

# Kodiak Maritime Industry

## An Assessment

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### *Executive Summary*

In December, 2018 a group of Kodiak Island Borough business owner-operators and others described current conditions, future challenges and opportunities for the economy and community life. Here are some insights from the following report that provides more background and detail.

- The Kodiak maritime economy has ten distinct sectors that support and influence each other. The most significant sector is driven by fish harvesting, processing and distribution.
- Other maritime economy sectors include: ports & harbors; vessels; marine services and supplies; logistics and cargo; safety & law enforcement; maritime related construction; tourism; and, support functions like education, research, and regulation.
- The future of the fishing-based economy is uncertain because of three factors: industry consolidation from historic local and private fishers toward large corporate operations; somewhat unpredictable harvesting quotas; and, fish stock uncertainties in the ocean environment influenced by temperature, chemistry, weather and red tide.
- Long-term residents share concerns about keeping the local economy intact in an era influenced by: drugs and opioids, obstacles faced by younger workers and entrepreneurs, general cost of living increases, along with graying of the fleet, infrastructure, and leaders.
- The tourism industry is growing with more cruise ships, charters and visitors but should be balanced to maintain an authentic, working community quality of life.
- Innovation in all sectors of the maritime economy shows opportunities for sustaining what works well now and making adaptive change to new products and services. In fisheries for example, expanding the sector to include all seafood can lead to: fresh ways to add fish species value and direct market; kelp and other sea plants, replenishing fish stocks through hatcheries, seafood farming concepts and others. Tourism innovation can find more activities for visitors to stay longer periods than cruise ship day visits. Research trends toward 'blue economy' resources and technology can be investigated.
- Public and private investment can sustain and improve port and harbor facilities, services, appearance and function to enable local business, particularly independent fishers who must operate, maintain and improve their boats.
- Many firms are prepared to hire and achieve business succession if people with appropriate attitude, aptitude and key skills are available. Cooperation between education organizations and the maritime industry sectors can help close workforce gaps.
- Collaboration within and between sectors of the maritime economy requires trust and leadership. Those invested in the comfort of today can listen to different and fresh ideas. Demonstrated collaboration and consensus can lead to stronger political, financial and talent resources.



## Kodiak Maritime Industry - An Assessment

This assessment summarizes current resources and challenges in the City of Kodiak and Kodiak Island Borough maritime industry. The assessment is prepared for the Kodiak Chamber of Commerce supported by the Alaska Sea Grant, the University of Alaska, the Alaska MAKE Partnership and Southwest Alaska Municipal Conference.

Information in this assessment is drawn from government and business documents, web sites, interviews, surveys and observations.

**Background.** Kodiak Island (aka: “the Emerald Isle”) is the largest island in Alaska and is the second largest island in the United States. It is 252 air miles south of Anchorage.

The geographic setting of Kodiak in the ocean environment shown in Figure 1 suggests that maritime and marine related activities are important. Kodiak Island has been inhabited for the past 8,000 years.

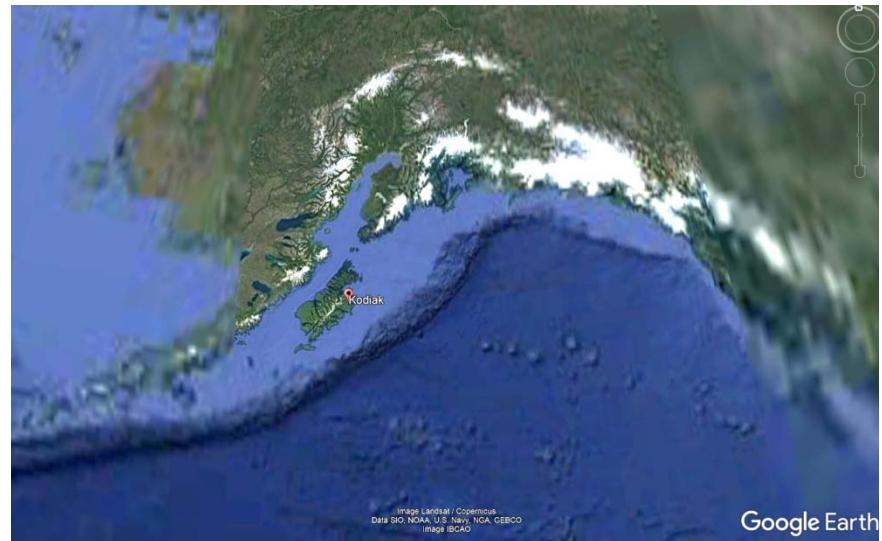


Figure 1 Kodiak geographic setting



Figure 2 Kodiak Island Borough

Kodiak Island Borough (KIB) shown in Figure 2 has the largest share of population in Southwest Alaska. A significant portion of the population and the economy are connected to greater Kodiak ocean waters. The Southwest Alaska Municipal Conference Comprehensive Economic Development Strategy provides recent statistical and narrative information about KIB.<sup>1</sup>

Due to the way economic data is typically quantified, the KIB and City maritime industry has not previously been measured as an independent sector. As a result its contributions to the regional economy have not been fully recognized. Within the maritime industry cluster, the fisheries sector has been carefully

<sup>1</sup> SWAMC Comprehensive Economic Development Strategy 2015-2019 (CEDS)

analyzed<sup>2</sup> because it is the major maritime cluster segment estimated to influence 30-40 percent of the City and KIB economy and employment. This assessment draws from reports with quantitative data; however the assessment is largely qualitative.

This summary assessment can lead to additional detailed analysis of the greater Kodiak maritime industry cluster segments, their economic and employment trends. An example of maritime cluster detailed analysis was summarized by the Southeast Conference in 2013.<sup>3</sup> Maritime jobs are all jobs related to the ocean. These may include ship and boat builders, fishermen, cannery workers, barge line operators, Coast Guard employees, ferry workers, marine welders, builders of breakwaters, whale watching cruise staff, marine biologists, fishing lodge owners, sports fishing crew, marine regulation enforcers, kayak guides, boat dealers, salmon hatchery staff, fish permit clerks, fishing gear retailers, and more. Maritime employment sets coastal Alaska apart from the rest of the United States. Private maritime jobs are 49 times more prevalent in coastal Alaska than in the US as a whole according to the Bureau of Labor Statistics. Even excluding commercial fishing, which is 95 times more common here than in the US as a whole, the region's maritime businesses are 35 times more concentrated (or specialized) in coastal Alaska than the nation as a whole. When economists look at an economy to identify the economic drivers, they look at this "location quotient" in order to understand what makes a region unique compared to national norms. Coastal Alaska's maritime sector is off the charts in uniqueness.

### Describing the Kodiak Maritime Industry Cluster

**Cluster.** There are many Alaska communities that have an airport, but there aren't many communities fortunate enough to have a deep water port as does the City of Kodiak. Port and harbor operations support a wide range of vessels home-ported and visiting. Fisheries are a prominent part of the local economy. Kodiak was named the 3rd largest port in the US for volume and the 4th largest for value in the US for calendar year 2017 with 530 million pounds of fish landed, valued at over \$150 million.<sup>4</sup>



Figure 3 Kodiak Maritime Cluster

<sup>2</sup> Economic impact of the seafood industry on the Kodiak Borough. McDowell Group 2016 <https://www.kodiak.us/DocumentCenter/View/7796/2016-DRAFT-Economic-Analysis-Presentation-McDowell-Group?bidId=>

<sup>3</sup> The Maritime Economy of Southeast Alaska [http://www.seconference.org/sites/default/files/FINAL%20Southeast%20Alaska%20Maritime%20Economy%20Report%20for%20web\\_0.pdf](http://www.seconference.org/sites/default/files/FINAL%20Southeast%20Alaska%20Maritime%20Economy%20Report%20for%20web_0.pdf)

<sup>4</sup> NOAA 2017 Fisheries Report <https://www.fisheries.noaa.gov/national/2017-report-congress-status-us-fisheries>

People and goods move on waterborne transportation. Tourism and sport fishing attract visitors. Suppliers and service firms serve maritime-related businesses and government. The Coast Guard provides marine safety and law enforcement. Schools and colleges provide education for organization leaders, technical and operational staff. Collectively these business, government and non-government organizations comprise what is often named a Maritime Industry Cluster. Some segments of the maritime industry have logical operating connections to communities and businesses elsewhere in Alaska, the lower 48 or around the world.

Clusters are geographic concentrations of interconnected companies or organizations that share infrastructure, suppliers, and distribution networks. In KIB, the maritime industry shares the ocean environment. Figure 3 is a basic maritime industry cluster diagram. There are 10 current categories or segments of stakeholders in the greater Kodiak maritime industry. These include:

- Ports, harbors, land-based storage for home-ported and visiting vessels
- Vessel building, conversion and repair
- Fisheries – harvesting, processing
- Logistics and shipping – for passengers and goods with connections to roadways, aviation
- Safety and security, law enforcement
- Maritime supply – parts, consumables, fuel
- Maritime services – electronics, communications, lodging & food
- Marine building – construction on land, waterfront and in waters
- Tourism & visitors
- Supporting stakeholders – government agencies, education & training, research, regulators, trade associations, non-profit and non-government advocacy or support organizations

The Marine Yellow Pages provides a database of companies in some of these maritime segments.<sup>5</sup> In this mix, clusters typically include companies in the same industry or technology. The ocean environment is a common denominator in these ten maritime stakeholder groups. Supporting firms that provide components, support services, and raw materials (e.g. fish, kelp) come together with like minded firms in related industries to develop joint solutions and combine resources to take advantage of market opportunities. These are groups of related businesses and organizations—sometimes direct competitors, but more often operating in a complementary manner. They may comprise more than just one industry classification, and a true cluster is more than just a supplier-producer-buyer model.



<sup>5</sup> Marine Yellow Pages – West Alaska Section [https://www.marineyellowpages.com/index.php/AdvSearchR/menu-id-338?search\\_id=1446](https://www.marineyellowpages.com/index.php/AdvSearchR/menu-id-338?search_id=1446)

**Benefits of Industry Cluster.** A well developed concentration of related business spurs three important activities:

- increased productivity (through specialized inputs, access to information, synergies, and access to public goods),
- more rapid innovation (through cooperative research and competitive striving), and
- new business formation (filling in niches and expanding the boundaries of the cluster map).

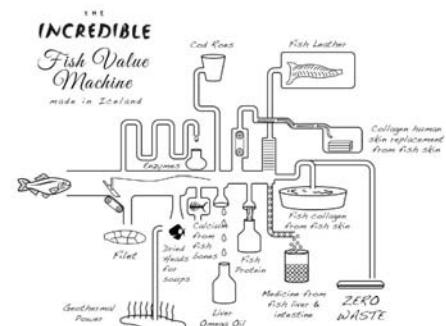
Clusters are always changing. They respond to the constant shifting of the marketplace. They usually begin through entrepreneurship. Silicon Valley is a relatively new cluster of computer-related industries; in the past, Detroit was the same for automobiles. Nothing sparks productive innovation better than having your competitor across the street. Iceland, Canada Atlantic provinces and greater Seattle<sup>6</sup> have marine-maritime industry clusters. Marine-maritime cluster development is active in Alaska in Southeast Alaska and the Bering Sea region.<sup>7</sup> A Greater Kodiak Maritime Cluster can achieve these benefits.

Clustering helps cities and counties direct their economic development and recruiting efforts. It also encourages communities to refocus efforts on existing industries. Communities understand that the best way to expand their own economies and those of the surrounding region is to support a cluster of firms rather than to try to attract companies one at a time to an area. Chambers of Commerce, business incubators, and some universities work with companies to develop clusters and synergies in business communities. Other regions with Maritime Industry Clusters are expanding the so-called 'Blue Economy' to include more enterprise for ocean technology, seabed resources and more.

Strong domestic clusters also help attract foreign investment. If clusters are leading centers for their industries, they will attract all the key players from both home and abroad. In fact, foreign-owned

**Industry Cluster Case Study:** Icelanders have produced "an industry fishing machine" which takes pride in the fact that no other whitefish nation is utilizing more of each fish than Icelanders. While in typical North Atlantic fisheries the head, gut and bones of every cod are discarded, Icelandic fisheries have become used to making money out of many of these by-products. Analysis done by the Iceland Ocean Cluster indicates that Icelanders utilise 80%+ of each cod while many neighboring countries make full use of only around 50%.

The case study reveals how participating fish harvesters, processing firms, technology firms, university research, private and government investment all combined to add significant value beyond simply quality seafood.



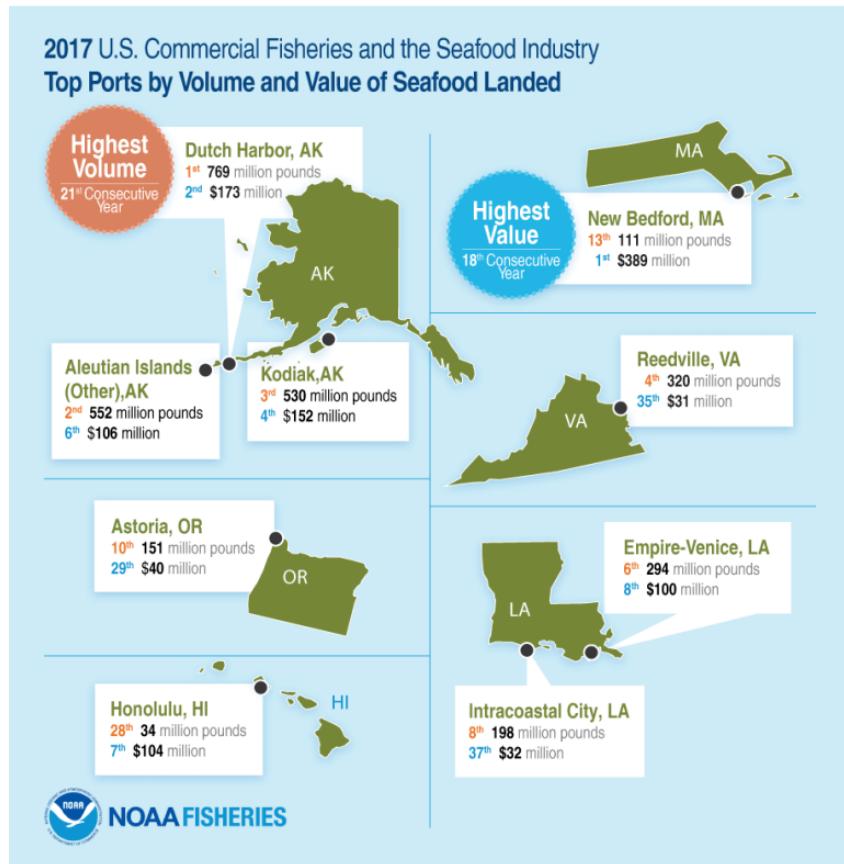
<sup>6</sup> Seattle's Maritime Industry

<http://www.seattle.gov/Documents/Departments/economicDevelopment/keyIndustries/SeattleMaritimeStudy-2009.pdf>

<sup>7</sup> Bering Sea Fishermen's Association Alaska Ocean Cluster Initiative <https://www.bsfaak.org/alaska-ocean-cluster-initiative/>

companies can enhance the leadership of the cluster and contribute to its upgrading. The fisheries industry, already receiving some foreign investment, could be even more attractive to growth and innovation.

For small and developing businesses, locating in a cluster near competitors and related industries may aid the firm in faster growth, recognition, and status within the market. Economies of scale can be gained by group purchasing within the cluster. There can be discussions among cluster members about their unique competitive advantages and future challenges. Linked supply chain networks can naturally be created within a tightly-linked cluster. Informal day-to-day contact with similar companies is also important. Physical location proximity is not always required to be a cluster. Many firms, including retailers and publishers, can be grouped together on an Internet site. Cluster stakeholders with Kodiak experience may have headquarters and service centers in other Alaska communities such as Anchorage or Ketchikan, or in the lower 48 such as Seattle. Sometimes a local office or agent helps coordinate out-of-area business.



**Kodiak Maritime Industry Analysis.** Assessment of the ten Kodiak Island Borough (KIB) maritime industry sectors shown in Figure 3 is informed by government and professional studies and reports, information from business and organization publications, web sites and social media, and through dozens of surveys and interviews with both supply and demand focus. Workforce related comments and observations are extracted into a separate category, along with emphasis on innovation, current and future challenges. Complete copies of surveys and interviews are provided to the Kodiak Chamber of Commerce and assessment sponsors.

**Ports & Harbors Operations.** The City of Kodiak offers a full range of dockage, boat yard and marine services for commercial fishing, cargo, passenger, and recreational vessels.<sup>8</sup> Figure 4 is an aerial view of

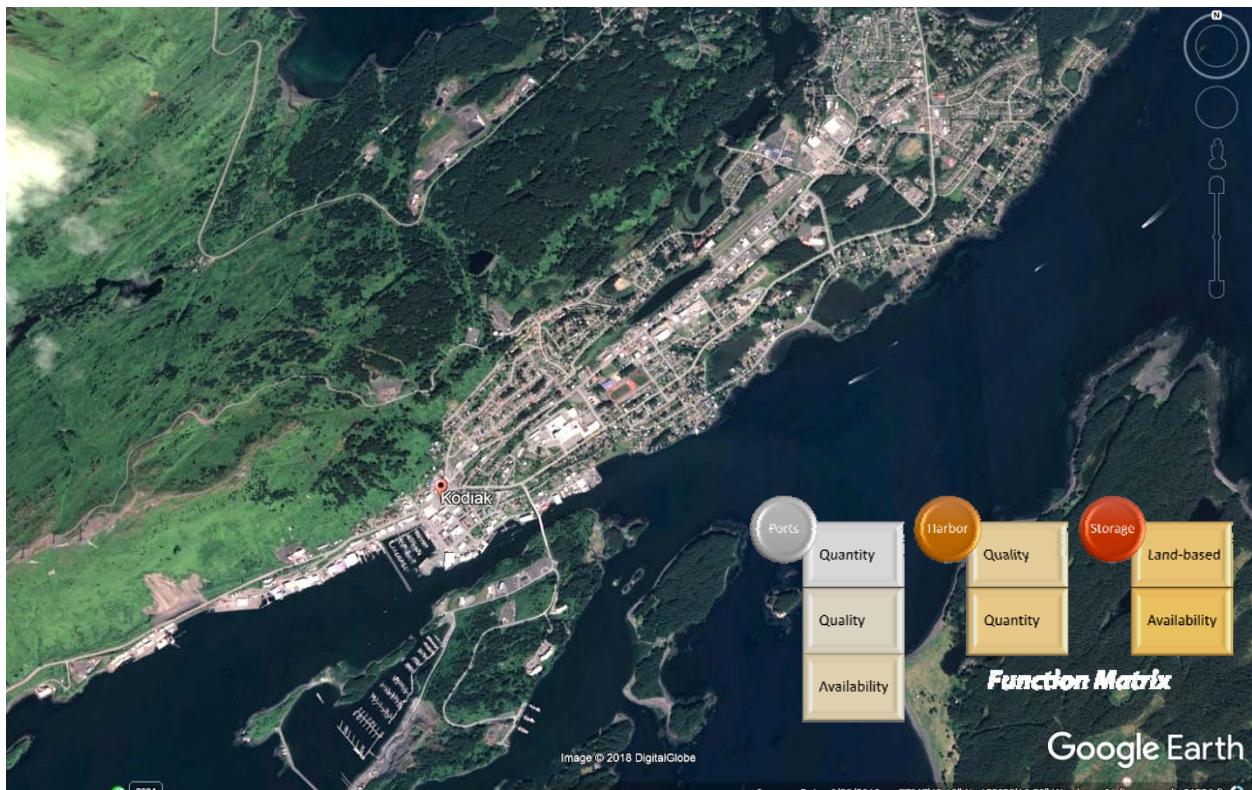


Figure 4 Satellite view of Kodiak port & harbor area

the Kodiak waterfront. Two harbors provide protected moorage for 650 vessels up to 150 feet in length. Large vessels, including the state ferries, cruise ships and cargo vessels are moored at the three-deepwater piers. Two inner-harbor docks are available for vessels up to 120 feet that may be used for loading and maintenance activities. The City operates two marinas: One downtown (St. Paul Harbor 250 slips) and another on Near Island (St. Herman Harbor 325 slips). The facilities are owned by the City of Kodiak; operated, and maintained by the City's Harbor Department. The City of Kodiak proposes nearly

<sup>8</sup> Kodiak Ports & Harbors <https://www.city.kodiak.ak.us/ph>

\$300 million for infrastructure improvement with substantial benefit to the maritime industry cluster over the next five years.<sup>9</sup>

Port & Harbor Survey Comments.

- We are limited by the depth of the water, often making the choke point to the ships we can have in service. Dredging to offer deeper channels and ports could alleviate the vessel size restrictions.
- Pier 2 is becoming constricted. Consider floating dock to accommodate greater vessel range.
- The dock at pier 3 should be bigger and built to support its full potential.
- Structures for vendors at cruise ship ports would help local business.
- Need breakwater at piers 2 & 3
- Boat ramp improvement for smaller vessels.
- St. Herman Harbor is at the end of life cycle. The majority of floats are toast. Repair needs to be financed.
- A new pier facility for CG coast guard base in Womans Bay will be needed. Kodiak could build a fast response harbor for Coast Guard at Gibson Cove
- Competition for port and harbor services are from other small local boat facilities in Kodiak along with Dutch Harbor and Homer. Homer can provide some economy and service variety because it is on the Alaska road system.
- See harbor related comments by vessel owner-operators and building-construction comments

Vessels. Over 2,300 ships and boats operate in the KIB area in seasonal, visiting or year-around patterns. About 75 percent of these are associated with the fisheries and seafood industry, about 25 percent pleasure and charter craft along with passenger and goods logistics vessels.<sup>10</sup> Some smaller vessels are built in Kodiak including custom aluminum boats. Larger and more complex boats and ships are built elsewhere. Kodiak has expanded boat repair services with lift capacity to 650 tons.

Vessel-related Survey Comments (overlap port & harbor comments).

- Having lift with open yard access leaves positive potential for growth and has led to an increase in services including the welding shop. Retain open yard and don't sell shipyard to private company. (Ketchikan has a state-owned shipyard, operated by a private company so it is effectively closed to private vessels to use for owner-operator performed repairs and maintenance.)
- Build temporary shelter; large shelter with environmental controls for larger boats and larger projects would be great, including painting. A really big project, the large shelter may start to improve economics. Boat storage costs too high in Kodiak.
- Review lift prices by considering overall value of vessel work to Kodiak community. The lift prices need to be lower to be competitive. Discounts should be made for those that are already paying to moor in the area.

<sup>9</sup> City of Kodiak Long-term Capital Improvement Plan Fiscal Years 2019-2023

<sup>10</sup> Commercial Fisheries Entry Commission data <https://www.cfec.state.ak.us/> and North Pacific Fishery Management Council <https://www.npfmc.org/wp-content/PDFdocuments/resources/FleetProfiles412.pdf>

Vessel-related Survey Comments (overlap port & harbor comments) continued

- Kodiak caters to bigger boats, there is room to improve for small boats such as a boat ramp.
- Demand for smaller aluminum boats, outboard motors and services is high.
- Operators consider going to Homer to repower or Naknek – more expensive but more qualified experts to do technical projects like big engine projects. Basic skills are adequate in Kodiak for relatively complex work such as variable pitch propellers, but not enough for larger projects. Welding costs higher than Homer.
- Fiberglass extension could do in Kodiak, if it was small project/small boat. Probably not economical to do large or steel boats.
- Need a machine shop and prop shop. No prop-shop or shaft work, especially for big vessels, some can be done for small vessels, over 3" shaft is challenge, mostly 58 ft vessels and up
- Large vessel maintenance is done in communities with drydock capability

Fisheries & Seafood. The seafood industry accounts for 30-40 percent of the Kodiak Island economy measured in terms of income and employment.<sup>11</sup>

Elements of this maritime stakeholder group include private and corporate fish harvesting, processing and distribution. The seafood industry stimulates a multiplier effect through suppliers, services and government. The fishing industry operates 11 months annually, harvesting multiple species. The community of Kodiak has made substantial investment in seafood industry-related infrastructure. The City of Kodiak's public utilities, transportation connections, and maritime infrastructure have been scaled to serve the needs of the seafood industry. A healthy seafood industry is critical to the community's ability to pay for these investments. Other ocean product and seafood service markets are developing including kelp, oysters, fish hatcheries and more.



Fisheries-related Survey Comments (overlap port & harbor comments).

- Kodiak has infrastructure to support processing and shipping of fish with good linkages to intermodal transport system. Diversity of commercial fishing types is good. Uses of fisheries waste are growing.
- Uncertainty about declines in commercial fisheries natural resources. Climate change concerns: ocean temperature, chemistry, weather extremes, red tide.
- Fishing quotas – The quotas are conservative and based on science to keep a healthy population. If we don't take care of our environment, we won't have any industry left.
- Increase and support kelp farms, oyster farms, and fish hatcheries. All projects should be properly vetted by science and approved by the public. Kodiak lacks experience to process sea plants to an economic scale. State support for timely regulation and permitting is uncertain.
- Help independent fishers develop direct marketing, custom processing innovations, more cold storage, adequate crane capability.

<sup>11</sup> Economic impact of the seafood industry on the Kodiak Borough. McDowell Group 2016

**Fisheries-related Survey Comments (overlap port & harbor comments) continued.**

- Need expanding harbor space with lowered prices to accommodate fisherman. Fishing industry is the lifeblood of Kodiak and the harbor needs improvements. Additionally, there should be safer access to river fishing with better parking options. Cold storage would also be beneficial.
- Alaska seafood and Ocean Beauty have done a fantastic job with branding, especially with having the Kodiak name known.
- Seafood processors need electrical companies that work on vessel electronics or refrigeration systems. Kodiak capacity insufficient. Welding costs in Kodiak push some business to Homer.
- Kodiak lacks capacity of mechanics, electricians who can come out and help stalled boats at sea.
- Kodiak has more services than St. Paul or Homer but other ports are taking business from Kodiak. Concern is a combination of available fish and quotas.

**Maritime Related Building & Marine Construction.** Infrastructure is critical for a functioning maritime industry cluster. Building piers, docks, breakwater structures, and related waterfront buildings requires special skills and materials. Kodiak has several companies in this industry segment; however, significant marine construction talent and materials are provided from off-island sources.

**Building and Marine Construction Survey Comments (overlap port & harbor comments)**

- Construction work is typically hired on island, but the quality of materials is rarely available on island. All construction work is better quality and faster when it's from off island. Costs are high.
- Need breakwater at piers 2 & 3
- Pier 2 becoming constricted. Consider floating dock to accommodate greater vessel range.
- We are limited by the depth of the water, often making the choke point to the ships we can have in service. Dredging to offer deeper channels and ports could alleviate the vessel size restrictions.
- The dock at pier 3 should be bigger and built to support its full potential.
- Boat ramp improvement for smaller vessels.
- A new pier facility for CG coast guard base in Womans Bay will be needed. Kodiak could build a fast response harbor for Coast Guard at Gibson Cove
- Structures for vendors at cruise ship ports.
- St. Herman Harbor is at the end of life cycle. The majority of floats are toast. Repair needs to be financed.
- Pile driving, project engineering not available in Kodiak.

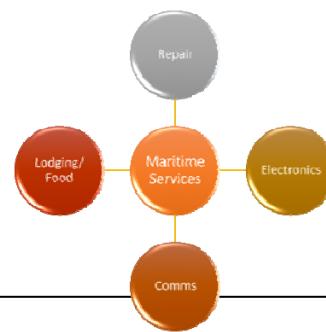
**Logistics.** About 95 percent of imported and exported goods in Alaska move by waterborne transportation. Cargo, tank and passenger vessels, tugs and barges operate in and through Kodiak ports. Air transport makes up the balance. The three cargo and passenger serving piers along with other waterfront locations allow cargo and passenger transfer. Roadways connect land destinations.



Logistics & Shipping Survey Comments (overlap port & vessel comments)

- Currently, there is not enough volume to keep to large shipping carriers healthy.
- If economy supports, a new fleet of logistics vessels will be needed.
- Marine construction needs: Breakwater reduction at piers 2 & 3.
- Service needs: IT support,
- Supply needs: Cheaper fuel, safety and personal protection gear.
- Evaluate harbor fares. Kodiak's set too low by comparison.
- Need new ferries and ferry facilities with ADA compliance.
- AMHS rates too high, restrict travel to Kodiak yet are more affordable than barge/air.

Maritime Services. Businesses need land-based lodging, vessel and equipment repair. The Kodiak Shipyard provides capabilities to lift and haul vessels up to about 650 tons.<sup>12</sup> The shipyard facilities allow the vessel owner to block, wash down, service and repair with the help of some city employees and contract service specialists.



Maritime Services Survey Comments

- Customer business is flat to declining. Customers spending less. Fewer fishers buying in town. Hard to get services on short notice. Lack of space or bays and covered space for services to work at the city shipyard. City policies and zoning control land to build, space lease. City does not enforce policies and rules like sales tax.
- Development of near island, transportation and infrastructure.
- Public transportation needs to be offered and a grocery store downtown should be offered.
- Lack of competition causes difficulties of affordability. Grocery stores specifically have very limited competition.
- Vessel maintenance is often done off island due to the expense, or lack of large project skills and materials such as metal fabrication, hydraulics, electronics. Aircraft maintenance is usually off island because the services don't exist on island. More services would struggle to be competitive.
- Federal Government takes buoys to Seattle for maintained, the sanding, paining, refurbishment could happen in Kodiak; need to work more closely with Coast Guard, could save money, and create opportunity in Kodiak
- Refrigeration including ice and its support by technical and electrical talent is needed.
- Broadband internet needs expanded service for current and future business.
- Some service and supplier firms need training from manufacturers of products sold & maintained.

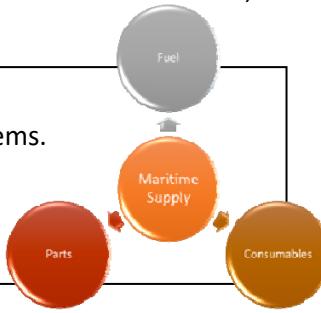
Maritime Supplies. Vessel owner-operators and maritime businesses need food, fuel, fishing gear, electronics & communications, parts, safety equipment and more.



<sup>12</sup> Kodiak Shipyard <http://kodiakboatyard.com/>

### Maritime Industry Supplies Survey Comments

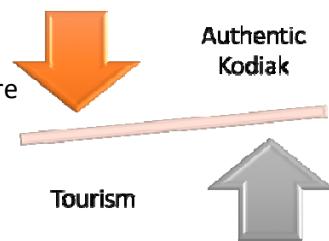
- Limited competition and variety causes off-island purchasing of many items.
- Need grocery stores near harbors for visiting vessel crews
- Need metal suppliers



Tourism and Visitors. Kodiak is a working community. Tourism is a smaller but growing maritime industry sector. Cruise ships, charter companies, hunting & fishing, wildlife enthusiasm and more bring visitors.

### Tourism Survey Comments

- It's a balancing act. Conflicted about quality of life for locals. We need moderate growth and reasonable supporting infrastructure including accommodations.
- Should preserve the fishing identity and create infrastructure to support mountain bikers, and surfers. Infrastructure maintenance plans must be in place, no longer only reactionary.
- Tourism can grow significantly with attribution to cruise ship traffic and working with Alaska Airlines to offer more direct flights. Need marketing and advertising of Kodiak on a national and international level.
- Kodiak can focus on developing the kind of high-end clients or customers that want to stay multiple nights and spend money at local business. Not just come in and leave in the same day on the cruise ships. Activities for tourists needed such as guided tours, more mountain and wildlife access, hunting and fishing, boat rentals, kayaks. Charter regulations are restrictive. Need better waterfront to town transportation for visitors.
- In the summer, there is a significant need for more employees and businesses offering excursions to meet customer demand.
- Needs: vendor stalls on the pier and covered cruise ship gangway with gift shop area, beautification of piers and pathways to town, transportation to get tourists from ship to town. Bike rentals.
- Connect with increased interest in arctic cruising and potentially supporting those ships.
- More support for visiting fishing parties – commercial and tourist – such as additional lodging, more fish cleaning stations in main harbor, rental boats, other innovations.
- Visual appearance of harbor waterfront needs improvement.



Safety & Law Enforcement. The US Coast Guard provides a range of marine safety support such as buoys and other aids to navigation. The Coast Guard provides safety and operational regulations for boats and vessels that operate in US waters. The Kodiak Police Department (KPD) is the principal law enforcement agency and provides twenty-four hour patrol, criminal investigation support, animal control and parking enforcement services. The KPD Public Safety Answering Point (PSAP) provides communication support and dispatch services to all police, fire and EMS agencies in Kodiak. The Division of Alaska State Troopers provide patrol, enforcement, search and rescue to the Kodiak area.

#### Safety & Law Enforcement Survey Comments

- Petty thefts including fuel siphoning needs to be reduced.
- Some ask for place for disposal of hazardous or safety items. Example: expired marine flares
- Need stronger advocacy groups, public forums, community effort to deal with drugs and vagrancy.
- Need ability to have information transmitted to vessel owners and private citizens to promote a safety culture
- Need property code enforcement out of town

Other maritime support. Maritime workforce education, training is available through University of Alaska's Kodiak College. Kodiak High School curriculum includes career-technical courses that support the maritime industry.<sup>13</sup> Seafood technical advice and marine science research is available through the Sea Grant Program Kodiak Fisheries Research Center and the University of Alaska's Fishery Industrial Technology Center.

#### Maritime Support Related Survey Comments

- Develop partnerships within schools that use local resources (i.e. bring in the CG, rocket launch) to facilitate education and programs.
- Need research vessels, airplanes for monitoring, consistent and stable funding to understand climate change impacts and find economic alternatives.
- Education and employee sustainability. Biologists, pilots, skippers, accountants, administrative staff, maintenance workers for facilities, air, and vessels.
- To do work in Kodiak expense is far exceeding budget for government work, so very little contracts are awarded in the Kodiak area. Needs are met elsewhere such as Seattle.
- Due to the incoming Coast Guard assets to Kodiak, in the next 5-10 years there will be a significant increase in demand for fuel oil, pipe fitters, hydraulic oil technicians, wholesale food sales. Larger government vessels need large ship dry dock facilities, and dock side contractors.
- Firms need education and training around new products and services, and for operational technologies like refrigeration and general maintenance. Some in-company job-based learning works. Lack of some education in Kodiak requires companies to send workers to factory schools out of state.
- Educators provide several workshops to help fisherman become direct-to-market suppliers. We do a direct marketing seminar. We don't do anything with the Coast Guard or government entities.

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<sup>13</sup> Education, Training, Science and Research Sources. <https://www.uaf.edu/cfos/about-us/locations/kodiak/about-ksmsc/>; <https://koc.alaska.edu/>; <https://www.kibsd.org/Page/1207>

#### Maritime Talent and Workforce Survey Comments

- Many businesses would hire if skill-set and attitudes fit. All need customer service. Many need quality management skills. Some businesses have younger family members learning to manage and lead.
- For boat building and service: Welding, boat fabrication, customer service is very important, diesel mechanical knowledge, marine electrical, marine plumbing, hydraulics, carpentry, painting, accounting, order processing, inventory control, electronics & communications build and repair.
- For shipping and logistics: Skilled labor force (Kodiak College programs), good mechanics, refrigeration servicers, heavy & diesel mechanics, longshoreman (Most longshoreman are trained internally.), CDL Drivers
- For lodging & visitor industry: need cooking, cooking staff, chefs, customer service skills, range of employees

Innovation and Increasing Maritime Economic Activity. While many people in a coastal Alaska community yearn to maintain the quality of life and experience they have, various forces indicate the need for adaptive change in logical, planned ways. Innovation provides some opportunities.

#### Innovation Related Survey Comments

- Innovation and diversification is needed and should be supported. Kodiak is a politically challenging environment. Private enterprises do well, but new innovations are derailed easily by taxes and regulations. There is lack of encouragement for diversity. Everyone thinks they should be like them in the industry instead of encouraging each to pursue what's best for them.
- Innovation is done well by larger corporations such as fish processors. Help is needed for local innovation.
- Kodiak is resistant to changes and lacks economic development teams that are properly funded. An outside specialist is needed so that personal agendas are no longer able to influence innovation.
- Money is needed for innovations. Entrepreneurs are needed to develop innovation.
- Geographic location is a roadblock to innovation collaboration.

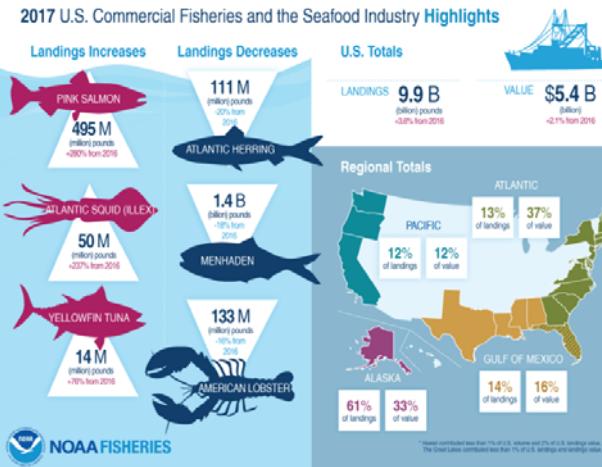
#### Increasing Maritime Economic Activity Related Survey Comments

- Rule about selling merchandise on the dock needs to be removed.
- Open space for housing of residents
- Need to break silos and work together. Communicate better. Correct fragmented and misinformation. Need to have Borough and City and industry think as a whole and not work against each other's segments. They compete for funding, etc. rather than work together.
- Look at Ketchikan as a model.
- With fishing decline, services are best Kodiak option.
- Need better state support for coastal economic development, better Native corporation support for coastal tribe economy

**Current and Future Challenges.** Persons interviewed and completing surveys were asked what current and future challenges exist. Despite many uncertainties in a time of changing politics, environment, technology and social relationships, identifying challenges and critically analyzing assumptions around them can help lead to best decisions for government, businesses, and individuals in the Kodiak Maritime Industry Cluster

#### Current and Future Challenges Survey Comments

- Keeping the economy intact locally. We have a major problem with drugs and opioids that could break the fabric of the community and social cohesion
- Attracting and keeping good employees. Cost of living, lack of housing, lack of opportunity for younger generation to take up private fishing and other business.
- Regulatory impact. Some regulations unfair, not relevant.
- Price. Prices of catch, the commodity catch, fuel. It's expensive for the commercial fishers to operate, if the price of the fish is not paid well here, then they will go to the mainland to sell the fish.
- Declines in commercial fisheries natural resources.
- For Coast Guard: Appropriate facilities and resources as more Coast Guard vessels are homeported in Kodiak. The existing housing, supplies, and infrastructure to support the vessels is not sufficient to support the growth.
- Degradation of harbor and waterfront infrastructure caused by other priority spending.
- Impact of large corporate business on local and small business, particularly fishing. Consolidation can force small owners out of business and provide obstacles to new venture starts.
- Graying of the fleet/workers and finding good help. It's not a shortage issue it's a reliability issue.
- Management of fishing quotas in a predictable and reasonable way to allow adaptive business changes as needed.
- Changing attitudes that maintain the status-quo.
- Business enterprises to promote local economic growth.



### Other Observations & Recommendations from Surveys & Interviews

- Leaders raise concern about the costs of living and doing business in Kodiak. Energy and all 'imported' goods are expensive. Kodiak investment in wind and hydro power are helping.
- The vessel fleet is aging. It is not clear that current owners will replace and modernize so consolidation is happening. Owners of multiple boats are selling off to one; large fisheries operators tend to drive smaller businesses out.
- The age of maritime industry people is climbing but some young people are interested
- City & Borough management: City has to change long-term leasing policy to land; Opposed to selling tidewater land to industry; Businesses need to invest in developing property, need long-term leasing; Manage businesses so the public good is upheld, and specifically maintain access to water front
- Financial and tax strategies to aid new ventures and expansions. Lower costs during beginning years may help prevent firms going out of business early.



Figure 5 is a 3-D functional map of cluster process. A trusted strategic broker has cross-functional knowledge and experience with the industry organizations matrix, the value-adding matrix of knowledge and experience, awareness of the matrix of common problems and issues, and the community context of culture and economy. The strategic broker can bring together groups to share their past experience and future hopes then work for improvement and adaptive change.

Examples of problems or issues in the fisheries segment were revealed in surveys and interviews. Challenges include impacts of consolidation, uncertainties about regulations and fish quotas in an era of ocean temperature and chemistry change, an aging vessel fleet, aging talent base plus difficulties of

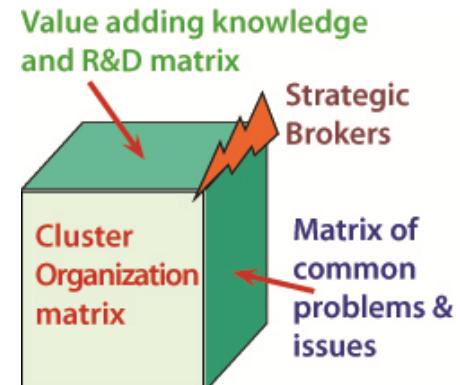


Figure 5 Industry Cluster Functional Diagram

young people getting started, continuing investment in fishing-supportive infrastructure, and more. The case study from Iceland on page 4 is an example of how recognition that fish waste has value helped change this industry segment. Fish waste reduction concepts are being applied in Kodiak fisheries such as Trident and research projects sponsored by Alaska Sea Grant. Some maritime communities are expanding value-adding functions to fish processing including smoking, developing new recipes, finding specific urban area restaurant customers for direct marketing and more. As noted in interviews, expanding seafood to include sea plants and concepts of fish hatcheries, some aspects of farming and others can be considered. The fisheries industry is interesting and exciting, documented by reality shows such as Discovery Channel's *Deadliest Catch*. Value-adding innovations, new products and new services can be developed through maritime industry collaboration.

Results of Kodiak Maritime Industry Cluster activities can lead to focused strategic planning, additional market research, attraction of focused research and development, attraction of investment and fresh talent. The Kodiak Maritime Industry Cluster has strengths, weaknesses, opportunities and threats yet has promise for decades of quality life for citizens and visitors.

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**References.** Included as footnotes. File of interview-survey comments provided to assessment sponsors