS-RPC provides all-in-one locations with facilities that help companies move from prototype to operational system to market faster.

AMS-RPC enables Ocean Tech Hub (OTH) to continuously develop the regional pipeline of technologies. While the Test Access Network (TAN) secures vessels for integrated trials and America's Marine Test Ranges Network (AMTRN) brings advanced validation, AMS-RPC provides the critical rapid prototyping, system integration, and experimentation capacity critical to fast iteration. Insights from testing feed directly back into the AMS-RPC facilities, enabling fast iteration and accelerating commercialization of TRL 6–9 technologies.

The RADE Center is optimized for large-scale experimentation, simulation, and system-level demonstration. The facility includes high-bay labs, observation platforms, a data visualization center, and direct waterfront access to a test range that support end-to-end testing and integration. The BRL on the Providence waterfront brings advanced fabrication, system integration, component testing, and controlled validation in an urban environment. The location includes co-working office and lab space, ocean tech-specific lab equipment including large format 3D printers, gantry crane and a test tank. Technologies advance sequentially between BRL and RADE as they mature, creating an intentional dependency and closed-loop development cycle rather than parallel or duplicative operations.

Construction and outfitting for both facilities will begin within six months; the centers will be operational in 18-24 months. Leveraging combined regional strengths in shipbuilding, waterfront access, and advanced manufacturing, AMS-RPC will support 40+ companies and create 200+ high-skill jobs within five years. Long-term outcomes include a globally competitive prototyping ecosystem, strengthened defense capabilities, and measurable economic growth.

This initiative advances federal priorities under Executive Order 14269: Restoring America's Maritime Dominance, enhances the Hub's global competitiveness, and delivers lasting value to the American taxpayer through innovation, job creation, and regional prosperity.

(2) Project Specific Challenge

2.1 AMS companies face significant barriers in moving innovations from early prototypes to fully operational systems. The tools they need to build and test their technologies (e.g., fabrication equipment, hands-on prototyping space, and safe waterfront testing assets) are expensive, scattered across the region, and often not available at the scale required. As a result, promising technologies frequently stall at TRL 5–7, unable to progress into system-level validation and commercialization.

The most acute gap occurs at TRL 6–7 stage, when components must be integrated into full systems, tested in realistic environments, and refined rapidly based on operational feedback. Without coordinated facilities that support this transition, development timelines lengthen, costs increase, and commercial and defense applications are delayed. Globally, countries like China have invested heavily in coordinated maritime innovation ecosystems – integrating government, academic, and private resources to accelerate unmanned systems development. To maintain U.S. leadership in this strategically critical domain, domestic companies require a secure, continuous development pipeline with direct waterfront access, prototyping tools, and connectivity to operational vessels and in-water ranges for testing.

2.2 Federal funding is required to establish the AMS-RPC because the initial capital investment, specialized infrastructure, and secure waterfront access exceed the capacity of private, state, or local funders, nor individual companies. Once operational, RADE and BRL will transition to self-sustaining membership models through complementary revenue streams (e.g., facility leases and memberships for companies, universities, and defense partners; fee-for-service fabrication and testing support such as additive manufacturing, electronics prototyping, and rapid system integration; specialized training programs in advanced robotics, automation, and maritime systems; and hosted events, demonstrations, and government-industry showcases). This model ensures that federal investment serves as catalytic capital while enabling long-term, market-driven operations that directly support AMS commercialization and national security objectives.

(3) Project Specific Solution

3.1 The AMS-RPC creates a coordinated regional system for high-TRL maritime technology development, testing, and deployment by establishing two interconnected facilities, each optimized for a specific role within the commercialization pathway. AMS-RPC is the production core of the OTH, bringing capability through RADE and BRL to the regional nodes activated through AMTRN and TAN, helping maintain a steady pipeline of firms ready to advance into build-test-refine environments. While RADE and BRL can each operate independently to meet private-sector and defense demand, their greatest value is realized through intentional sequencing and dependency. Together, they form a national model for public–private collaboration that strengthens U.S. industrial competitiveness and bolsters defense readiness.

RADE Center is positioned as a large-scale prototyping, demonstration, and testing facility designed to support mature companies, defense primes, and scale-ups, with expanded prototyping bays, extended in-water testing capabilities, and secure environments suitable for classified or defense-sensitive work. At 40,000+ square feet, this facility includes high-bay laboratories, flexible wet and dray labs, and serves companies in later TRL stages. Included:

- Large-scale system experimentation and demonstration
- Joint military–industry–academic testing and training
- Infrastructure to support secure environments, such as Sensitive Compartmented Information Facility (SCIF)
- Ocean Tech Data Center for visual real-time data integration
- Extended dockside testing with continuous power and high-speed data connectivity
- Validation of integrated systems under realistic operational conditions.

Serving as a test and demonstration facility, RADE enables joint experimentation, training, and research among the military, private industry, and academia, accelerating the validation and

transition of dual-use technologies that enhance both national defense and commercial competitiveness. RADE will leverage QDC's adjacent Pier 5 "Blue Economy Support Docks," which will provide direct water access to the Narragansett Bay Test Range, at-shore power, and fiber internet infrastructure for data transfer from sea to land. Access to Pier 5 for RADE tenants and utilizers will allow companies developing AMS to launch vessels; access continuous power supply for dockside testing and maintenance; and leverage reliable internet connectivity to support real-time data transmission, remote operations, and system diagnostics in maritime environments. QDC already hosts major AMS-related employers including General Dynamics Electric Boat, Robosys, Anduril, Senesco Shipbuilding, and Regent Craft, providing an immediate industrial base for growth. It also manages the Port of Davisville and offers proximity to Naval Station Newport, two of the region's most active industrial anchors.

Blue Robotics Lab (BRL) is purpose-built to accelerate early-stage AMS startups serving as the advanced fabrication and system integration node. Companies at this stage operate with small, highly technical teams (3-5 employees) that require affordable, flexible access to fabrication, integration, and dockside validation infrastructure. These firms often have early revenue from pilot contracts or federal awards but lack the capital to build dedicated facilities. BRL reduces their fixed-cost burden, compresses iteration cycles, and enables rapid progression from TRL 6-7. Managed by MassRobotics and located on the Providence's urban waterfront, BRL provides:

- Advanced manufacturing (standard and large-format additive manufacturing)
- Component and subassembly testing
- Co-working flexible space for incubation and acceleration
- System integration and controlled validation using an ocean test tank
- Dockside testing in a working waterfront environment.

BRL's 20,000-square-foot facility will include standard and large format 3D printers, cranes and operational equipment as well as an ocean test tank and configurable space for component integration, subassembly testing, and system-level validation. The location has immediate access to waterfront with laydown space and launch points within 60 yards for rapid iteration. Co-located with the 144-year-old McAllister Towing's Providence Steamboat Company (PSC), BRL connects engineering teams directly to real-world maritime operations. PSC has been in service to the maritime industry for over 200 years. Their location at the mouth of the Providence River includes quick access through a deep water channel to the Ports of Providence, East Providence, Davisville/Quonset and Fall River. It's also strategically located to integrate the urban core to the OTH. BRL's partnership with MassRobotics' brings a 10+ year track record – its companies have raised over $1B since 2015 – and underscores BRL's operational strength.

Together, BRL and RADE form a cohesive, interdependent model: BRL accelerates advanced fabrication, high-fidelity prototype and integration, while RADE enables large-scale experimentation, operational demonstration and qualification. Technologies move from BRL to RADE as they transition from integrated systems to operational demonstration. Performance data from RADE testing flows back to BRL for redesign, re-integration, and refinement before technologies advance into open-water testing through TAN and AMTRN. This closed-loop process reduces duplication, accelerates learning, and directly addresses the commercialization gap. By specializing services rather than replicating them, AMS-RPC fills a critical ecosystem gap: commercially accessible infrastructure for TRL 6–9 development that

connects fabrication, integration, experimentation, and validation within one coordinated system. With this, RADE and BRL close a critical gap in the U.S. defense innovation ecosystem – turning prototypes into deployable products faster and strengthening America's position in the global maritime technology market. This differentiation ensures that AMS-RPC supports the full company lifecycle — from venture-backed startup to globally competitive enterprise — without duplicative infrastructure investment.

3.2 The U.S. currently lacks a coordinated, commercial infrastructure that enables advanced testing, validation, and certification of AMS across the full range of operational settings. Existing assets are fragmented, geographically dispersed, and often limited to single-environment operations, preventing continuous evaluation from lab prototype to field-ready system. As a result, technologies that reach mid- to high-readiness levels struggle to progress into service, slowing adoption, increasing costs, and leaving critical defense and commercial capabilities underdeveloped.

Although the region hosts exceptional organizations – including the Naval Undersea Warfare Center (NUWC), Naval Station Newport, and the University of Rhode Island – these facilities operate independently and lack a unified environment for integrated testing and demonstration. This fragmentation constrains collaboration and limits the region's ability to deliver deployable maritime solutions at scale.

The AMS-RPC addresses this gap by accelerating rapid prototyping and system integration – specifically the TRL 6–7 stage when components must be assembled, validated, and refined before entering larger in-water or multi-setting demonstrations. The AMS-RPC strengthens the pipeline feeding AMTRN/TAN, ensuring that more technologies reach the point where full-scale, in-water, and operational-context testing is feasible. In doing so, the RPC supports a priority of the Department of War (formerly Defense): closing the "valley of death" between development and operational deployment.

Federal investment of $20M will leverage more than $325M in existing state, private, and industry investments at QDC (the Port of Davisville, Pier 5, Quonset Airfield) and the Providence Steamboat location. By integrating and enhancing assets already in place, AMS-RPC provides an efficient, scalable, and sustainable solution for accelerating dual-use maritime technology transition, strengthening both U.S. economic competitiveness and national defense.

3.3 The following are the organization and partners involved in the project and their roles:

- **Quonset Development Corporation (QDC) (Lead Applicant)** – QDC will lead the design, construction, and operation of the **RADE Center** within the Quonset Business Park. As steward of 3,200 acres of industrial and defense property – home to over 250 companies, as well as the Rhode Island Air National Guard – QDC has managed more than **$305M** in federal and state infrastructure investments through MARAD, EDA, and DOT programs. QDC's expertise in permitting, maritime operations, and site management ensures efficient and compliant delivery of capital projects.
- **Polaris Tech Bridge**– Polaris Tech Bridge will serve as the operator of the RADE Center, leveraging its experience managing federal, state, and privately funded facilities to accelerate research commercialization. A recognized NavalX Tech Bridge partner, Polaris Tech Bridge hosts the annual **BlueTIDE Event** (a technology in-water

demonstration event), engaging more than 30 companies in demonstrations of unmanned and autonomous technologies. The organization brings extensive experience in compliance, technology licensing, and program administration for federally funded innovation initiatives.

- **Blue Robotics Lab (BRL) (Co-Applicant)**– BRL led by MassRobotics (MR), will oversee facility retrofits and operations for maritime system integration and advanced fabrication at the Providence Steamboat Company on the Providence waterfront. As the nation's largest independent robotics innovation hub, MR supports over 80 startups and established industry partners, providing shared lab space, prototyping resources, and industry–academic collaboration. MR will apply its proven model for accelerating robotics commercialization to the maritime domain, ensuring strong engagement from private-sector innovators and defense partners.
- **One India Street LLC/Providence Steamboat Co (PSC)** – Established in 1881, PSC is one of the oldest tugboat operations in New England, bringing more than a century of hands-on maritime experience. PSC is a McAllister Towing location, a generational family-owned tug towing and marine transportation company, who operate a fleet of over 80 vessels from Maine to Puerto Rico, and have refurbished a dozen maritime terminals and facilities, including PSC's five-acre parcel at the mouth of the Providence River. These assets and their history bring continuous innovation in marine transportation to the BRL and OTH. The PSC property is under One India Street LLC, who will convey a ground lease of a portion of this waterfront location to BRL. Both entities are maintained by the same family-ownership.

3.4 The AMS-RPC builds on a concentration of existing state, federal, and private assets that make the MSA uniquely positioned to lead in advanced maritime systems. QDC oversees one of the nation's most active marine industrial complexes, managing approximately $25M in infrastructure work annually, including an ongoing $235M port expansion that enhances deepwater capacity for defense and commercial operations.

Upon completion, QDC will own the RADE Center and manage its marine and land-based infrastructure, integrating it into Quonset's established logistics, utilities, and permitting network. Operations and programming will be conducted through a formal partnership with Polaris Tech Bridge, leveraging its experience in federal program administration, technology commercialization, and industry engagement.

The project also draws on the Providence waterfront's existing maritime and robotics infrastructure, including the BRL/MassRobotics, and regional testing assets connected through the American's Marine Test Ranges Network (AMTRN). The regional robotics ecosystem is further strengthened by NBRR facility, which provides tiered memberships for startups and industry with varying levels of engineering, fabrication, and prototyping access. NBRR's early-stage hardware support model complements AMS-RPC by serving companies with low- to high-intensity robotics iteration needs, helping maintain a steady pipeline of firms ready to transition into maritime-focused build-test-refine environments. Together, these assets form a dense, interoperable innovation corridor linking research, manufacturing, and open-water testing.

This integration of proven infrastructure, institutional capacity, and industry presence ensures the AMS-RPC can deliver immediate, scalable impact by leveraging prior and projected investments and not duplicating existing resources – positioning it as a cost-effective, nationally significant platform for maritime innovation.

3.5 AMS-RPC is the innovation engine that initiates and completes the regional commercialization cycle for AMS. It provides the space and technical capacity for companies to design, assemble, and refine advanced systems before and after field testing. Once prototypes are developed at the AMS-RPC, companies move seamlessly, through the TAN. into the AMTRN for open-water validation.

Following testing, performance data from the AMTRN flow directly back to AMS-RPC (and other OTH partner) facilities, allowing for rapid iteration and re-engineering of the AMS in controlled lab and simulation environments. This closed-loop innovation feedback cycle shortens development timelines, lowers risk, and accelerates transition from prototype to production.

All participating organizations – Polaris Tech Bridge, QDC, BRL/MassRobotics, and PSC – are established partners with proven collaboration across the BlueTIDE demonstrations, defense innovation initiatives, and workforce alignment efforts. Their existing infrastructure and governance models ensure that AMS-RPC will operate as a fully integrated element of a ready, market-driven ecosystem that transforms R&D into economic and defense outcomes.

(4) Project Specific Outputs and Outcomes

4.1-4.6

Baseline	Component Project Outputs (by the end of the Period of Performance)	Intermediate Outcomes (5 years)	Long-term Outcomes (within 10 years)	Component Goal(s)	Contribution to the Tech Hub Outcomes
Lack of dedicated, secure AMS rapid-prototyping facilities with direct waterfront access (AMS-RPC)	Construct and equip RADE Center (Quonset) and Blue Robotics Lab (Providence waterfront) in 18-24 months to create shared build-test-refine facilities for AMS developers	Support 40+ companies; create 200+ high-skill jobs; launch a membership and fee-for-service model to generate $5M+	Operate a nationally recognized $10M self-sustaining prototyping ecosystem serving 50+ companies and 300+ high-skill jobs	**Build and operate a scalable DoD accessible infrastructure for dual-use prototyping and testing solutions for TRL 6–9 advancement**	**Reduce barriers to commercialization via faster TRL advancement, and position Southeastern New England as a U.S. leader in maritime innovation**
Fragmented DoW-industry-academic infrastructure limits coordination	Establish secure, shared data infrastructure linking existing assets and facilitate joint demonstrations and experimentation events	Enable data-driven testing and reduce development timelines through shared infrastructure	Institutionalize DoW-industry-academic collaboration through a regional dual-use innovation pipeline	**Integrate defense, academic, and commercial partners to advance dual-use maritime technologies**	**Increase technology transition rates and build global leadership in autonomous marine systems**
High capital barriers for hardware	Provide shared workspace and	Incubate and scale 50+ startups and SMEs; generate	Sustain a self-funding innovation hub	**Develop a market-driven, self-sustaining**	**Ensure long-term financial viability and deliver ROI on**

startups and SMEs	advanced fabrication tools and attract private co-investment, incubate 50+ AMS startups	operating revenue through leases, memberships, and services	anchoring $1B+ in private investment and regional supply-chain growth	**innovation model that lowers barriers for early-stage AMS firms**	**federal investment through private sector growth**

(5) Project Specific Long-Term Viability of Sunsetting Plan

5.1 AMS-RPC is designed as the production and innovation core of OTH, providing the facilities, tools, and expertise needed to convert advanced concepts into operational prototypes ready for field testing. Its long-term sustainability is built on a diversified, market-driven financial model that generates revenue through tenant leases, membership fees, fabrication services, and sponsored training programs.

By serving as the physical and technical bridge between laboratory prototyping and in-water validation at the AMTRN and logistical coordination through TAN, the AMS-RPC ensures that the Hub's innovation pipeline remains active and economically self-sustaining. Federal investment acts as catalytic capital to establish this advanced prototyping infrastructure, which will transition to full operational and financial independence within three years through commercial and government partnerships.

5.2 AMS-RPC will continue in perpetuity as a self-sustaining, revenue-generating regional asset. Once construction and initial equipment acquisition are complete, operations will be maintained through the following income streams:

- Facility leases and memberships for companies, universities, and defense partners;
- Fee-for-service fabrication and testing support, including additive manufacturing, electronics prototyping, and rapid system integration;
- Training programs in advanced robotics, automation, and maritime systems for workforce development; and
- Hosted events and demonstrations, including government-industry showcases and STEM outreach.

Post-award, AMS-RPC will reinvest profits into equipment maintenance and modernization, continued security, operations, and workforce training to maintain technological relevance. Anticipated challenges include sustaining utilization rates and keeping pace with emerging automation and robotics technologies. These will be mitigated through continuous engagement with the regional supply chain, flexible lease structures, and close integration with AMTRN and TAN to ensure continuous project flow through the Hub's innovation pipeline.

5.3 AMS-RPC is not intended to sunset. Its construction phase will conclude with full operational readiness, transitioning to steady-state commercial operations managed under OTH governance structure. Any future scaling or modernization will be driven by market demand and emerging technological trends, such as autonomous production systems, digital twins, and AI-driven design optimization. Should specific programs conclude, the facility's modular layout enables seamless reconfiguration for new tenants or technology domains, ensuring long-term adaptability and sustained contribution to regional innovation capacity.

(6) Taxpayer Bargain

6.1 AMS-RPC will catalyze regional economic growth by anchoring a high-value innovation corridor for advanced manufacturing and maritime autonomy. By co-locating fabrication, prototyping, and early validation capabilities waterside, AMS-RPC shortens development timelines, lowers costs, and expands throughput for AMS companies across the Tech Hub. The result is 200+ high-quality direct job creation in engineering, manufacturing, and logistics; expanded demand for regional suppliers; and greater attraction of private investment. These activities multiply the impact of the initial federal investment, transforming it into sustained regional economic growth and a broader tax base.

6.2 The AMS-RPC directly enhances U.S. global competitiveness by accelerating commercialization of technologies critical to maritime, minerals, and defense markets. By enabling companies to advance systems from TRL 6-9 within a single regional ecosystem, AWS-RPC reduces costs and compresses time-to-market, allowing American firms to outpace international competitors. This aligns with U.S. ambitions to lead the global autonomous marine systems' market, which is projected to grow by a CAGR of 10.5% to $371B by 2035 as digital and defense applications converge. Securing even 1 percentage point incremental share on that growth rate would generate at least $3.7B annually in additional industry revenues, based on conservative modeling assumptions. The AMS-RPC's integration with AMTRN and TAN ensures the nation retains technological leadership in maritime robotics, automation, and intelligent manufacturing.

6.3 AMS-RPC strengthens national security by accelerating dual-use technology development and reducing time from concept to operational capability. Rapid prototyping of unmanned systems, sensor payloads, and AI-driven platforms directly supports naval readiness and homeland defense initiatives. By integrating early-stage innovation with the testing and deployment capabilities of AMTRN and TAN, AMS-RPC ensures that U.S. warfighters have faster access to validated, mission-ready technologies. This acceleration of innovation safeguards American advantage in autonomy, undersea systems, and maritime domain awareness amid growing global competition and national security ramifications.

6.4 The AMS-RPC represents a high-value, low-risk investment for U.S. taxpayers. Federal funds provide one-time catalytic capital for infrastructure and equipment, after which AMS-RPC operates independently through earned revenue. The estimated reinvested annual revenue of $10M after ramp-up period is projected to unlock complementary state, private follow-on investment, and industry co-investment during the 7-year period, achieving a return-on-investment ratio of 5.2x during the period. Through its market-driven model, AWS-RPC ensures that federal dollars generate durable public benefit:

- Long-term job creation and workforce training in high-demand technical fields;
- Strengthened domestic production capacity and supply chain resilience;
- Accelerated delivery of technologies supporting U.S. defense and economic priorities; and
- Reinforcement of the Ocean Tech Hub as a national model for sustainable, self-funding innovation infrastructure.

In short, AMS-RPC converts a limited federal investment into a lasting engine of American innovation, competitiveness, and security, an enduring bargain for the taxpayer.