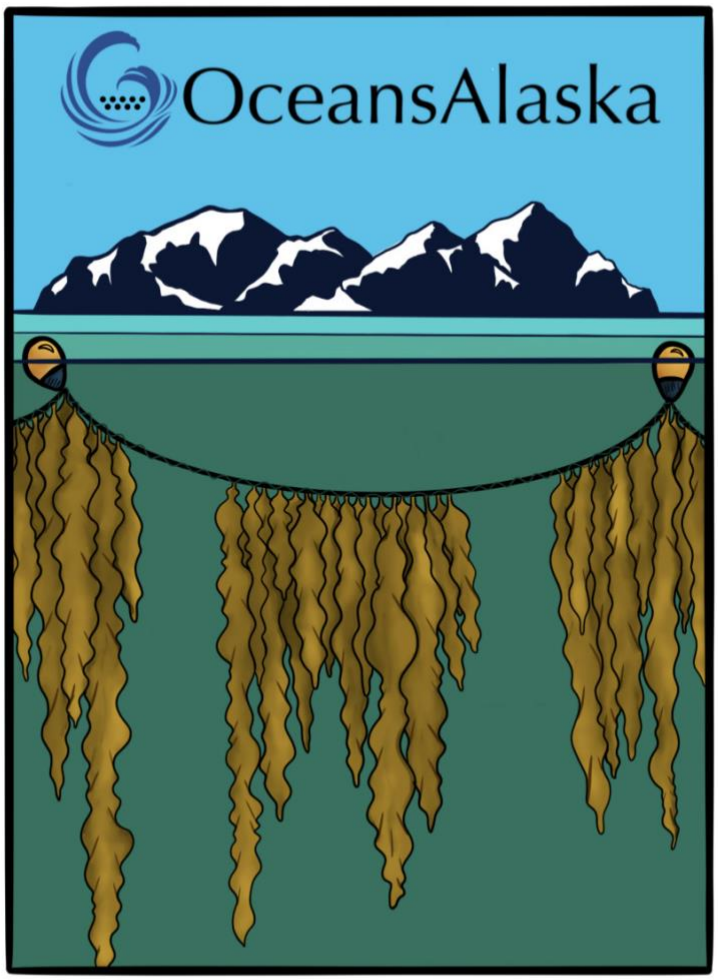
OceansAlaska Feasibility Study

Southeast Conference - September 30, 2026



Executive Overview

Southeast Conference, in collaboration with a broad range of stakeholders, identified several bottlenecks limiting the growth of Alaska's mariculture industry. To address these challenges, Southeast Conference issued a Request for Proposals (RFP) for feasibility studies that would evaluate technical, economic, and infrastructure constraints and recommend practical solutions. One of the primary barriers identified was the lack of commercial processing facilities for mariculture products.

Mariculture is a form of aquaculture that involves cultivating marine organisms in saltwater under controlled conditions, rather than harvesting them from wild stocks. Alaska has supported mariculture for decades, formally establishing the industry through the Aquatic Farm Act of 1988. This legislation enabled the development of small coastal oyster farms and laid the foundation for the recent expansion of seaweed and shellfish farming, increased public support, and initiated new funding opportunities throughout the state.

OceansAlaska is a nonprofit shellfish hatchery, nursery, and marine science center located in Ketchikan, Alaska. With more than 25 years of experience in mariculture, its board and staff possess extensive expertise in hatchery operations, shellfish production, seaweed cultivation, research, and industry development. OceansAlaska's feasibility study evaluated the most effective strategies for expanding processing, value-added production, and distribution capacity in southern Southeast Alaska.

The study initially examined the feasibility of developing a small regional processing facility or commercial kitchen supported by refrigerated and frozen container storage. The proposed facility would provide mariculture farmers and harvesters with space to create value-added products, aggregate products for distribution, and serve local and visitor markets. OceansAlaska also explored a modular facility design that could be scaled and replicated in other rural communities throughout Alaska.

As the study progressed, the project was refined to focus on two complementary facilities: a commercial kitchen and a separate shellfish holding and repacking facility. Rather than combining shellfish and seaweed processing within a single seafood processing plant, the study concluded that this approach better matched the shared-use model envisioned for multiple users. The regulatory requirements, staffing needs, operating costs, and liability associated with a licensed seafood processing plant made it less compatible with small-scale mariculture businesses. Separating the functions allows the commercial kitchen to support product development and small-batch production while the shellfish facility addresses the distinct cold-chain, traceability, holding, and repacking requirements that apply to shellfish.

The study found that a commercial kitchen is better suited to the current scale of southern Southeast Alaska's mariculture industry. It requires fewer permits, lower operating costs, reduced initial capital investment, less staffing, and a smaller physical footprint while providing entrepreneurs with a space to develop, test, and market new products. In addition to supporting

product innovation, a shared commercial kitchen encourages collaboration among users. Similar collaborative models, such as the Icelandic Ocean Cluster, have demonstrated how shared facilities can stimulate innovation and create successful seafood businesses.

The Alaska Homemade Food Program (formerly the Cottage Food Program), also complements this approach by allowing small-scale entrepreneurs to produce and sell certain food products under a simplified regulatory framework. While participants must still meet food safety requirements, the program significantly reduces permitting and compliance burdens. A DEC-approved commercial kitchen would provide seaweed farmers and wild harvesters with access to licensed production space for developing value-added products such as seaweed salsa, pickles, seasonings, and other artisanal foods.

Ketchikan's visitor economy offers a potentially substantial market for locally produced mariculture foods. The community welcomed more than 1.5 million cruise visitors in 2025 and is expected to host approximately 1.6 million visitors in 2026. These volumes support further testing of small-batch products targeted to visitors and local consumers, but visitor counts alone do not establish demand; product selection, pricing, sales channels, seasonality, and conversion rates should be validated through pilots and direct market testing. A commercial kitchen would enable mariculture businesses to produce small batches of specialty products targeted to both visitors and local consumers. (akcruise.org)

Barnacle Foods demonstrates the potential of this business model. Beginning as a small company producing wild-harvested kelp products, it successfully expanded into regional and national retail markets. Its award-winning salsas, pickled products, and other value-added foods are now sold throughout Alaska and beyond, illustrating how small-scale product development can grow into a successful commercial enterprise.

Although the Homemade Food Program is particularly well suited for seaweed products, shellfish products require additional regulatory oversight because of food safety requirements. Value-added shellfish products, including chowders, smoked products, or canned goods, remain viable opportunities but require additional licenses, inspections, and compliance with shellfish sanitation and labeling regulations.

Overall, the feasibility study concluded that a commercial kitchen, connected with frozen and refrigerated container vans, and including a separate shellfish holding area, best meets the current needs of the regional mariculture industry. Compared with a seafood processing facility, a commercial kitchen is more economically viable, scalable, easier to permit, less labor-intensive, and better aligned with existing small-business models. It also leverages the growing visitor economy while providing an accessible pathway for entrepreneurs to develop and test new products.

The study recommends encouraging the development of community commercial kitchens, either as stand-alone facilities or in partnership with other restaurant businesses, existing kitchen facilities (non-profits or public resources), and/or small seafood processors. This approach

provides flexibility, supports compliance with Alaska Department of Environmental Conservation regulations, encourages entrepreneurship, and creates a practical foundation for the continued growth of Alaska's mariculture industry.

Executive Summary

Recommended action: advance a phased shared-use model consisting of a DEC-approved commercial kitchen, separate shellfish holding and repacking capacity, and modular refrigerated and frozen storage. This model is preferred over a shared seafood processing plant because it better matches current production volumes, reduces permitting and staffing burdens, limits operator liability, and can expand as demand grows. Before implementation, the managing entity should confirm final permitting requirements, complete capital and operating budgets, validate user demand, establish insurance and user-accountability provisions, and determine whether the barge-based or land-based configuration offers the strongest operational fit.

Historical Background

Southeast Alaska is a highly productive coastal environment that supports a wide variety of commercially harvested seafood species. In addition to its long-established commercial fisheries, the region is home to a growing mariculture industry, including oyster and seaweed farms.

Seafood harvesting and processing in Southeast Alaska are generally seasonal. Processing activity is driven by the annual progression of fisheries, beginning with the summer salmon season and continuing through fall, winter, and spring fisheries for geoducks, crab, halibut, shrimp, sea cucumbers, and herring. These seasonal harvests determine which processing facilities operate, when they operate, and where they are located.

Historically, numerous small and large seafood processors were distributed throughout coastal communities, with tenders servicing fishermen year-round. As mariculture emerged, it was anticipated that oyster and seaweed production would help extend processing activity during the traditional shoulder seasons, in addition to amplifying and supporting existing transportation infrastructure, existing facilities, and workforce. Instead, the industry's early expansion coincided with a significant downturn in Alaska's seafood processing sector. Weak seafood markets, geopolitical pressures, rising operating costs, and broader economic challenges led to industry consolidation, bankruptcies, and mergers as companies sought greater efficiency and financial stability. The years following the COVID-19 pandemic further accelerated these trends, leaving fewer processors available to support new mariculture businesses.

Seaweed has a long history as an Indigenous food and trade commodity throughout coastal Alaska. Traditional foods such as black seaweed and herring roe on kelp have been harvested, consumed, and traded by Indigenous communities from Washington State to Prince William Sound for generations. The commercial herring roe on kelp fishery has expanded and contracted over the years as markets and biomass have shifted. More recently, commercial seaweed products have been produced through wild harvest under Commissioner permits authorizing

harvest in Alaska state waters. Examples include Cape Pole's seaweed bio-stimulant operation on Prince of Wales Island and smaller value-added businesses such as kelp marmalade producers in Sitka, Foraged & Found in Ketchikan, and Barnacle Foods in Juneau.

Growing interest in mariculture has led to numerous seaweed workshops, increased farm leases, and significant investment in commercial cultivation. According to the National Seaweed Hub, approximately 40 commercial seaweed farms were operating in Alaska in 2023, with roughly 100 permitted aquaculture sites producing kelp, seaweed, or shellfish. Annual production was expected to exceed one million pounds, primarily consisting of sugar kelp, bull kelp, and winged kelp cultivated in Southeast Alaska, Prince William Sound, and Kodiak. Farms range from small owner-operated businesses to large commercial operations such as Seagrove on Prince of Wales Island. Ownership includes Native organizations, individual farmers, and corporate entities, with financial support from programs such as Build Back Better as well as organizations including the World Wildlife Fund and The Nature Conservancy. (https://afdf.org/research-and-development/alaska-mariculture-initiative)

Despite this growth, changes within the seafood processing industry created significant challenges for commercial seaweed farming. As seafood companies reduced operating costs and focused on core fisheries, fewer processing facilities remained available to handle seaweed harvests or provide cool infrastructure for shellfish. At the same time, Alaska seaweed producers face substantially higher labor, transportation, insurance, and operating costs than competitors in many international markets.

Today, Alaska seaweed businesses generally follow one of two business models. Smaller farms focus on high-value consumer products, while larger operations seek to produce bulk biomass for secondary processing into bio-stimulants, nutraceuticals, food ingredients, and industrial products. Large-scale production depends on access to primary processing facilities capable of handling significant harvest volumes. Utilizing existing seafood processing infrastructure was considered a key component of the Alaska Mariculture Initiative's goal of developing a $100 million mariculture industry over twenty years (Alaska Mariculture Initiative, 2014). However, the contraction of Alaska's seafood processing sector has limited access to this infrastructure, creating a significant bottleneck for industry growth. (https://www.fisheries.noaa.gov/s3/2023-05/ak-aquaculture-support-mariculture.pdf)

Due to EDA restrictions from public funds going to private companies, the distribution of Build Back Better funding was challenging. Much of the funding was directed through universities, nonprofit organizations, and consultants, limiting direct access for private companies. While this approach supported research and planning, it reduced opportunities for some commercial operators to offset the costs and risks associated with developing new farming technologies, processing capacity/equipment, product innovation, integration into existing seafood facilities, and public/private cool/cold storage infrastructure.(https://seconference.org/program/alaska-mariculture-cluster/)

Alaska's shellfish industry has followed a different development path. Although oyster farming began during the 1970s, passage of the Aquatic Farm Act of 1988 established a formal regulatory framework that streamlined permitting and enabled commercial expansion. Before these regulations, only a small number of pioneering oyster growers operated without a formal state permitting process. The formation of the Alaska Shellfish Growers Association (ASGA) during the 1980s helped shape the emerging regulatory system through collaboration with state agencies. Today, Alaska's aquatic farming program is jointly administered by the Alaska Department of Fish and Game (ADFG), the Department of Natural Resources (DNR), and the Department of Environmental Conservation (DEC).(https://www.alaskashellfish.org)

To strengthen relationships and expand resources, ASGA later partnered with the Pacific Coast Shellfish Growers Association (PCSGA) and the Pacific Shellfish Institute (PSI) to advance shellfish production throughout Alaska and the Pacific Northwest. These organizations continue to collaborate on research, legislative priorities, shellfish health, harmful algal blooms, marine toxins, and disease management.

Today, approximately 40 oyster farms currently have active sales in Southeast and Southcentral Alaska, with additional farms being developed in Kodiak. The McKinley 2024 report showed an estimated 50 additional oyster and seaweed farm sites are in various stages of the permitting process. Recent investment through the Economic Development Administration's Build Back Better, Alaska Mariculture Cluster has further accelerated industry growth, increasing demand for infrastructure such as oyster distribution hubs, repacking facilities, and value-added processing for oysters that do not meet the premium half-shell market. Because shellfish safety depends on maintaining an uninterrupted cold chain, investments in refrigerated storage, transportation, and handling infrastructure remain essential for maintaining product quality and expanding into new markets. (https://alaskamariculturecluster.org/wp-content/uploads/2024/11/Alaska-Mariculture-Industry-Update-Fall-2024-Final.pdf)

Although Alaska's seaweed and shellfish industries share common infrastructure needs, their processing requirements, product forms, marketing strategies, and business models differ substantially. Large commercial seaweed farms require industrial-scale processing capacity that can often be integrated with existing seafood processors or purpose-built facilities. Oyster farming, by comparison, remains largely composed of small and medium-sized producers whose primary needs center on cold-chain logistics, packing, distribution, and value-added processing.

Given the current scale of Alaska's mariculture industry, smaller regional processing facilities offer the most practical path for supporting continued growth. Community-scale processors, shared-use facilities, and commercial kitchens can provide cost-effective processing capacity while allowing both oyster and seaweed producers to expand production until demand supports larger, dedicated processing infrastructure.

Problem Statement

Ketchikan lacks several critical pieces of shared food-processing infrastructure, including a public cold storage, a community processing facility, a public commercial kitchen, and community refrigerated and dry storage. Without these essential resources, mariculture producers face significant barriers to developing new products, maintaining existing production, establishing a viable cool/frozen chain, and expanding into new markets.

The community also has a shortage of food-grade commercial kitchen space needed to produce value-added mariculture products, support cottage and homemade food businesses, and teach traditional and cultural food preparation. This gap limits local food production, reduces opportunities for small business development, and slows the growth of the regional mariculture industry.

At the same time, both the Ketchikan Indian Community and the Metlakatla Indian Community are updating their climate resilience and mitigation strategies, recognizing that strengthening local food production is an important component of food security and long-term community sustainability, thus the study of commercial kitchens and small processors is relevant to their communities planning.

Project Background

1. Evolution of the Feasibility Study

The feasibility study was originally developed in partnership with an established, year-round seafood processor that processed wild-harvested kelp, farmed kelp, and roe-on-kelp products. The study was intended to evaluate the processor's capacity alongside projected production from several planned seaweed farms, including a large operation on Prince of Wales Island, proposed farms near Duke Island and Sea Otter Sound, and a Ketchikan-based company producing consumer products from wild-harvested kelp.

Since the project began, industry conditions changed significantly. The seafood processor experienced permitting and construction delays, the Prince of Wales farm reduced its kelp production and shifted toward oyster farming, the Duke Island and Sea Otter Sound projects advanced more slowly than anticipated, and the Ketchikan kelp company ceased operations.

2. Shift to a Scalable Model

In response to these changes, the feasibility study shifted its focus toward a smaller, more scalable model designed to meet the needs of existing small seaweed and oyster farms, as well as wild kelp harvesters. This approach better reflects current production volumes and creates a model that can be replicated in other rural Southeast Alaska communities as an affordable first step in developing mariculture infrastructure.

3. Tourism as an Economic Opportunity

Southeast Alaska's visitor industry has remained strong and continues to expand into communities such as Prince of Wales Island, where oyster farming is growing. This presents opportunities to diversify local economies as the mariculture industry develops.

The study explores whether revenue generated through small-scale farm tours, value-added products produced in a commercial kitchen, or a mariculture retail store or food bar could help support hatcheries, farms, and community facilities while creating stable local employment. These opportunities are viable for both large tourism destinations and smaller communities seeking to attract visitors.

Also, as tourism grows, the infrastructure that supports the visitor industry can also be utilized by mariculture farmers. Increased cool/cold storage facilities at regional airports are being expanded to accommodate the sport fishing lodges and these can also be used by oyster farmers or others who need to keep their product cool or frozen. Additional flights to the lower 48 enhances transportation opportunities to expand markets. Thus, as mariculture can enhance the visitor industry, the visitor industry infrastructure can elevate the mariculture industry.

4. Expanded Opportunities Through Homemade Food Regulations

Recent updates to Alaska's Homemade Food Program have expanded opportunities for community members and mariculture producers to market locally made products directly to consumers. With more than 80 percent of Alaska visitors coming from the domestic market, these visitors represent an important opportunity to introduce products that can later be marketed throughout Alaska and the Lower 48.

Project Description

Objective

The objective of this study was to develop conceptual plans and a practical decision-making workbook for scalable, modular commercial kitchens and small shellfish distribution infrastructure in rural Southeast Alaska. The study compares facility models, identifies regulatory and infrastructure requirements, evaluates the potential use of OceansAlaska and container-based facilities, and outlines the information communities need before making capital and operating decisions.

The workbook serves as a planning guide and decision-making tool for businesses, nonprofit organizations, Tribes, and communities considering a commercial kitchen or small-scale processing facility. It helps users evaluate:

- Community goals and priorities.
- Infrastructure needs.
- Workforce availability.
- Capital and operating costs.

- Regulatory requirements.
- Financial feasibility.
- Opportunities for future expansion.

The workbook also assists communities in determining whether their primary goal is to:

- Improve local food security by providing locally produced and culturally prepared foods;
- Support product innovation and value-added processing for local and visitor markets;
- Expand into regional and national markets; or
- Pursue a combination of these objectives.

Rather than encouraging large capital investments from the outset, the study promotes a phased approach that allows businesses and communities to begin with appropriately sized infrastructure and expand as production and demand increase. This strategy reduces financial risk while supporting sustainable, long-term growth.

Background and Context

Mariculture is a growing industry in Alaska, but its infrastructure needs vary widely depending on the size and stage of individual operations. Farms range from small family-owned businesses to larger commercial enterprises, and both established producers and new entrants require access to appropriately scaled processing and storage facilities.

Ketchikan is uniquely positioned to support this growth. In addition to OceansAlaska, traditional seafood processors, and an expanding network of shellfish and seaweed farms, the community welcomes more than 1.6 -1.7 million visitors each summer. This creates a strong local market for value-added seafood and mariculture products.

At this time, many seaweed farms currently produce relatively small harvest volumes, their products often command greater value as artisan or specialty foods rather than bulk commodities. Likewise, many established oyster farms lack convenient access to local and visitor markets because Ketchikan currently lacks shellfish holding, repacking, and distribution facilities.

OceansAlaska initially evaluated two potential approaches: developing a mariculture processing facility or establishing a commercial kitchen. The organization recognized that local farmers needed affordable access to facilities where they could safely process harvests, develop value-added products, and test new business ideas.

Successful Alaska businesses demonstrate the value of this approach. For example, Barnacle Foods, an Alaska specialty food company, has grown from producing specialty kelp-based products for local visitors, into a company that markets throughout Alaska and the Lower 48 and continues to expand its product line. Similarly, Ketchi Kelp and Foraged and Found used

Alaska's cottage food framework to develop and market small-batch kelp salsa and other products.

To evaluate the best path forward, OceansAlaska partnered with Fishes & Dishes to respond to Southeast Conference's request for proposals to study the feasibility of a mariculture processing facility or commercial kitchen in Ketchikan and other Southeast Alaska communities.

The project included extensive consultation with mariculture producers, seafood processors, regulators, and industry experts. Research addressed regulatory requirements, permitting, licensing, taxation, insurance, business structures, wastewater and potable water systems, fire and building code requirements, workers' compensation, and food safety. Information was gathered through agency websites, technical publications, phone interviews, meetings, and consultations with organizations including the Alaska Department of Environmental Conservation (ADEC), the Small Business Administration, commercial kitchen operators in Anchorage and Seattle, local governments, seafood processors, shellfish businesses, and food service professionals.

Additional guidance from Chris Sannito of Alaska Sea Grant, who operates a small seafood processor in Kodiak, clarified the regulatory distinctions between a small seafood processor and a commercial kitchen. That analysis helped identify the most practical path forward.

Based on stakeholder input and regulatory research, the study concluded that a shared commercial kitchen combined with shellfish holding and repacking facilities best meets the current needs of Ketchikan's mariculture industry. Most local farms and wild kelp harvesters are small businesses that are just beginning operations or expanding gradually. A shared commercial kitchen provides an affordable space where entrepreneurs can safely innovate, develop value-added products, and build successful businesses. As those businesses grow, they can transition into direct marketing permits and larger processing facilities, including the future KAPA processing plant. In this way, the commercial kitchen serves as both foundational infrastructure and a bridge to larger-scale commercial processing.

Goals

The goal of this project was to develop conceptual plans for a community commercial kitchen and/or product holding facility that would support small and start-up businesses while expanding market access and improving logistics without requiring costly individual investments. By providing shared equipment and cooperative workspaces, the facility would reduce barriers to entry for entrepreneurs and strengthen the regional mariculture and local food economy.

The feasibility study evaluated three potential facility models: a seafood processing facility, a commercial kitchen, and a shellfish distribution and cold storage facility. Each option was assessed for its ability to support workforce education, coastal stewardship, economic diversification, community resources, generational opportunities, climate resilience, visitor industry access, and improved food security. The study also considered how each facility could

serve a diverse range of users, including mariculture producers, commercial fishermen, local farmers, Indigenous harvesters, and value-added food businesses.

Although located in Ketchikan, the proposed facility would function as a regional aggregation and distribution hub serving Prince of Wales Island, Annette Island, and surrounding communities. Regular ferry, barge, and air transportation provide reliable connections throughout the region, making Ketchikan an ideal location for consolidating products before shipment to local and external markets.

The facility would also support the long-term goals of the Alaska Shellfish Cooperative in Naukati by providing additional refrigerated and frozen storage capacity, expanding opportunities for oyster growers to reach Ketchikan's visitor industry and other markets. Beyond shellfish, the study examined how a commercial kitchen equipped with value-added processing equipment—including dehydrators, grinders, and packaging equipment—could create new opportunities for seaweed farmers and harvesters to develop consumer products and diversify revenue streams.

An important component of the study explored the facility's potential to support Indigenous food processing, cultural education, and youth programming. Food gathering, preparation, and sharing are foundational cultural practices that reinforce stewardship of natural resources, strengthen relationships between generations, and promote accountability to Elders and community. A shared commercial kitchen could therefore provide not only economic opportunities but also a welcoming space for cultural workshops, knowledge sharing, and community collaboration. Products created in the facility could enter the local economy through both commercial sales and traditional systems of sharing and barter.

The study also evaluated the feasibility of adapting the OceansAlaska facility for use as either a commercial kitchen or a small-scale seafood processing plant. OceansAlaska consists of a 120-by-40-foot concrete float supporting a 30-by-80-foot, two-story metal building, a 40-by-40-foot open deck, a 5-foot-wide aluminum gangway, and an aluminum stiff-arm hoist. The facility currently operates as a shellfish hatchery and seaweed nursery, producing seeded seaweed lines from September through December and functioning as a shellfish nursery from January through May. This seasonal schedule leaves approximately four to five months each year during which portions of the facility could potentially be used for commercial food processing, cold storage, or a shared commercial kitchen.

Stakeholder outreach consistently identified access to refrigerated and frozen storage, along with a DEC-approved commercial kitchen and seafood processing space, as one of the region's highest infrastructure priorities. These facilities would improve transportation and market access for remote mariculture farms, commercial fishermen, and local food producers while supporting value-added production. To explore this opportunity, OceansAlaska partnered with Fishes & Dishes and Blue Starr Oysters to conduct this feasibility study. The project aims to determine whether the facility can be permitted as a shared commercial kitchen and/or small-scale seafood

processing facility while also creating a replicable model that other Alaska coastal communities can adapt to strengthen local food systems and expand market opportunities.

Objectives

The project objectives are to:

- Research the feasibility, regulatory requirements, and permitting needed to establish a commercial seafood processing facility, commercial kitchen, and shellfish distribution or holding facility.
- Review Alaska cottage food (homemade food) regulations and determine their applicability to local food producers.
- Evaluate the feasibility of using the OceansAlaska facility as a commercial seafood processing plant, commercial kitchen, and shellfish holding facility.
- Develop operational concept drawings for a commercial kitchen at OceansAlaska that meet Alaska Department of Environmental Conservation (DEC) requirements.
- Develop operational concept drawings for a modular commercial kitchen that complies with DEC requirements.
- Complete a Conditional Use Permit application for the OceansAlaska facility with the Ketchikan Gateway Borough.
- Prepare the necessary permitting applications for the OceansAlaska commercial kitchen.
- Prepare the necessary permitting applications for the OceansAlaska shellfish holding facility.
- Develop a decision-tree checklist to help prospective users identify the permits, approvals, and facility requirements applicable to their operation.
- Prepare a preliminary list of commercial kitchen equipment and estimate electrical loads to assist with sizing a generator for a modular commercial kitchen.
- Determine potable water, hot water, wastewater, and greywater requirements for the proposed facilities.
- Research regulatory requirements for mariculture food events and develop an event planning checklist.
- Evaluate opportunities to incorporate visitor tours, a mariculture food makerspace, and a raw bar within the OceansAlaska facility.

Intended Outcome

The intended outcome of this project is to increase the availability of appropriately scaled food processing infrastructure for small businesses, startup processors, and mariculture producers throughout Southeast Alaska. Expanding access to commercial kitchens, seafood processing space, and cold storage facilities will help entrepreneurs develop new products, maintain existing production, and reach additional markets without the substantial capital investment required to construct independent facilities.

This approach responds to the continued consolidation of Alaska's seafood processing industry by providing smaller producers with shared infrastructure that reduces barriers to entry. The project also supports recommendations identified by the Alaska Legislative Task Force on the Seafood Industry. Although the Task Force focused primarily on challenges facing the traditional seafood industry, many of its recommendations apply equally to the growing mariculture sector, Proposed legislation, including efforts to encourage micro-processors and modernize DEC permitting requirements, may further improve opportunities for small seafood processors and commercial kitchen operators.
(https://www.akleg.gov/basis/get_documents.asp?session=34&docid=397)

The study evaluates the feasibility of adapting existing community facilities, such as OceansAlaska, as well as modular container-based facilities. These approaches provide communities with flexible, scalable alternatives to new construction while maximizing the use of existing infrastructure. The findings are intended to serve as a model for other Alaska communities seeking to expand local processing capacity, commercial kitchen access, shellfish handling facilities, or shared food production infrastructure.

Deliverables

The primary deliverable is a comprehensive planning workbook containing concept designs and implementation guidance for a commercial kitchen and shellfish distribution facility.

Deliverables include:

- Facility concept plans for the OceansAlaska commercial kitchen and shellfish holding facility.
- Modular commercial kitchen concept plans.
- Operational layouts that satisfy applicable DEC requirements.
- Regulatory and permitting guidance.
- Decision-tree permitting checklist.
- Commercial equipment list with preliminary utility and electrical requirements.
- Water supply, wastewater, and greywater demand estimates.

- Research summary for mariculture food events.
- Feasibility assessment for visitor tours, makerspace activities, and a raw bar.
- Recommendations for implementation and future development.

Task 1 – Facility Design and Regulatory Assessment

Task 1.1 – Processing Facility and Commercial Kitchen Design

Develop conceptual designs for a seafood processing facility, commercial kitchen, shellfish distribution facility, and associated refrigerated or frozen storage.

The task includes:

- Identifying design and operational requirements necessary to satisfy applicable permitting and regulatory agencies, including HACCP, DEC food safety regulations, FDA seafood processing requirements, and the National Shellfish Sanitation Program (NSSP).
- Evaluating the feasibility of processing shellfish, seaweed, seafood products, and culturally significant traditional foods within shared-use facilities.
- Comparing the operational, regulatory, and infrastructure differences between a commercial kitchen and a licensed seafood processing facility.
- Assessing legal and regulatory feasibility, including zoning, licensing, permitting, food safety compliance, and operational requirements.
- Conducting research into facility design standards, equipment needs, workflow, sanitation requirements, utility demands, and best practices for shared-use processing facilities.

Seafood Processing Facility Feasibility

Fishes & Dishes and OceansAlaska conducted extensive research with the relevant regulatory agencies to determine the permits and requirements associated with different types of seafood and food production facilities. The study evaluated the feasibility of three primary facility types: a seafood processing facility, a shellfish holding and distribution facility, and a commercial kitchen.

A seafood processing facility would provide primary processing capabilities and could be scaled to accommodate larger production volumes, including the manufacture of value-added products such as bio-stimulants, nutraceuticals, and other processed mariculture products. A shellfish holding, shucking/packing, and re-shipping facility could either be incorporated into the processing plant or operated as a separate facility, depending on available space, operational requirements, and HACCP considerations. Such a facility would allow remote shellfish farmers to temporarily store oysters, re-pack shellfish into smaller retail quantities, distribute product, or shuck shellfish for value-added production.

A commercial kitchen could also be incorporated into the facility. Compared to a seafood processing plant, a commercial kitchen requires fewer permits and regulatory requirements and provides opportunities for the production of cottage or homemade food products, which are subject to less stringent regulations. Each of these facility types offers different opportunities depending on the scale of production, investment costs, and intended use. They may operate independently or be combined within a single shared facility.

Permitting generally falls into four primary categories:

- Food Establishments / Commercial Kitchens
- Shellfish Facilities
- Seafood Processing Facilities
- Homemade (Cottage) Food Production

Within each category are numerous additional permits, certifications, and operational requirements that vary depending on the products being produced and the processing methods used.

As part of this study, discussions were held with the Alaska Department of Environmental Conservation (DEC) Ketchikan office, the DEC Shellfish Coordinator, and Alaska Sea Grant. Conversations with the Ketchikan DEC office focused on seafood processing permits and food establishment permits. DEC staff explained that they do not provide design recommendations or regulatory consultation before an application is submitted. Permit reviews begin only after a completed application and associated fees have been received. For planning assistance, DEC referred the project team to Alaska Sea Grant.

Additional discussions with the DEC Shellfish Coordinator focused on permitting requirements for shellfish holding, re-packing shellfish into smaller containers, redistribution, vehicle transport, and shucking shellfish for value-added products. Research also included a comprehensive review of Alaska DEC Food Safety and Sanitation regulations, Food and Drug Administration guidance, and National Shellfish Sanitation Program (NSSP) requirements.

The project initially explored the feasibility of establishing a permitted seafood processing facility within the OceansAlaska building that would also include a commercial kitchen and shellfish holding area. However, preliminary research indicated that this model would not be well suited for a shared, multi-user facility. Based on current understanding, each entity conducting seafood processing—even within a communal facility—would require its own seafood processing permit and assume the associated regulatory responsibilities. While seafood processing could potentially occur alongside a commercial kitchen, the regulatory complexity significantly reduces the practicality of a shared processing model. Conversely, a commercial kitchen would provide mariculture producers with an affordable space to develop, test, and produce small batches of value-added products before expanding into larger-scale production.

Consultation with E.C. Phillips & Son

E.C. Phillips & Son (ECP) is a medium-sized, year-round seafood processor in Ketchikan and served as an important source of practical industry knowledge during this study. The company processes salmon, groundfish, shellfish, herring roe on kelp, and has previously processed farmed seaweed. With more than a century of experience in Alaska's seafood industry, ECP provided valuable insight into seafood processing regulations, permitting, transportation logistics, food safety compliance, insurance, general liability, workers compensation, harassment, food recall), human resources, and market development.

Discussions focused on the regulatory responsibilities of seafood processors and the company's experience processing aquatic plants and shellfish, including farmed kelp, herring roe on kelp, and geoducks. ECP explained that they rarely perform custom processing. Instead, they typically purchase raw product, process it to customer specifications, and market the finished product under their own Alaska processor identification number (AK number). Customer specifications may include packaging style, product size, grinding, or whether the product is sold fresh or frozen.

The AK number identifies the licensed processor responsible for the product and demonstrates compliance with Alaska seafood processing regulations. It also establishes responsibility for product safety, tax reporting, traceability, recordkeeping, and any product recalls. In the event of a food safety issue, the processor holding the AK number must be able to trace all affected products and demonstrate compliance with applicable regulations.

If another business wished to process seafood within the ECP facility, one of two arrangements would generally be required. Either ECP would process the product under its own permit for a fee, or the other business would need its own AK number and lease the facility. ECP indicated that it generally avoids both arrangements because of the legal liability associated with food recalls, worker safety, insurance exposure, equipment maintenance, and operational oversight. Given the relatively small production volumes typical of emerging mariculture businesses, the fees generated through custom processing would not offset these additional costs and liabilities.

Licensed seafood processors are required to maintain comprehensive food safety programs, including Hazard Analysis and Critical Control Point (HACCP) plans that identify and monitor critical control points (CCPs). These programs address hazards such as metal contamination, biological pathogens, chemical contaminants, and pests.

For example, because ECP has processed live geoducks, the company maintains a shellfish shucker/packer certification. This certification requires DEC inspections four times annually, along with HACCP procedures designed to prevent contamination and ensure product safety. To prevent cross-contamination between shellfish and finfish, protein swab testing is routinely conducted on equipment, containers, and processing tools to verify proper sanitation. Strict shellfish handling protocols are essential to ensure shellfish contaminated with pathogens such as E. coli or affected by marine biotoxins do not enter the marketplace.

ECP has also processed herring roe on kelp and farmed seaweed. During processing, the company monitored critical parameters including time, temperature, and salinity. If seaweed processing were expanded, ECP indicated that routine E. coli testing would likely become part of their food safety program.

In addition to food safety requirements, seafood processors must comply with environmental regulations under the Clean Water Act. Processing facilities are subject to wastewater discharge permits and routine monitoring of both discharged effluent and receiving waters. Discharge testing typically includes measurements of suspended solids and particle size, while receiving waters are monitored to establish baseline environmental conditions. Failure to comply with these requirements can result in significant enforcement actions and financial penalties.

As wastewater regulations have become increasingly stringent and costly, many seafood processors in Ketchikan have shifted away from direct discharge by transporting processing waste to hydrolyzate facilities, where it is converted into fish oils, fertilizers, or pet food ingredients. These practices reduce permitting complexity while creating additional value from processing by-products, which may eventually include seaweed.

Also, processors pay fees for municipal DEC approved water for cleaning, which is substantial, especially for seaweed. Cleaning for seaweed processing is very fresh water intensive, due to the nature of seaweed grinding or other forms of processing. Along, with utilities and solid waste disposal.

For additional information regarding wastewater discharge permitting and the Alaska Pollutant Discharge Elimination System (APDES), see the Alaska Department of Environmental Conservation's Wastewater Discharge Authorization Program.

Seafood Processor – Small Scale

Meetings with the president of Kodiak Island Wild Source, and a technical specialist from Alaska Sea Grant, confirmed the significant differences between obtaining a seafood processing permit and a commercial kitchen permit. They also emphasized that shellfish permitting is a separate regulatory process.

Kodiak Island Wild Source is a small seafood processing facility in Kodiak that processes both commercially harvested seafood and mariculture products. During our discussions, the CEO shared valuable insights into seafood processing regulations, wastewater disposal requirements, staffing needs, production volumes, product development, and the financial considerations involved in establishing a processing facility. Like OceansAlaska, Kodiak Island Wild Source evaluated whether a seafood processing facility or a commercial kitchen would best support its long-term goals.

Kodiak Island Wild Source vision was to operate as a small processor closely connected with the Kodiak Sea Grant facility, providing a space where entrepreneurs could develop and test new value-added seafood products such as canned oysters, seaweed tacos, and other innovative

mariculture products. These conversations helped OceansAlaska evaluate which path would best fit our own objectives by considering production volume, staffing, capital resources, seasonality, transportation, existing infrastructure, economic feasibility, community needs, and available funding.

Further discussions with the Alaska Department of Environmental Conservation (ADEC) and Alaska Sea Grant identified an important limitation of the seafood processor model. A facility permitted as a seafood processor is not easily operated as a shared-use or cooperative facility because each business using the space must hold its own permits and assume responsibility for regulatory compliance. Individual users are responsible for fish tickets, reporting requirements, food safety plans, OSHA compliance, insurance, taxes, and other business obligations.

Regardless of whether a facility processes wild seafood or mariculture products, every processing facility must obtain an Alaska processing plant identification number (AK Number) issued by ADEC. The AK Number signifies that the facility complies with applicable state and federal regulations governing seafood processing. Regulatory oversight includes ADEC, the U.S. Food and Drug Administration (FDA), and the Occupational Safety and Health Administration (OSHA).

Processing facilities must comply with numerous food safety and operational requirements, including wastewater management, potable water standards, cleanable food-contact surfaces, chemical storage, pest management, metal detection or inclusion prevention, contamination controls, sanitation procedures, and worker safety protocols. Facilities must also implement Hazard Analysis and Critical Control Point (HACCP) plans in accordance with FDA seafood regulations.

Existing seafood processors, such as the E. C. Phiilips and Son seafood processing company(ECP), already maintain HACCP plans for products such as roe-on-kelp (ROK) and shellfish. HACCP guidance specific to cultivated seaweed continues to evolve, with Alaska Sea Grant developing additional resources for seaweed processors. Alaska Sea Grant has also published the Seaweed Handling and Processing Guidelines (2023), which outlines seafood processing requirements as they apply to seaweed, including sanitation, organic certification, contamination prevention, and food safety practices.

In addition to facility requirements, seafood processors must establish the business infrastructure necessary to operate legally, including business licensing, tax registration, workers' compensation insurance, liability insurance, payroll systems, human resources policies, employee training, and personnel management procedures.

Direct Marketing

As part of this study, we also researched direct marketing regulations for both wild-caught seafood and farmed shellfish. Resources from ADEC, Alaska Sea Grant, ADFG, and the Alaska

Seafood Marketing Institute provide extensive guidance on licensing, food safety, shipping requirements, and marketing opportunities.

Direct marketing offers commercial fishermen an alternative to selling their catch to a traditional seafood processor. Instead, fishermen may process and sell only their own catch directly to consumers, restaurants, or retailers. Because direct marketers are not classified as catcher-processors, the regulatory requirements are generally less extensive than those for a full-scale seafood processing facility. This approach is similar to the reduced regulatory burden provided under Alaska's Homemade Food Program (formerly known as the Cottage Food Program), which is discussed later in this report.

For commercially harvested seafood, direct marketers typically require:

- A Commercial Fisheries Entry Commission (CFEC) permit.
- A vessel less than 65 feet in length.
- Fish tickets documenting harvest.
- Applicable ADEC permits for processing or shipping activities.
- Additional permits depending on the products being produced and marketed.

Direct marketing allows fishermen to increase the value of their catch by selling directly to consumers, restaurants, and local retailers rather than through traditional wholesale channels.

Direct marketing of farmed shellfish follows a similar regulatory framework. Oyster farmers selling their own products directly to consumers must obtain:

- A Direct Marketer License issued by the Alaska Department of Fish and Game (ADF&G).
- An Aquatic Farm Operation Permit issued by ADF&G.
- An Alaska Business License and applicable tax registrations.
- An ADEC Shellfish Shipper/Dealer Permit for handling, packing, and shipping shellfish.
- A HACCP plan addressing food safety, sanitation, and handling procedures.

Alaska Sea Grant and other organizations offer HACCP training courses to assist growers in meeting these food safety requirements.

Because shellfish and seaweed farms already operate under Aquatic Farm permits and are accustomed to meeting food safety, sanitation, and traceability requirements, these businesses may be better suited to utilizing a shared commercial kitchen or small-scale processing facility than a traditional seafood processing plant. This model offers greater flexibility while still supporting value-added product development and direct-to-consumer marketing.

Commercial Kitchen

Fishes & Dishes and OceansAlaska evaluated the size of Southeast Alaska's mariculture industry, existing transportation infrastructure, and regional economic opportunities to determine whether a commercial kitchen or seafood processing facility would best meet industry needs. Through research into the permitting requirements for a seafood processing plant at the OceansAlaska (OA) facility, it became clear that a shared commercial kitchen would provide greater flexibility, lower barriers to entry, and better support for the current scale of the mariculture industry.

The original concept was to establish the OA facility as a "pay-as-you-play" seafood processing plant. However, this model proved to be significantly more complex than anticipated. A seafood processor requires extensive licensing, insurance, permitting, staff, food safety programs, record keeping, bookkeeping, and ongoing regulatory oversight.

Several operational models were considered:

- OA as the product owner. OceansAlaska would purchase product directly from farmers, making OA responsible for taxes, insurance, food safety compliance, equipment maintenance, staffing, and product recalls.
- OA as a custom processor. Using OA's Alaska processing number, each farm would specify how its product should be processed. Although growers would retain ownership of the product, OA would still assume responsibility and liability for food safety and any recalls.
- Each farm as its own processor. Even farms selling directly to consumers may need to obtain their own Alaska processing number, along with all required licenses, insurance, food safety plans, and regulatory approvals. Each operator would then be individually responsible for food safety, recalls, taxes, and compliance.

Given these challenges, Fishes & Dishes and OceansAlaska shifted their focus toward developing a shared commercial kitchen. This model better reflects the current size and diversity of Southeast Alaska's mariculture industry, which includes a growing oyster farming sector, relatively small seaweed farms, and an inconsistent wild seaweed harvest that requires a Commissioner's Permit.

Commercial kitchens are regulated under the Alaska Department of Environmental Conservation (ADEC) Food Establishment Program and may include additional permits for activities such as product labeling, mobile food operations, and cottage or homemade foods. While commercial kitchens must still meet food safety and sanitation requirements, the permitting process is generally less complex than that of a seafood processing facility and is better suited for small businesses, entrepreneurs, and start-up operations. Commercial kitchens can also accommodate larger-scale food production as businesses expand.

A shared commercial kitchen is an established model in which multiple independent businesses lease time or space in the same DEC-approved facility. Each operator remains responsible for its business license, insurance, food-safety training, tax registration, and other applicable permits, but avoids the cost of constructing and permitting an independent kitchen. As a result, one facility can support dozens of independent food businesses while significantly reducing startup costs. Publicly accessible examples include kitchens in churches, conference venues, and restaurants that rent unused capacity. In Juneau, El Sombrero previously allowed other businesses to use its commercial kitchen; its closure illustrates how the loss of one host kitchen can remove critical production capacity from a community.

Operating costs are also reduced because staffing requirements are lower. Lease agreements can require each user to clean, sanitize, and maintain the kitchen and equipment after use, minimizing the need for dedicated facility staff.

For mariculture businesses, products originate from permitted farms that already operate under established food safety protocols, including Hazard Analysis and Critical Control Point (HACCP) plans where applicable. Farm operations routinely maintain time and temperature logs, shellfish harvest tags, traceability records, and other documentation required to protect public health. These existing food safety practices integrate well with the shared commercial kitchen model.

Shellfish Facility

The Alaska Department of Environmental Conservation (DEC) provides detailed requirements for the safe handling, storage, and distribution of shellfish, including temperature monitoring, cooling logs, and recordkeeping. Additional permits and regulatory requirements apply to specific species, including shrimp, geoducks, and crab.

For this feasibility study, the focus was on farmed oysters and the regulatory requirements associated with receiving, holding, packing, distributing, repacking, and shucking shellfish. These activities require compliance with state regulations administered by DEC as well as the National Shellfish Sanitation Program (NSSP).

Requirements include approved sanitation practices, shellfish harvest tagging, time and temperature monitoring, toxin monitoring, water quality testing, traceability, and recordkeeping. Any facility handling shellfish must comply with these standards to protect public health and maintain certification for interstate commerce.

Permits Required for the Three Facility Concepts: A seafood processing facility is the most heavily regulated of the three concepts. Depending on the products produced and the volume of processing, multiple federal, state, and local permits are required.

1. Seafood Processing Facility

Wastewater Discharge

Seafood processors that discharge wastewater are regulated under the Alaska Pollutant Discharge Elimination System (APDES). Facilities typically require one of the following:

- General APDES Permit – For facilities that qualify under the statewide general permit for seafood processors.
- Individual APDES Permit – Required for facilities whose operations, discharge volumes, or site conditions do not qualify under the general permit.

The University of Fairbanks has also created a checklist for starting a small food processing business.(www.uaf.edu/ces/publications/database/cooking/checklist.php)



Checklist for Starting a Small Food Processing Business

This checklist is to assist small food processing operations that are making foods considered not potentially hazardous by the Alaska Department of Environmental Conservation, Food Safety and Sanitation Program (DEC). This includes, but may not be limited to, baked goods, jams and jellies, and confections. This checklist is not intended for individuals operating under the DEC Cottage Foods Exemption, also referred to as Home-Based Food Businesses. This checklist is not intended for food service facilities with or without seating, food markets, or for processing of meat or fish, acidified vegetables, canned low-acid foods, beverages, bottled water, or dairy products. Detailed information can be found at https://dec.alaska.gov/eh/fss/food/processors/.

☐ **DEC Plan Review**

Producers must meet with a DEC contact and discuss their entire operation before production begins.

Online Resource: Find your local office at https://dec.alaska.gov/eh/fss/staff.

Cost: Varies from $250 to $400 depending on product (one-time fee)

☐ **DEC Annual Permit**

Online Resource: Find your local office at: https://dec.alaska.gov/eh/fss/staff.

Cost: Varies from $250 to $400 depending on product (annual fee)

☐ **Alaska Business License**

This license is necessary to be able to legally sell your products. Most of the form is self-explanatory except that you will be asked to input a North American Industry Classification System (NAICS) code.

Online Resource: https://www.commerce.alaska.gov/web/cbpl/BusinessLicensing/BusinessLicensingFormsFees.aspx

Cost: $50 annual fee

☐ **City or Local Business License and Sales Tax Registration**

Check with your city to determine if there is a city business license and/or sales tax requirements. Some communities may also have additional requirements or licenses for food processing businesses.

Cost: Annual fee varies

☐ **Product Liability Insurance**

Product liability insurance is highly recommended to protect against any potential liability associated with a foodborne illness that may occur in association with your food products. Contact your personal insurance provider to find out if this service is available; if not, there are a number of other options. To discuss which option is best for you, please contact the Alaska Small Business Development Center or the Alaska MEP.

Contact: Small Business Development Center State Office, 800-478-7232 or http://aksbdc.org

Contact: Alaska MEP, https://alaska-mep.com/

☐ **FDA Food Facility Registration**

The FDA requires all food facilities that are processing food products in the United States to register with the FDA. This is done with a simple form that asks for the physical location of the processing facility and the main contact for that facility.

Contact: For more information, visit www.access.fda.gov, following the link to "FURLS Food Facility Registration Module (FFRM)"

Cost: Free

☐ **Certified Food Protection Manager's Certification**

A certified food protection manager (CFPM) is responsible for monitoring and managing all food establishment operations to ensure that the facility is operating in compliance with food establishment regulations. This certification must be obtained in order to run a food processing operation.

Processing Permits

Federal permits

- U.S. Food and Drug Administration (FDA) facility registration.
- Hazard Analysis Critical Control Point (HACCP)- Mandatory federal food safety system.
- Federal Fisheries permit (FFP) and Federal Processor permit (FPP) which is issued by NOAA if the facility wants to receive or include processing of groundfish, halibut or other

species caught in federal waters (3-200 miles offshores). www.fisheries.noaa.gov/permit/alaska-federal-fisheries-permit-applications.

- EPA NPDES/APDES wastewater discharge permit.

State permits

- Alaska Business License.
- Fisheries Business License, which is issued by the Alaska Department of Revenue, for buying, processing, or exporting seafood www.adfg.alaska.gov/index.cfm?adfg=fishlicense.buyers.
- Alaska Department of Fish and Game (ADFG) intent to operate and process registration. This establishes code plate and fish ticket reporting www.adfg.gov.
- Alaska Department of Environmental Conservation(ADEC) will issue a DEC food processing /seafood processor permit, which is based on daily production, facility type, and processing activities www.dec.alaska.gov.
- Certified scale approval and inspection from the Department of Transportation Division of Weights and Measures.

Local

- Local sales taxes and business registration from the City or Borough.
- Local building, fire, and zoning permits.
- Local wastewater and plumping permitss

The University of Fairbanks has also created a checklist for starting a small food processing business. www.uaf.edu/ces/publications/database/cooking/checklist.php

Additional permits may be required depending on the type of seafood processed, shellfish handling activities, water supply, solid waste disposal, and facility operations.

2. Commercial Kitchen

A commercial kitchen has significantly fewer permitting requirements than a seafood processing facility while still allowing many value-added seafood and mariculture products to be produced legally.

As part of this feasibility study, we completed the process of preparing an application for an Alaska Department of Environmental Conservation (ADEC) Food Establishment Permit to better understand the permitting requirements and assist future users of the facility.

The permitting process includes:

- Alaska Business License

- Federal Employer Identification Number (EIN), if applicable
- UEI (Unique Entity Identifier), if required for grants or contracts
- Conditional Use Permit, if required by the Ketchikan Gateway Borough
- Building plans and operational drawings
- Ketchikan Gateway Borough approvals
- City sales tax registration
- Fire Marshal inspection
- Approved potable water source
- Wastewater disposal plan
- Solid waste disposal plan
- Adequate parking
- General liability insurance
- Workers' compensation insurance, if employees are hired
- Business accounting and recordkeeping systems

Prior to construction or remodeling, applicants must submit a Food Establishment Plan Review to ADEC that includes:

- Site plan
- Floor plan
- Plumbing schematic
- Equipment specifications
- Required plan review fee

Commercial kitchens must comply with the Alaska Food Code, including requirements for:

- Commercial-grade equipment
- Proper refrigeration (41°F or below)
- Approved thermometers
- Required aisle spacing
- Handwashing facilities
- Food safety procedures

Following construction, the facility must successfully complete a pre-opening inspection before operations may begin. Annual Food Establishment permit fees vary according to the type and size of the operation.

3. Shellfish Holding or Distribution Facility

Shellfish - Shellfish are all edible species of oysters, clams mussels, and scallops, either shucked or in the shell, fresh or frozen, whole or in part. Scallops are excluded when the final product is the shucked adductor muscle only. https://dec.alaska.gov/eh/fss/shellfish/resources/permit-guide/

Processing - Any activity associated with the handling, shucking, freezing, packing, labeling, or storing of shellfish in preparation for distribution. Processors include shell-stock shippers, shucker/packers, re-packers, and re-shippers.
https://dec.alaska.gov/eh/fss/shellfish/resources/permit-guide/

All shellfish processors must comply with Alaska's Seafood Processing and Inspection Regulations, and the standards for fresh or frozen shellfish relating to sanitation, harvesting, handling, shucking, and transporting contained in the National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish (NSSP) and 21 CFR 1240.60 (Control of Communicable Diseases: Molluscan Shellfish).
https://dec.alaska.gov/eh/fss/shellfish/resources/permit-guide/

Depending on the services provided, a shellfish holding, shucking, or distribution facility may require permits that differ from both commercial kitchens and seafood processors.

- Direct Marketer License
- Alaska Business License
- Aquatic Stock Acquisition and Transport permits, this allows collection and transport. www.adfg.gov.
- Alaska Department of Environmental Conservation issues the Shellfish Dealer permit and comply with HACCP and sanitation regulations.

COMMERCIAL SHELLFISH PERMITS from DEC website
https://dec.alaska.gov/eh/fss/shellfish/resources/permit-guide/

Types of Permits

Harvester - a person who takes shell-stock by any means from a growing area.

Dealer - a person to whom certification is issued for the activities of shucker-packer, shell-stock shipper, re-packer, or re-shipper.

Shucker-packer - a person who shucks and packs shellfish. A shucker-packer may also act as a shell-stock shipper or re-shipper, or may repack shellfish originating from other permitted dealers.

Shell-stock Shipper - a dealer who grows, harvests, buys, or repacks and sells shell-stock but is not authorized to shuck or repack shucked shellfish. A shipper may buy, repack, and sell in-shell product as well as ship shucked shellfish.

Re-packer - a person other than the original certified shucker-packer who repackages shucked shellfish into other containers.

Re-Shipper - a person who buys shellfish from dealers and then sells the product without repacking or relabeling to other dealers, wholesalers, or retailers.

Geoduck Dive Vessel - a vessel for the commercial harvest and transport of geoducks from the harvest area to a dealer.

What is Required for a Permit?

A harvester or dealer application is available by calling the DEC or from the shellfish section of our website.

- Pay the fee.
- Provide proof of completion of Harvester or Dealer Education training.
- Persons who are harvesters or dealers must also submit:
- A waterproof, tear-proof shellfish tag that is at least 2 5/8 inches by 5 1/4 inches.
- A narrative that includes: 1)shellfish holding container material, temperature controls, and how product is protected from contamination during transport; and 2)a map and description of the shellfish growing/harvest area.

What Other Information May be Required?

- Facility Plans
- Drawings and other documentation that accurately depicts and describes the location of processing and storage buildings, roads, alleys, docks, and other areas that will be used to support the processing, storage, or transportation of the product.
- The placement of processing equipment and storage areas for shellfish, food ingredients, and food packaging materials.
- Plumbing plans showing piping, fixtures, toilets, and hand sinks.
- Surface finish of walls, floors, and ceilings in processing, packaging, and storage areas.

HACCP Plan

HACCP Plan, prepared by operator who is knowledgeable or trained in HACCP (may be prepared by contractor).

- Weekly record reviews conducted by individual trained in HACCP.
- Sanitation Plan and Sanitation Control Records
- Describes the sanitation procedures to be followed at the facility including the following conditions and practices:
- Pest control procedures
- Labeling, storage and use of chemical compounds
- Sanitizer concentrations for hand and product dips, processing water, and sanitizing solutions for food-contact surfaces
- Condition of water that contacts food or food-contact surfaces
- Maintenance of hand sanitizing, hand washing, and toilet facilities
- Cleanliness of equipment, utensils and containers and surrounding areas
- Prevention of cross-contamination
- Personnel - hygiene and health

Appendix A-Permits

Supplementary Permits and Regulatory Requirements

Seafood Variance

Seafood facilities that are processing or producing seafood goods for consumption shall have a Hazard Analysis Critical Control Plan in place. However, a seafood variance permit can also be obtained from DEC for limited production or product forms. This permit allows a food kiosk or restaurant to process seafood products in a restricted amount and pre-approved forms. Seaweed is in the grey area of if it qualifies as a fishery product and thus would need a HACCP plan but oysters and other shellfish definitely fall under the definition of a fishery product and would need a HACCP plan. Seaweed products enjoy a less rigorous process than shellfish, such as oysters. A seafood variance is another opportunity for small mariculture businesses to use existing food kiosks to prepare and sell products. Appendix A- Permits

Product Labeling

Products packaged and labeled for retail sale require label approval before they may be sold.

Examples include:

- Frozen packaged seaweed
- Dried seaweed
- Refrigerated ready-to-eat meals

- Seafood rice wraps
- Oyster chowders
- Jarred products such as kelp salsa

During this project, Fishes & Dishes developed and submitted a product label to better understand the approval process and provide guidance to future users of the facility.

Examples of existing Alaska mariculture products include packaged dried seaweed produced by Seagrove Kelp Co. and kelp salsas produced by Barnacle Foods.

Under ADEC and federal labeling requirements, food labels generally must include:

- Common name of the food
- Net weight or quantity (U.S. and metric)
- Manufacturer, packer, or distributor name and address
- Complete ingredient list in descending order by weight
- Major food allergen declaration
- Nutrition Facts panel (unless exempt)
- Required storage instructions
- Production lot or batch code



Appendix B-Label example

Mobile Food Kiosks

A mobile food kiosk is regulated similarly to a permanent food establishment but includes some modified facility requirements. Although kiosks are not required to contain permanent restrooms

or mop sinks, they must have access to approved restroom facilities located within the distance specified by ADEC regulations. Furthermore, they may need to have access to approved commissary kitchen depending on the foods that they are producing.

Mobile food kiosks must also:

- Use an approved potable water source
- Properly dispose of wastewater
- Properly dispose of solid waste
- Maintain fire extinguishers and fire suppression systems
- Properly dispose of grease and used cooking oil
- Maintain access to a commercial kitchen when required

Homemade Foods (Formerly Cottage Foods)

Alaska's Homemade Food Program, established under HB 251, significantly expanded opportunities for small food businesses.

Homemade foods may be prepared in a private residence or leased kitchen and sold directly to consumers without routine permitting or inspection, provided they meet the requirements of the Homemade Food Rule.

HB 251:

- Removed the previous $25,000 annual sales limit.
- Expanded the types of foods that may qualify.
- Allows both potentially hazardous and shelf-stable foods to be sold directly to consumers under specified conditions.

Although a permit is generally not required, producers should maintain an Alaska Business License and comply with all applicable local regulations.

Required labels must include:

- Producer's name
- Address
- Telephone number
- Alaska Business License number
- Ingredient list
- Allergen declaration

- The statement:

"This food was made in a home kitchen, is not regulated or inspected, except for meat and meat products, and may contain allergens."

Certain products are not eligible under the Homemade Food Program, including:

- Seafood and products containing seafood
- Most dairy products
- Wild game meat
- Animal-fat oils
- Products containing cannabis or alcohol

Homemade food producers remain legally responsible for the safety of their products and should consider obtaining product liability insurance. Inspected and uninspected food products must also be stored and displayed separately.

For mariculture businesses, the Homemade Food Program offers opportunities for products such as:

- Seaweed salsa
- Jams and marmalades
- Chili crisp
- Other shelf-stable seaweed products

However, refrigerated seaweed products are produced, they must generally be sold directly to the consumer and prepared in accordance with food safety requirements, including proper acidification when applicable.

Conversely, value-added seafood products—including oyster chowders, smoked shellfish, canned seafood, pickled shellfish, or prepared oyster entrées—are not eligible under the Homemade Food exemption. These products must instead be produced in an ADEC-approved commercial kitchen or permitted seafood processing facility.

The Homemade Food Program is well suited for seaweed farmers and wild harvesters who are testing new products or selling at farmers markets, pop-up events, and festivals. (https://dec.alaska.gov/eh/fss/homemade-food)



	Non-Potentially Hazardous	Potentially Hazardous
Who Can Sell Homemade Foods?		
Sold by Producer	✓	✓
Sold by an Agent of the Producer (i.e. a third party vendor)	✓	✗
Where Can Homemade Foods Be Sold?		
Sold In-Person	✓	✓
Sold Online	✓	✓
Sold via Mail Order	✓	✓
Sold at Retail Spaces (groceries, food hubs, or even bookstores, pop-up sales, and more)	✓	✓* ✗ *Yes, if it's owned by the producer
Sold wholesale or to restaurants	✗	✗
Sold out-of-state	✗	✗

Temporary Food Service (Festival) Permits

A Temporary Food Service (Festival) Permit is issued by the Alaska Department of Environmental Conservation (ADEC) and, where applicable, the local fire marshal for one-time events such as the Blueberry Festival. These permits ensure that temporary food vendors meet food safety requirements related to contamination prevention, temperature control, sanitation, handwashing, food storage, and waste disposal.

Two exemptions may apply if a temporary permit is not required:

- The food producer qualifies for an Alaska Food Code exemption.
- The producer operates under the Alaska Homemade Food Exemption.

According to the Alaska Department of Environmental Conservation (ADEC), a temporary food service operation is one that sells food to the public and meets one of the following criteria:

- Operates at one location in conjunction with a single event for no more than 21 consecutive days; or
- Operates at the same location for no more than two days per week over a period of 120 days or less.

A Temporary Food Service Permit must be obtained before operating any qualifying temporary food establishment.

Commercial Kitchen Requirements

A commercial kitchen must meet the same equipment and facility requirements outlined by ADEC for a permitted Food Establishment. At a minimum, these requirements include:

- A three-compartment ware-washing sink.
- A dedicated handwashing sink.
- A food preparation sink.
- A separate mop or utility sink.
- A commercial-grade dishwasher (if used in conjunction with the three-compartment sink).
- Self-draining drainboards with adequate space for air drying utensils and equipment.
- Thermometers and sanitizer test strips for monitoring cleaning and sanitizing procedures.

Food preparation sinks are designated exclusively for washing and preparing food products. They may not be used for handwashing or disposal of mop water.

Handwashing sinks must be conveniently located in both restrooms and food preparation areas and supplied with hot and cold running water. Hot water must reach a minimum temperature of 100°F and each sink must be equipped with soap and disposable paper towels. Depending on sink placement, a minimum 6-inch splash guard may be required to prevent cross-contamination between handwashing and food preparation areas.

A separate mop or utility sink is required for cleaning equipment and disposing of mop water. This sink may not be used for food preparation or handwashing. Janitorial supplies and chemicals must be stored separately from food and food-contact equipment.

The facility must also have a hot water system capable of providing sufficient hot water volume and temperature for all anticipated operations. Based on preliminary calculations, the existing OceansAlaska facility does not currently have adequate hot water capacity. A 50-gallon commercial hot water heater is recommended to meet ADEC requirements for the proposed commercial kitchen activities.

Adequate dry, refrigerated, and frozen storage must also be provided based on the anticipated volume of ingredients, packaging materials, and supplies. Shelving and storage configurations should be designed to meet ADEC spacing and sanitation requirements. Appendix C- Facility checklist

HACCP Considerations for Seaweed Processing

The growth of Alaska's seaweed industry, supported by programs such as Sea Grant and NOAA's Aquaculture Initiative, has increased interest in seaweed farming, processing, and value-added product development. As production expands, there is an increasing need for standardized harvesting, handling, processing, and quality assurance practices to ensure consistent product quality and food safety.

Although seaweeds are not classified as plants, time and temperature remain critical factors affecting product quality, shelf life, and public health. New seaweed farmers, as well as experienced wild kelp harvesters, may not be familiar with food safety regulations, processing methods, or best management practices.

Alaska Sea Grant has developed comprehensive Seaweed Handling and Processing Guidelines for Alaska, which provide practical recommendations for both farmed and wild-harvested seaweed. While a formal Hazard Analysis and Critical Control Point (HACCP) plan may not currently be required at the farm level, harvesters should carefully monitor harvest times, product temperatures, and handling practices to minimize quality degradation.

Fresh seaweed continues to respire after harvest by releasing carbon dioxide (CO_2). Rapid chilling or storage in circulating cold seawater slows respiration, preserves product quality, and extends the time available for transportation to a processing facility. Maintaining proper temperature control from harvest through processing is one of the most important practices for ensuring product quality and food safety. The Alaska Sea Grant publication Seaweed Handling and Processing Guidelines for Alaska https://alaskamariculture.org/wp-content/uploads/2023/02/MAB-81PDF-Seaweed-Handling-and-Processing-Guidelines-for-Alaska.pdf.Appendix D-Provides additional guidance for harvesters and processors.

Technical Feasibility: Technology, infrastructure, expertise needed

Task 1: Designs for processing/kitchen and associated cold storage container

· 1.2 Hire electrician to develop an electrical plan for any additions/modifications to OA electrical system to allow a processing facility/commercial kitchen to be operated in the barge when the barge is not in use as a hatchery/nursery. And modular kitchen electrical needs.

OceansAlaska is connected to shore power, which is stepped down with a transformer, from 480 v 3 phase to 220 v 3 phase. On the main floor, OA has fifteen potential 120v outlets, ten have outlets wired in, five have cover plates but could have outlets. These outlets are 38' up from the floor. The algae room has two more 120v in. There are also eight conduit outlets that come down from the ceiling, they are 8' 3" up from the floor and seven are 120v and one is 220v single phase. An electrician was hired to assess the feasibility of modifications or additions to the OA electrical system if a generator was installed. The study would share information on electrical needs and equipment needed for any commercial kitchen that was not on the electrical grid or modification needed for an existing structure to meet code. In the case of OA, has three panels

which are tied together, in order to create an independent panel that would allow OA to operate off a generator or a lower voltage and phase of shore power, would consist of OA rewiring or trying to see if there is enough wire to move breaker to a single panel. Also, because of the 480 v 3 phase, care must be taken that a 3phase generator is installed or to make sure that all the breakers to a designated panel are 220 v single-phase. Also, refrigerated container vans are often 480 v 3 phase and the 220 v 3 phase are rare and often more expensive. Care must be taken to specify what you are procuring and matching it to existing electrical needs. It is critical to design your panels in accordance to load and use, especially if you want to use alternative energy sources, solar, wind, to power an inverter for low electrical draws, such as lights. OA has been working to implement Green Energy, through insulation, heat pumps, LED, and feasibility of solar panels, however this may entail rearranging electrical panels and re-wiring, depending on the final design and electrical needs. Appendix K-Electrical.





Plans and drawings

Task 1: Designs for processing/kitchen and associated cold storage container

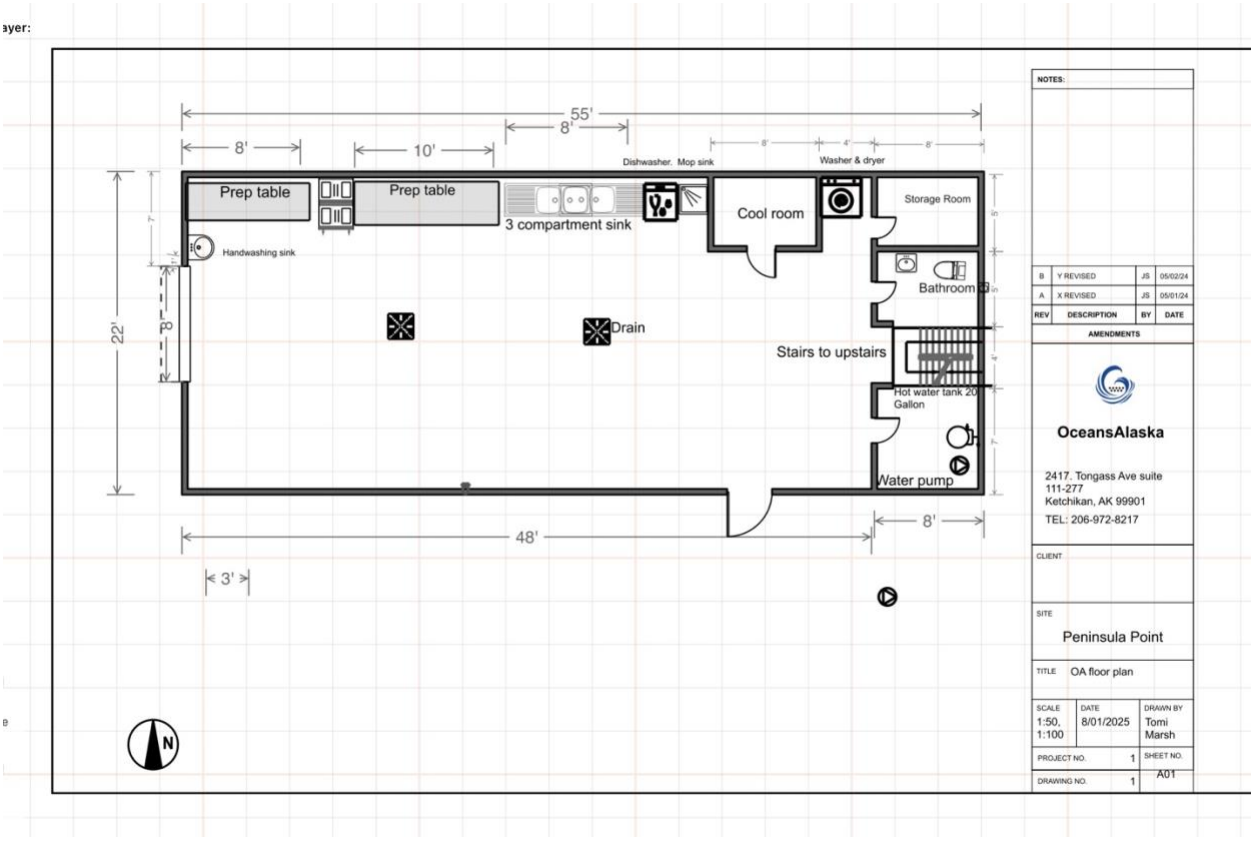
· 1.3 CAD plans for facility layout when operating as a processing space, including equipment configuration with consideration of required permits, various user types, and plumbing/sewage/electrical/etc.

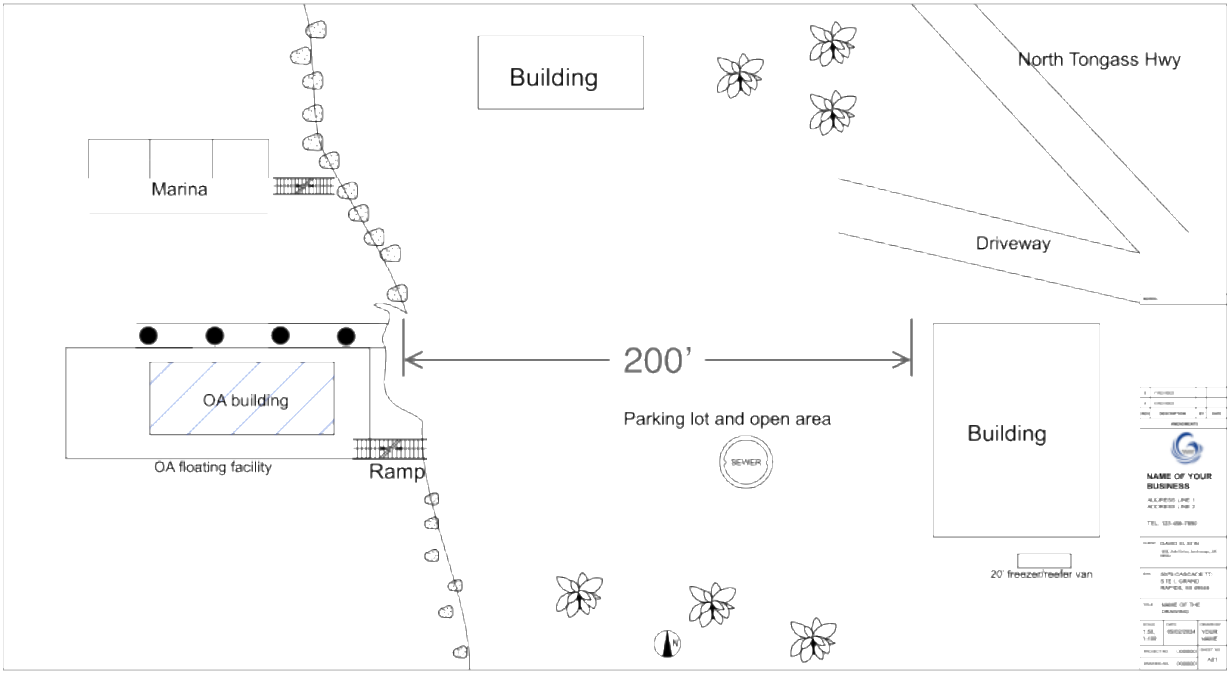
OceansAlaska measured the facility and prepared a schematic layout for food-processing use based on current understanding of ADEC standards. The covered downstairs area is 60 by 40 feet, and the upstairs is 40 by 40 feet. Existing assets include food-grade FRP walls, concrete floors, drainage, fresh- and saltwater plumbing, approved electrical service, overhead lighting, pumps, road and ramp access, a waterfront hoist, work and storage areas, restrooms, heating and cooling, fire extinguishers, a fire-escape ladder, and a monitored fire alarm.

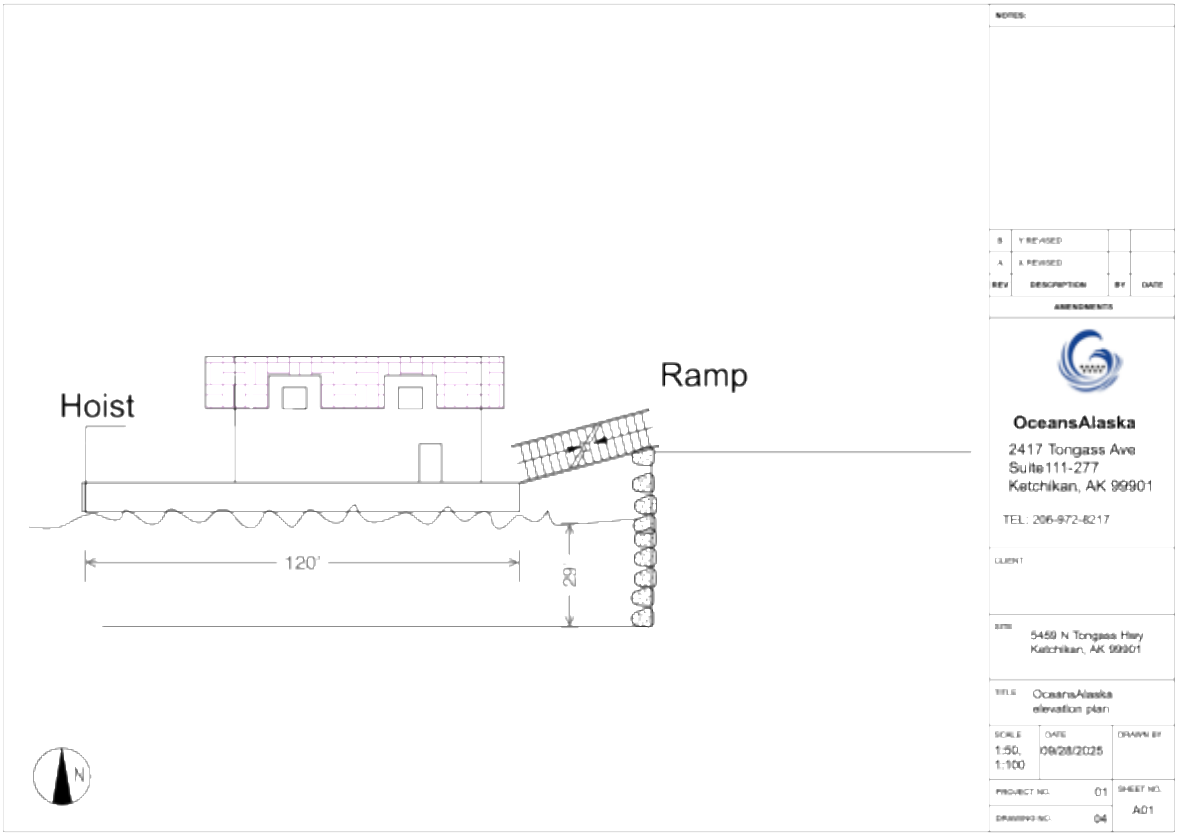
The foot print of the covered portion of the downstairs of the facility is 60’ x 40’, while the upstairs is 40’ x 40’. Downstairs, the facility has food grade FRP walls, 25’ ceilings, overhead lighting, cement floors, drainage area for waste water, approved electrical outlets, fresh water plumbing, salt water plumbing, pumps, ramp to uplands and road system, hoist on the water side end of the facility, toilet, and sink. The downstair floor plan has a door on one side towards the office end of the facility, directly inside are the stair leading upstairs. To the right of the stairs is a small area that has the fresh water pump and hot water heater, then on the other side of the stairs is a room for hanging clothes and adjoins the bathroom with a sink, mop sink, and an Incinolet toilet. Next to the bathroom is a workroom with tools. The rest of the area is large and open besides a small side area that is insulated and usually houses the algae bio-reactors. At the far end of this space is another door and a garage roll up door. The upstairs is laid out with an office area, lab area, sink, refrigerator, electrical room with the three electrical panels, dry storage room, a small room for algae production, a small room with a vapor hood, and then an I beam for a hoist that runs out and over the downstairs. Upstairs and downstairs are heated with 220v three phase heaters and cooled with a three-fan unit. There are fire extinguishers, fire escape ladder, and the facility is wired to a fire alarm as required by insurance and the fire marshal. As of now, there is not a vent hood nor a vent hood hooked up to a remote fire extinguishing system. That would only be needed if there was a fryer or other propane cooking equipment installed.

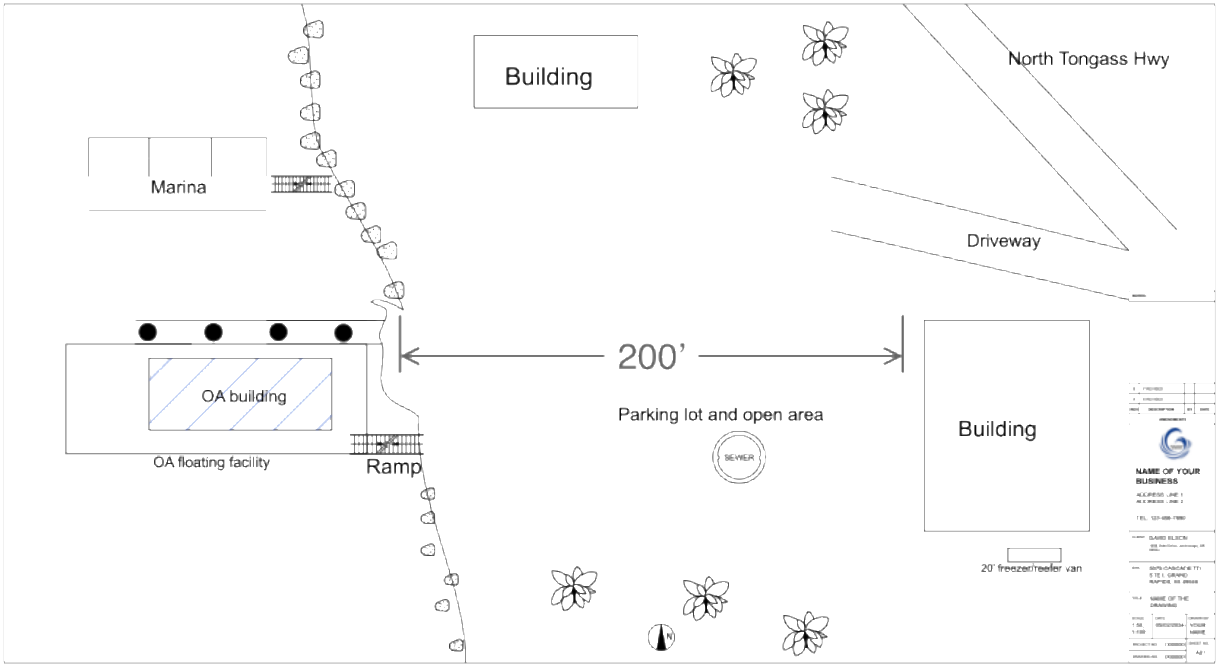
The principal identified gaps are final agency plan review, confirmation of plumbing and wastewater arrangements, adequate hot-water capacity, and installation of a compliant ventilation and fire-suppression system if frying or propane cooking equipment is selected. Because DEC reviews designs only after receiving an application and fee, the schematic should be treated as a preliminary configuration rather than an approved plan.

Appendix E-OceansAlaska Drawings


55'
8'
8'
10'
Dishwasher
Mop sink
Washer & dryer
Prep table
Prep table
3 compartment sink
Cool room
Storage Room
Handwashing sink
Bathroom
22'
8'
Drain
Stairs to upstairs
Hot water tank 20 Gallon
Water pump
48'
8'
3'
N
NOTES:
B Y REVISED JS 05/02/24
A X REVISED JS 05/01/24
REV DESCRIPTION BY DATE
AMENDMENTS
OceansAlaska
2417. Tongass Ave suite 111-277
Ketchikan, AK 99901
TEL: 206-972-8217
CLIENT
SITE
Peninsula Point
TITLE OA floor plan
SCALE 1:50, 1:100
DATE 8/01/2025
DRAWN BY Tomi Marsh
PROJECT NO. 1
SHEET NO. A01
DRAWING NO. 1


Building
North Tongass Hwy
Marina
Driveway
200'
OA building
Parking lot and open area
Building
OA floating facility
Ramp
SEWER
20' freezer/reefer van
NAME OF YOUR BUSINESS


Hoist
Ramp
120'
29
N
OceansAlaska
2417 Tongass Ave
Suite111-277
Ketchikan, AK 99901
TEL: 206-972-8217
5459 N Tongass Hwy
Ketchikan, AK 99901
OceansAlaska
elevation plan
1:50,
1:100
09/28/2025
01
A01
04


Building
North Tongass Hwy
Marina
Driveway
OA building
OA floating facility
Ramp
200'
Parking lot and open area
SEWER
Building
20' freezer/reefer van
N
NAME OF YOUR BUSINESS



NOTES:

REV	DESCRIPTION	BY	DATE
B	REVISED		
A	REVISED		

AMENDMENTS

OceansAlaska

2417 Tongass Ave
Suite 111-277
Ketchikan, AK 99901

TEL: 206-972-6217

CLIENT

SITE 5459 N Tongass Hwy
Ketchikan, AK 99901

TITLE
OceansAlaska site plan 2

SCALE	DATE	DRAWN BY
1:50, 1:100	08/30/2025	

PROJECT NO. 01

DRAWING NO. 03

SHEET NO. A01

Potable water and wastewater Requirements

The property is not connected to city water, nor to the city waste water system. To permit the facility as a food establishment/commercial kitchen, we needed to identify ADEC approved potable water sources/protocols and determine how to move wastewater to the city waste water system. Many business and homes capture rainwater from their roofs, store it, and test it for home and commercial uses. Because OA is working on a food establishment, commercial kitchen permit, we will use a permitted potable water company.

An ADEC Drinking Water Program-approved source is required at Peninsula Point because the facility does not have municipal water service. A separate approved water carrier is therefore a practical option. Stored water would still require an appropriate tank, pump, potable-water plumbing, sampling, and operating procedures. The preliminary estimate is approximately $250 for 4,000 gallons of delivered water. A nominal 500-gallon vertical tank is estimated at approximately $900 plus shipping; its stated dimensions should be verified with the supplier before design or procurement.

There are two local, mobile water companies which supply both residential and commercial potable water. One is Ketchikan H2O, https://ketchikanh2o.com which, provides bulk potable water delivery service to many people in the community of Ketchikan. The other is Ketchikan Water, another local company that provides high-quality, safe drinking water to the community of Ketchikan. They support both the local community and businesses in the area. https://ketchikanwater.com. Bulk water services are used to fill peoples water tanks or cisterns. These companies are enrolled with the State of Alaska DEC and follow proper protocol to stay in compliance with potable water regulations. Appendix F-Water regulations

Wastewater Requirements and Disposal

The proposed facility must comply with the Alaska Pollutant Discharge Elimination System (APDES) and receive approval from the Alaska Department of Environmental Conservation (ADEC) Division of Water through the Engineering and Plan Review Program, regulatory review and authorization by ADEC as applicable.

Currently, the OceansAlaska (OA) facility collects wash water in floor trays, which is then pumped into a holding tank before being discharged to the upland municipal wastewater system. Because the wastewater must be pumped approximately 23 feet uphill—the maximum tidal elevation change—a sump pump with sufficient head pressure is required. Pump costs will vary depending on the required flow rate (gallons per minute) and pumping head.

The current plan is to install an initial 200–250 gallon holding tank within the facility. This tank will provide temporary wastewater storage, accommodate tidal fluctuations, and allow flexibility for chlorination and de-chlorination of wash water or future greywater if required.

Restroom blackwater disposal

At present, the facility uses an Incinolet (incinerating) toilet, so no restroom blackwater is generated. However, a commercial food establishment will require conventional restroom facilities. Current regulations indicate that accessible, multi-user restrooms are required, the restroom requirement is being confirmed with ADEC regarding the number and whether gender-specific or gender-neutral restrooms are acceptable for the proposed operation and if there are variances.

Solid waste

Solid waste will be collected in designated containers and transported to the local landfill for disposal. Recycling opportunities in Ketchikan are currently limited, with only a basic recycling program available at the landfill.

Additional information is available from the Alaska Department of Environmental Conservation's Wastewater Program. (https://dec.alaska.gov)

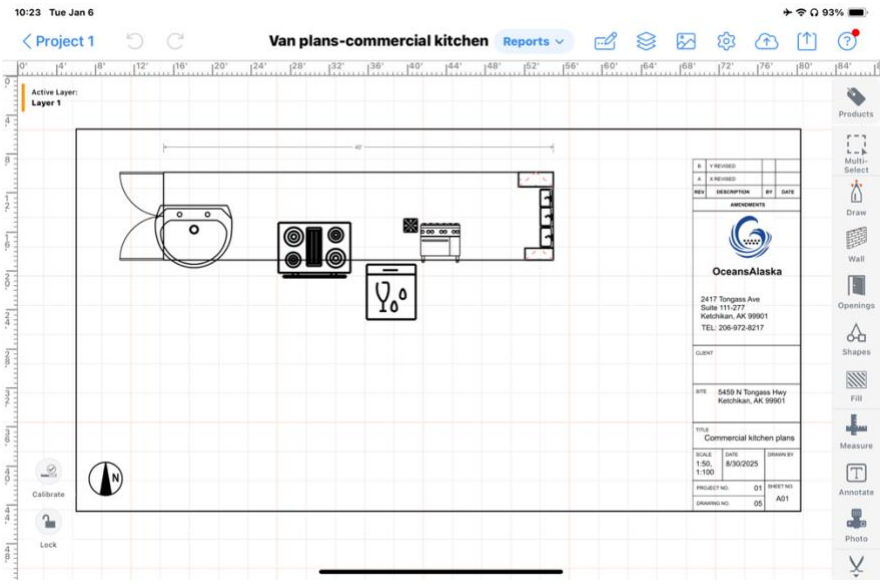
Task 1: Designs for Processing/Kitchen and Associated Cold Storage

1.4 Alternative Shipping Container Facility Design

As an alternative to locating the commercial kitchen on the OceansAlaska (OA) facility, conceptual drawings were developed to evaluate a processing facility/commercial kitchen housed in one or more shipping containers. The container-based concept provides a potentially lower-cost, flexible, and scalable option for communities where permanent commercial processing infrastructure is limited.

The analysis is intended to be less detailed than the drawings developed for the barge facility, but identifies the basic space requirements, equipment layout, utilities, workflow, and potential configuration of a modular commercial kitchen or processing space.

A container-based facility could also provide a replicable model for other rural Southeast Alaska communities. Individual modules could be added or modified as demand increases, allowing communities to develop shared-use food infrastructure without the cost of constructing a larger permanent facility.



Appendix H-Drawings.

1.5 Cold Storage Container Analysis

There is currently limited access to public cold-storage space in Ketchikan, creating a significant infrastructure bottleneck for mariculture producers and other small food businesses. The only identified public freezer space is operated by Ketchikan Sam and has limited capacity. The current cost is approximately $250–$300 per pallet. Steelhead Electric is also planning a commercial park that would allow private businesses to lease space and plug in their own freezer vans, refrigerated vans, or trailers. These developments demonstrate both the existing need for cold storage and the potential for additional private and shared-storage options in the community.

Shared cold storage is an important component of the proposed cooperative facility model. It would allow producers to maintain the cold chain for shellfish and other perishable mariculture products without requiring each producer to invest in a dedicated refrigerated facility. Cold storage would also support users of the proposed commercial kitchen and provide additional capacity for future processing and value-added activities.

Proposed 20-Foot Cold-Storage Container

The feasibility study evaluates placing a refrigerated cold-storage container on land adjacent to the OceansAlaska (OA) barge. The preliminary concept is a 20-foot insulated container divided into approximately 10 feet of cool storage and 10 feet of freezer storage. The container would provide flexible, shared storage capacity while remaining physically separate from the commercial kitchen and other processing activities.

The analysis considers:

- Availability of land and site requirements adjacent to the OA barge
- Container size, configuration, and internal division between cool and frozen storage

- Available cool-storage and freezer capacity
- Electrical service and refrigeration requirements
- Access for trucks and forklifts
- Loading and unloading requirements
- Integration with the OA barge and proposed commercial kitchen
- Operating, maintenance, and repair costs
- Potential use by local mariculture producers, harvesters, and other community food businesses
- Seasonal and year-round storage requirements

The proposed 20-foot insulated freezer van was positioned beside the SeaGrove building, where it can be accessed by truck and forklift. Its location also provides convenient access from the OA facility. Product can be transferred between the OA facility and the container by forklift or truck, minimizing handling and transportation requirements.

Freezer Container Requirements and Costs

A typical 20-foot insulated freezer container can require approximately 3–5 kWh per hour to maintain temperatures in the range of approximately -10°F to -20°F, depending on ambient conditions, insulation, equipment efficiency, and product loading. Refrigerated containers commonly require three-phase electrical service, with the exact voltage and amperage dependent on the refrigeration equipment installed. Start-up loads can be higher than normal operating loads and should therefore be considered when evaluating electrical infrastructure and generator requirements. Purchase prices in 2025: Dry box 20' freezer container van $7,500.00, Alaska marine lines shipping $840.96, CoolBot Store it cold system $374.00, Akon Cool curtain $389.00 (to minimize heat transfer), Breaker, disconnect Switch, plug $1,296.04. A large forklift to move container $200 and hour (2 hour minimum), a boom truck is $500 an hour (2 hour minimum). (www.storeitcold.com)

At an estimated electricity rate of approximately $0.145 per kWh in Ketchikan, electricity costs for operating a freezer container can be relatively manageable compared with many other Alaska locations. However, actual operating costs will vary with outside temperature, frequency of door openings, product load, equipment condition, and electrical rates. Ketchikan's predominantly hydroelectric power system, supplemented by diesel generators, when necessary, also affects electricity costs and availability.

Refrigeration equipment represents an important maintenance consideration. A compressor replacement may cost approximately $3,000–$5,000, while other refrigeration repairs may average approximately $1,800–$2,000 and require 7–10 hours of labor, depending on the problem and availability of parts. Refrigerant-related repairs or recharging may cost

approximately $500–$1,000. In Ketchikan, access to specialized parts and refrigerant can increase repair times and costs because some materials must be transported by barge. These maintenance considerations should be incorporated into the operating budget and contingency planning for any shared cold-storage facility.

Cool Storage Alternative

In addition to a conventional refrigerated container, the feasibility study considered the use of a CoolBot system as a lower-cost approach to developing cool storage. A CoolBot is a digital temperature controller that allows a compatible residential air-conditioning unit to operate at temperatures substantially below its normal range. Sensors prevent the evaporator coils from freezing by temporarily shutting down the air conditioner and allowing a defrost cycle.

The system can be used with a properly insulated room or prefabricated walk-in cooler and may provide an economical alternative for cool storage where freezer temperatures are not required. Prefabricated CoolBot-compatible walk-in coolers are available, with smaller systems starting at approximately $4,625. The manufacturer also provides sizing guidance and an air-conditioner compatibility calculator to help determine the appropriate equipment for a particular insulated space.

A CoolBot-type system may be particularly useful for shellfish and other products requiring refrigeration rather than frozen storage. However, the system would need to be evaluated for commercial food use, reliability, temperature-control requirements, humidity, cleaning, and the specific requirements of shellfish handling. A conventional commercial refrigeration system may be more appropriate where continuous temperature control, higher capacity, or greater reliability is required. (www.storeitcold.com)

Seasonal and Cooperative Use

Cold-storage demand is expected to vary by product and season. Shellfish require reliable refrigerated storage to maintain the cold chain between harvest, processing or repacking, transportation, and sale. This creates a particularly important seasonal need during periods of oyster and other shellfish production. Other mariculture products, including frozen seaweed and value-added products, may require freezer capacity throughout the year.

A shared cold-storage facility could therefore serve several complementary purposes:

1. Shellfish cold chain: Provide refrigerated holding capacity for oysters and other perishable shellfish products.

2. Mariculture storage: Provide freezer or cool storage for seaweed and other mariculture products awaiting processing, distribution, or sale.

3. Commercial kitchen support: Provide temporary storage for businesses using the cooperative commercial kitchen.

4. Seasonal overflow: Provide additional capacity during periods when local producers experience peak production.

5. Small-business access: Allow producers who cannot justify their own refrigerated facility to access commercial cold storage on a shared-cost basis.

6. Future processing support: Provide storage capacity that can expand the usefulness of future processing or value-added infrastructure.

Feasibility Considerations

The cold-storage container concept appears to be a practical and scalable component of the proposed cooperative infrastructure model. A containerized system has the advantages of a relatively small footprint, modular installation, portability, and the ability to add additional units as demand increases. Locating the container near the OA barge would also reduce product-handling distances and allow the storage facility to function as part of a larger processing and commercial-kitchen hub.

The primary feasibility considerations are adequate electrical service, site access, drainage and site preparation, refrigeration reliability, temperature monitoring, food-safety requirements, security, and responsibility for maintenance and repairs. The facility would also need an operating model that establishes user fees, scheduling and access procedures, cleaning responsibilities, temperature monitoring, product identification, and liability for stored products.

Conclusion

Public access to both cool and frozen storage is an important infrastructure need for Ketchikan's developing mariculture industry. Limited existing capacity creates a bottleneck for producers seeking to maintain the cold chain, develop value-added products, and access local and visitor markets. The proposed 20-foot refrigerated container, potentially divided between cool and freezer storage, provides a relatively flexible approach that could be implemented independently or as part of the proposed cooperative commercial-kitchen model.

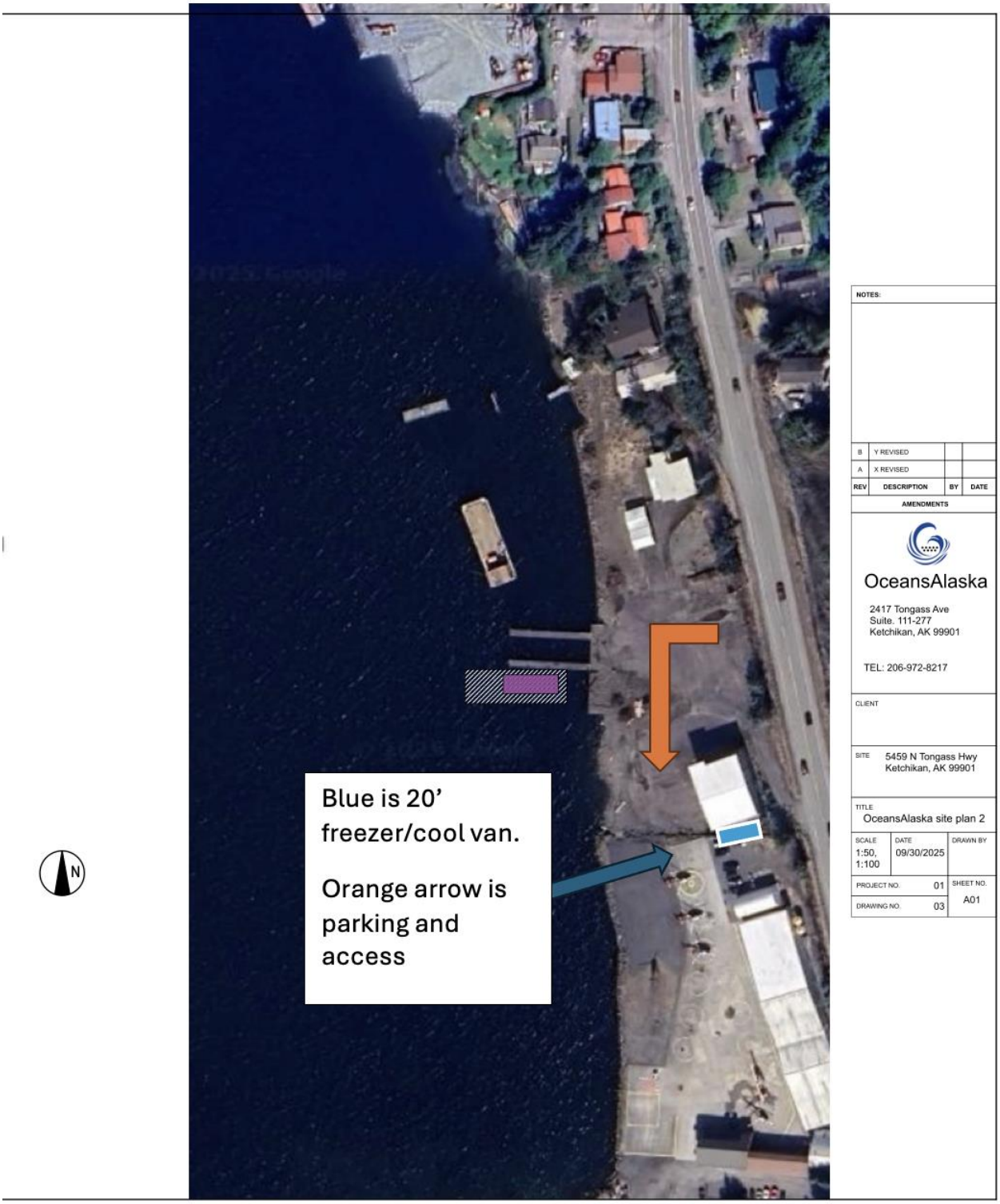
The combination of shared commercial kitchen space and shared cold storage would allow multiple small producers to access essential infrastructure without each business having to construct and maintain its own facility. This modular approach is particularly appropriate for a developing mariculture industry where demand is seasonal and individual producers may not have sufficient volume to justify dedicated infrastructure. As utilization increases, additional refrigerated or freezer containers could be added, allowing the system to grow incrementally with demand. www.store.cold.com.

Quick Reference A/C Sizing Chart

English System **Metric System**

		Desired Temperature Range		
		34°F - 37°F 1°C - 2.9°C	**38°F - 49°F** 3°C - 9.9°C	**50°F - 60°F** 10°C - 16°
Room Size		**Air Conditioner Size (BTUs)**		
L (Ft)	**W (Ft)**	**(1K = 1,000 BTUs)**		
4'	4'	8K BTU	6K BTU	5K BTU
6'	6'	12K BTU	8K BTU	5K BTU
6'	8'	15K BTU	10K BTU	5K BTU
8'	8'	18K BTU	12K BTU	7K BTU
8'	10'	24K BTU	15K BTU	8K BTU
8'	12'	24K BTU	18K BTU	10K BTU
10'	14'	18K + 18K BTU	24K BTU	15K BTU
Larger Sizes		Multiple A/Cs and CoolBots - Please Contact Us		

**Assumes an airtight cooler with an 8' ceiling, at least R25 Rigid Foam Insulation, and less than 6 openings per hour.*



Task 2: Business and Operations Planning for the OceansAlaska Processing/Kitchen

2.1 Cooperative and Shared-Use Business Model

OceansAlaska and Fishes & Dishes evaluated commissary kitchens, shared-use commercial kitchens, and cooperative business models to determine how existing infrastructure could be

made available to multiple small businesses and community users. The objective is to develop a financially and operationally sustainable model that supports small mariculture producers, harvesters, emerging food businesses, Indigenous food producers, and other community entrepreneurs without requiring each user to construct and permit an independent commercial facility.

A shared-use facility can reduce the financial and regulatory burden on individual businesses by distributing the costs of infrastructure, commercial equipment, utilities, storage, insurance, maintenance, and other operating expenses among multiple users. The business and operations analysis will consider potential organizational structures, user agreements and facility-use policies, rental and membership models, equipment-use fees, cold-storage fees, cleaning and sanitation fees, utilities, insurance requirements, staffing and facility management, maintenance and repair costs, licensing and permitting, potential sources of revenue, and potential subsidies or community-support models. The facility operator provides and maintains the shared infrastructure, while individual users remain responsible for their own businesses, products, permits, licenses, insurance, food-safety requirements, taxes, and regulatory compliance. The analysis will also consider how the facility can accommodate different users and activities while maintaining appropriate food-safety, sanitation, scheduling, and liability controls.

Commercial Kitchen Models

Commercial kitchens are an established model for providing shared commercial space, equipment, and cool or frozen storage within a food-safe infrastructure for businesses that may not have the financial capacity or production volume to construct and operate their own facility. These facilities can include restaurants, cafés, catering facilities, church and school kitchens, event facilities, cloud or ghost kitchens, commissary kitchens, and other shared-use kitchen spaces. All must meet applicable food-safety, health, building, fire, plumbing, wastewater, and occupancy requirements.

A dedicated commissary kitchen is designed specifically to provide approved commercial food-preparation infrastructure to multiple businesses. Users generally rent space or time on a daily, monthly, or seasonal basis and share equipment, storage, utilities, and other infrastructure. This model is particularly well suited to start-up businesses, small-scale producers, food trucks, and entrepreneurs testing new products because it reduces the initial investment required to enter commercial production. It can also provide a bridge for businesses moving from the Homemade Food program into larger-scale commercial production.

Cloud or ghost kitchens, by comparison, are generally designed around delivery, take-out, meal preparation, and other virtual food businesses. They tend to provide more private space and equipment, longer-term commitments, and bundled services such as cleaning, maintenance, utilities, and administrative support. This model may be appropriate for an established food business seeking dedicated production space; however, its higher financial commitment and

emphasis on exclusive operations may make it less appropriate for small, seasonal, or emerging businesses in rural Alaska.

A third option is a hybrid shared-use model, which may be particularly viable for smaller communities. Research by Danielle McCusker, owner of Kitchen Share, demonstrated how restaurants, churches, schools, and nonprofit organizations with approved commercial kitchens can make unused kitchen capacity available to entrepreneurs. McCusker developed software that connected kitchen hosts with businesses looking for commercial kitchen space. The model allows small businesses to use facilities in their communities rather than traveling significant distances to larger commissary kitchens, while also creating a revenue stream for facilities with underutilized capacity. (www.kitchenshareth.com)

This model could be particularly useful in rural Alaska. Rather than constructing a new facility, a community could connect businesses that need licensed kitchen space with existing facilities that have unused kitchen, equipment, storage, or preparation capacity. Small businesses gain access to commercial infrastructure without the expense of constructing a facility or signing a year-round lease, while the host organization can generate revenue from otherwise underutilized space and offset existing fixed costs.

The model may also create additional economic opportunities for the community by increasing demand for related services such as storage, transportation, equipment rental, cleaning, waste-oil disposal, propane services, training, and other business-support activities. Existing infrastructure—including restaurants, schools, churches, nonprofit facilities, seafood-processing facilities, and other underutilized buildings—could potentially provide commercial kitchen, dry-storage, cool-storage, freezer, event, or pop-up space without requiring construction of a new, single-purpose facility.

For example, an underutilized school kitchen in Ketchikan, an unused seafood-processing facility in Hydaburg, or seasonal space at OceansAlaska could potentially support small businesses and community food production.

Business Operations: Fee Structures and Examples

Commissary kitchens commonly charge users by the hour, day, month, or through membership structures. Fees vary according to the level of access, dedicated space, storage, equipment, utilities, and services provided. The examples reviewed for this study, in both Alaska and the Lower 48, demonstrate that both the facility operator and the food producer have responsibilities related to public health, business operations, insurance, licensing, and compliance with applicable local, state, and federal requirements. Examples include:

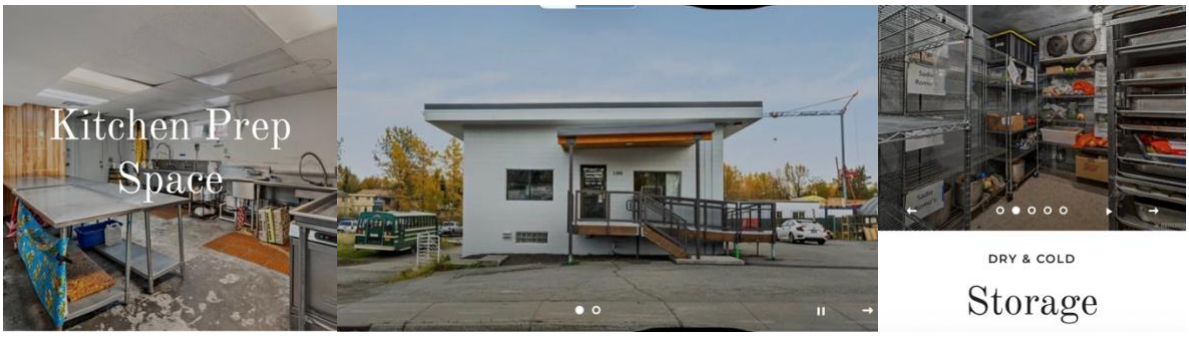
Commercial Kitchen Fee Comparison

Examples of commercial and shared-use kitchen fee structures reviewed for this study are summarized below. These examples illustrate the range of approaches available rather than establishing recommended rates for OceansAlaska. Actual OceansAlaska rates would need to

reflect local operating costs, available equipment, seasonal use, storage needs, and the level of administrative and facility support provided.

Facility / Model	Fee Structure / Example Rates	Access or Services Included	User Requirements / Notes
Artisan Community Kitchen – Seattle	Flex Plan: approximately **$90 for 4 hours** or **$360/month**. Fixed Monthly plans range from approximately **$352–$2,548/month**. Premium option approximately **$2,300/month**.	Access varies by plan; higher-level plans provide more consistent or dedicated use.	Prospective users tour the facility and discuss their production needs, space requirements, and business arrangements before selecting a plan.
Anchorage Commercial Kitchen	Approximately **$25/hour for hot-side kitchen use** and **$20/hour for cold-side use**. Additional charges may apply for walk-in refrigerator/freezer space.	Kitchen and cold-storage access based on the type of space used.	Prospective members are interviewed. Requirements include appropriate insurance, food-handler cards, business license, and ServSafe manager certification.
Seattle Commissary Kitchen	Membership and use fees vary according to access and services.	Kitchen equipment, Wi-Fi, utilities, trash service, and 24-hour access are among the services provided.	Users must provide a business license, insurance naming the commissary as an additional insured, applicable health permits, and a signed membership agreement. Fees and deposits may also apply.
Kitchen Sisters – Seattle	Approximately **$50/hour**, with a **4-hour minimum** for entry-level use.	Options range from limited hourly access to higher levels of recurring use.	Tiered structure allows businesses to increase their commitment as

Facility / Model	Fee Structure / Example Rates	Access or Services Included	User Requirements / Notes
	Higher membership levels approximately **$1,500–$3,000/month**.		production needs grow.
Alaska MEP	Equipment-use fees vary according to equipment and use. Dehydrators and other energy-intensive equipment may have separate charges.	Specialized processing equipment, including dehydrators; Alaska seaweed farmers have used the facility for kelp processing.	Useful example of charging separately for specialized equipment and energy-intensive activities rather than incorporating all costs into a general kitchen rate.



https://anchoragecommercialkitchen.com



www.kitchensistersseattle.com.

Implications for the OceansAlaska Model

The examples demonstrate several potential approaches for OceansAlaska, including **hourly use, minimum-use periods, monthly memberships, seasonal access, specialized equipment**

charges, and separate cold-storage fees. A combination of these approaches may be more appropriate than a single hourly rate.

For OceansAlaska, a potential fee structure could distinguish between basic kitchen access, specialized equipment, cool or frozen storage, and recurring or seasonal memberships. This would allow occasional users and small businesses to enter the facility at a relatively low initial cost while providing a more predictable revenue stream as businesses increase their production.

The examples also indicate that commercial kitchens commonly establish user requirements beyond the rental fee. Insurance, business licensing, food-handler requirements, health permits, deposits, membership agreements, and facility-specific operating rules are typically addressed as part of the onboarding process. These requirements would need to be adapted to OceansAlaska's specific operating structure and regulatory responsibilities.

Other examples:

Distinguished Kitchens – information on commercial kitchen rental costs and operating considerations. https://www.distinguishedfoodskitchenrental.com.

KMB Seattle Commissary Kitchens – information on commercial kitchen rental costs and operating considerations. https://www.kbmseattle.com.

Alaska Commercial Kitchens, Community Kitchens, Licensed Kitchens, Shared Kitchens - Places to make foods to sell. www.pickyourown.org.

Commissary kitchens in King County – What are commissary kitchens and what are the benefits? https://kingcounty.gov/en/dept/dph/health-safety/food-safety/educational-resources/commissary-kitchens.

Examples of Cloud /Ghost kitchen and Mobile Kitchens

Cloud/ghost kitchen provide a suite of bundled services from cleaning, licensing, equipment, maintenance, insurance, and utilities and the rental price depends on location and size. These, campuses of purpose built, dedicated, private kitchens, with services, can run between $30,000-$120,000 a year. www.trycloudkitchens.com.

Culinex Kitchens – information on commercial kitchen rental costs and operating considerations. www.culinexkitchens.com.

Mobile Culinaire offers ready to go Kitchen equipped and DEC approved large mobile container vans. Mobile Culinaire leases these for $8,000 to $25,000 a month depending on the size.

These models demonstrate that a commercial kitchen can generate revenue through several complementary fee structures rather than relying solely on an hourly rental rate. Access to dedicated workspace, storage, specialized equipment, and additional services can be matched to the needs and financial capacity of individual users. Operating a commercial kitchen requires meeting all legal and regulatory standards to ensure food safety and business integrity. Both

shared commissary kitchens and ghost kitchens must comply with federal, state, and local requirements, such as:

1. Licenses and Certifications: Food handlers and supervisors must have specific certifications, including training and exams related to food safety.

2. Food Business Licenses: Health inspections verify compliance with hygiene, storage, labeling, and food preparation rules.

3. Mechanical and Plumbing Codes: Kitchens must meet technical standards such as the Uniform Mechanical Code for exhaust systems, grease traps, and sanitation.

4. Certificate of Occupancy: After property inspections, approval is issued confirming suitability for food operations.

5. Fire Department Inspections: Safety checks include emergency exits, sprinkler systems, and alarms.

6. Sanitary Evaluations: Analysis of sewage access and waste management.

7. Regular Health Inspections: Ongoing checks ensure hygiene maintenance, temperature control, and safety protocols.

8. HACCP Plans: Essential to identify risks and implement controls to prevent contamination.

9. Workplace Safety: Occupational safety standards must be followed, including accident prevention and emergency signage.

10. Recommended Certifications: Equipment certified by NSF, for example, facilitates passing inspections.

11. Zoning and Occupancy Compliance: Properties must have municipal authorization for commercial food use.www.mobileculinaire.com



OceansAlaska as a Shared-Use Example

OceansAlaska is not being proposed as a seafood processor that assumes responsibility for users' products. It is being evaluated as a host/operator of shared infrastructure, where individual businesses retain responsibility for their own products, permits, insurance, and business operations.-This distinction is particularly important for OceansAlaska. Research conducted during this study indicated that a licensed seafood processing facility would be difficult to operate as a cooperative or multi-user facility because seafood processing businesses assume significant responsibility for product safety, HACCP plans, traceability, recalls, worker safety, insurance, and regulatory compliance. A commercial kitchen provides a different operating structure: the facility can provide the permitted space and shared equipment while individual businesses retain responsibility for the products they produce.

OceansAlaska provides an opportunity to apply this model to an existing facility rather than constructing a dedicated commercial kitchen from the ground up. The hatchery and nursery operate on a seasonal schedule, with seaweed line production occurring primarily from September through December and shellfish nursery activities from January through May. Portions of the facility may therefore be available during other periods for commercial kitchen, cold-storage, product-development, educational, or community uses.

Under this model, OceansAlaska would function primarily as the host and operator of shared infrastructure rather than as the processor or owner of users' products. User agreements would establish clear responsibilities for scheduling, cleaning and sanitation, equipment use, storage, waste disposal, maintenance, food safety, insurance, licensing, and liability. The objective would be to create a system in which individual businesses are accountable for their own products and operations while OceansAlaska maintains the shared facility and its applicable infrastructure requirements.

Historically, expanding use of the facility during available periods has been limited in part by staff capacity. A shared-use model could reduce this burden by assigning routine responsibilities—such as cleaning, sanitation, equipment care, and proper shutdown of work areas—to the businesses using the facility. Scheduling and billing systems could further reduce administrative requirements.

The facility also offers value beyond kitchen rental. Its existing food-grade surfaces, cement floors, drainage, utilities, waterfront access, and relatively large work area provide a foundation for food production and mariculture-related activities. Its location near the Ward Cove cruise terminal creates additional opportunities for visitor education, product demonstrations, workshops, and other visitor-oriented activities, subject to permitting and facility design.

A cooperative facility could incorporate a combination of food production, maker-space activities, visitor education, and product sales. Depending on permitting and facility design, potential activities could include mariculture demonstrations, artist or maker space, an oyster grill or raw bar, seaweed-based foods, product demonstrations, workshops, and a marketplace for

locally produced goods. These activities could provide opportunities for visitors and residents to learn more about mariculture and coastal Alaska communities while creating additional revenue opportunities for participating businesses.

User Fees and Revenue Structure

Commercial kitchens commonly use a combination of hourly, daily, monthly, and membership-based fees. The appropriate structure depends on the level of access, dedicated workspace, equipment, storage, utilities, and services provided.

For a rural Alaska shared-use facility, the fee structure should balance two objectives: recovering the incremental costs created by facility use while maintaining access for small and emerging businesses. Rates should discourage inefficient or unscheduled use and contribute toward utilities, maintenance, cleaning, equipment replacement, and administrative costs without recreating the financial barrier that the shared-use model is intended to overcome.

OceansAlaska should therefore consider a combination of:

- Hourly or daily kitchen rental;
- Monthly or seasonal memberships;
- Equipment-use fees for specialized equipment;
- Cool and frozen storage fees;
- Cleaning or sanitation fees where appropriate;
- Product-development or specialized-use fees;
- Workshops and training;
- Pop-up and special-event use;
- Visitor and educational activities; and
- Community, grant, or economic-development support.

The facility should not necessarily be expected to recover its entire organizational operating cost through kitchen users. OceansAlaska already maintains infrastructure for its hatchery and nursery operations. During periods when portions of that infrastructure are otherwise underutilized, commercial kitchen and shared-use activities could allow users to contribute toward incremental costs while making productive use of existing assets.

This differs from a purpose-built commissary kitchen, which must generally recover the full cost of construction, equipment, utilities, maintenance, staffing, insurance, and other overhead through user fees and other revenues. An existing facility such as OceansAlaska can instead establish rates based on the incremental costs associated with additional use, a reasonable

contribution toward existing fixed costs, and the value of the equipment and infrastructure made available to users.

Insurance and Liability

Insurance should be incorporated directly into the shared-use operating model rather than treated solely as a facility-wide expense.

Under a potential shared-use structure, individual businesses would maintain insurance appropriate to their activities, including product and general liability coverage where required. OceansAlaska would maintain insurance appropriate to its role as facility owner or operator, including coverage for the shared infrastructure and premises. The exact division of responsibility would need to be established with an insurance provider after the facility's activities, equipment, users, and operating structure have been defined.

Each business would have to apply, identify coverage, and be accepted into an insurance program. There are numerous online companies offering coverage for caterers, chefs, food trucks, restaurants, and commercial commissaries. Local options include Davies Barry in Ketchikan and P-W insurance in Petersburg. P-W also offers insurance for mariculture farms. Liberty Mutual is a well-known insurance company for workers compensation along with other policies, such as employee/employer liability.

- Food Liability Insurance Program (FLIP) – information on liability insurance for commercial kitchen users. www.fliprogram.com. This company offers insurance for bakers, caterers, food trucks, food trailers, farmers markets, commercial kitchens, and chefs. They cover Commercial Auto, Cyber Liability, General Liability, Food Trailer Endorsement, Product Liability(recall), Professional Liability, and Workers Compensation.

- Insure My Food – information on insurance considerations for commissary and shared commercial kitchens. https://insuremyfood.com

- Forbes – Best liability food liability comparison 2026. Information on liability insurance for commercial kitchen users. www.forbes.com/advisor/best-general-liability-food-insurance.com

User agreements should establish minimum insurance requirements and clearly identify which risks remain with the individual business and which are covered by the facility operator. This approach helps preserve the central benefit of the shared-use model: individual entrepreneurs gain access to commercial infrastructure without transferring responsibility for their individual products and business activities to OceansAlaska. Appendix J- includes an example of insurance applications.

Pathway for Business Development

A shared-use commercial kitchen can also function as an incubator for emerging businesses. A new entrepreneur could begin with occasional hourly or seasonal use, move into a recurring-use

or membership arrangement as production increases, and eventually transition to a dedicated commercial facility when production volume and market demand justify the additional investment.

This creates a progression from product development → pop-up or small-batch sales → recurring commercial production → direct marketing or larger-scale processing.

Such a model is particularly appropriate for Southeast Alaska, where many mariculture businesses are small, seasonal, and still developing their markets. Rather than requiring substantial capital investment at the beginning of a business venture, shared infrastructure allows entrepreneurs to demonstrate demand and develop their operations incrementally.

For OceansAlaska, the shared-use model could therefore serve two purposes simultaneously: making productive use of existing infrastructure during available periods and providing an accessible entry point for new food and mariculture businesses.

Preliminary Business Model

The study supports continued evaluation of a shared-use commercial kitchen and associated cold-storage infrastructure as a community resource. The model would distribute the cost of infrastructure and equipment among multiple users while allowing individual businesses to remain responsible for their own products, permits, insurance, and operations.

The next phase of financial analysis should establish preliminary operating budgets and test several fee structures against realistic levels of utilization. The analysis should determine the combination of kitchen use, storage, equipment fees, memberships, workshops, and other revenues necessary to cover incremental operating costs while maintaining reasonable access for small businesses.

The final operating model should be designed around shared infrastructure with individual accountability. This structure provides a clearer separation between OceansAlaska's role as a facility operator and the responsibilities of individual food and mariculture businesses, while retaining the flexibility and community benefits that make a shared-use commercial kitchen attractive.

Potential Revenue Model for Rural Alaska

A facility such as OceansAlaska, or another underutilized existing facility in a rural community, could generate revenue through a combination of:

- Kitchen rental fees
- Membership fees
- Equipment-use fees
- Cool and frozen storage fees

- Cleaning and sanitation fees
- Processing or other specialized services
- Training and workshops
- Pop-up food events and community-use fees
- Visitor and tour activities
- Other business-support services

A key distinction exists between a dedicated, purpose-built commissary kitchen and a shared-use facility operating within existing infrastructure.

A dedicated commissary must recover the full cost of its construction, equipment, utilities, maintenance, insurance, staffing, and other overhead through user fees and other revenue. These costs are therefore generally incorporated into the prices charged to users.

A shared-use facility operating within an existing restaurant, nonprofit, school, seafood facility, or other business can have a different cost structure. The host has already made the initial investment in the building and much of the infrastructure. Users can therefore help offset existing fixed costs without having to bear the full cost of developing and operating a new commercial facility. The host can establish rental rates based on a portion of its fixed costs, the incremental costs created by additional use, and the value of the space and equipment provided.

OceansAlaska Cost and Revenue Considerations

OceansAlaska provides an example of a shared-use model built on existing infrastructure. The approximately 800-square-foot facility already has food-grade walls, cement floors, and drainage. Fixed costs include moorage and insurance, while variable costs include electricity, water, and staff time. Based on an estimated total cost of approximately $4,000 per month, the allocated daily cost is roughly $150–$300 per day, depending on the number of operating days and the method used to assign shared costs. A final feasibility determination should test these assumptions against expected operating days, utilization rates, staffing requirements, maintenance reserves, and revenue from kitchen, equipment, and storage fees.

An additional investment of approximately $10,000–$20,000 in commercial kitchen equipment and cool/freezer storage could allow the facility to generate additional revenue during periods when the space is not required for hatchery or nursery operations. For example, a basic DEC-approved cool-side preparation area could potentially support an hourly rental rate of approximately $25 per hour. If demand develops, OceansAlaska could expand the model by adding hot-side equipment and establishing a separate hot-side rental rate.

The seasonal nature of the facility may also reduce the staffing burden compared with operating a full-time commercial kitchen or visitor attraction. Under a cooperative model, users would be responsible for routine cleaning, sanitation, and appropriate care of the equipment and

workspace. This would allow the facility to function as a shared resource while minimizing the number of additional staff required to manage routine operations.

The objective would not necessarily be to recover the entire cost of the OceansAlaska facility through kitchen users. Instead, users could contribute toward costs that OceansAlaska is already carrying while gaining access to infrastructure that would otherwise be unavailable or unaffordable. This distinction is important when evaluating the financial feasibility of shared-use facilities in rural communities.

Organizational and Operating Considerations

Small, board-managed nonprofits may face additional challenges in taking advantage of these opportunities. Limited staff capacity, competing responsibilities of board members who have other employment, limited access to flexible funds, and concerns about mission creep can make it difficult to develop new revenue-generating uses for existing facilities. These constraints may prevent organizations from considering innovative uses of existing assets even when those uses could support both the organization and the broader community.

For this reason, a cooperative model should clearly define responsibilities among the facility operator and individual users. User agreements should address scheduling, cleaning and sanitation, equipment use, storage, insurance, food-safety requirements, licensing, maintenance, damage, waste disposal, and liability. The goal should be to establish a system in which individual businesses remain responsible for their own products and operations while the facility operator maintains responsibility for the shared infrastructure and applicable facility requirements.

Recommended Cooperative Approach

For a rural Alaska cooperative or shared-use kitchen, the fee structure should balance the actual cost of operating and maintaining the facility with the objective of keeping the facility accessible to small and emerging businesses. Rates should be high enough to discourage unscheduled or inefficient use and recover incremental operating costs, but should not create the same financial barrier that the shared-use model is intended to overcome.

A cooperative facility should therefore not rely solely on hourly kitchen rental income. A more sustainable operating model may combine kitchen rentals, memberships, cold-storage income, equipment and specialized services, training and workshops, tourism and community-use activities, and potential community or economic-development support.

This approach is particularly relevant to OceansAlaska because the facility's value is not limited to kitchen rental. The combination of existing infrastructure, seasonal availability, cold storage, commercial equipment, mariculture expertise, community relationships, water access, proximity to the Ward Cove cruise ship dock, and potential educational and visitor activities creates multiple opportunities to generate revenue while supporting emerging businesses. The

cooperative model can therefore function both as a revenue-generating operation and as an incubator for new food and mariculture businesses.

The goal should be to create a flexible system in which a new entrepreneur can begin with limited hourly or seasonal use, move into a membership or recurring-use arrangement as production increases, and eventually transition into a dedicated commercial facility when the business reaches sufficient scale. This creates a pathway for business development while allowing rural communities to make better use of existing infrastructure.

Existing Cold Storage Options and Costs

Public cold and cool storage facilities are not readily offered in all Alaska communities. In Southeast Alaska there is public cold storage available in Petersburg and Valdez.

In Valdez "The Valdez Fisheries Development Association (VFDA) recognized a need for local cold storage to promote the development of fish products and renewable fisheries resources, and to compliment the Fisheries Business Incubator Program. In partnership with the US Department of Commerce Economic Development Association (EDA), the VFDA Regional Cold Storage Facility was built and completed in June of 2012.This modern facility provides needed cold storage to the Prince William Sound Economic Development Region, and promotes local economic development for local seafood processors, fishermen and other businesses in Valdez and the surrounding areas."

The facility has a holding capacity of 11,000 cubic feet and is temperature controlled at –10 degrees and monitored 24/7. The facility also has commercial ice machine, blast freezer, and processing equipment. All users of the seafood processing equipment must have a current direct marketer or AK processor license.

Commodity:	Handling In/Out	Storage
Seafood totes	$1.89	$3.27
Seafood/Protein Boxes	$2.19	$3.32
Frozen Grocery	$2.93	$3.56
General Bulk	$3.25	$5.07

https://www.valdezfisheries.org/fisheries-programs/cold-storage-facility

In Petersburg *"The Petersburg Community Cold Storage was constructed in 2006, and provides cold storage, blast freezing, ice sales, and packaging space to seafood processors and other businesses in the food industry. The PCCS holding room has capacity for up to 500,000 pounds of product as well as hold additional product in outside freezer vans. Three commercial blast*

freezers can turn 75,000 lbs of product every 24 hrs. The facility is equipped with tables, glaze tank, freezer racks, pallets, cardboard totes, ice machine, commercial scale, forklifts, loading dock, and health/sanitation equipment. Direct marketers are welcome and the PCCS provides dedicated space for filleting, sorting, and packing product. All seafood processors must obtain a DEC Seafood Processing Permit prior to operating in in the facility."
https://www.petersburgak.gov/econdev/page/petersburg-community-cold-storage

Petersburg Community Cold Storage

Rate Schedule

FREEZING	
Blast Freezing and Glazing	.50/pound
Glazing Only	.25/pound
Minimum Charge for Blast Freezing	$2,000 per blast cell

STORAGE	
Full Month	$35.00/tote
Partial Month (Totes received on or after the 16th of the month.)	$21.00/tote
Oversized Tote (Totes exceeding 44" in height.)	$42.00/tote
Shelf Rate for Sport/Personal Use/Subsistence (no in/out fee.)	$30.00/calendar month
In/Out Fees (First four outtakes per month are no charge.)	$10 for every intake/release $10 intake/release every 7+ totes
VOLUME STORAGE DISCOUNT	
11- 20 totes	5% discount
21-49	10% discount
> 50 totes	20% discount
Discounts are based on the number of totes stored in the holding room when monthly inventory is taken at the end of the month. Customers whose accounts are in default status forfeit the volume discount.	

MISCELLANEOUS	
Van staging (plug-in)	$40.00/day
Processing/Packaging Space (Scheduling at discretion of manager.	$30.00/hr.

Sitka and Wrangell have a slightly different model and have stable anchor tenants that sign long term leases. Seafood Producers Co-op and North Pacific Seafoods are the anchor tenants at the Sitka Cold Storage and their rates are roughly $30 a pallet or ~$0.03 a pound. The City of Sitka requires both tenants to offer 10% of their space to the public. The same program exists for the

Wrangell Cold Storage. Trident is the anchor tenant and the rates and requirement to offer space to the public is about the same.

OceansAlaska Insurance

The research indicates that insurance requirements and user fees can be structured in several ways depending on ownership, facility activities, and the operating model.

For a cooperative or shared-use facility, one potential approach would be for individual users to maintain their own product and general liability insurance, while the facility maintains separate property and premises liability coverage. The appropriate structure would need to be developed with an insurance provider based on the activities conducted at the OA facility, the types of products produced, equipment used, and associated risks, along with food recall and public health. Since OceansAlaska is also on the water, additional insurance may be required if egress is by boat, either by visitor or commercial kitchen user.

Insurance costs should therefore be considered as part of the overall shared-use business model rather than treated as an independent facility expense. The final operating agreement could establish minimum insurance requirements for users and identify which risks are covered by the facility and which remain the responsibility of individual businesses.

Preliminary Business Model Considerations

The research supports further evaluation of a shared-use commercial kitchen and processing center as a potential community resource. Rather than requiring each small producer to develop an independent commercial facility, a shared-use model could distribute the costs of infrastructure, equipment, utilities, insurance, storage, and maintenance among multiple users.

For OceansAlaska, the next step is to develop preliminary operating budgets and compare potential revenue models. This analysis should identify the level of facility use and fee structure necessary to cover operating costs while maintaining reasonable access for small businesses.

The business model should also account for the seasonal availability of the OA barge, the potential use of a land-based container kitchen, and the proposed adjacent cool/freezer storage. Together, these components could create a flexible, modular system capable of supporting mariculture businesses while also serving other community food businesses during periods of lower mariculture activity.

This approach would allow the facility to function as both mariculture infrastructure and a broader community food-business resource.

Shellfish Holding and Repacking Permits

Shellfish activities require careful consideration of the applicable Alaska Department of Environmental Conservation (ADEC) authorizations. Oysters may involve different regulatory

requirements depending on whether the facility is harvesting, receiving, holding, shipping, repacking, or shucking product.

The feasibility study distinguishes between the activities proposed for the OceansAlaska facility and the specific ADEC authorization applicable to each activity. Final permitting requirements should be confirmed with ADEC based on the final facility design and operating model.

The study evaluates the potential requirements associated with shellfish holding, shell-stock shipping, shucking/repacking, and other shellfish handling activities that could occur at the facility. Appendix G

Shellfish Labeling and Tag Requirements

The facility will also need to comply with applicable seafood and food-product labeling requirements. These requirements may vary depending on the type of product, processing activity, packaging, and intended market. Raw shucked shellfish must be obtained in containers which bear a legible label that identifies the name, address, and certification number of the shucker-packer. The label must also include the "sell by" date for packages of less than one-half gallon or the date shucked for packages larger than one-half gallon. Each container of shellstock must have the certified shellfish dealer's tag with required harvest information. The tags must have the following information in order:

Dealer name, address, and certification number

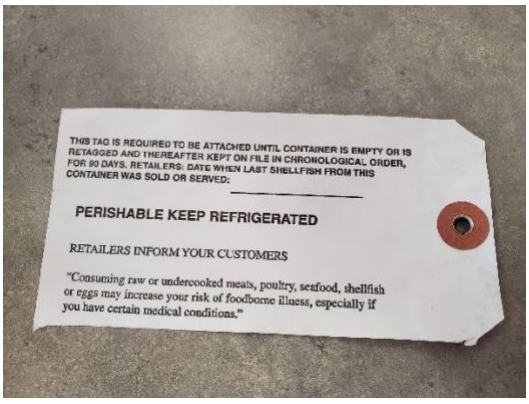
Original shipper’s certification number

The date of harvest

The harvest location, including water body and specific site designation

The type and quantity of shellfish

The following statement in bold, capitalized type: "This tag is required to be attached until container is empty or retagged and thereafter kept on file for 90 days"



Shell-stock may be repackaged in consumer self-service containers if each self-service container is plainly marked with the type and quantity of shellfish, harvest location, date of harvest, and

dealer certification number, or otherwise marked with a code that links the product with the tag or label information. Shucked shellfish may not be removed from the original container and repacked by the food establishment into consumer self-service containers. (https://dec.alaska.gov/eh/fss/resources/molluscan-shellfish-at-retail)

Applications Underway

OceansAlaska has begun the application and planning process for the proposed commercial kitchen and related activities. Additional permitting and authorization requirements will depend on the final facility configuration and the activities ultimately conducted at the facility.

The study will document applications already initiated and identify additional applications or approvals that will be required as the project advances.

Appendix A-Permits

Plans, Drawings, and Infrastructure

Facility planning must address the physical requirements associated with commercial food preparation, shellfish handling, processing, storage, sanitation, utilities, and safe product flow.

The planning work includes consideration of:

- Kitchen and processing space
- Equipment placement and workflow
- Potable water
- Hot water
- Wastewater collection and disposal
- Electrical service
- Refrigeration
- Cold and freezer storage
- Handwashing and sanitation facilities
- Restrooms
- Loading and unloading
- Solid-waste management
- Fire and life-safety requirements

These requirements will be evaluated for both the OA barge concept and the alternative modular shipping-container concept.

HACCP and Shellfish Handling Protocols

HACCP (Hazard Analysis and Critical Control Points) requirements will need to be evaluated for activities involving seafood processing and shellfish handling.

The final operating model should identify which activities require a HACCP plan and establish appropriate procedures for receiving, temperature control, storage, handling, processing, sanitation, and recordkeeping.

Shellfish activities will require particular attention to maintaining product temperature and traceability throughout receiving, storage, processing, packaging, and distribution.

Appendix G-Shellfish

Value-Adding and Innovation

Value-added processing provides an opportunity to increase the economic value of Alaska mariculture products while expanding market opportunities for producers.

The Alaska Fisheries Development Foundation (AFDF) promotes innovation through the annual Alaska Symphony of Seafood (ASOS) competition. Mariculture products have participated in the Symphony, including innovative kelp and seaweed products as well as Alaska oyster products.

These examples demonstrate the potential for mariculture products to move beyond the sale of raw commodities into prepared foods, sauces, snacks, ingredients, and other value-added products.

A community commercial kitchen could support this development by providing small producers with access to commercial equipment and food-safe production space needed to test recipes, develop products, conduct small production runs, and prepare products for retail or visitor markets.

The kitchen could therefore serve as a bridge between small-scale experimentation and larger-scale commercial production. It could also complement existing seafood processing infrastructure by allowing processors and producers to explore new products without requiring each business to invest in a separate commercial kitchen.

Energy Needs for Modular Facility and Equipment

The modular facility concept will require an assessment of electrical loads associated with commercial kitchen equipment, refrigeration, freezer storage, water heating, pumps, lighting, ventilation, and other equipment.

The energy analysis should identify:

- Major commercial equipment and connected loads
- Voltage and phase requirements

- Peak electrical demand
- Refrigeration and freezer loads
- Water-heating requirements
- Pumping requirements
- Lighting and general receptacle loads
- Generator requirements
- Shore-power limitations
- Potential energy-efficiency measures

This information will be used to determine whether existing electrical service can support the proposed facility or whether upgrades, additional shore-power capacity, or generator capacity will be required.

Basic Commercial Kitchen Equipment and Power Use

Kitchen equipment is categorized by its power draw, voltage, and circuit needs:

Commercial Range / Oven: Draws 15–30 kW. These heavy-duty cooking appliances operate on 208V or 240V (single or three-phase) and require dedicated high-amperage circuits or hardwiring.

Deep Fryers: Draws 10–15 kW per unit. Electric fryers use high-wattage immersion heating elements running on 208V/240V dedicated lines.

Commercial Dishwasher: Draws 10–20 kW (plus substantial additional load if using an electric booster heater). They typically run on 208V–240V single- or three-phase power and require a dedicated circuit due to simultaneous water heating and motor operation.

Walk-in Cooler / Freezer: Draws 3–8 kW. Because compressor and evaporator fan motors run continuously or cycle frequently, they represent a continuous electrical load operating on 208V–240V three-phase power.

Refrigeration (Under-counter / Reach-in): Draws 0.5–2 kW (Standard 120V). Smaller, localized fridges and prep tables can usually plug into standard 120V single-phase circuits.

Food Prep & Small Wares (Mixers, Slicers, Coffee Makers): Draws 0.5–2 kW (Standard 120V). These smaller countertop units generally plug into standard 120V outlets, though floor-model heavy commercial mixers may require higher voltage.

Key Electrical Requirements

Voltage & Phase: Standard wall plugs are 120V, but heavy machinery requires 208V, 240V, or 480V. Three-phase power is standard for larger operations because it balances heavy electrical loads efficiently.

Dedicated Circuits: High-demand appliances like ovens, fryers, and dishwashers require individual branch circuits with local disconnect switches.

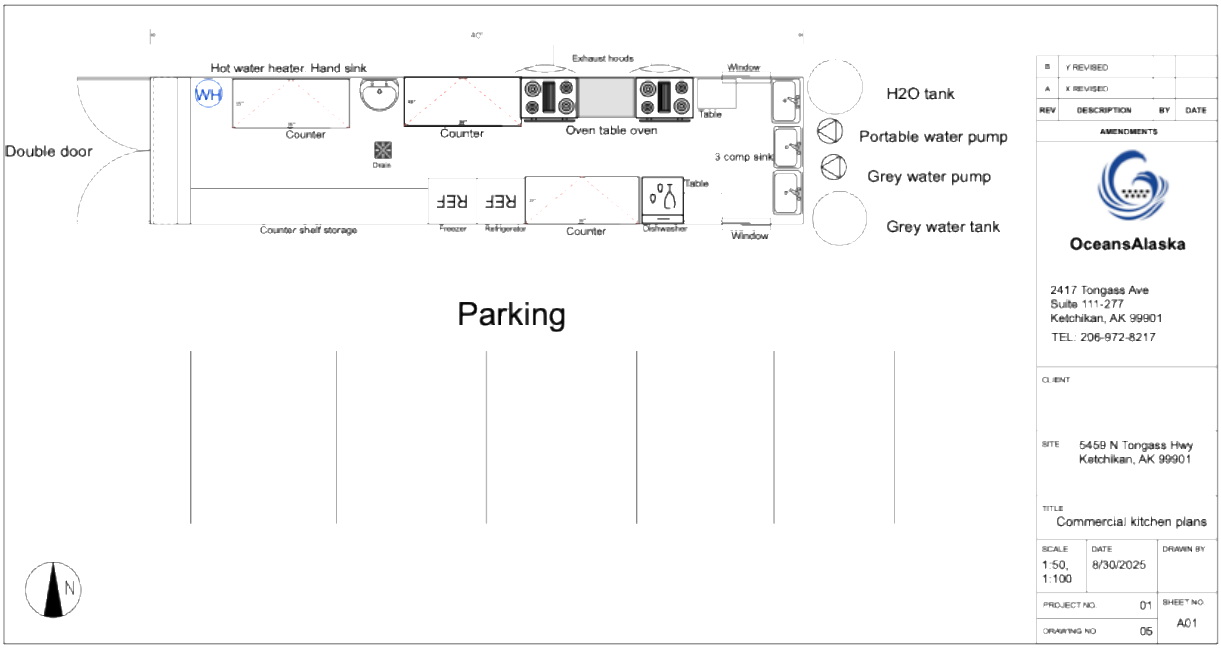
Safety Codes: Ground Fault Circuit Interrupter (GFCI) protection is mandatory for receptacles near sinks and wet areas, and all wiring must be rated for damp or greasy commercial kitchen environments.

kW vs kVA: Commercial generator specifications frequently use both kilowatts and kilovolt-amperes. The relationship depends on power factor.

kW represents real power.

kVA represents apparent power.

Generator capacity cannot be selected from steady-state kilowatt demand alone. Motor-driven equipment—including refrigeration compressors, pumps, commercial HVAC equipment, and other inductive loads—can draw substantially more power during startup, and those loads may start simultaneously. Generator sizing should therefore use a complete equipment schedule showing running kilowatts, starting current, voltage, phase, power factor, load sequencing, and required reserve capacity. The preliminary ranges discussed in this study—20–50 kW for a basic off-grid kitchen and 75–150 kW when cooking, processing, dehydration, grinding, or multiple refrigeration loads are added—should be treated only as screening estimates pending a licensed electrical engineer’s load calculation and equipment-specific design.



Indigenous Food Classes and Community Partnerships

The shared commercial kitchen concept also provides an opportunity to support Indigenous food production, education, workforce development, and community programs.

OceansAlaska and Fishes & Dishes will work with nearby tribal entities, including the Metlakatla Indian Community and Ketchikan Indian Community, to explore opportunities for Indigenous food classes and workshops at the facility. Similar outreach can be used to develop partnerships with local high school students and other community organizations. Conversations with local Tribal citizens, highlights the importance of sustaining cultural food practices.

These activities could provide additional uses for the facility during periods when commercial mariculture production is lower while supporting food education, workforce development, cultural programming, and community engagement.

Integrated Facility and Business Opportunity

Taken together, the Task 1 and Task 2 analyses support a modular, shared-use approach to mariculture infrastructure in Southeast Alaska.

The proposed system could combine:

1. A commercial kitchen or processing space on the OceansAlaska floating facility;

2. An alternative land-based shipping-container kitchen;

3. Shared cool and freezer storage;

4. Shellfish holding and repacking capabilities where appropriately permitted; and

5. Community food, training, and value-added product development activities.

Rather than designing a facility solely around one processor or one type of product, the shared-use approach allows infrastructure and operating costs to be distributed among multiple users. It also provides flexibility to accommodate seasonal mariculture production, visitor-industry demand, community food businesses, and emerging value-added enterprises.

For OceansAlaska, the feasibility question is therefore not simply whether a commercial kitchen can operate independently, but whether a shared, modular facility can provide enough combined uses and revenue opportunities to make the infrastructure financially sustainable while improving market access for small mariculture businesses.

The next phase should focus on developing preliminary capital and operating budgets, refining the equipment and energy requirements, confirming applicable permits and insurance requirements, and testing potential rental, membership, storage, and service-fee structures. This will provide the information needed to determine the most practical combination of barge-based, land-based, and shared infrastructure for Ketchikan and potentially other rural Southeast Alaska communities.

Marketing and Visitor Opportunities

OceansAlaska (OA) and Fishes & Dishes have established relationships with a broad network of organizations, industry associations, businesses, and state and federal agencies that can help new mariculture entrepreneurs develop markets, make connections, and gain access to technical assistance and mentoring. These relationships include the Alaska Fisheries Development Foundation's Symphony of Seafood, the Alaska Travel Industry Association (ATIA), the Alaska Seafood Marketing Institute (ASMI), the Alaska Shellfish Growers Association, the Cruise Lines Association of Alaska (CLIA Alaska), and numerous other industry and government partners.

Furthermore, Food for Climate League identified the untapped opportunities for connecting mariculture products to the visitor industry, while Tastemakers has built on Southeast Conference's Marketing project to bring chefs, writers, bloggers, influencers, and mariculture farmers together.

These connections provide an important marketing advantage for small-scale mariculture producers. Entrepreneurs may benefit not only from direct introductions to buyers and tourism businesses, but also from the experience and mentoring available through established industry networks.

Opportunities for Mariculture Products: The visitor industry provides several potential markets for small-scale mariculture businesses. Farmers could sell directly to visitors through local markets, restaurants, oyster shacks, farm-to-table businesses, and other visitor-oriented outlets. Products produced in a community commercial kitchen could also be developed specifically for the visitor market, including value-added seaweed and shellfish products, packaged foods, and other locally branded products.

This creates an opportunity to move beyond selling raw commodities and develop higher-value products that reflect Alaska's unique marine resources and local identity. Understanding visitor preferences, current food trends, product presentation, and acceptable price points will be important to successfully targeting this market. The Food for Climate Change and Kelp People, reports provide additional context for understanding consumer interest in kelp, climate-related food products, and emerging seaweed markets. Appendix L- and resource file for full pdf.

Tourism as a Seasonal Market

The Alaska tourism industry represents a significant opportunity for locally produced mariculture products. More than three million visitors traveled to Alaska during the 2024–2025 tourism period, with more than half arriving by cruise ship and the remainder traveling independently. Cruise and independent travelers are increasingly visiting communities throughout Alaska, creating opportunities for locally produced food products from Southeast Alaska through Southcentral Alaska, Kodiak, and other coastal communities.

The continued growth and expansion of the cruise industry may further increase these opportunities. New cruise ships and cruise itineraries are bringing additional visitors to Alaska; while repositioning and cross-Gulf itineraries are creating opportunities to reach visitors in communities beyond the traditional Southeast cruise corridor.

The Alaska Travel Industry Association's annual conference in Anchorage provided a particularly valuable opportunity to connect mariculture producers with this market. Cruise lines, lodges, tour operators, and other tourism businesses were represented at the conference, and there was significant interest in sourcing more Alaska-made products and developing curated visitor experiences.

Fishes & Dishes developed contacts with representatives from Royal Caribbean and Norwegian Cruise Line regarding opportunities to expand or implement the Fisherman on Board enrichment program. Existing relationships also include the Cruise Lines Association of Alaska, Princess and Holland America properties in Denali and Fairbanks, and tour operators and tourism businesses throughout the state.

This year the increase in awareness of Alaska oysters elevated the growing number of oyster bars in the ports of Ketchikan, Juneau, Sitka, and Klawock. The Oyster Shack in Ketchikan, and the one in Deckhand Daves food court in Juneau have increased orders of local oysters. Lodges such as Fireweed in Klawock order oyster from Prince of Wales and the Ritz Carlton super luxury

yacht Luminara highlighted oysters along with other Alaska seafood products. Thus, the opportunity for incorporating an oyster bar and grill on the OceansAlaska facility would provide an additional outlet for finished products and shellfish.

OceansAlaska Oyster Bar

An OceansAlaska Oyster Bar could provide a visitor-facing component of the proposed modular processing facility and mariculture innovation center. The concept would combine locally grown oysters and other mariculture products with an outdoor food-service experience, providing an opportunity to introduce visitors to Southeast Alaska aquaculture while creating an additional potential revenue stream for the facility.

The oyster bar could operate as an extension of the commercial kitchen rather than as a separate processing operation. Oysters and other shellfish would be received, held, and handled in accordance with applicable shellfish requirements, while the commercial kitchen could be used to prepare value-added foods such as cooked oysters, seaweed dishes, sauces, chowders, snacks, and other products developed by participating food entrepreneurs. This arrangement would allow the facility to demonstrate products developed through the culinary incubator and provide a direct market-testing opportunity.

The concept is particularly relevant to Ketchikan because of the community's substantial visitor economy. An outdoor shellfish and seaweed food bar could provide a relatively simple way for visitors to experience Alaska-grown mariculture products while learning about oyster farming, seaweed cultivation, and the role of mariculture in Southeast Alaska. The OceansAlaska feasibility study has identified cruise passengers and independent travelers as potential customers for this type of programming.

The oyster bar could also function as a market-testing and product-development venue. Small oyster and seaweed producers could introduce new products in limited quantities without immediately investing in a permanent restaurant or processing facility. Products developed in the shared commercial kitchen could be tested through pop-up events, seasonal menus, workshops, or special tasting events. Customer response could help producers determine which products have sufficient demand to justify further production, packaging, permitting, and investment.

A shared-use approach would also create opportunities for collaboration among farmers, harvesters, culinary entrepreneurs, students, and community organizations. For example, the oyster bar could host demonstrations or tasting events associated with Indigenous foods, local seafood, seaweed products, or youth culinary programs. This would complement the proposed community workshops and workforce-development activities identified elsewhere in the feasibility study.

The oyster bar should be evaluated as a seasonal or flexible-use operation, rather than assuming that OceansAlaska would operate a full-time restaurant. Seasonal operation could reduce labor and overhead requirements while concentrating activity during the visitor season. The facility

could also use the space for classes, demonstrations, private events, product tastings, and pop-up food-service activities when the oyster bar is not operating.

The operating model should clearly distinguish between the responsibilities of OceansAlaska and participating businesses. OceansAlaska could provide the permitted facility, equipment, cold storage, utilities, and basic operating framework, while individual producers or food entrepreneurs would remain responsible for their products, recipes, required permits, food-safety procedures, insurance, and sales. This shared space with individual accountability approach would reduce the need for OceansAlaska to assume the processing liability for every product developed or sold at the facility.

The oyster bar could therefore serve several purposes simultaneously:

Visitor attraction: Provide cruise passengers and independent travelers with an opportunity to taste locally grown oysters and seaweed products.

Market development: Introduce consumers to Alaska-grown mariculture products and gather direct customer feedback.

Education: Inform local and visitors alike about sustainable fisheries and mariculture and its importance to the marine environment and community food security.

Culinary incubation: Provide a sales outlet for products developed in the shared commercial kitchen.

Workforce development: Provide practical experience for students, beginning food entrepreneurs, and others interested in seafood, mariculture, and hospitality.

Industry promotion: Demonstrate the quality and diversity of Southeast Alaska mariculture.

Revenue generation: Generate potential income through food sales, events, tastings, rentals, and related programming.

Community engagement: Provide a venue for workshops, Indigenous food programming, and collaboration with local producers and organizations.

The concept should be developed in coordination with the facility's commercial-kitchen, shellfish holding, cold-storage, wastewater, insurance, and permitting plans. A final operating model should identify whether the oyster bar would be operated directly by OceansAlaska, leased or contracted to a food entrepreneur, or operated through a seasonal partnership with participating mariculture businesses.

The proposed oyster bar is therefore best viewed not simply as a restaurant, but as a demonstration, market-development, and incubator component of the larger OceansAlaska mariculture innovation center. It could connect production, processing, product development, education, and direct sales in one location while providing a relatively low-risk pathway for small producers to test new mariculture products in the Ketchikan market.



OceansAlaska as a Visitor Experience: OceansAlaska's location provides an additional opportunity to connect tourism with education, local food production, and marketing. OA is approximately a 10-minute boat ride from Ward Cove, making it potentially accessible within the short port calls typical of cruise ship itineraries.

OA could partner with an existing small tour operator to develop a visitor experience centered on the marine environment, shellfish and seaweed farming, and local food production. Rather than creating a completely new tour operation, OA could provide the destination and educational component while an established operator manages transportation, marketing, and visitor logistics.

A potential tour could include:

- An introduction to OceansAlaska and its role in Alaska's mariculture industry.
- Education about shellfish and seaweed farming in Southeast Alaska.
- A view of the hatchery, nursery, and mariculture operations.
- An introduction to the commercial kitchen or "makers" kitchen.
- Demonstrations of how locally grown marine products can be transformed into value-added foods.
- Opportunities to purchase locally produced products.
- Potential tasting experiences or other food-focused programming, subject to applicable permits and food-safety requirements.

Because OceansAlaska is a nonprofit organization, this type of educational experience may also align with cruise-line and tourism programs that support nonprofit organizations and community-based experiences.

A Replicable Model

The combination of mariculture production, value-added food production, and tourism creates an opportunity to develop a model that could be replicated in other coastal Alaska communities. A community commercial kitchen can provide the infrastructure needed for small producers to develop products for both local residents and visitors, while partnerships with tourism businesses can provide access to seasonal markets.

For OceansAlaska, the commercial kitchen therefore represents more than a food-production facility. It could serve as a community production space, product-development center, visitor education site, and connection point between mariculture producers and Alaska's tourism market.

The opportunity is particularly relevant as Alaska's tourism industry continues to seek authentic local experiences and Alaska-made products. Connecting small mariculture producers with these established tourism networks could help diversify markets, increase the value of locally harvested resources, and provide new revenue opportunities for farmers and coastal communities.

Value-Adding and Innovation

The Alaska Fisheries Development Foundation (AFDF) hosts its annual Alaska Symphony of Seafood (ASOS), an event that promotes innovation, product development, and market opportunities for Alaska seafood. The competition is held in Seattle during One Ocean Week and provides Alaska seafood and mariculture entrepreneurs with an opportunity to showcase new products to industry leaders, buyers, and consumers. https://afdf.org/alaska-symphony-of-seafood

Mariculture products have been well represented in the Symphony, with notable examples including Barnacle Foods' kelp salsas and bullwhip hot sauces. Alaska oysters are also prominently featured, providing an opportunity for farmers to introduce their products to new audiences. Fishes & Dishes previously entered its CBD and seaweed brownies into the competition. The judging process and feedback from the judges provided valuable insight into product development, marketing, and opportunities for improvement, making the experience both educational and worthwhile.

The Symphony provides significant exposure and networking opportunities for participating businesses. Top winners in each category receive a roundtrip ticket to the Seafood Expo North America (SENA) in Boston, along with space in the AFDF/Alaska Seafood Marketing Institute (ASMI) booth. This provides an opportunity to meet new customers, develop relationships, and explore new markets. Symphony products are also featured, tasted, and promoted at ASMI's "Go Wild" Boston event, which attracts more than 500 buyers and industry influencers.

The Symphony also creates opportunities for Alaska seafood and mariculture businesses to connect with legislators, processors, distributors, and other industry participants. AFDF co-sponsors an event in Juneau during the legislative session, where legislators and local residents can learn more about the importance and relevance of Alaska seafood and mariculture products. The Symphony is also highlighted at the ASMI All-Hands event in the fall, providing local processors and seafood sales professionals with an opportunity to learn about new mariculture products and potential collaborations.

These events can lead to innovative partnerships between mariculture producers and established Alaska seafood businesses. One example is the collaboration with Peters Pan, which paired a

sockeye portion with Sea Grove kelp chimichurri, demonstrating how mariculture products can complement traditional Alaska seafood and create new value-added products.

Fishes & Dishes has established industry contacts and experience that can help users of the proposed commercial kitchen connect with these organizations, events, businesses, and potential markets. These relationships can provide mentorship and introductions while helping entrepreneurs navigate product development, marketing, and market opportunities.

Recent examples further demonstrate the potential of these opportunities. At this year's Symphony, Selkies Soak, a product made with local seaweed, was selected as a winner. Sea Grove oysters were also paired with a new Holland America sparkling wine and proved to be a successful auction item. These examples demonstrate how participation in industry events can raise awareness of Alaska mariculture products while encouraging creativity, innovation, new markets, collaborations, and partnerships for mariculture farmers.

The Alaska Symphony of Seafood therefore represents more than a product competition. For small-scale mariculture entrepreneurs using a community commercial kitchen, it can serve as a pathway to product testing, industry feedback, mentorship, networking, market exposure, and collaboration with established Alaska seafood businesses.



Task 2: Business and Operations Planning for OceansAlaska Processing/Kitchen

2.2 Culinary Incubator and Workforce Development

The proposed OceansAlaska commercial kitchen can serve as a culinary incubator and workforce-development resource for emerging food and mariculture entrepreneurs. In addition to providing access to commercial kitchen space, the facility could create opportunities for entrepreneurs to test products, develop markets, refine packaging, and gain experience before making larger investments in equipment, facilities, and inventory.

Fishes & Dishes provides an existing local example of this approach. Fishes & Dishes operates a food trailer at the refurbished Newtown Wharf, an emerging visitor and community venue near Berth 4 in Ketchikan. The food trailer court includes Fishes & Dishes and the Oyster Shack. Fishes & Dishes has also constructed a covered area behind the trailer that provides additional protected space for temporary food businesses and "pop-ups."

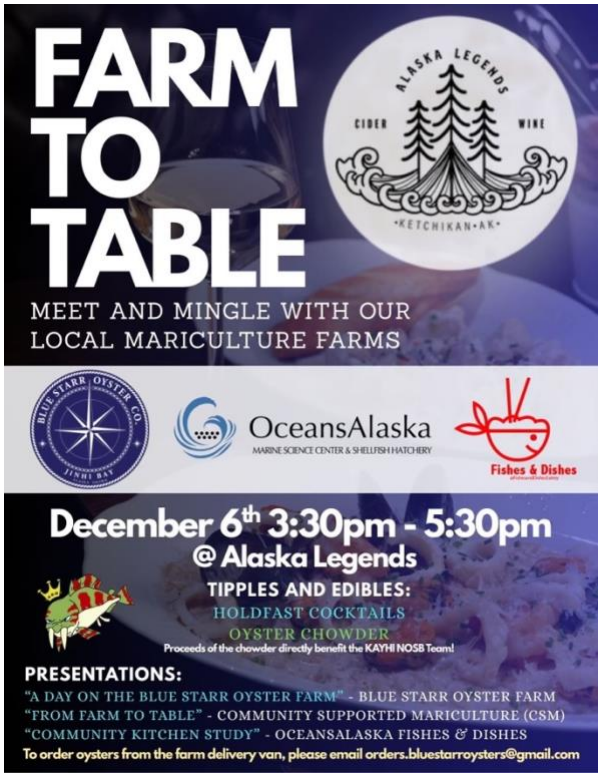
Pop-ups provide a relatively low-cost way for entrepreneurs to test a product or concept in the marketplace before making a significant investment. They allow business owners to evaluate customer interest, pricing, packaging, production requirements, and marketing while developing a more realistic and sustainable business plan. In some cases, the pop-up model itself may become a viable long-term business model.

Fishes & Dishes previously developed a business concept called “Fish Pop” based on this approach. The experience demonstrated that pop-ups can provide an important stepping stone between an idea and a fully developed business. Fishes & Dishes currently has the necessary ADEC permit and equipment and encourages emerging business owners to use the available space.

Two pop-up events have already been hosted, including one with Local Table and another with a high school student. Additional summer pop-ups are encouraged because they provide opportunities to engage both visitors and local residents while creating activity and excitement around the waterfront. This type of hands-on experience can help identify and develop the next generation of local food entrepreneurs and potentially future Alaska Symphony of Seafood participants.

The proposed OceansAlaska commercial kitchen could build on this existing model by providing a more permanent and flexible location for product development, culinary training, small-business incubation, and workforce development.





Cultural Food Workshops

OceansAlaska and Fishes & Dishes will work with nearby Tribal entities, including the Metlakatla Indian Community and Ketchikan Indian Community, to explore opportunities for Indigenous food classes, workshops, demonstrations, food security, and other educational activities at the facility.

These activities could provide opportunities to share traditional food knowledge, connect Indigenous food systems with contemporary culinary enterprises, and create opportunities for community members to develop food products for local and visitor markets.

Outreach will also include local high school students and other interested community members. Workshops could include hands-on food preparation, product development, food safety, packaging, business development, and introductions to mariculture products and markets.

The facility could therefore serve not only as commercial infrastructure but also as a place where culinary skills, language, traditional knowledge, entrepreneurship, and workforce development intersect.





Annette Island high school class roe on kelp

Task 2.3: Financial and Operations Planning

Financial and operations planning for the OceansAlaska processing/kitchen concept includes estimating capital and operating costs, including the cost of modular containers, facility modifications, equipment, utilities, permits, and ongoing maintenance. Potential revenue sources will also be evaluated.

The financial analysis will consider several potential uses of the facility, including:

- Commercial kitchen rental or membership fees
- Short-term kitchen use by emerging businesses
- Pop-up and special-event use
- Food and culinary workshops

- Indigenous food classes and community programming
- Product-development and testing activities
- Cold or cool storage associated with mariculture products
- Potential partnerships with local businesses, schools, Tribal organizations, and other community organizations

The analysis will also consider the potential for grants, public investment, partnerships, and other funding sources to reduce the initial capital burden and support community-oriented uses of the facility.

Market Feasibility

Market feasibility will consider demand for commercial kitchen and related processing infrastructure, target users, existing competition, potential customers, and marketing strategies.

Potential users include:

- Small-scale mariculture farmers and harvesters
- Seaweed and shellfish producers
- Indigenous food producers and gatherers
- Existing local food businesses
- Emerging food entrepreneurs
- High school and workforce-development programs
- Community organizations
- Visitor-oriented businesses
- Local restaurants and chefs
- Entrepreneurs developing new value-added seafood or seaweed products

The commercial kitchen could provide a bridge between small-scale production and larger commercial markets by giving entrepreneurs access to infrastructure that may otherwise be unavailable or unaffordable.

Task 3: Reporting, Outreach, and Coordination

3.1 Community Outreach and Regional Coordination

Outreach will continue with community members, mariculture producers, Tribal organizations, educational institutions, businesses, and other projects exploring multi-user seafood and mariculture processing space in Ketchikan and the surrounding region.

In December, a community workshop was held in Ketchikan in coordination with the Alaska Shellfish Cooperative. The workshop provided an opportunity to discuss local needs and opportunities associated with mariculture development and shared processing infrastructure.

SEC, AMA, and Tastemakers have also launched a mariculture marketing campaign. Information and insights from these efforts can be shared with both new and established farmers, entrepreneurs, and community members to identify additional market opportunities and encourage new product development.

The proposed commercial kitchen can serve as a catalyst for culinary innovation by providing infrastructure where producers can experiment with new products and develop new approaches to using locally harvested seafood and seaweed. This could help launch additional small businesses while strengthening the local mariculture economy.

Tribal and Community Partnerships

Keolani Booth of Annette Island, owner of Rebel Oceans seaweed farm, is helping facilitate a presentation for local high school students and the broader community. Keolani views the commercial kitchen as an opportunity to continue building bridges between the communities of Annette Island and Ketchikan while also connecting local producers with Ketchikan's growing visitor industry.

These partnerships demonstrate the potential for the facility to serve a regional rather than solely local function. Shared programming could connect producers, students, entrepreneurs, Tribal communities, and the visitor industry around food, mariculture, and entrepreneurship.

Business and Industry Workshops

Workshops can provide opportunities for entrepreneurs and producers to learn from existing Alaska businesses that have successfully developed value-added products from local marine resources.

Modular Commercial Kitchen

The modular commercial kitchen concept will be evaluated as a potentially scalable model for Ketchikan and other rural Southeast Alaska communities.

Financial Feasibility

Financial analysis will include:

- Capital costs for modular containers and kitchen equipment
- Facility modifications and installation
- Electrical, water, wastewater, and utility requirements
- Permitting and licensing costs

- Transportation and installation costs
- Annual operating and maintenance expenses
- Insurance and administrative costs
- Potential rental, membership, workshop, storage, and other revenues
- Potential grant and partnership funding
- Long-term operating sustainability

The analysis will consider whether a modular approach could reduce the initial capital investment and allow the facility to expand incrementally as demand develops.

Scheduling and Timing Feasibility

The modular concept will be evaluated based on the anticipated OceansAlaska seasonal operating schedule, availability of the barge and associated infrastructure, equipment procurement, permitting, installation, and required modifications.

The ability to assemble or modify components independently may allow portions of the project to be completed incrementally rather than requiring the entire facility to be constructed at once.

Risk Assessment

Potential risks include:

- Permitting and regulatory requirements
- Capital and operating costs
- Limited availability of qualified staff
- Seasonal demand
- Transportation and installation costs
- Utility limitations
- Wastewater capacity
- Conflicts with OceansAlaska's hatchery and nursery operations
- Insufficient utilization during portions of the year
- Food safety and sanitation requirements
- Long-term maintenance of modular infrastructure

Potential mitigation strategies include phased development, careful scheduling around hatchery operations, advance permitting coordination, partnerships with community organizations and

businesses, and development of multiple revenue streams. These risks are interdependent: low utilization weakens cost recovery, limited staffing increases compliance risk, and utility constraints can raise both capital cost and permitting complexity. The most effective mitigation strategy is phased development tied to verified demand, with permitting, utility design, operating agreements, insurance, staffing responsibilities, and maintenance reserves confirmed before each investment stage. Partnerships and multiple revenue streams can improve resilience, but they should supplement rather than substitute for demonstrated core utilization.

Alternatives

Alternative approaches considered include a conventional seafood processing facility, a community commercial kitchen, separate shellfish holding and repacking infrastructure, modular kitchen containers, and partnerships with existing commercial food facilities.

The modular commercial kitchen concept provides an opportunity to develop infrastructure that can be scaled according to demonstrated demand while supporting multiple users and activities. It can also complement existing facilities and provide a pathway for small businesses to move from product development and pop-ups toward larger-scale commercial production.

Conclusion & Recommendations

1. Business Opportunities and Diversification

Mariculture can provide opportunities for diversification within Alaska's existing seafood processing sector. Expanding the use of existing fisheries resources, such as crab, can help create a more stable and diversified resource base. Similarly, processing seaweed during the off-season could help spread the cost of equipment and infrastructure across multiple fisheries and products.

As processors continue to look for ways to utilize more of the catch and reduce waste, equipment and technologies developed for one resource may have applications for another. For example, equipment used to dry crab shells for the production of chitin could potentially also be used to dry seaweed. These types of cross-sector applications could improve equipment utilization, create new products, and increase economic opportunities for processors and communities.

2. Visitor Education and Outreach

OceansAlaska could provide visitors with an educational experience connecting Alaska's fisheries, hatcheries, mariculture, seafood processing, and healthy coastal communities. This opportunity should be developed as a second-phase pilot after the core commercial-kitchen, shellfish-handling, and cold-storage functions are established and after transportation, staffing, permitting, insurance, visitor demand, and operating responsibilities have been confirmed. This experience provides a strong foundation for connecting visitors with the broader story of Alaska's seafood industry.

3. Social Connection to the Community

Social responsibility is increasingly becoming an important component of seafood certification and sustainability initiatives and is reflected in international frameworks addressing resilient communities. A marine science center in Ketchikan can help demonstrate the connection between seafood production, education, community resilience, and environmental stewardship.

OceansAlaska provides local processors and seafood businesses with an opportunity to demonstrate to customers, sustainability officers, and other stakeholders that Ketchikan has educational and scientific infrastructure capable of helping communities understand and adapt to changing ocean conditions and climate impacts.

4. Ecosystem Services, Habitat Enhancement, and Economic Diversity

OceansAlaska's role as a mariculture hatchery and nursery could expand to support organisms and technologies that provide ecosystem services as well as economic benefits. For example:

- Bivalves are filter feeders that can contribute to nutrient removal and water-quality improvement.
- Seaweeds can provide opportunities for carbon sequestration and nutrient uptake.
- Sea cucumbers and other detritivores can consume organic material and contribute to nutrient cycling.

Integrating species from different trophic levels through integrated multitrophic aquaculture (IMTA) could provide both environmental and economic benefits. These systems could contribute to habitat rehabilitation while creating additional opportunities for communities through shellfish, seaweed, sea cucumber, and other mariculture products.

In the future, these activities could also support emerging markets for carbon and nutrient sequestration, environmental credits, and cost-recovery opportunities associated with salmon hatcheries and other marine infrastructure. Seaweed may also have potential applications as a renewable resource, a food-security opportunity, an Indigenous food resource, and a possible tool for addressing sanitation and waste-management challenges in Western Alaska.

Bivalves, seaweeds, and detritivores can therefore be viewed not only as commercial products, but also as tools that may contribute to the rehabilitation of compromised marine habitats.

5. Monitoring Changing Ocean Conditions:

Monitoring these conditions is particularly valuable because OceansAlaska works with organisms at lower trophic levels. Shellfish and seaweed larvae are monitored daily, providing an opportunity to observe biological responses to changes in water quality and ocean conditions. Changes in the health or survival of these organisms may provide an early indication of environmental changes that could eventually affect higher-value and culturally important fisheries, including crab, salmon, and pollock. Continued monitoring and collaboration among

hatcheries, researchers, and fisheries managers could help improve understanding of these changes and support adaptation strategies.

6. Social Involvement, Education, and Food Security

The fishing community does not exist in isolation. Much like a marine ecosystem, the seafood industry is made up of interconnected levels and participants. Harvesters, processors, hatcheries, schools, support businesses, government agencies, researchers, and communities all contribute to the functioning and resilience of the industry.

OceansAlaska can help communicate these connections to local communities and visitors. Demonstrating how each component supports the others can strengthen public understanding of the seafood industry, promote food security, and reinforce the importance of maintaining local infrastructure and expertise.

This broader message of interconnectedness and responsible resource use also has the potential to resonate with environmental non-governmental organizations (ENGOs), sustainability programs, and global social-responsibility initiatives.

7. Next Year's Plan: Visitor Education

OceansAlaska plans to develop small visitor tours that illustrate the importance of Alaska's hatcheries, fisheries, mariculture, seafood processing, and coastal communities. The goal is to show how these activities are interconnected and how responsible management can contribute to sustainable communities and healthy marine ecosystems.

One potential demonstration would be a tasting featuring canned salmon served with kelp relish instead of traditional pickle relish. The simple dish would connect salmon fisheries with emerging mariculture products and provide visitors with a tangible example of how different components of Alaska's marine economy can work together.

Overall Recommendation

The feasibility study indicates that OceansAlaska can expand its role beyond hatchery and nursery operations by serving as a community hub for mariculture development, education, innovation, ecosystem services, and seafood-industry diversification. The near-term opportunity evaluated in this report is a shared commercial kitchen supported by separate shellfish holding and modular cold-storage infrastructure. Education, environmental monitoring, partnerships, visitor programming, and ecosystem-service activities represent potential complementary functions that should advance only as capacity, demand, funding, and regulatory approvals permit.

Developing these functions incrementally—beginning with the commercial kitchen and shellfish holding infrastructure described in this study, while expanding education, monitoring, partnerships, and ecosystem-service opportunities over time—could provide a practical model

for strengthening Alaska's small-scale mariculture economy and building more resilient coastal communities.

References

Alaska Commercial Kitchens, Community Kitchens, Licensed Kitchens, Shared Kitchens - Places to make foods to sell. www.pickyourown.org.Alaska Department of Environmental Conservation. https://dec.alaska.gov

Alaska Department of Environmental Conservation. Cottage Foods. https://dec.alaska.gov/eh/fss/homemade-food/

Alaska Department of Environmental Conservation. Food Establishment. https://dec.alaska.gov/eh/fss/food/establishments/

Alaska Department of Environmental Conservation. Food Code. https://dec.alaska.gov/media/51tb5co0/18-aac-31.pdf

Alaska Department of Environmental Conservation. Shellfish Guide. https://dec.alaska.gov/eh/fss/shellfish/resources/permit-guide/

Alaska Department of Fish and Game. Aquatic Farming. https://www.adfg.alaska.gov/index.cfm?adfg=fishingaquaticfarming.main

Alaska Department of Fish and Game: Direct Marketing https://www.adfg.alaska.gov/index.cfm?adfg=fishlicense.marketers

Alaska Department of Natural Resources. https://dnr.alaska.gov

Alaska Fisheries Development Foundation. https://afdf.org/alaska-symphony-of-seafood

Alaska General Seafoods Agrees to Fix Fish Waste Problems. https://www.epa.gov/archive/epapages/newsroom_archive/newsreleases/d00d5a05c1cdea81852570cb0075e27e.html

Alaska Mariculture Alliance. https://alaskamariculture.org/about/

Alaska Mariculture Alliance. McKinley Research: Fall 2025 Mariculture Industry Update. https://alaskamariculture.org/mckinley-research-fall-2025-mariculture-industry-update/

Alaska Manufacturing Association: https://www.akmfg.org/

Alaska Mariculture Cluster. https://alaskamariculturecluster.org

Alaska Mariculture Cluster. Mckinley Report 2024. https://alaskamariculturecluster.org/wp-content/uploads/2024/11/Alaska-Mariculture-Industry-Update-Fall-2024-Final.pdf

Alaska Mariculture Industry Overview, Fall 2024 https://alaskamariculturecluster.org/wp-content/uploads/2024/11/Alaska-Mariculture-Industry-Update-Fall-2024-Final.pdf

Alaska Fisheries Development Association. Alaska Mariculture Initiative. https://afdf.org/research-and-development/alaska-mariculture-initiative

Alaska Mariculture Research and Training Center. https://amrtc.org/research-section/

Alaska Mariculture Task Force. https://www.adfg.alaska.gov/index.cfm?adfg=amtf.main

Alaska Seafood Legislative Task Force. https://www.akleg.gov/basis/get_documents.asp?session=34&docid=397

Alaska Seafood Marketing Institute: Market Your Catch https://www.alaskaseafood.org/industry/fishermen-resources/direct-marketer-resources/

Alaska Shellfish Growers Association. https://www.alaskashellfish.org

Anchorage Commercial Kitchen: https://anchoragecommercialkitchen.com/

Artisan Community Kitchen: https://www.artisancommunitykitchen.com

Carriker, Melbourne R. Taming of the Oyster, A history of Evolving Shellfisheries ad the National Shellfisheries Association.

Cloud Kitchens: https://cloudkitchens.com/blog/commercial-space-with-a-kitchen-for-rent/

Commercial kitchen- Food Establishment requirements. https://dec.alaska.gov/eh/fss/food/establishments/

Commissary kitchens in King County – What are commissary kitchens and what are the benefits? https://kingcounty.gov/en/dept/dph/health-safety/food-safety/educational-resources/commissary-kitchens.

Cool Bot. www.storeitcold.com

Cruise Line International Association Alaska CLIA. akcruise.org

Culinex Kitchens. www.culinexkitchens.com.

Department of Natural Resources https://dnr.alaska.gov/mlw/aquatic/history/

Distinguished Kitchens – information on commercial kitchen rental costs and operating considerations. https://www.distinguishedfoodskitchenrental.com.

Homemade food https://dec.alaska.gov/eh/fss/homemade-food/requirements/

Foods Allowed https://dec.alaska.gov/eh/fss/homemade-food/food-types/#types

Food Liability Insurance Program: https://www.fliprogram.com/commercial-kitchen-insurance

Food for Climate League. www.foodforclimateleague.org

Fisher, MFK. Consider the Oyster

Gordon, D. Larson, S, Wagner, M.B Heaven of the Half Shell

Hardy, Dave Scallop Farming

Insure My Food: https://insuremyfood.com/commissary-kitchen-insurance/

Jacobson, Rowan. The Essential Oyster

Ketchikan H2O.www.ketchikanh2o.com

Kitchen Share. www.kitchenshareth.com

Kitchen Sisters. www.kitchensisters.com

Ketchikan Water. https://ketchikanwater.com

KMB Seattle Commissary Kitchens – information on commercial kitchen rental costs and operating considerations. https://www.kbmseattle.com.

Liberty Mutual Insurance. https://www.libertymutual.com/small-business?cmpgncde=3006&gad_source=1&gad_campaignid=23973010204&gbraid=0AAAAAo_dig_nSjllIRCFOA0A52pNMz1DE&gclid=EAIaIQobChMI6KbUhdOUlwMVxA6tBh1Zxy3kEAAYBCAAEgI_7vD_BwE

Mobile Culinaire: https://www.mobileculinaire.com/resource-center/commercial-kitchen-rent-cost-2025

National Oceanic and Atmospheric Administration NOAA: Mariculture Initiative. https://www.fisheries.noaa.gov/s3/2023-05/ak-aquaculture-support-mariculture.pdf

National Oceanic and Atmospheric Administration NOAA: State of Alaska Aquaculture report 2024 https://www.fisheries.noaa.gov/s3/2024-02/State-of-AK-Mariculture-FINAL-2-23-24-508.pdf

National Seaweed Hub. https://seaweedhub.extension.uconn.edu/wp-content/uploads/sites/3646/2023/04/2023-State-of-the-States_For-Posting_Dec2023.pdf

Pacific Seafood Processors Association. www.pspafish.net

Pacific Shellfish Growers Association. www.pcsga.org

Pacific Shellfish Institute. www.pacshell.org

Petersburg Economic Development Council. Cold Storage. https://www.petersburgak.gov/econdev/page/petersburg-community-cold-storage

Sea Grant Direct marketing https://alaskaseagrant.org/fishbiz/grow-and-diversify/direct-marketing/

Sea Grant HAACP Guide. https://www.flseagrant.org/wp-content/uploads/2024/09/IEB_SGR_137_HAACP_2024_Digital.pdf

Sea Grant. Seaweed Handling Guide https://alaskamariculture.org/wp-content/uploads/2023/02/MAB-81PDF-Seaweed-Handling-and-Processing-Guidelines-for-Alaska.pdf

Sea Grant. https://seagrant.sunysb.edu/Images/Uploads/PDFs/rapidresponse/Seafood-Guide5-Sanitation.pdf

Seafood Permit Variance

Seafood Plan Review Checklist

Seafood Processing Facility Agreement

Southeast Conference. Seafood and Mariculture. https://seconference.org/industry/seafood-and-mariculture/

Shellfish Dealer https://dec.alaska.gov/eh/fss/forms?s=dealer%20application

Shellfish plan review checklist https://dec.alaska.gov/eh/fss/shellfish/forms/

State of Alaska. Administrative Order 280. https://gov.alaska.gov/admin-orders/administrative-order-no-280/

State of Alaska.HB 415. https://gov.alaska.gov/governor-dunleavy-introduces-hb-415-relating-to-the-alaska-food-freedom-act/

Steele, E.N. The Rise and Decline of the Olympia Oyster

Temporary Food Permit https://dec.alaska.gov/eh/fss/resources/operating-tfs/

University of Alaska Fairbanks. Cooperative Extension Service. Checklist for Starting a Small Food Processing Business. https://www.uaf.edu/ces/publications/database/cooking/checklist.php

Valdez Fisheries Development Association. Cold Storage. https://www.valdezfisheries.org/fisheries-programs/cold-storage-facility

Variance for Seafood Source https://dec.alaska.gov/eh/fss/forms?s=seafood

Wastewater Discharge Authorization and Alaska Pollutant Discharge Elimination System (APDES) Program https://dec.alaska.gov/water/wastewater/