

## Workforce Development Component Narrative

### 1. Program Description and Scope of Work

#### a. Executive Summary

The objective of the Alaska Mariculture Cluster workforce development component is to support the growing mariculture industry in Alaska through education, learning, and skills development that are aligned with industry needs, broadly accessible, and culturally responsive. Southeast Conference is lead on this project with partners including universities, regional development organizations, Alaska Native groups, state and federal workforce development organizations, nonprofit organizations, and the mariculture industry. The approach includes six goals that provide system development, program design, program implementation and sustainability. 1) Create a Mariculture Workforce Development Strategy to serve as a roadmap for meeting training needs of the mariculture workforce as the sector develops and grows. 2) Develop training materials and curriculum. 3) Create and support self-sustaining and inclusive education and training through online and in-person workshops, short courses, hands-on training, high school dual enrollment, and college programs. 4) Create a glidepath from training programs to a specific job through career awareness, outreach, and job placement programs, including a strategy to disseminate and provide outreach about the availability of training programs. 5) Support technology transfer and knowledge exchange. This program aligns with state and regional CEDS and addresses EDA Recovery and Resilience Investment and Equity priorities. Workforce development efforts will be long-lasting well beyond this federal award and designed to be self-sustaining. Economic benefits will be shared by coastal communities throughout Alaska where mariculture businesses are created, primarily in remote and rural Alaska with traditionally underserved communities.

#### b. Scope of Work

The project, lead by Southeast Conference, will provide workforce development to generate workers and entrepreneurs to support the growing mariculture industry in Alaska. Workforce development has equity at its core: this project engages UA Minority Serving Institutions, identifies concrete metrics to serve underrepresented groups and underserved communities, and works with partners in non-profit organizations and state, federal and Tribal agencies.

**Workforce Strategy:** Create a Mariculture Workforce Development Strategy (deliverable) to serve as a roadmap for meeting training needs of the mariculture workforce as the sector develops and grows. Strategy development will engage stakeholders and provide a lasting plan to identify workforce demands for the emerging mariculture industry in Alaska.

**Training materials & curriculum:** Develop training materials, curriculum, safety modules, & other tools (all deliverables) for use by workforce development providers, including tribes. Update outdated Alaska oyster farming manual (deliverable) with modern techniques, equipment and engineering designs. Create a seaweed farming manual for Alaska (deliverable), building on the ARPA-E funded research and engineering designs in Kodiak, as well as other recent experience in Alaska.

**Implement training:** Create and support self-sustaining and inclusive education and training (deliverable) through online and in-person workshops, short courses, apprenticeships, high school, and college programs. This effort will ensure availability of training in core life and professional skills and advanced professional and academic skills and degree programs that produce graduates to conduct scientific research and development.

**Career pathways:** Create a glidepath (deliverable) from training programs to a specific job through career awareness, outreach, and job placement programs, including a strategy (deliverable) to disseminate and provide outreach about the availability of the programs.

**Knowledge exchange:** Provide opportunities for knowledge exchange with mariculture practitioners outside of Alaska and across disciplines (deliverable). Technology transfer activities will connect researchers with industry stakeholders to identify and prioritize opportunities for new inventions and innovations that can be commercialized.

## **2. Regional Industry Assets and Needs**

### Regional Description

Each component of this cluster is focused on the four southern regions of coastal Alaska (Southeast (SE), Prince William Sound (PWS), Kenai Peninsula (KP), Southwest (SW)) due to the location of the waters appropriate for mariculture development, as well as the existing seafood industry participants and interested workforce, infrastructure, and vessels which already operate and move across communities to access fishery resources. See attached separate FIPS code spreadsheet as directed by EDA staff.

Alaska comprises more than half of the US coastline, continental shelf, and exclusive economic zone (EEZ) (see above image) and is a world leader in seafood production; over 60% of the seafood harvested in the US comes from Alaska waters. At the same time, Alaska has over 250 rural coastal communities that are largely inaccessible by road and have limited employment opportunities. Many of these communities have high numbers of Alaska Native residents, who make up 22% of the AMC focus area population. The communities in these coastal regions have the need and desire to build ocean-related businesses, diversifying opportunities for residents to live and work in their communities in an industry that is beneficial to the environment and complementary to commercial and subsistence fishing.

### b. Industry, Employer, and CEDS alignment

Mariculture development is a priority in state and regional development efforts and as well as aligning with the [Alaska Mariculture Development Plan](#), this cluster also aligns with the CEDS for each of the EDDs ([SEC](#) - pgs. 2, 11, 24, 41-43, [PWEED](#) – pgs. 8, 32, 41, 44, 58, [KPEDD](#) – pgs. 39-50, [SWAMC](#) – pgs. 1, 4, 5, 7), and the State of Alaska (pgs. 2, 11, 24, 41-43).

## **3. Proposed Solution**

Alaska Mariculture Cluster, Award number: ARPA-BBRC-P2-687

The Alaska Mariculture Cluster will structure workforce development so that it supports growth in Alaska's Mariculture sector to meet the EDA Recovery and Resilience Investment priority. The project will accelerate industry growth by increasing awareness of career opportunities, providing training, working with employers to increase employment, and attracting private investment. Workforce development will ensure a skilled and adaptable workforce to drive the sustainable development of aquaculture, through applying education, learning and skills development. This workforce development will be broadly accessible through online offerings and in-person training centered in regions of mariculture industry expansion. Workforce development strategies will be developed collaboratively by industry and the appropriate education sectors. The approach includes six goals (described below) that provide system development, program design, program implementation, and sustainability.

The Alaska Mariculture Cluster will address the EDA Equity priority and have set Equity Engagement Goals of 25% Alaska Native and 25% rural Alaskan. Alaska's workforce consists of a wide range of underserved populations across coastal Alaska, including women, Latino, Filipino, and Alaska Natives as well as underserved communities that often have a majority population of Alaska Natives. Alaska Mariculture Cluster workforce development is uniquely well-suited to serve these audiences.

- The University of Alaska Fairbanks and University of Alaska Southeast are [Minority Serving Institutions \(MSI\)](#), specifically Alaska Native Serving.
- The coastal area contains 13 of Alaska's 25 Qualified Opportunity Zones, which are federally designated distressed, low-income communities, many of which have experienced a lack of investment for decades.
- Alaska has 231 federally-recognized tribes, more than any state in the nation. Over 40 communities in the coastal Alaska region are Alaska Native villages where over 50% of the population is Alaska Native. According to the [2020 census](#), of the total 221,682 people that live in the 25 Borough/Census Areas in the coastal Alaska region (excluding upper Cook Inlet), 37% identify as Alaska Native or American Indian.
- The Alaska Workforce Innovation Opportunity Act [Combined Plan](#) 2020 – 2023 provides guidance on how to reach these historically underserved populations.
- Many rural and Indigenous communities in coastal Alaska are challenged by broadband connectivity. Diversifying delivery methods of education and training promotes inclusivity of younger and older students, traditional and non-traditional learners, and from urban, rural, and remote locations in the region.
- While Indigenous mariculture activities are practiced throughout coastal Alaska as part of subsistence lifestyles, developing Indigenous-focused workforce training will promote career and entrepreneurial opportunities in mariculture. As the mariculture industry grows and expands across Coastal Alaska, so may the opportunities for rural and Indigenous residents to remain close to home and not have to leave their communities for career opportunities.

#### **4. Partners and Program Outreach**

- **Universities** - The University of Alaska system comprises three independently accredited universities: University of Alaska Southeast (UAS), University of Alaska Fairbanks (UAF), and University of Alaska Anchorage (UAA) with 13 community campuses and extended

learning centers, many of which are designated as Minority Serving Institutions. Alaska Sea Grant is a university-federal partnership based at UAF that supports education, extension, and research and hosts the Mariculture Research and Training Center (MRTC).

- **Economic Development District (EDD) Partners** - As partners of the State of Alaska and leaders of regional economic development efforts, the coastal regions of Alaska are served by [EDDs](#) through a network of economic development and planning programs and support services for their regions, communities, and businesses.
- **Alaska Native, State and Federal Workforce Development Partners** - Alaska Native organizations, state, federal and local governments, and economic development and community organizations will engage diverse audiences in workforce development.
- **Nonprofit Organizations** – A wide variety of nonprofit organizations will be engaged in workforce development, including science centers, marine safety organizations, and industry-driven associations, that may include the Alaska Longline Fishermen’s Association, Alaska Mariculture Alliance, Alaska Marine Safety Education Association, Alaska Safety Alliance, Alaska Sustainable Fisheries Trust, OceansAlaska, Prince William Sound Science Center, Sitka Sound Science Center, Southeast Sustainable Partnership, and others.

## 5. Measurable Goals and Impacts

**GOAL 1: Create a Mariculture Workforce Development Strategy to serve as a roadmap for meeting training needs of the mariculture workforce as the sector develops and grows.**

**Actions:** We will engage stakeholders and provide a lasting plan to identify workforce demands for the emerging mariculture industry in Alaska, including mariculture producers, land-based service providers, and ancillary businesses. The strategy will identify needs for mariculture teaching staff, curriculum, mariculture standards, credentials, industry links, mariculture distance learning resources and delivery systems.

**Impact:** This plan is a BBB deliverable that will guide workforce development in Alaska’s mariculture industry, which is critical to support growth from a \$1M industry to a \$100M industry in 20 years. Developing a strategy will provide sustainability beyond this federal award and will provide entrepreneurs and investors data to make informed decisions about entering the industry, business planning, and business expansion.

**GOAL 2: Develop training materials and curriculum**

**Actions:** We will develop training materials, curriculum, safety modules, & other tools (all deliverables) for use by workforce development providers, including tribes. Update outdated Alaska oyster farming manual (deliverable) with modern techniques, equipment and engineering. Create a seaweed farming manual for Alaska (deliverable), building on the ARPA-E funded research and engineering in Kodiak as well as other recent experience in Alaska. These materials will be used in implementation (Goal 3) and refined during the course of this federal award.

**Impact:** Training materials and curriculum will be custom designed for the Alaska mariculture industry as identified by the mariculture workforce development strategy and will ensure sustainability of the workforce development tools beyond this federal award.

**GOAL 3: Create and support self-sustaining and inclusive education and training through online and in-person workshops, short courses, hands-on training, high school dual enrollment, and college programs.**

**Actions:** Education and training implementation provides points of entry for all learners.

Training for prospective farmers, entrants, and practitioners who want to advance skills. Alaska Sea Grant will provide webinars, short courses and hands-on training opportunities in a) shellfish and seaweed husbandry, including hatchery and nursery culture and growout; b) business practices, such as direct-marketing, human resources and management skills; and 3) food safety, including HACCP, and marine safety. Standards for Certification (where not externally pre-determined, such as for HACCP) will be developed during creation of the workforce development strategy, so that students who complete these standards receive Certification. To increase accessibility, trainings will be offered online as well as in person, and trainers will travel and offer trainings in person at remote locations.

University-based & dual-enrollment (high school) training for a semester, year, two-year or four-year degrees. The UAS – Sitka Campus and the UAA – Prince William Sound College will offer a Mariculture Occupational Endorsement available for college and Dual-Enrollment (high school) students. These new programs will be based on the successful UAS Occupational Endorsement programs in Alaska Salmon Enhancement, Fishery Management, and Scientific Diving. These programs allow for expansion beyond a semester and students can pursue specialties and hone technical skills like skiff handling and cold-water SCUBA diving. Tailored for-credit research and internship opportunities across Alaska further encourage students’ professional and occupational development. These programs can be further developed through the UAS– Sitka Campus Certificate and Associates of Applied Science degrees. The UAF College of Fisheries and Ocean Sciences will create a Mariculture track in their Bachelor of Science in Fisheries and Ocean Sciences degree to cater to students looking for a four-year degree. All of these efforts will be informed by the mariculture workforce development strategy and curriculum developed in Goals 1 and 2.

**Impact:** This effort will ensure the availability of training in core skills including life skills/problem solving, trade skills, basic husbandry, work ethic, marine safety skills, advanced skills in marine biology, business and management, food safety, and degree programs that produce graduates to fill jobs in the expanding mariculture industry. We aim to engage 800 participants in webinars, short courses, and workshops, enroll 400 students in for-credit college courses, produce 50 Occupational Endorsement graduates, 20 Certificate graduates, 20 AAS graduates over the course of this grant.

**GOAL 4: Create a glidepath from training programs to a specific job through career awareness, outreach, and job placement programs, including a strategy to disseminate and provide outreach about the availability of training programs.**

**Actions:** We will create career awareness materials and occupational videos for sharing on websites and social media (e.g. universities, Alaska Sea Grant, workforce development organizations) and expand career awareness outreach partnerships to mariculture employers and strategic partners (e.g., Dept. of Labor, AK Job Center Network, school districts).

**Impact:** Alaskans will better understand pathways and opportunities in mariculture careers through the deployment of electronic resources (increase website traffic by 10% annually), disseminating information at career and college fairs (average of seven annually), launching a platform for career exploration and soft-skills courses made widely accessible to students and job seekers statewide (average of 200 participants annually).

**GOAL 5: Support technology transfer and knowledge exchange.**

**Actions:** We will connect researchers with industry stakeholders both within Alaska and through broader collaborations to identify and prioritize opportunities for new inventions and innovations that can be commercialized, thereby accelerating mariculture development in Alaska by solving industry challenges, driving down costs, and anticipating technology trends into the future. Areas of technology transfer will include mariculture applications and span disciplines including emerging energy technologies. We will provide travel opportunities for knowledge exchange with mariculture practitioners outside of Alaska and across disciplines. University of Alaska staff will be also be funded to provide free consulting services to Alaska researchers and mariculturists, including evaluating commercial potential, advising on commercialization strategies, and application support for grants such as through the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs of the US Small Business Administration. The Governance Body will receive and review proposals for travel support and technology transfer efforts.

**6. Sustainability Plan**

**Impact:** Continued development of the Alaska mariculture industry will be informed through technology transfer and sharing knowledge with experts from Alaska and around the world. It is anticipated that this work will support up to fifteen transfer activities each year, including hosting relevant Alaska events and facilitation of travel for Alaskan and international experts.

Workforce development efforts will be sustainable because deliverables will be long-lasting well beyond this federal award and designed to be self-sustaining including the integration of the MRTC and AMA. The workforce development strategy will guide future workforce development efforts that will be carried out using training materials and curriculum developed, implemented, and refined during the duration of this award. These strategies and training materials will be made available via platforms at long-lasting institutions to ensure their continued availability. Workforce development programs will be designed to become self-sustaining once the grant funds have been expended and fully supported through participant tuition and course fees.

**Optional Template for BBBRC Phase 2 Primary Service Area County List**

BBBRC Phase 2 applicants may use this template to list the counties in their primary service areas, which is required as part of both the Overarching Narrative (see p. 21 of the NOFO) and the project narratives of all Component Applications (see p. 23 of the NOFO).

<https://www.census.gov/geographies/reference-files.2019.html>

Overarching Narrative	"A description (~1 page) of the project's location and region, including a definition of its primary service area by counties. Counties should be identified by both name and 5-digit FIPS codes. See <a href="https://www.census.gov/geographies/reference-files.2019.html">https://www.census.gov/geographies/reference-files.2019.html</a> . The description of the region should include identify the communities served and a description of the target participants served and stakeholders engaged. The description also include the identification of assets in the region critical to the success of the regional growth cluster. The location regions should directly correspond to Questions 14 and 16 of Form SF-424 as submitted in each constituent component project. If applicable, also provide information demonstrating that the project is in or directly benefits a coal community. NOFO p. 21.
Component Application Project Narratives	"Section 2a: A description of the component project's location and region. The locations and regions should directly correspond to Questions 14 and 16 of Form SF-424 and align with the information provided in the Overarching Narrative. If the applicant expects impacts beyond the noted region, the applicant should note the region of expected impact. Additionally, applicants must identify their proposed primary service area(s) by county or counties. Counties should be identified by both name and 5-digit FIPS codes. See <a href="https://www.census.gov/geographies/reference-files.2019.html">https://www.census.gov/geographies/reference-files.2019.html</a> p. 23.

FIPS Code	County / County Equivalent Name
02013	Aleutians East Borough
02016	Aleutians West Census Area
02060	Bristol Bay Borough
02070	Dillingham Census Area
02100	Haines Borough
02105	Hoonah-Angoon Census Area
02110	Juneau City and Borough
02122	Kenai Peninsula Borough
02130	Ketchikan Gateway Borough
02150	Kodiak Island Borough
02164	Lake and Peninsula Borough
02195	Petersburg Borough
02198	Prince of Wales-Hyder Census Area
02220	Sitka City and Borough
02230	Skagway Municipality
02275	Wrangell City and Borough
02282	Yakutat City and Borough
02261	Valdez-Cordova Census Area