US Army
Corps
of Engineers
Alaska District

SECTION 905(b) ANALYSIS
ALASKA REGIONAL PORTS

May, 2008

EXECUTIVE SUMMARY

Geography is both a boon and a bane for transportation planners in Alaska. The state is located within 9 flight-hours of 90 percent of the world's industrialized countries, which has led to Anchorage International becoming the number one airport in the United States by landed cargo weight. That same locational advantage brings ocean shipments through Unimak Pass in Southwest Alaska where thousands of ships pass annually on their way to the West Coast of North America from the Far East. Additional advantages would materialize if Arctic sea lanes continue to open with climate change and retreating sea ice. Arctic shipping routes would cut 5,000 miles off a voyage that currently moves through the Panama or Suez canals.

Alaska's locational advantage is paired with a coastline that is longer than the rest of the states combined and remote communities lacking even the barest of transportation essentials. More than 30 percent of the state's population cannot be reached via road, requiring the shipment of goods by air or sea. In terms of scale, Alaska stretches from Florida to California. To increase Alaska's and the Nation's economic competitiveness, navigation systems must become the comparable to the Lower 48's Interstate road system. This reconnaissance report examines the need for formulating and improving navigation systems in Alaska.

Among the many considerations for improved marine transportation is the fact that Alaska is the largest training grounds in the United States for the Army and Air Force. The ability to support operations with commercial goods and fuel and to support deployment capacity recently led the U.S. Department of Transportation's Maritime Administration (MARAD) to designate the Port of Anchorage as a strategic commercial port. MARAD's long term presence in Alaska capabilities is expected to grow.

In terms of Homeland security, our Nation has an enduring national and strategic interest in the Arctic region. Possible U.S. ratification of the United Nations convention on the Law of the Sea will require the United States to collect data that extends its economic zones and / or counter territorial claims by other Arctic nations. Establishing logistical resiliency will ensure the smooth flow of goods and materials for civil and defense purposes. This aspect is vital to our national interests, especially during times of national defense and emergencies.

The State of Alaska has some of the nation's largest resource reserves in the form of coal, minerals, oil, and natural gas that depend on commercial navigation. Additional infrastructure capacity is required to support these growing industries in addition to providing support for commercial fisheries and Alaska Native subsistence activities.

In addition, global climate change and retreating sea ice will likely increase commercial, cruise ship, and private vessel traffic in Arctic waters. Increased vessel traffic imposes increased risk of damage to the pristine environment of Alaska. This change will heavily influence the need for marine support infrastructure that can provide safe moorage and vessels capable of responding in emergencies. International shipping along Alaska's coastline highlights the need to seek common environmental sustainability goals with other Arctic nations.

This report recommends development of a comprehensive master plan to address marine transportation opportunities and challenges faced by the State of Alaska and our Nation. The comprehensive plan will identify opportunities to develop Alaska's economy, protect its environment, and sustain its cultural resources. It will also address the challenges and opportunities of global climate change; issues of safety, passage, and ports of refuge; deployment

capacity to protect national interests, and during natural disasters; and the needs and goals of Alaska Native Villages.

Regional studies, aligned by geography and usage, are also recommended to address specific industry concerns, project opportunities, and port functionality. In this regard, Alaska is unique and these studies should be viewed in context of a "National Coastal Infrastructure Development Model" as opposed to a "Port Development Study". Alaska's coastal infrastructure must be recognized as an enabling engine to a developing economy in the same way roadways were to the Lower 48 states in 1950's. These studies would integrate planning for road, rail, and air transportation to develop an inter-modal system to prepare Alaska and the Nation for the global economy.

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1. STUDY AUTHORITY. This Section 905(b) Analysis was prepared in response to the House Public Works Committee Resolution for Rivers and Harbors in Alaska, adopted 2 December, 1970. The resolution states:

> "Resolved by the Committee on Public Works of the House of Representatives, United States, that the Board of Engineers for Rivers and Harbors is hereby requested to review the reports of the Chief of Engineers on Rivers and Harbors in Alaska, published as House Document Numbered 414, 83rd Congress, 2nd Session; and other pertinent reports, with a view to determining whether any modifications of the recommendations contained herein are advisable at the present time."

Funding in the amount of $59,000 in FY 2003, $190,000 in FY 2004, $209,000 in FY 2005, $75,000 in FY 2006, $325,000 in FY 2007, and $0 in FY 2008 were allocated to conduct the reconnaissance phase of the study. Total is $858,000 to date.

2. STUDY PURPOSE. The purpose of this study is to determine if there is a Federal interest in participating in cost-shared feasibility studies addressing regional ports and harbors in the State of Alaska.

3. LOCATION OF PROJECT/CONGRESSIONAL DISTRICT. The study area has not been limited to one individual port or region in Alaska, but rather focuses on a systematic analysis of existing and future needs of harbors and navigational systems. For this analysis, coastal Alaska is divided into five regions; Southeast, Southcentral, Southwest, Yukon-Kuskokwim, and Northwestern Regions.

Several non-federal sponsors for a feasibility phase study have been identified. Sponsors may appear for one or more of the recommended actions in this study. The study area is in the Alaska Congressional District, which has the following congressional delegation:

Senator Ted Stevens (R);

Senator Lisa Murkowski (R);

Representative Don Young (R).

4. PRIOR STUDIES, REPORTS, AND EXISTING WATER PROJECTS.

- *Demand for Harbors, Dockage, and Other Navigational Needs for Small Boats and Commercial Fishing Vessels in Alaska (Cornell University), May 2006.* Results of surveys sent to commercial, charter, and recreational boat owners in the State of Alaska for needed harbor improvements.
- *Value of Time Commercial Fishermen in Alaska Could Save with Improved Harbor Facilities (Cornell University) September 2006.* Results of surveys sent to commercial fishermen in the State of Alaska to determine a reasonable hourly rate for fishing activity in the various fisheries.

- *Prince William Sound Transportation Plan (ADOTPF), July 2001*. This plan forecasts regionally significant transportation system needs for the upcoming 20–year period and recommend improvements to meet those needs. Highlighting the plan is a recommendation for the purchase and deployment of high speed vehicle ferries to Prince William Sound by the Alaska Marine Highway System.
- *Southeast Alaska Transportation Plan (ADOTPF), August 2004.* The focus of this plan is mainly roadway interconnectivity; there are large components of upgrades to existing vessel traffic, especially in terms of the southeast Alaska ferry service.
- *Southwest Alaska Transportation Plan (ADOTPF), September 2004.* The plan's study area extends to the end of the Aleutian Chain and Pribilof Islands and includes the Aleutian East Borough, Kodiak Island Borough, Bristol Bay Borough, Lake and Peninsula Borough, Aleutians West Census Area, and the Dillingham Census Area.
- *Northwest Alaska Transportation Plan (ADOTPF), February 2004.* This plan reflects the broad range of concerns, views, and perspectives of the people of this region, which covers the North Slope Borough, Northwest Arctic Borough, Norton Sound, Seward Peninsula, and the Middle Yukon River Basin. The plan considers marine, river, aviation, trail, and highway transportation, as well as other economic, demographic, and technological forces at work in this and adjoining areas of Alaska. The plan addresses passenger and freight inter-community movements by land, air, and water modes. In the accompanying Resource Transportation Analysis, the plan addresses the transportation needs of mineral, coal, and oil/gas developments.
- *Yukon-Kuskokwim (Y-K) Delta Transportation Plan (ADOTPF), March 2002.* The Y-K Delta plan presents significant transportation challenges to the state. The large coastal villages have many needs. The lack of roads and cost-effective road building opportunities puts pressure on the region's other modes of transportation. With its growing population and increasing use of consumer products as well as traditional resources, the people of the Y-K Delta are putting ever-greater demands on the existing transportation infrastructure. Practical ways to improve transportation include upgrading airports, marking a network of winter trails, access mining road development to enhance regional economic diversification, Bering Sea port development, and village river barge mooring facilities.
- *Reconnaissance of Navigational Improvements, Western and Arctic Coasts, Alaska (USACE Alaska District), December 1997.* This study found that it is difficult to show sufficient economic benefits for projects such as full-featured boat harbors and large scale channel dredging in western Alaska communities. The study recommended reconnaissance studies be performed for Brevig Mission, Elim, Kongiganak, Napaskiak, and Perryville.
- *Harbors of Refuge Survey, Various Locations, Alaska (URS Corporation), July 1986.* Survey of 15 Southeast Alaska harbors to serve as harbors of refuge. The report found that while the 15 harbors would normally have adequate capacity for use as harbors of refuge, the harbors were often over-utilized and/or required expansion or upgrading. Because of these weaknesses, the harbors ability to effectively function as critical parts of the communities' water-based economy and as a harbor of refuge was jeopardized.
- *Southeast Alaska, Harbors of Refuge (USACE Alaska District), June 1989.* An evaluation of southeast Alaska harbors with recommendations for improvements at Sitka and Haines based

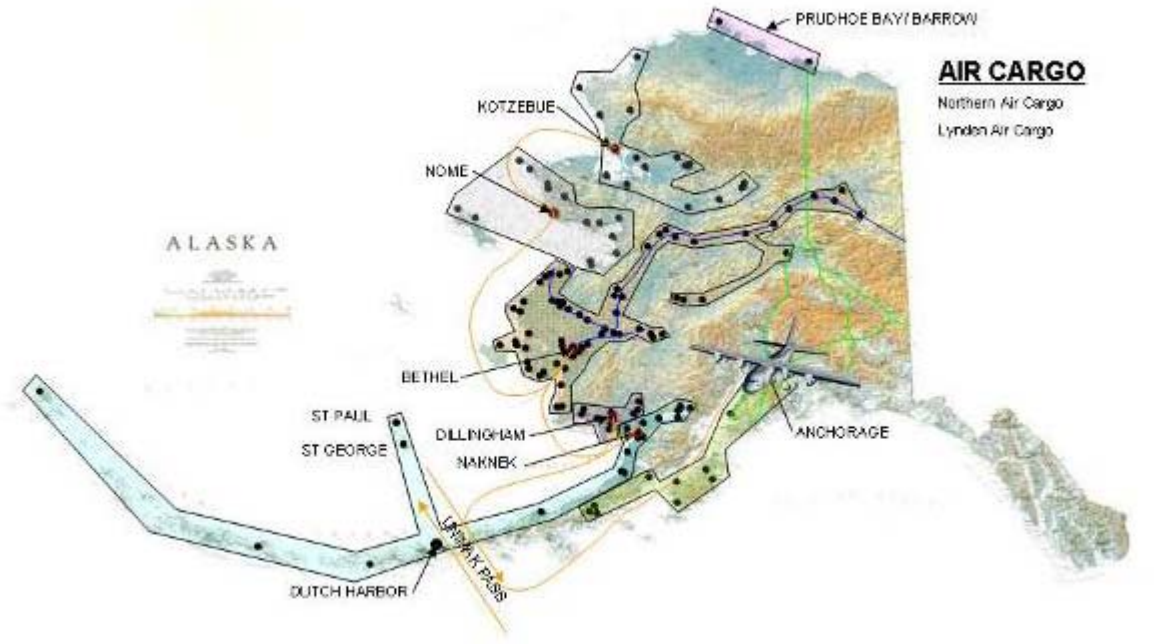
on estimated National Economic Development benefits that could be achieved at both locations. The study further recommended evaluation for the provision of storm refuge for vessels at Riou Bay within Icy Bay with emphasis on safety as the justification.

- *Improving the Economic Analysis of Small Boat Harbors, Policy Study (Richard McDonald, Water Resources Consultant) December 2003.* Raised concerns about the adequacy of economic analysis and the lack of independent verification of data and information used in Corps reports. This study highlighted the challenges faced for economic evaluation of rural and remote communities.
- *After Workshop Report on Improving the Economic Analysis of Small Boat Harbors (Richard McDonald, Water Resources Consultant), December 2003* IWR Report 03-PS-4. This report recommended, among other things, the procurement of funds to develop a Commercial Fishing IWR/NED Manual.

5. PLAN FORMULATION. This reconnaissance report presents a systems-based approach to identify water resources problems, issues, and opportunities and address the future of ports and harbors in Alaska. The report is initially focused on statewide needs, then geographic regions that mirror the State's Transportation Plans, and then individual communities or regional hubs. The delineation of regions varies based on the resource under consideration, whether it's fuel delivery, goods and services, commercial fishing, mining, etc. Provided below is the general delineation for regional service and transportation hubs in Alaska.

The scope of this reconnaissance study and recommended feasibility studies resulted from a regional ports conference conducted in January 2008. This conference brought individuals together from local, state and federal government agencies, private transportation businesses and tribal entities to look together at the future of ports and harbors in Alaska. An executive summary of the conference is provided as an attachment to this report.

This report recommends a comprehensive plan for harbors and ports rather than a site specific study(s). Given this regional approach, the report does not provide site specific information for harbor development. However, the report does present economic opportunities which exist in these regions and shows that there is a significant interest to merit further Federal participation in cost-shared feasibilities studies. Opportunities will be examined in the context of the four accounts; National Economic Development (NED), Regional Economic Development, Environmental Quality, and Other Social Effects. Future studies may support the economic development of the State of Alaska and the Nation to address the challenges and opportunities of climate change, promote safe passage, and facilitate "ports of refuge", protect the nation and future homeland defense, and fulfill the needs and goals of Alaska Native Villages.

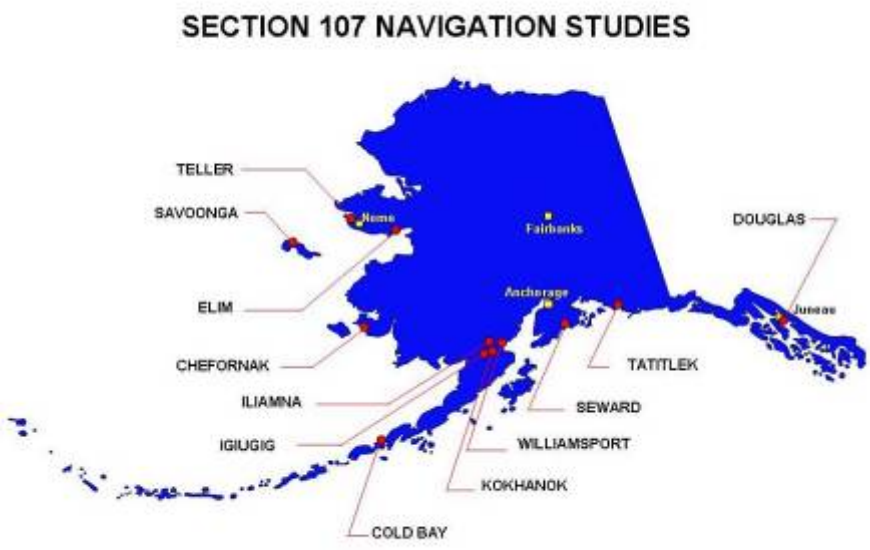


SERVICE FROM TRANSPORTATION HUBS

5.1 Current Corps Navigation Projects and Studies. The Corps of Engineers, Alaska District and its various non-Federal partners have constructed numerous navigation projects and are continuing to conduct navigation improvement studies throughout Alaska. Ongoing and recently completed projects and studies are shown in the figures below. Although the planning stories for these projects and studies considered vessel movements pertinent to the individual location, some regional aspects were evaluated as well.

ACTIVE OR RECENTLY COMPLETED NEW AND EXPANSION NAVIGATION PROJECTS

GENERAL INVESTIGATION NAVIGATION STUDIES



5.2 Statewide Needs. Statewide needs include support activities for the commercial fishing industry, the mining industry, and the cruiseship/tourism industry. Add to that the potential for the Northern Sea Route or Northwest Arctic Passage to allow transport of goods "over the top" of the world and potentially shorten sailing distances between international ports. The problems faced by each of these industries in the state can be summarized into the following categories: transportation planning, harbors of refuge, mining industry, oil and gas industry, and cruiseship/tourism industry. Each of these are discussed below with a statement of the problems faced, existing and expected future conditions, potential sponsors, and a proposed Corps action.

5.3 Statewide Marine Transportation Plan. With 33,904 miles of coastline, the State of Alaska has more coastline than the rest of the United States. Many of Alaska's 350+ communities lack road or rail access to other parts of the state. Inclement weather conditions and limited air transportation infrastructure often block access to rural Alaska communities and these conditions sometimes last for days.

Alaska District held a conference in January 2008 bringing together federal and state agencies, borough and community leaders, and other interested parties to examine how we might work together to solve the marine transportation challenges faced by the State of Alaska. Of particular concern was the potential for global climate change to allow shorter shipping routes connecting the Pacific and Atlantic Ocean basins compared to those using the Panama and Suez Canal routes.

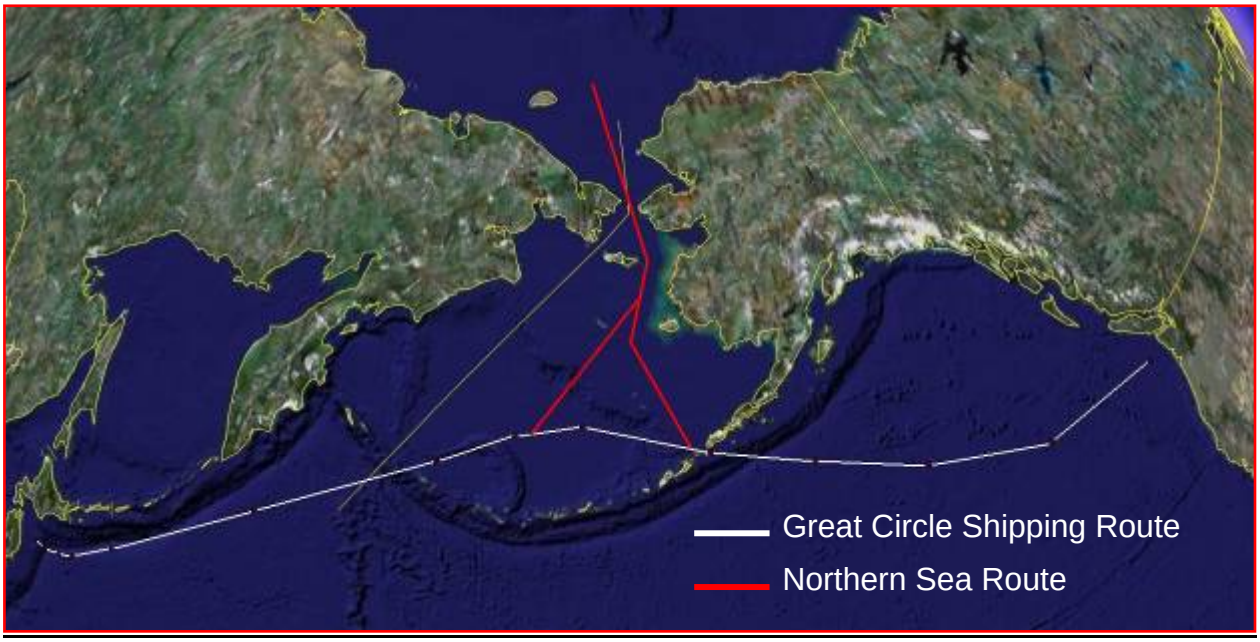


Figure 1. Existing West Coast Shipping Compared to "Over the Top" Route

Problems and Opportunities.

- Increased ship traffic along the Aleutian Chain and the Western coast of Alaska intensify the potential for shipwrecks and spills.
- Shipwrecks and spills cause great damage to environmentally sensitive marine habitat and wildlife.
- Remote Alaska villages rely on subsistence activity to feed their families and any impairment to the coastline can cause grave consequences.
- Crew safety is compromised if mechanical problems, rough seas, or shipwrecks leave a vessel stranded in areas where response vessels and equipment are unavailable.

- Increased cruiseship activity is making the "over the top" treks put passengers and crew at risk if emergency response vessels are unavailable.
- With the advent of global climate change comes a realization that traditional Alaskan fisheries are moving further northward. Impacts to fish harvesting activity in the state are yet to be fully understood.
- Resource extraction and economic development in rural/remote communities creates a unique set of challenges when mobilization and demobilization can double and sometimes exceed the cost of a project. Techniques for responsible development need further examination.

Existing Condition. Sea ice is retreating on the northern pole and in recent years has allowed vessel traffic in areas that previously were icebound year-round. According to the U.S. Arctic Research Commission, sea ice projections for Russia's Northern Sea Route indicate an increasing length of the navigation season. In addition, the Commission reports there is a possibility for regular marine surface navigation in the Central Arctic Ocean by the summer of 2050. The polar route has the capability of cutting 5,000 miles or more from the journeys that currently pass through the Panama or Suez canals.

The Coast Guard has plans to open its first operating base near Barrow in the summer of 2008 as a way of dealing with the cruiseships and tankers that are already beginning to ply Arctic waters. Several companies already offer tours of the Arctic on ships carrying 100-120 passengers.

A further complication is the recent successful bidding from Shell on the Chukchi Sea oil and gas deposits where the company paid $2.66 billion for the opportunity to explore in the area. Shell also plans on conducting exploratory offshore oil and gas drilling this summer in the Beaufort Sea. All told, one quarter of the world's undiscovered oil and gas resources lie in the Arctic, according to the United States Geological Survey.

Expected Future Condition. In a 2002 report for the Navy on climate change and the Arctic Ocean, the Arctic Research Commission, a panel appointed by the president, concluded that fish species were moving north through the Bering Strait. "Climate warming is likely to bring extensive fishing activity to the Arctic, particularly in the Barents Sea and Beaufort-Chukchi region where commercial operations have been minimal in the past," the report said. "In addition, Bering Sea fishing opportunities will increase as sea ice cover begins later and ends sooner in the year."

Even before the polar ice began shrinking more each summer, countries were pushing into the frigid Barents Sea, lured by undersea oil and gas fields and emboldened by advances in technology. But now, as thinning ice stands to simplify construction of drilling rigs, exploration is likely to move even farther north.

The Alaska Arctic region and Bering Strait will likely see significant increase in maritime traffic as the extent of the Arctic sea ice declines in the decades head. Trans-Arctic navigation will be confined to a summer season of unknown duration – most likely at least 60 days and perhaps 120 days or longer. Ice breaking ships or ice strengthened ships will most likely be a requirement. Prospects for trans-Arctic navigation will be greater on the Northern Sea Route than the

Northwest Passage due to the nature of the ice formation and the projected sea ice extent on each route.

Alternative Plans. There are no alternative plans developed at this time. Further study is needed to determine the long-range needs for marine traffic along the state's borders.

Potential Sponsors.

- The State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response, or the Department of Military and Veteran Affairs – Division of Homeland Security.
- Denali Commission

Proposed Action. Conduct further study on the marine transportation needs for vessels operating in the State of Alaska, particularly those vessels traversing the Aleutian Chain and the Western Coast of Alaska.

5.4 Alaska Harbors of Refuge.

Alaska's fishing and processing vessels must compete in harsh ocean conditions. Rationalization of some fisheries and the advent of fishing quotas helped to make Alaska fisheries safer as vessels can elect when to conduct fishing activity. However, weather conditions can often change quickly requiring fast actions on the part of captain and crew to maintain safety. Additionally, the Arctic ice cap has experienced some years when transporting goods over the top of the world as opposed to traversing the Suez Canal route have proven less expensive and therefore, more profitable. At this point, transportation of goods over the top of the world is done on opportunistic basis so cannot be regularly scheduled but expectations are that this method of transporting goods will become a reality during the 50-year period of analysis. Recently, the federal government offered oil and gas leases in the Chukchi Sea. This lease sale set a record with $2.66 billion being spent by the oil and gas industry for the opportunity to drill in this region. Cruiseship and yacht traffic has increased in the northern regions in recent years. These changing activities will continue to put Alaska coastal communities at greater risk from spills and damaged vessels.

Problems and Opportunities.

- Limited safe harborages along the 33,900 miles of Alaska coastline can be dangerous.
- Lives have been lost in the past due to limited safe moorage possibilities.
- Traffic along Alaska's coastline is increasingly putting remote communities at risk from spills and stranded vessels.
- Remote Alaska communities rely on subsistence activities for their livelihood which is further endangered by increased vessel traffic along the coastline.
- Remote coastal Alaska communities lack the infrastructure and capabilities to respond to vessel disasters.

Existing Condition. Alaska has 6,640 miles of coastline and, including islands, 33,904 miles of shoreline and relatively few roads. Ninety percent of the state's population lives within ten miles from the coast or along a major river. Alaska's marine facilities are integral to the local, statewide, and international transportation of goods and people.

Alaska's coastline is longer than the coastline of the entire United States. Most of Alaska's 350+ communities, much of its natural resources, and one third of its population are not connected to the state's road and ferry system. Dependence on ports and harbors is crucial to the continued viability of many Alaska communities. Alaska's immense size results in greater distance between coastal/river communities, commercial fishing areas, and recreational destinations. Each year, storms injure or kill operators, crew members and passengers; damage and destroy vessels and gear; and cause millions of dollars in property loss. The threat to life and property is most profound when vessels are unable to locate refuge from severe weather along the Alaska coastline.

Commercial fishing, the most dangerous occupation in the U.S., is especially dangerous in Alaska. However, despite the treacherous conditions, commercial fishing remains a significant contributor to the economy of many Alaska coastal and river communities. Cold water, frequent storms, and the long distances between safe harbors in Alaska is the norm.

Harbors-of-refuge would provide added safety and reduce the threat to life and property for commercial fishing vessels, charter/commercial passenger vessels, and recreational boat owners. A 2005 survey conducted by Cornell University reveals that more than half of all the boat owners think there is a need for additional harbors to provide safe moorage. Locations for new harbors in the state are discussed further in the geographic regions section of this report.

Table 1.
Survey Respondents Indicating a Need for Protected Moorage in Alaska.

User Type	Total Responses	Need for Safe Moorage	Percentage
Commercial Vessel Operators [1]	393	211	54%
Charter/Commercial Passenger Vessels [2]	121	87	72%
Recreational Boat Owners [3]	193	106	55%
Total	**707**	**404**	**57%**

Notes to table:

1. Commercial vessel operators were asked to name the location for creation of a new harbor that would enhance their fishing business. Numbers presented in this table were responses labeled 4 or 5 from a range of 1 to 5 with 5 being very important to provide protected moorage at locations throughout Alaska.

2. Charter/commercial passenger boat owners were asked where a new harbor is needed to provide a safe harbor.

3. Recreation boat owners were asked where a new harbor is needed to provide a safe harbor.

The efficient and safe movement of freight via barge is also critical to Alaska's remote coastal and river communities. Alaska ports typically import general cargo, consumer goods, and fuel and export Alaska's natural resources to markets across the globe. Almost all consumer goods, food, and household items are shipped to Alaska via ports in Washington State. The typical shipment of freight from a Washington port to a remote area in Alaska requires a 1,500 to 2,000 mile movement to Anchorage and an additional 250 to 750 mile voyage to its destination. Barge companies delivering cargo destined for one of the many small villages in western and northern Alaska regions have a short summer season in which to operate. Heating fuel, heavy equipment, gravel, and other construction materials that would normally move via road or rail network elsewhere, typically move by barge in the remote coastal areas of Alaska. In the more remote areas of the state, barge deliveries occur only a handful of times (2-3 times) during the summer months. Distances from hub communities to delivery points are often great, and the number of harbors-of-refuge between most locations is minimal. Therefore, a delay along a barge route due to inclement weather has the potential to postpone the arrival/departure of many barges and add cost to time critical endeavors such as construction projects and delay the delivery of much needed equipment and supplies. The availability of harbors-of-refuge could provide added safety and improved delivery times to barge operators.

In addition, many of Alaska's mineral and natural resource development activities (mining, logging, etc.) require workforce, equipment, and supplies to be moved by marine transportation involving a variety of different vessel types and sizes. Mineral developments at Red Dog mine near Kotzebue; and Greens Creek and Kensington near Juneau have all increased the flow of goods to and from their respective regions. There is also potential for possible large scale mineral developments at Donlin Creek on the Kuskokwim River and Pebble Mine in the Bristol Bay region, and other locations around the state. If either of those two developments were to occur, the flow of equipment, supplies, and workers to these locations would grow substantially. The availability of harbors-of-refuge prior to and/or during the development and operation of these projects could provide added safety, greater efficiency, and safer passage through environmentally sensitive areas.

Expected Future Condition. As vessel traffic increases along Alaska's coast line, the potential for another accident like the 738-foot Selendang Ayu, which broke in half near Unalaska spilling its soybean cargo and fuel, are great. The Selendang Ayu accident created further havoc when the helicopter sent to rescue the crew crashed in stormy weather and another helicopter was sent to rescue the crew of the first helicopter. Six members of the freighter's crew were lost in this accident. The cost of the Selendang Ayu cleanup was over $100 million and the company paid criminal fines of $10 million for negligence associated with the environmental damages.

Figure 2. U.S. Coast Guard rendition of the Selendang Ayu rescue operation.

The 1989 Exxon-Valdez accident spilling more than 11 million gallons of oil in Prince William Sound is still in litigation today. The 986-foot vessel ran aground and caused one of the worst environmental hazards in the world. To date, the Exxon-Valdez Oil Spill Trustee Council has spent more then $750 million in an attempt to restore the ecosystem and Exxon claims to have

spent more than $2 billion to clean up the spill. Still fishermen in the Sound lost their livelihoods and the beaches still contain oil. Among the animal species that have not recovered are common loons, harbor seals, harlequin ducks, and Pacific herring. Sea otters, which eat clams buried underground, are particularly affected by the subsurface oil. The clams may be clean, but sea otters exposed to oil get it on their fur, which requires energy to cope with.

Accidents like these can still happen today and there is inadequate safe moorage and relatively little accident response capability, leaving pristine areas of Alaska's coastline at risk.

Alternative Plans. There are no alternative plans developed at this time. Further study is needed to identify gaps in harbor protection along Alaska's coastline and ways in which the Corps might participate to respond to this need.

Potential Sponsors. Potential sponsors to evaluate the need for harbors of refuge include:

- The State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response, or the Department of Military and Veteran Affairs – Division of Homeland Security.
- Denali Commission

Proposed Action. Conduct further study on the harbor-of-refuge needs for vessels operating in the State of Alaska.

5.5 Industry Support. There are three main industry areas in which the Corps can play a support role in Alaska: mining, oil and gas, and the cruiseship industries. Taking an industry approach to examining the marine infrastructure needs in the state allows the Corps to collaborate with other entities (both private and government) and address these problems from a regional perspective. An overview of these industries along with a discussion of needs is provided in further detail below.

Mining Industry. Alaska levies a mining license tax on mining net income and royalties received in connection with mining properties and activities in Alaska. The division collects mining license taxes primarily from businesses engaged in coal and hard rock mining in the state. The mining license tax was the fastest growing source of tax revenue from 2001 through 2006. Revenue increased from $1.7 million in 2001 to $18.6 million in 2006 and then jumped to $79.1 million in 2007. Rising mineral prices have led to higher profits for Alaska's mining industry, which in turn fosters growth in collections. Continued high mineral prices mean this tax should contribute even more to the state treasury, with average annual growth of 24 percent projected from 2006 through 2011. See figure 3 for large mining locations in the state.

According to the executive director[1] of the Alaska Miners Association, the Alaska mining industry employs individuals from at least 116 different communities throughout the state. These jobs are often the only employment outside of government positions in rural communities. More importantly, these are generally high-paying positions that provide a much-needed infusion of cash into subsistence-based communities. In 2006 the mining industry provided 3,500 direct mining jobs in Alaska with an average annual wage of $80,000, which is 90 percent higher than the state average for all sectors of the economy. The industry paid $14 million in local government revenue through property taxes and payments in lieu of taxes, $175 million in state government revenue through royalties, rents, fees, and taxes, and $170 million in payments to Alaska Native corporations, according to the Alaska Miners Association. Alaska mineral exports in 2006 were valued at $1.1 billion, or 27 percent of the state's exports.

Problems and Opportunities.

- Lack of infrastructure (i.e. roads, rail, and ports) limit the mining potential in the state.
- Mining extraction provides much-needed wage and salary employment in Alaska's rural and remote communities.
- Higher mineral prices have pushed exploration expenditures in Alaska to new levels while environmental challenges and potential legislative changes have increased the risks associated with pursuing Alaska mines.
- Delivering building supplies, mining equipment, and personnel to mine sites in Alaska is a major challenge and has the potential to be environmentally hazardous without the appropriate safeguards in place.

[1] Steve Borell quoted from the Alaska Journal of Commerce *Mining leader optimistic about future* published February 3, 2008.

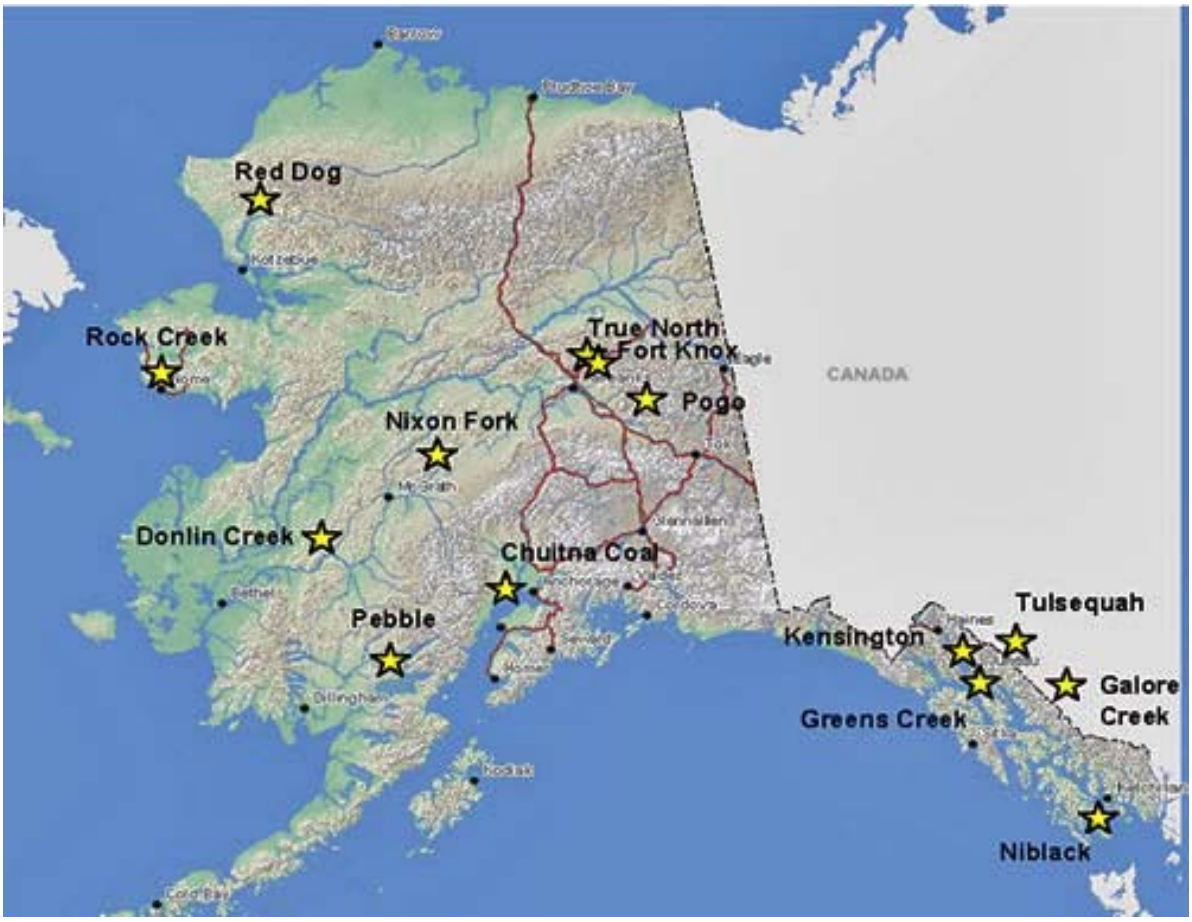


Figure 3. State of Alaska Large Mining Activity

Source Map: Alaska DNR, Division of Mining, Land, and Water

http://www.dnr.state.ak.us/mlw/mining/largemine/index.htm

Existing Condition. Operating mines in the state include Red Dog, Fort Knox, Usibelli, Pogo, and Greens Creek according to a recent Alaska Department of Natural Resources presentation. Rock Creek and Kensington mines are in construction along with the Galore Creek Canadian mine. Chuitna Coal and the Tulsequah Canadian mine are in the permitting process and Donlin Creek, Pebble, and the Niblack mines are in the pre-permitting process. Following is a summary of the existing large mine projects in the state:

- **Red Dog Mine** (zinc-lead)

The Red Dog Mine is located in northwestern Alaska, approximately 82 miles north of Kotzebue, and 46 miles inland from the coast of the Chukchi Sea. The mine is located on the Middle Fork of Red Dog Creek in the DeLong Mountains of the western Brooks Range in an area that is otherwise remote and undeveloped. Red Dog is a partnership between NANA and Teck Cominco Alaska. The mine is an important component of the economy of Northwest Alaska, employing approximately 450 people directly and creating an additional 150 jobs indirectly. A majority of the employees are NANA shareholders. It has been operating continuously since its opening in 1989.

Red Dog produces more than one million tons of zinc and lead concentrates annually using conventional open-pit mining, milling and flotation technologies. All concentrates are exported to world markets via the DeLong Mountain Transportation System, which connects the mine and millsite to port facilities on the Chukchi Sea.

- **Fort Knox Mine** & **True North Project** (gold)

The Fort Knox Mine is an open-pit gold mine, located approximately 26 miles northeast of Fairbanks, Alaska. The operator proposes to add a heap leach gold recovery facility in the Walter Creek drainage. The mine was originally permitted in 1994, and currently produces about 330,000 ounces of gold annually. The mine site is located primarily on lands owned by the State of Alaska and the Mental Health Trust. Fairbanks Gold Mining Inc (FBMI) operates the mine and employs 400-425 people at the mine and mill, which operate on two shifts, 24 hours per day, 365 days per year.

The True North Project is located 25 miles northeast of Fairbanks approximately 11 miles from the existing Ft. Knox Mine. On December 20, 2000, the Alaska Department of Natural Resources (DNR) issued authorizations to FGMI to develop the True North Project by opening two surface mine pits. The first ore was hauled to the Fort Knox Mill on March 31, 2001. On July 12, 2002, DNR issued authorizations for an expansion to the True North Project. As a result of this pit expansion, up to an additional 7.4 million tons of ore were mined from the True North Mine, and trucked via the existing haul road to the Fort Knox Mill for processing. As in the originally authorized mine plan, no processing of ore takes place at the True North site. Mining at True North has been suspended due to uneconomic conditions of trucking ore to the Fort Knox Mine and some reclamation activity has begun.

Access to the Fort Knox mine from Fairbanks, Alaska is by 34 kilometers of paved highway and 8 kilometers of unpaved road. The area has generally good access, with numerous all-weather paved highways and gravel roads maintained by the Fairbanks North Star Borough and the State of Alaska.

- **Usibelli** (coal)

The Usibelli Coal Mine (UCM) currently has a work force of about 95 employees, and operates year-round. During more than 60 years of operation, mine production has grown from 10,000 tons to an average 1.5 million tons of coal per year. Currently the only operational coal mine in Alaska, UCM is supported by the most modern mining equipment and state-of-the-art engineering. Today, UCM supplies coal to six Interior Alaska power plants and exports coal to South Korea and several other Pacific Rim destinations.

The majority of production is consumed by the domestic Alaskan electrical energy market; however, approximately 500,000 tons per year are shipped overseas to Pacific Rim destinations. Coal is loaded on train cars and the Usibelli Coal mine utilizes the Seward Coal Terminal, owned by the Alaska Railroad Corporation as its shipping port.

- **Pogo Mine** (gold)

Pogo is an operating underground gold mine with a current estimated gold resource of 5.6 million ounces averaging 0.41 ounces/ton, a projected mine life of 12 years, and an annual

production rate of between 350,000 and 500,000 ounces of gold. Newly constructed, gold production began at the mine in early 2006. As of the end of the second quarter 2006, the mine was still in the commissioning phase, and was not yet operating at commercial production levels. Access to the Pogo Mine project is via a 49-mile all season road from the Richardson Highway. The mine workforce is estimated to be up to 700 people for construction and 360 for operation. Power is supplied from the regional grid via a 50-mile power line paralleling the access road. The mine site includes a mill, camp complex, dry stack tailings pile, recycle water tailings pond, airstrip, gravel pits, and fuel storage areas.

Pogo mine does not currently use any port or harbor facilities in transportation of concentrates.

- **Greens Creek Mine** (lead-zinc-silver-gold)

The mine is located in Southeast Alaska on the northern end of Admiralty Island, approximately 15.5 miles south of Juneau. It is situated on federal land administered by the U.S. Forest Service (USFS). The mine is a joint venture between Kennecott Minerals and Hecla and is operated by the Kennecott Greens Creek Mining Company. The company employs 270 workers and they have an annual payroll of $26 million. The mine is a significant part of the economy in Southeast Alaska. Current efforts include working as a cooperating agency with the USFS and EPA on the necessary permits for the expansion of the tailings facility.

Greens Creek Mine operates a concentrate storage and loading terminal located at Hawk Inlet on Admiralty Island. Concentrate is transported approximately 9 miles by covered haul trucks from the Greens Creek mill facilities to the Hawk Inlet concentrate storage and load-out facilities. An enclosed telescoping conveyor is used to load ships and minimize wind-blown material. Greens Creek concentrates continue to be shipped overseas to various smelters throughout the world for processing.

- **Rock Creek Project** (gold – in first stages of production)

The Rock Creek Project is located on the Seward Peninsula along the west coast of Alaska. There are two project components: the Rock Creek Mine/Mill Complex located about 6 miles north of Nome in the Snake River watershed, and the Big Hurrah Mine located about 42 miles east of Nome in the Solomon River watershed. Both are proposed to be developed as open pit gold mines by the project applicant, Alaska Gold Company (AGC), a wholly owned subsidiary of NovaGold Resources, Inc.

The Rock Creek Mine/Mill Complex as planned includes an open pit mine, two non-acid-generating development rock stockpiles, a gold recovery plant, and a paste tailings storage facility. Standard drilling and blasting techniques would be used to break the ore. Ore milling rates would be about 2.75 million tons/year, while development rock stripping volumes would be in the range of 4.4 to 5.5 million tons/year. Milling would include crushing, screening, gravity separation, flotation, and a cyanide leaching process. The expected mine life is 4.5 years, with potential for additional discovery and expansion. The project would employ up to 135 employees.

The known gold resource at the Rock Creek Mine/Mill Complex lies within land owned approximately 66 percent by AGC, with the remainder within Bering Straits Native Corporation

(BSNC) lands. At Big Hurrah site, the known gold resource lies within land owned 100% by AGC, and the surrounding lands are owned by Solomon Native Corporation.

The Big Hurrah component consists of a smaller open pit gold mine, a non-acid-generating development rock stockpile, a temporary stockpile for acid-generating development rock that would later be backfilled into the pit, and an ore stockpile. Ore would be trucked to the Rock Creek Mine/Mill Complex to be milled. Ore would be mined at a 1,500 tons/day rate on a seasonal basis for a total of approximately 270,000 tons/year for 4 years. Combined, Rock Creek and Big Hurrah are indicated to have 677,000 ounces of gold.

There is also an economic evaluation to study restarting alluvial gold production at Nome Gold, which covers a major portion of the historically famous Nome goldfields. The study will assess the viability of a combined gold and aggregate production facility. NovaGold's current business plan for the Nome Gold project includes the potential to restart operations with a target to ultimately produce 25,000 ounces of gold annually, along with several million tons of sand-and-gravel co-product. If the study confirms economic viability of the project and gold prices remain strong, expansion opportunities will be evaluated.

The Rock Creek Project is currently road accessible via the Glacier Creek Road and the State maintained Teller-Nome Highway, an all-weather paved and gravel road. The State of Alaska is constructing the Glacier Creek Road By-Pass, which will simplify the road access distance to site.

- **Kensington Project** (gold – project in development)

The Kensington Gold Project is located approximately 45 air miles north of Juneau and 35 air miles south of Haines, Alaska. The mine site is within the City and Borough of Juneau and the Tongass National Forest. The proposed mine will produce approximately 2,000 tons of ore per day and 400 tons per day of development rock over an estimated 10 years. The project will employ approximately 300-400 people during the 22 months required for construction of the facilities and 225 full time employees to operate the mine and processing facilities.

According to Alaska Business Monthly, Kensington is expected to produce 150,000 ounces of gold each year with an expected mine life of 10-15 years.

The mill site is approximately 6 miles away from Slate Creek Cove in Berners Bay, concentrates are trucked via an access road from the mill to Slate Creek Cove where a dock and barge ramp are located for transporting the concentrates offsite.

- **Chuitna Coal Project** (coal – project in development)

The Chuitna Coal Project is a surface coal mining and export development located in the Beluga Coal Field of Southcentral Alaska, approximately 45 miles west of Anchorage. The project is based on the development of a 300 million ton, ultra low sulfur, subbituminous coal resource, the center of which is approximately 12 miles from the coast of Cook Inlet. The project area is largely undeveloped except for a system of primitive roadways that remain as a result of oil and gas exploration and production and logging activities.

The proposed project includes: a surface coal mine and associated support facilities; mine access road, coal transport conveyor, personnel housing, air strip facility; a logistic center, and coal

export terminal. The coal export terminal would include a 10,000-foot trestle constructed into Cook Inlet for the purpose of loading ocean-going coal transport ships. PacRim Coal, the project proponent, predicts a minimum 25-year mine life based on the proven reserves in one of three mining areas within the 20,571-acre coal lease area.

- **Donlin Creek Project** (gold – major exploration project)

Donlin Creek is located in Southwestern Alaska, about 175 miles up the Kuskokwim River from Bethel. Current resource estimates are at 33 million ounces of gold. Plans are to complete the pre-feasibility phase and begin the permitting process this year. According to the operator, NovaGold, the project would produce about 1 million ounces of gold annually.

Major infrastructure construction to support the mine will include the building of a 29-mile all-weather road from the proposed barge landing at Jungjuk Creek on the Kuskokwim, replacing the existing private road from Crooked Creek to the mine site as the primary access route. There will also be a new airstrip built at the mine site; it will be 6,000 feet long, capable of accommodating commercial 737 jet traffic from Anchorage for the transport of supplies and mine personnel.

The proposed barge dock and storage facility to service the mine will be constructed at the terminus of the all-weather road at Jungjuk Creek. It will have the capacity to off-load two barges at a time, with storage for a nine-month inventory of fuel and supplies, since the Kuskokwim is ice-free only from about early June to late September. NovaGold estimates it will need a fleet of ten barges to service the mine, with dock crews working around the clock to unload barges arriving at the approximate rate of 1.6 barges per day.

A floating lightering station consisting of two 10,000 ton barges will be established at the mouth of the Kuskokwim River at Johnson Creek, roughly 240 miles downriver from the mine. Ocean-going barges will transport the majority of supplies and fuel from Seattle/Vancouver to the lightering station at Johnson Creek. From there fuel and supplies will be transferred to the smaller, shallow-draft river barges[2].

- **Goodnews Bay Mine** (platinum)

Goodnews Bay Platinum Mine is located 25 miles northeast of Cape Newenham. An alluvial placer dredge was commissioned for use at this location in 1937. Dredging and exploration activities continued until 1976. Hanson Industries Inc. acquired the property in 1980 and has since determined that substantial platinum metals can be extracted from previously mined and unmined areas within the claim block. Hanson Industries is proposing exploration activities using reverse circulation drills within unmined portions of the claim block and cable-tool drills in previously mined areas of the claim block. There will be up to 100 exploratory holes/ trenches dug in Ethel fraction and Platinum creek sections. The estimated trench size will be 6' wide; 30' long & 35' deep or to bedrock.

The mining plan for 2006 was to use a placer dredge, following claim blocks and advancing toward the south and then conduct additional ore processing involving a dry land plant consisting

[2] http://www.northern.org/artman/publish/donlin.shtml

of three sluice boxes, vibrating screen and belt-feeder. Platinum Creek will need to be moved (diverted) to the south to give the area needed room for mining.

The total surface area to be disturbed by the mining operation should be a maximum of approximately 16 acres, 800,000 cubic yards.

The Goodnews Bay Project is located near year round ice free tidewater and is road accessible from the village of Platinum, which has a public airstrip.

- **Pebble Project** (copper-gold-molybdenum – advanced exploration phase)

The Pebble Project is a copper-gold-molybdenum porphyry deposit that, as of May 2007, is in the advanced exploration stage. The project is located in the Bristol Bay Region of southwest Alaska, approximately 17 miles northwest of the community of Iliamna, and is operated by Northern Dynasty Mines Inc. (NDM) in partnership with Anglo American US LLC.

Pebble consists of two contiguous deposits. Pebble West is a near surface resource of approximately 4.1 billion metric tons that, if developed, would likely be mined by conventional open-pit mining techniques. Pebble East is significantly deeper than Pebble West and contains generally higher grade ore. Its size is currently estimated at 3.4 billion metric tons. If developed, Pebble East would probably be mined via bulk tonnage underground mining methods.

NDM is currently conducting a deep drilling program to further explore the Pebble East Deposit and upgrade its resource classification. The company has stated that it expects to finalize its proposed mine development plan and apply for development permits no sooner than late 2008 or 2009.

According to Alaska Business Monthly, there are identified 67.3 billion pounds of copper, 81.7 million pounds of gold, and 4.054 billion pounds of molybdenum in Pebble West with those numbers likely to increase with continued exploration. Pebble East contains 42.6 billion pounds of copper, 39.6 million ounces of gold, and 2.7 billion pounds of molybdenum.

Responsible development of the Pebble Project will generate capital investment of between $3-4 billion, 1,000 high-skill, high-wage operations jobs for 50-80 years, 2,000 jobs during the project's 2- to 3-year construction phase, tens of millions of dollars in annual tax payments to state and local governments, among other spin-off benefits and business opportunities. Proposals being evaluated include a 104-mile, controlled-access industrial road between the site and Cook Inlet, a pipeline for concentrate transport, a tidewater port, and power lines to service the project and nearby communities.

- **Niblack Project** (copper-zinc-gold-silver – advanced exploration phase)

The Niblack Project is a copper-zinc-gold-silver prospect in an advanced exploration phase of development. The proposed underground exploration project is located off Moira Sound on southeastern Prince of Wales Island, approximately 30 miles southwest of Ketchikan.

The applicant, Niblack Mining Corporation, proposes to develop 6,000 feet of underground tunneling from a single adit entry. The main focus of the underground work is to provide access for exploration drilling to test deep zones of mineralization. The project is expected to last 2 years. Tidewater location offers ease of access on Prince of Wales Island in southeast Alaska. It

will require development of a marine access and camp barge facility on the adjacent State-owned tide and submerged lands.

- **Nixon Fork Mine** (gold-copper)

The Nixon Fork Mine is an existing underground lode gold mine located 32 miles northeast of McGrath, Alaska. Mining and milling operations ceased when Nevada Goldfields parent corporation and its subsidiaries were voluntarily placed into bankruptcy. The project currently consists of two developed small ore bodies with currently defined resources of approximately 126,400 tons, containing 131,500 ounces of gold. An additional 116,000 tons of existing mill tailings are reported to contain 30,200 ounces of gold.

Mystery Creek Resources, Inc (MCRI) has submitted a Plan of Operations and Reclamation Plan to the U.S. Bureau of Land Management and an application for a Solid Waste Management Permit to the Alaska Department of Environmental Conservation and proposed to reinstitute mining and gold production from the facility beginning in the winter of 2005-2006. With construction underway in mid-summer of 2006, MCRI sought a target date of late fall for the mine to begin producing gold, but as of January 2007 construction was still ongoing, although the mill was commissioned (operating, but not at production levels). Current mine life is estimated to be four years, with an annual production rate of 45,000 ounces of gold per year. This small scale mine anticipates hiring 50 to 58 workers. Although MCRI states it has a local hire preference, it has noted in the media the absence of skilled underground mine workers in the McGrath area, and more generally, the shortage in Alaska.

Mine crews will remove the high-grade underground ore and process it, producing gold dore bars and a copper concentrate on-site, both of which will be shipped out via air freight.

- **Canadian Mines**

Canadian mines are not currently supported by Alaska infrastructure; however there are multiple mines that are located within a reasonable transportation distance of the Alaska coastline. For example, these mines include Galore Creek which is located in northwestern British Columbia less than 60 miles from Wrangell. The project is a copper-gold-silver mine with an anticipated life of 20 years, believed to contain a total of 14.3 billion pounds of copper, 13.1 million ounces of gold, and 219.6 million ounces of silver.

The proposed Tulsequah Chief Mine is located in British Columbia, Canada, on the Tulsequah River near its confluence with the Taku River, approximately 19 miles from where the Taku River crosses the US/Canada border. The Taku River flows into US marine waters, approximately 10 miles southeast of Juneau, and is the largest salmon producing river system in Southeast Alaska. The proposed mine would mill 2,500 tons per day, producing copper, lead, zinc, gold, and silver concentrate. Capital costs are expected to be $150 million, and the mine would employ up to 250 workers for about ten years.

Expected Future Condition. Given the high existing prices for minerals (i.e. Gold - $823.10 USD per trace ounce, Silver - $14.79 USD per trace ounce, Zinc - $2,356 USD per tonne, Copper - $302.95 cents per pound, Molybdenum - $32.75 USD per pound, all prices as of

December 31, 2007 according to mineralprices.com) the search for and the extraction of precious metals in the state is expected to grow. Improvements to infrastructure and the promise of high-paying jobs in rural communities will continue to exert pressure for the expansion of the mining industry.

Alternative Plans. There are no alternatives developed at this time to support the mining industry in the state other than a deep-draft harbor channel and dock at Delong Mountain Terminal that would serve the Red Dog Mine area.

Potential Sponsors. Potential sponsors to evaluate the need for marine infrastructure to support the mining industry include:

- State of Alaska through the Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- Alaska Miners Association
- Alaska Native Regional Corporations (owners of the subsurface rights to their lands)

Proposed Action. Conduct navigation studies that would be needed for development of mining in the state, identify the gaps in infrastructure to support the mines, and examine ways to develop natural resource potential in the state in an environmentally safe and efficient manner.

Oil and Gas Industry. Oil prices for Alaska North Slope crude continued a steady climb reaching almost $120 per barrel in April 2008. This is compared to the State's Department of Natural Resources estimate of less than $75 per barrel for the year. Oil production on the North Slope continued its decline with average production of 781,000 barrels per day in 2006 – down from an average 1,961,000 barrels per day in 1987.[3] Oil produced from Cook Inlet totals approximately 15,000 barrels per day. Oil and gas explorations continue within the Chukchi and Beaufort Seas. New exploration is being pursued in Balboa Bay along the Alaska Peninsula. Figure 4 shows the most recent oil and gas leasing program with significant activity on the North Slope and additional exploration taking place off the western shore of the Alaska Peninsula and the Cook Inlet region.

[3] State of Alaska Department of Natural Resources Division of Oil and Gas 2007 Report.

Figure 4. State of Alaska Oil and Gas Lease Activity

Large oil companies operating in the State of Alaska are unlikely to need the Corps assistance (BP, ConocoPhillips, and Royal Dutch Shell for instance). Small to medium sized operators in the state such as Aurora Gas, Lapp Resources, and Pioneer Natural Resources for example, might not have the capital needed to pursue projects without some assistance. It is expected that assistance could be in the form of staging emergency response vessels to protect environmentally sensitive areas or barge landings to facilitate the movement of cargo and personnel. Several small to medium-sized firms already operate in the state. They tend to pursue small and marginal fields where the company's smaller size allows them to explore and produce at efficient levels that the larger oil firms are unable to accomplish.

Problems and Opportunities.

- World oil and gas demand is expected to continue to climb and having domestic sources for product becomes increasingly important given unrest in other oil- and gas-producing nations.
- The Alaska Gasline Inducement Act (AGIA) resulted in a successful bid (TransCanada) for the purposes of building a natural gas pipeline. Pipeline construction is expected to be completed in 2017.
- Oil companies consider tax stability and permit streamlining as key challenges facing the industry.

Existing Condition. Direct oil and gas industry employment in the State of Alaska represents about 4 percent of total employment with some of the highest paying jobs. Thousands of other jobs service this industry but are not classified as oil industry employment. Jobs directly created by the oil industry include catering, security, construction contracting, transportation, engineering and other support services.[4] Much of the state's job growth in 2007 came from the oil industry, for the second year in a row it added more than 1,000 jobs.[5]

[4] *The Oil Industry* - Alaska Economic Trends by Neal Fried and Brigitta Windisch-Cole, September 2003.

[5] *Employment Forecast for 2008* – Alaska Economic Trends by Dan Robinson, Neal Fried, Alyssa Shanks, and Brigitta Windisch-Cole, January 2008.

Table 2.
Historical Oil and Gas Industry Employment

Year	Average Annual Jobs
2001	9,500
2002	8,900
2003	8,100
2004	8,200
2005	8,700
2006	10,100
2007	11,500
2008	11,900

Source: Alaska Department of Labor and Workforce Development Research and Analysis Section and the U.S. Department of Labor Statistics.

Note: 2008 is average of first three months of the year.

Oil and gas extraction industry wages are more than 3.5 times the average statewide wage in the State of Alaska.

Table 3.
Oil and Gas Extraction Wages Compared to Statewide Average

Year	Number of Firms	Oil and Gas Extraction Average Monthly Wages	Statewide Average Monthly Earnings	Oil and Gas Percent of Average Earnings
2001	N/A	7,720	2,902	266%
2002	35	11,489	2,979	386%
2003	35	10,666	3,026	352%
2004	35	11,610	3,126	371%
2005	36	12,116	3,212	377%
2006	36	12,087	3,366	359%
2007	25	12,901	3,503	368%

Source: Alaska Department of Labor and Workforce Development Research and Analysis Section Employment and Earnings Tables.

Note: 2007 average is the first three quarters of the year. Statewide Average Monthly Earnings is for Private Sector industries only.

Expected Future Condition. The oil and gas industry will continue to be important to the State of Alaska, both in terms of jobs and royalties supporting government spending. Alaska will continue to be important to the country for its wealth of natural resources. Given high oil and gas prices and a stable government structure, Alaska offers an attractive investment opportunity to the industry.

Alternative Plans. There are no alternative plans developed at this time. It is expected that support to the oil and gas industry would come in the form of emergency response assistance and barge landings to support the movement of cargo and personnel.

Potential Sponsors.

- State of Alaska through the Department of Natural Resources – Division of Oil and Gas
- Small to medium sized oil and gas producers (Flint Hills, Lapp Resources, Pioneer Natural Resources Alaska, Aurora Gas LLC, and others)
- Alaska Municipal League

Proposed Action. Investigate the needs of the oil and gas industry, both in terms of infrastructure and permitting process, to determine if there is a federal interest in providing assistance.

Balboa Bay. The Alaska State Department of Natural Resources (ADNR) recently sold oil and gas leases in the Herendeen Bay and Port Moller Area to Shell Oil and Hewitt Minerals. Previous exploration in this area has identified oil and gas resources. Additionally, the Minerals Management Service (MMS) has proposed oil and gas leasing in the Outer Continental Shelf (OCS) area north of Nelson Lagoon. A number of large oil companies have expressed interest in OCS leases, noting the potential for large gas deposits.

Development of oil and gas resources in this region has been studied since the 1960's. Local, state, and federal governments agree that the safest and most logical export transportation plan is to pipe hydrocarbons south to the Pacific Ocean across the Alaska Peninsula to Balboa Bay. It is expected that an oil export terminal and liquefied natural gas (LNG) terminal would be sited in Balboa Bay, requiring a port facility to handle vessel traffic. There is also potential for mineral development in this region that would also require port facilities in Balboa Bay. Hydrocarbons and minerals would be exported by vessel from the port at Balboa Bay.

Lease Sale Area 214, previously known as Area 92, is a wedge-shaped 8,700-square mile area adjacent to nelson Lagoon in the southwestern portion of the North Aleutian Basin, approximately 200 miles away from the Bristol Bay fisheries. See Figure 5. Geologists from MMS estimate the North Aleutian Basin could hold up to 23.278 trillion cubic feet of natural gas and 2.5 billion barrels of oil.

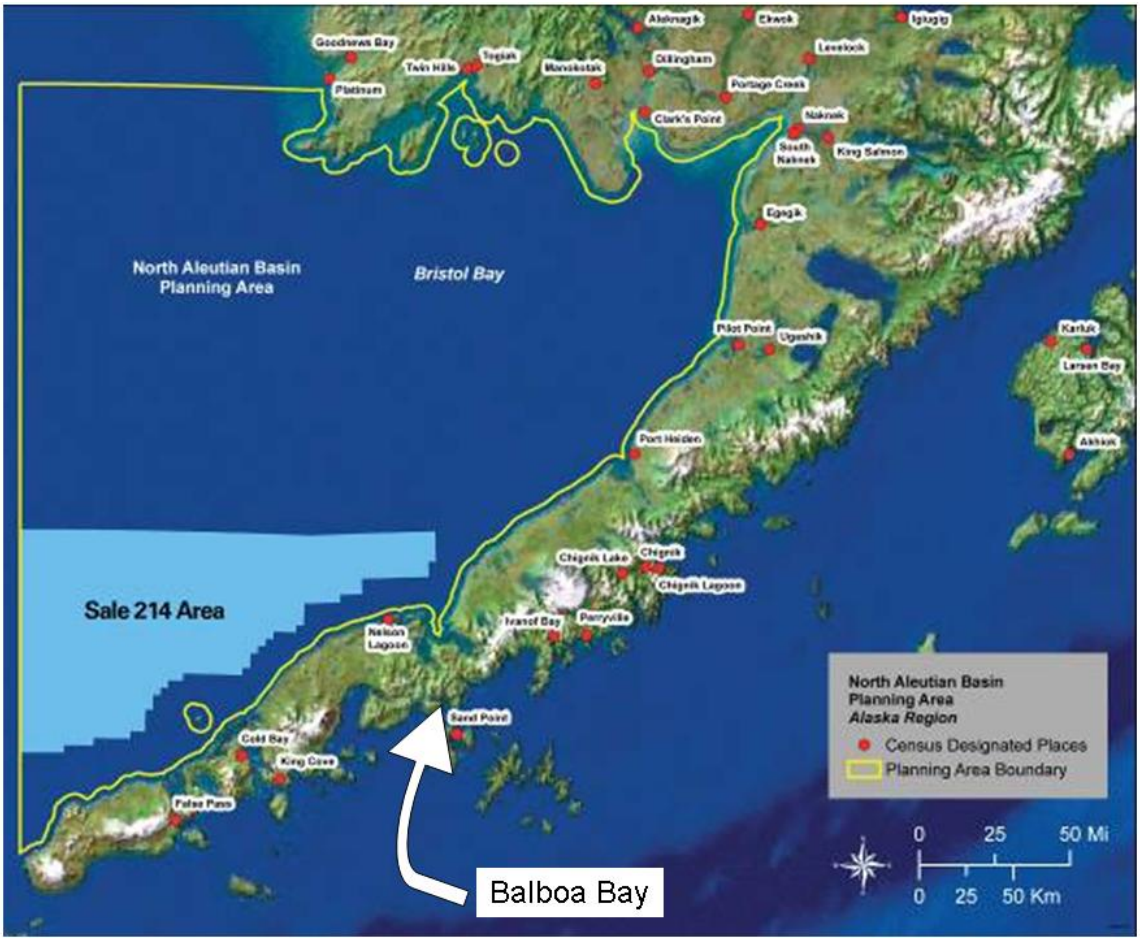


Figure 5. Minerals Management Service oil and gas lease sales across Peninsula from Balboa Bay

Problems and Opportunities.

- World oil and gas demand is expected to continue to climb and having domestic sources for product becomes increasingly important given unrest in other oil- and gas-producing nations.
- Congress temporarily halted deposits into the Strategic Petroleum Reserve in an attempt increase supply and ease prices at the pump making the development of new resources even more important.
- Needed infrastructure is missing from the Aleutians East Borough to support oil and gas development.
- Maximum protection to the fishery resource is required by the State and local residents as this development proceeds.

Existing Condition. There is no port, infrastructure, or community located in Balboa Bay today. Planning for a port will begin at the ground floor. Resource exploration will take several years,

and an export terminal may not be needed for another decade. However, it is critical to start planning today, because there has not been any historical site assessment, economic, or engineering work completed for port development in Balboa Bay to use as a starting basis. The Aleutians East Borough reports that several studies are already underway for the Balboa Bay development. There are water circulation, whale habitat, and subsistence activity studies currently being conducted. The Borough just finished scoping meetings to conduct the field studies in the summer of 2008 for the Environmental Impact Study.

Expected Future Condition. The Aleutians East Borough is interested in exploring various development options including constructing, owning, and operating a port facility at Balboa Bay. Typically, industry would construct, own, and operate the adjoining oil terminal, LNG facility, and mineral storage facilities. The oil and gas industry will continue to be important to the State of Alaska, both in terms of jobs and royalties supporting government spending. The National and Regional benefits of Lease Sale 214 over a 25-year period as reported on the Aleutians East Borough website are as follows:

- $546 million in Ad Valorem tax from the Liquefied Natural Gas plant
- $12 billion in Federal income tax
- $7 billion in royalties
- $850 million in State and Local taxes
- 5,000 construction jobs
- 400 platform and 250 on-shore operations jobs
- 3,500 support jobs in local communities

Alternative Plans. Conceptual alternative plans for navigation facilities are being developed at this time. Likely developments include a general cargo dock and trestle for mining support and pipeline for a LNG facility. There is a federal interest is providing wave protection for these facilities using floating or rubblemound breakwaters. Channel dredging could be required, although the sites under consideration at this time are in naturally deep water.

Potential Sponsors.

- State of Alaska through the Department of Natural Resources – Division of Oil and Gas
- Aleutians East Borough

Proposed Action. Investigate the feasibility of federal participation in providing wave protection and dredging for the proposed harbor facility at Balboa Bay.

Cruiseship Industry. The cruiseship industry is well established within the Southeast region of Alaska. Cruise ship activities, especially eco-tourism along the Aleutian Islands and into the Arctic Ocean, continue to increase. It is anticipated that tourism in the Arctic seas will further increase with sea ice retreat.

Large cruise ships like the Princess, Holland America, or Norwegian Lines will often build their own private infrastructure. These ships range in size from 40,000 tons to well over 100,000 tons carrying between 1,000 and 4,000 passengers. Some of these ships are over a football field long and while there have been accidents requiring assistance in the past, it is unlikely that the Corps would be involved in building infrastructure to support this industry.

Small to medium sized cruise or water taxi services, however, do not have the capital required to build the infrastructure to support an individual business. These ventures rely on public or other privately owned infrastructure to support their operations. In Alaska, where water transportation is the only reliable means of transportation in many communities, these smaller operations are the lifeline for the transportation of goods and people into and out of the community and sometimes serve as an important economic activity where there is limited employment opportunity.

According to the Alaska Department of Commerce Community and Economic Development Alaska Visitors Statistics Program (AVSP) there were 1.63 million out-of-state visitors in 2006. Almost 60 percent (958,900 visitors) arrived by cruise ship while 36 percent arrived by air, and the balance by highway. The cruise ship passengers likely arrived on the large cruise ships and it is the air and highway visitors who would likely participate in small to medium sized cruise or taxi activity.

Problems and Opportunities.

- Rural Alaska communities want to develop tourism to diversify their economies and provide new business opportunities but they lack the resources and infrastructure necessary to prepare for and attract tourism development.
- Rural Alaska does not have an established reputation as a desirable destination. Its ability to attract and retain visitors will require considerable investment in marketing and promotion accompanied by desirable inland facilities and attractions.
- Large cruise lines have the ability to operate independently due to economies of scale obtained with large passenger manifests while smaller operators must rely on public and other privately owned harbors which come at great cost to the local community.

Existing Condition.

A search of the Alaska Division of Occupational and Business Licensing database reveals 457 companies with valid 2008 Alaska licenses offering various modes of passenger water transportation services. The lion's share of licenses were in the Scenic and Sightseeing Water

Transportation industry with almost half as many businesses offering Other Support Activities for Water Transportation (NAICS code 488390) and Navigational Services for Shipping (NAICS 488330). See Table 4.

Table 4.
2008 Active Business Licenses for Water Transportation Industries

	State Region						
	South-east	**South-central**	**South-west**	**Yukon-Kuskokwim**	**Northern**	**Outside Alaska**	**Total**
Industry Designation of Passenger Transportation Service							
Coastal and Great Lakes	4	6	1	0	0	0	11
Deep Sea	0	1	0	0	0	0	1
Inland Water	3	10	1	0	0	3	17
Scenic and Sightseeing	101	98	14	5	1	42	261
Subtotal	***108***	***115***	***16***	***5***	***1***	***45***	***290***
Other Support Activities	41	48	11	1	0	10	111
Navigational Services	27	13	1	0	0	15	56
Subtotal	***68***	***61***	***12***	***1***	***0***	***25***	***167***
Total Active Business Licenses	**176**	**176**	**28**	**6**	**1**	**70**	**457**

Source: Alaska Department of Commerce Community and Economic Development. North American Industry Classification System codes shown in this table are 483114, 483112, 483212, 487210, 488390, & 488330.

Expected Future Condition. Eco-tourism is becoming increasingly popular and Alaska remains a safe destination for U.S. residents. Global climate change will allow more cruise ships access to northern points. Cruise activity in Alaska is expected to grow in the foreseeable future.

Alternatives Plans. No alternative plans have been developed at this time to address the needs of small to medium sized cruise lines or taxi services.

Potential Sponsors. Potential sponsors to evaluate the need for marine infrastructure needs to support the cruise industry include:

- State of Alaska through the Department of Transportation -Alaska Marine Highway System
- State of Alaska through the Department of Commerce Community and Economic Development – Office of Tourism Development
- Western States Tourism Policy Council
- Alaska Travel Industry Association
- Alaska Convention and Visitors Bureaus (too many to mention)
- Alaska Chambers of Commerce (also too many to mention)
- Alaska Municipal League

Proposed Action. Conduct a detailed study to analyze the need for infrastructure to support the cruise lines and water taxi service businesses in the State of Alaska.

Timber Industry. The timber industry in the State of Alaska is primarily located in the Southeast portion of the state. Forest stands further north and west of this area are hampered by cold temperatures, short growing seasons, and strong winds. The Southeast Alaska timber industry has been in a slow downward spiral for the past decade since the Alaska Pulp mill in Sitka and the Ketchikan Pulp Mill closed their doors.[6] The forest products manufacturing sector in Southeast now consists of four medium-sized sawmills and a dozen or so micro-mills. Low timber offerings from the U.S. Department of Agriculture (USDA) Forest Service and the State of Alaska Department of Natural Resources (DNR) maximized offerings continue to put downward pressure on the industry.

There is some interest in the Matanuska-Susitna Borough and the Kenai Peninsula to harvest, chip, and market Alaska wood fiber. Birch chips were sold to a Korean cardboard manufacture and spruce chips were shipped to a Japanese newsprint manufacturer. Alaska's white spruce provides a bright chip requiring very little bleaching making it environmentally desirable while meeting demanding Japanese quality standards.

Alaska's timber regions are managed by four landholders: Federal government (51 percent), State, University and local governments (25 percent), Native Corporations (23.6 percent), and other private landowners (0.4 percent). From 1994 to 1999, the average statewide total timber harvest on Federal lands was 167 metric million board feet, (Scribner scale, mmbf).[7]

Problems and Opportunities.

- The hardwood component of the boreal forest, primarily paper birch and aspens, represents a largely untapped economic resource. Recent interest has emerged in producing wood chips to export to Asia, wood pellets for residential and commercial heating, dimensional lumber, and other value-added timber products.

Existing Condition. The USDA Forest Service Sitka Wood Utilization Center reported an annual lumber market in Alaska of approximately 100 mmbf; a second wood product market estimated 90 million square feet of engineered wood products; and 40,000 short tons of other manufactured wood products. At present, Alaska imports these wood products from other markets, mainly Canada and other parts of the U.S. Alaska also imports approximately 10 metric

[6] Alaska Department of Commerce Community and Economic Development, Office of Economic Development, *Alaska Economic Performance Report 2006,* dated August 2007.

[7] Mmbf is a measure symbol used in U.S. forestry for one million board feet. One mmbf represents a volume of 83,333 cubic feet or 2,360 cubic meters.

million board feet in treated wood for docks, wharfs, palings, decks, posts, lumber, and timbers, and 10 million board feet of railroad ties.

The timber industry provided 378 direct jobs in Southeast Alaska last year, down from more than 3,500 jobs at the industry's peak in 1990. The U.S. Forest Service recently released a plan for how timber sales and all the other uses of the Tongass National Forest will be managed over the next ten years. The Forest Service is hoping to stabilize the industry with its plan.

Expected Future Condition. The Alaskan timber industry is expected to grow slightly and change to small-scale sales and high-value or novel uses of this renewable resource.

Alternative Plans. No alternative plans have been developed at this time to address the needs of the timber industry in the State of Alaska.

Potential Sponsors. Potential sponsors to evaluate the need for the timber industry include:

- State of Alaska through the Department of Natural Resources – Division of Forestry
- ANCSA corporations

Proposed Action. Conduct a detailed study to analyze the need for infrastructure to support the timber industry in the State of Alaska.

5.6 Subsistence Harbors. State and Federal law define subsistence as the "customary and traditional uses" of wild resources for food, clothing, fuel, transportation, construction, art, crafts, sharing and customary trade. In many communities subsistence is central to the customs and traditions, nutrition, and employment of Alaska Natives. In 1989 State law qualified all Alaska residents for subsistence fishing and today most rural families depend on this way of life.

Subsistence fishing and hunting in Alaska are regulated by the State of Alaska and the federal government depending upon where the harvests occur. This system is called a "dual management system" because there are overlapping state-federal jurisdictions in many areas. Subsistence hunting and fishing are closed in non-rural areas of Alaska by the federal and state programs. The Federal Subsistence Board and the Alaska Joint Board of Fisheries and Game have determined that the areas around Anchorage-Mat-Su-Kenai, Fairbanks, Juneau, Ketchikan, and Valdez are non-rural areas, where fish and game harvests may be allowed under sport, personal use, or commercial regulations, but not under subsistence regulations.[8]

Passage of the Water Resources Development Act (WRDA) 2007 will allow the Corps of Engineers to examine subsistence use harbors in detail. Pertinent pieces of the legislation read as follows:

WRDA - SEC. 2006. REMOTE AND SUBSISTENCE HARBORS.

(a) IN GENERAL.—In conducting a study of harbor and navigation improvements, the Secretary may recommend a project without the need to demonstrate that the project is justified solely by national economic development benefits if the Secretary determines that—

(1) (A) the community to be served by the project is at least 70 miles from the nearest surface accessible commercial port and has no direct rail or highway link to another community served by a surface accessible port or harbor; or

(B) the project would be located in the State of Hawaii, the Commonwealth of Puerto Rico, Guam, the Commonwealth of the Northern Mariana Islands, the United States Virgin Islands, or American Samoa;

(2) the harbor is economically critical such that over 80 percent of the goods transported through the harbor would be consumed within the community served by the harbor and navigation improvement; and

(3) the long-term viability of the community would be threatened without the harbor and navigation improvement.

(b) JUSTIFICATION.—In considering whether to recommend a project under subsection (a), the Secretary shall consider the benefits of the project to—

(1) public health and safety of the local community, including access to facilities designed to protect public health and safety;

(2) access to natural resources for subsistence purposes;

(3) local and regional economic opportunities;

[8] *Subsistence in Alaska, A Year 2000 Update* by Robert J. Wolfe, Research Director, Division of Subsistence, ADF&G, Juneau, March 2000.

(4) welfare of the local population; and

(5) social and cultural value to the community.

Problems and Opportunities.

- There is inadequate access to subsistence harvest resources.
- Due to a lack of protected moorage, subsistence harvesters are often exposed to dangerous wind and waves during extreme weather conditions when traveling from their village to the resources.
- Data for subsistence activity is sparse.
- The cultural and social aspects of subsistence activity need evaluation.
- The ability to evaluate subsistence harbors is further stymied by lack of guidance and the inability of National Economic Development procedures to capture all potential benefits.

Existing Condition. The subsistence food harvest provides a major part of the nutritional requirements of Alaska's population. The subsistence harvest contains 35 percent of the caloric requirements of the rural population (that is, it contains about 840 Kcal daily, assuming a 2,400 Kcal/day mean daily requirement).[9] The urban wild food harvests contain two percent of the caloric requirements of the urban population.

[9] *Subsistence in Alaska, A Year 2000 Update* by Robert J. Wolfe, Research Director, Division of Subsistence, ADF&G, Juneau, March 2000.

Table 5.
Estimated Subsistence Harvest Value – Rural/Urban Areas

Community/Area	Population (2007 Est.)	Annual Wild Food Harvest		Estimated Replacement Value	
		(Average Lbs Per Person)	(Total Lbs)	($4 Pound)	($6 Pound)
Rural Areas					
Southcentral	7,258	153	1,110,474	$ 4,441,896	$ 6,662,844
Kodiak Island	13,568	155	2,103,040	8,412,160	12,618,240
Southeast	25,863	178	4,603,614	18,414,456	27,621,684
Southwest-Aleutian	14,684	373	5,477,132	21,908,528	32,862,792
Interior	8,753	613	5,365,589	21,462,356	32,193,534
Arctic	23,653	516	12,204,948	48,819,792	73,229,688
Western	30,179	664	20,038,856	80,155,424	120,233,136
Total Rural	**123,958**	**375**	**50,903,653**	**$203,614,612**	**$305,421,918**
Urban Areas					
Ketchikan	13,160	33	434,280	$ 1,737,120	$ 2,605,680
Juneau	30,305	35	1,060,675	4,242,700	6,364,050
Matanuska-Susitna	80,056	27	2,161,512	8,646,048	12,969,072
Fairbanks-Delta	90,963	16	1,455,408	5,821,632	8,732,448
Valdez	3,599	89	320,311	1,281,244	1,921,866
Kenai Peninsula	51,123	40	2,044,920	8,179,680	12,269,520
Anchorage	283,823	19	5,392,637	21,570,548	32,355,822
Total Urban	**553,029**	**23**	**12,869,743**	**$ 51,478,972**	**$ 77,218,458**
Alaska Total	**676,987**		**63,773,396**	**$255,093,584**	**$382,640,376**

Source: Alaska Department of Labor and Workforce Development for population estimates. Alaska Department of Fish and Game, Division of Subsistence for food harvest based on *Subsistence in Alaska: A Year 2000 Update*.

Studies show that subsistence users tend to harvest in traditional use areas surrounding their communities. Subsistence harvest areas are accessible from the community, although seasonal camps are used to access some species. Subsistence harvest areas for communities are definable and relatively predictable. Harvesting outside a communities' traditional use area might antagonize a neighboring community or other land-owner. The intricacies of subsistence use areas are poorly understood by anyone outside of the rural community.

Expected Future Condition. Subsistence is part of rural economic system, called a "mixed, subsistence-market" economy. Future conditions are based on access, environmental conditions, and sustainable harvest regulations to maintain the ecological balance.

Alternative Plans. Alternative plans for subsistence harbors have not yet been developed.

Potential Sponsors.

- State of Alaska through the Department of Fish and Game – Division of Subsistence.
- The twelve Native Regional Corporations organized under the Alaska Native Claims Settlement Act (Arctic Slope, NANA, Bering Straits, Calista, Bristol Bay, Doyon, Chugach Alaska, Sealaska, Cook Inlet, the Aleut Corp, Koniag, Ahtna Regional Corporations).
- The six regional Community Development Groups organized under the federal fisheries program (Aleutian Pribilof Island Community Development Association (6 communities), Bristol Bay Economic Development Corporation (17 communities), Central Bering Sea Fishermen's Association (1 community), Coastal Villages Region Fund (20 communities), Norton Sound Economic Development Corporation (15 communities), Yukon Delta Fisheries Development Association (6 communities)).

Proposed Action. Conduct a detailed study to analyze existing activities, potential development impacts to the subsistence way of life, and need for infrastructure to support subsistence activity in the State of Alaska.

Alaska Regions. The following examines the marine infrastructure needs as defined by the five geographic regions of Alaska; Southeast, Southcentral and Interior, Southwest, Yukon-Kuskokwim, and Northwest. These regions mirror the statewide transportation planning corridors and are intended to be a start at inclusion in the statewide transportation planning efforts. Potential sponsors include Alaska Native Regional Corporations, Community Development Groups, Alaska Regional Development Organizations, and state agencies. Geographic boundaries for these regions do not always match so where practical, these organizations have been included in the region where the boundaries most closely align.

Data used to describe the potential NED benefits for any given project area have been derived using the results of the Cornell University study, Demand for Harbors, Dockage, and Other Navigational Needs for Small Boats and Commercial Fishing Vessels in Alaska, average benefits from previously published Corps reports, and a count of commercial fishing permits in any given region.

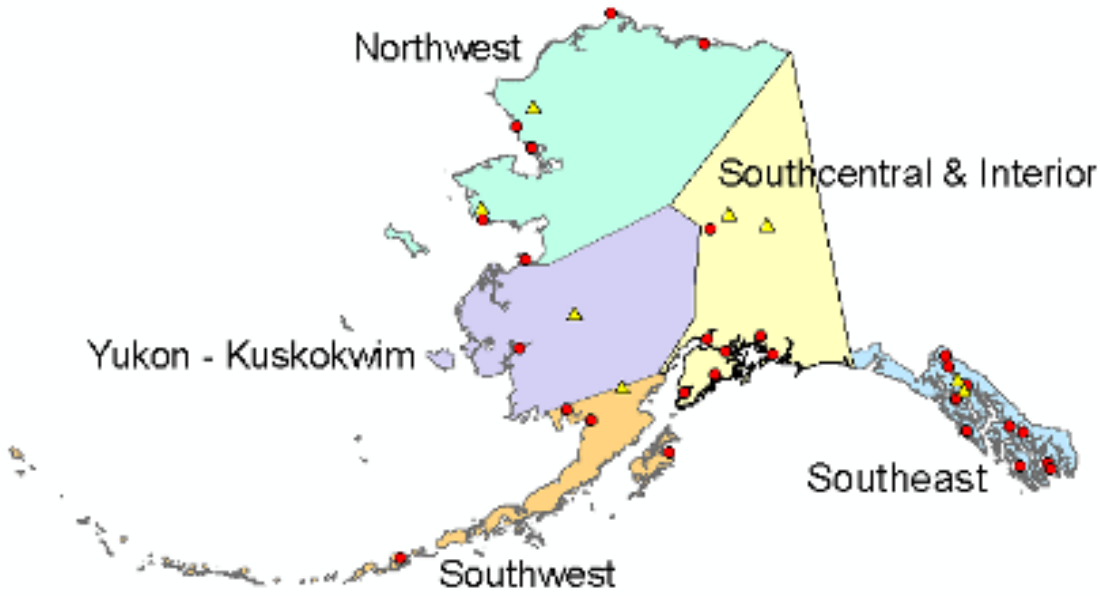


Figure 6. State of Alaska by Region

5.7 Southeast Region. The Southeast Alaska region includes the boroughs of Haines, Juneau, Ketchikan, Yakutat, and Sitka, and the census areas of Prince of Wales- Outer Ketchikan, Skagway-Hoonah-Angoon, and Wrangell-Petersburg. In the 2000 Census the Southeast Region had a total population of 73,082. The region connects to the road system at Haines, Skagway, and Hyder. The remainder of the region is accessible only by air and water. The Alaska Marine Highway System (AMHS) plays an integral role in the interconnectedness of the region's communities. The AMHS calls on the southeast communities of Haines, Juneau, Ketchikan, Petersburg, Sitka, Skagway, Wrangell, and Yakutat. In addition, smaller feeder lines connect the communities of Angoon, Hoonah, Kake, Metlakatla, Pelican, and Tenakee Springs.

Figure 7. Southeast Region

Residents of the region are dependent on air and water transportation for travel in-between communities and to and from the region. There are few roads linking communities in the southeast. As a result, the marine infrastructure is vital to the region's economy and accessibility. Ports and harbors provide access for the delivery of goods and services to many of the communities in the region. Mineral development, timber and commercial fishing industries are important contributors to the region's economic base and are dependent on the region's port/harbor facilities.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Southeast region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events

- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels
- Lack of infrastructure support for economic development

Existing Condition. According to Alaska Department of Fish and Game Commercial Fisheries Entry Commission 2005 permit file, there were 2,247 unique vessels fishing 3,556 commercial fishing permits during the 2005 season in Southeast Alaska. See Table 6 for fishery participation by species.

Table 6.
2005 Fishing Permits for Southeast Alaska

Southeast Commercial Fishing Permits - 2005	
Number of permits	3,556
Number of unique vessels	2,247
Fishery participation	
Salmon	1,223
Halibut	0
Sablefish	180
Herring	551
Ling Cod	0
Rockfish	184
Sea Urchin	91
Sea Cucumber	355
Scallops	0
Clams	115
Octopi/Squid	0
Shrimp	351
Crab	506
Misc. Finfish	0
All Other	0

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

Most vessels fishing in Southeast Alaska waters have only one permit but one-third of all vessels with Southeast permits are fishing in multiple fisheries. These vessels may also participate in fisheries in other regions but for purposes of this evaluation we have focused only on Southeast fisheries.

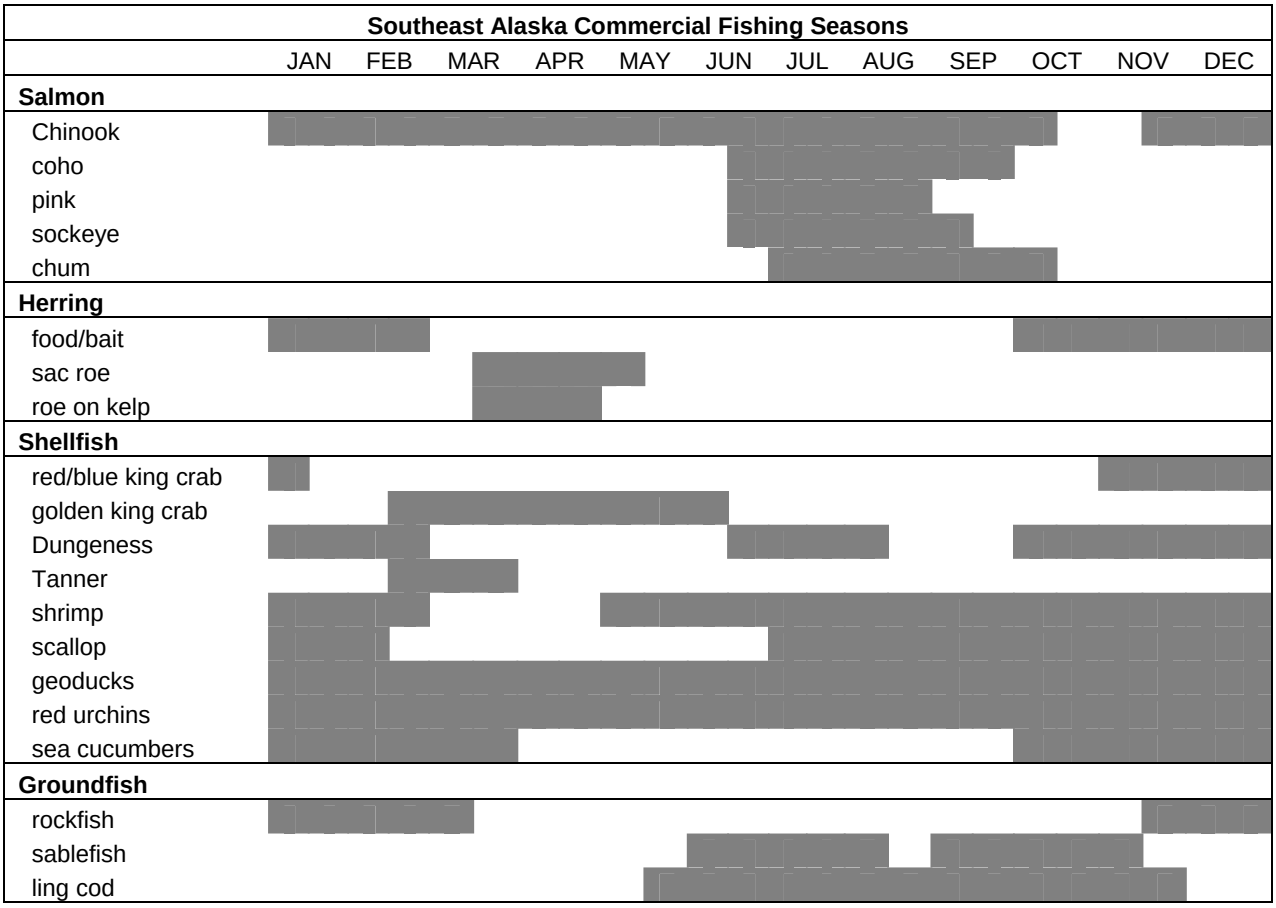
Table 7.
Vessel Owners with Southeast Permits in Multiple Fisheries

Number of Permits Per Vessel 2005	
One	67%
Two	20%
Three	7%
Four	4%
Five or more	3%

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

These vessels fished for a variety of species and depending on the vessel's ability to modify gear types, could potentially be fishing year-round. This has become more common in recent years as fishery participants have become more efficient and Alaska has realized a shrinking of the commercial fleet in many areas. Table 8 shows the annual combined fishing seasons for the Yakutat and Southeast management areas.

Table 8.
Southeast Commercial Fishing Seasons by Fishery - 2007



Note: Fishing seasons depicted here are a combination of gear types with the Yakutat and Southeast Alaska Management areas combined.

Source: Alaska Department of Fish and Game Division of Commercial Fisheries, published April 2007.

The 2006 Cornell University survey of commercial fishers, charter boat operators, and recreational boat owners revealed that Southeast boaters would most like additional harbor facilities in Sitka, Ketchikan, and Juneau (top three choices from the survey responses). There were a total of 28 communities where survey respondents felt there was a need for additional harbor facilities. See Table 9.

Table 9.
Survey Responses for Additional Harbor Facilities
Southeast Region

Port in need of additional facilities mentioned most often	Number of Respondents
Sitka	41
Ketchikan	35
Juneau	27
Gustavus	24
Skagway	22
Juneau/Douglas	20
Haines	17
Petersburg	14
Wrangell	13
Port Alexander	6
Wrangell-Petersburg	5
Yakutat	5
Coffman Cove	4
Craig	4
Hoonah	4
Metlakatla	4
POW - Outer Ketchikan	4
Angoon	3
Tenakee	3
Elfin Cove	1
Funter Bay	1
Hollis	1
Icy Bay	1
Klawock	1
Pelican	1
Point Baker	1
Port Protection	1
Saxman	1
Total	**264**

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Answers to expanded harbor facilities varied by user group. The responses for expanded or new facilities are shown by user group in Table 10. For instance, recreational boaters felt the need for new or expanded facilities was greatest in Gustavus and Juneau/Douglas, while charter passenger operators preferred Sitka and Skagway, and commercial fishing vessels felt the need greatest in Sitka, Juneau, and Ketchikan.

Table 10. Survey Responses for Additional Harbor Facilities by User Group - Southeast Region

User Type	Survey Respondents	Percent
Recreation boaters		
Coffman Cove	1	0%
Craig	1	0%
Funter Bay	1	0%
Gustavus	16	6%
Haines	2	1%
Hollis	1	0%
Icy Bay	1	0%
Juneau/Douglas	20	8%
Ketchikan	11	4%
Petersburg	2	1%
Saxman	1	0%
Sitka	6	2%
Tenakee Springs	2	1%
Wrangell	3	1%
Charter/passenger operators		
Haines	2	1%
Juneau	3	1%
Ketchikan	7	3%
POW - Outer Ketchikan	4	2%
Sitka	11	4%
Skagway	21	8%
Wrangell-Petersburg	5	2%
Yakutat	1	0%
Commercial fishing vessels		
Haines	13	5%
Juneau	24	9%
Ketchikan	17	6%
Coffman Cove	3	1%
Craig	3	1%
Klawock	1	0%
Metlakatla	4	2%
Point Baker	1	0%
Port Protection	1	0%
Sitka	24	9%
Angoon	3	1%
Elfin Cove	1	0%
Gustavus	8	3%
Hoonah	4	2%
Pelican	1	0%
Skagway	1	0%
Tenakee	1	0%
Petersburg	12	5%
Port Alexander	6	2%
Wrangell	10	4%
Yakutat	4	2%
Total Vessel Surveys	**264**	

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

More than half of the survey responses for this region were from commercial fishing vessel owners with recreational boaters making up about a quarter of the responses and charter/passenger vessels the remainder.

Table 11.
Southeast Region Survey Responses by User Group

User Type	Survey Respondents	Percent of Total
Recreational boaters	68	26%
Charter/Passenger vessels	54	20%
Commercial vessels	142	54%

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Expected Future Condition. Commercial fishing activity in Southeast Alaska is expected to remain strong in the coming years. The popularity of the Southeast Passage for cruise and recreational vessels continues to grow while the independent traveler market is one of the fastest growing in the tourism industry. Southeast Alaska harbors are a combination of commercial vessels, charter/taxi operators, cruiseships, and recreational boats.

Previous Corps navigation improvements projects for Haines and Douglas suggest that average annual benefits that might accrue as a result of harbor improvements in Southeast are approximately $5,900 per vessel.[10] There were 2,247 unique vessels with commercial fishing permits in Southeast for 2005. Assuming regional facilities could be acquired to meet the needs of these vessels, there is a potential for average **annual benefits of $13,257,500**. This probably understates the total potential for benefits as we have calculated this estimate using only commercial fishing permits. Recreational and charter/water taxi/sightseeing vessels are not examined here.

Alternative Plans. No alternative plans have been developed at this time to address the needs of Southeast harbors. Several harbor projects for Southeast Alaska have been recently authorized to address some of these problems and opportunities.

Potential Sponsors. Potential sponsors to evaluate the need for marine infrastructure needs in Southeast Alaska include:

- State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- Alaska Marine Highway System – a division of the State Department of Transportation

[10] Navigation improvements per vessel adjusted to 2007 dollars were $5,871 at Haines and $5,934 at Douglas Harbor. Benefits include those accruing to all vessel classes, opportunity costs of time, and the avoided harbor infrastructure damages.

- Sealaska Corporation – Alaska Native Regional Corporation for Southeast Alaska.
- Southeast Conference, Alaska Regional Development Organization (ARDOR) for Southeast
- City and Borough of Juneau
- City and Borough of Sitka
- Ketchikan Gateway Borough
- Haines Borough
- City and Borough of Yakutat

Proposed Action. Conduct a detailed regional port study to analyze the need for navigational improvements and potential alternatives in the southeast region of Alaska.

5.8 Southeast Region Hubs. The following individual communities are recommended for further study either as regional hubs for the Southeast region or because of the individual needs for the community or a combination of both. Some communities mentioned in the Cornell survey as having a great need for additional facilities are not mentioned here as the Corps already have studies underway.

Juneau/Douglas/Auke Bay. The City of Juneau is located in the northern Southeast Alaska region, at the center of the Inside Passage along the Gastineau Channel, on the mainland shore and facing Douglas Island. Juneau is the state capital and largest community in the southeast region. The 2005 population of the City and Borough of Juneau was 30,305. It is located approximately 900 air miles northwest of Seattle, WA, and 577 air miles southeast of Anchorage. It is not connected to the state road system. Douglas and Auke Bay areas are located in proximity to Juneau.

Juneau's harbor facilities include a sea plane landing area, two deep draft docks, five small boat harbors, and a state owned ferry terminal. Freight and cargo are delivered via barge on a regular basis. The Alaska Marine Highway System provides daily year-round service to the city.

Commercial fishing, tourism, sport fishing, and subsistence activities contribute to harbor demand. Juneau residents fished 442 commercial fishing permits in 2006 with estimated gross earnings of $21.6 million. Juneau received more than one million cruiseship visitors during the summer months of 2007, generating approximately $180 million in income, and nearly 2,000 jobs.[11] Support services for logging and fish processing also contribute to the Juneau economy. The Kennecott Green's Creek Mine produces gold, silver, lead and zinc, and is the largest silver mine in North America. As a regional hub for southeast, Juneau port/harbors support development activities such as tourism, commercial fishing, and mineral extraction industries.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Juneau/Douglas/Auke Bay region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity – especially for larger vessels
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events
- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels

[11] Cruiseship visitors and expenditures based on Cruise Line Agencies of Alaska estimate for 2007 and *Juneau Cruise Visitor Profile, 2005* prepared by McDowell Group.

- Lack of infrastructure support for economic development
- Need for working, drive down, and gear transfer floats

Existing Condition. According to the Alaska Department of Fish and Game Commercial Fisheries Entry Commission, there were 475 individual permit holders fishing 949 commercial fishing permits in 2005 with Juneau region mailing addresses. These vessels fished a variety of fisheries in Southeast, Southcentral, Yukon-Kuskokwim, and Statewide fisheries.

Table 12.
Juneau Area Residents Commercial Fishing Activity 2006

City Mailing	Number of Permit Holders	Number of Permits
Auke Bay	37	59
Douglas	49	105
Juneau	356	639
Total	**442**	**803**

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

Note: Auke Bay, Douglas, and Juneau are all within the City and Borough of Juneau geographic boundaries.

Almost half of the Cornell survey respondents (45 percent) indicated that their fishing business would be enhanced by the creation of a new harbor in Alaska. Of the survey respondents who were not currently renting a slip in the Juneau area, half (50 percent) indicated they would like to rent a slip. Important features that would make a new harbor attractive were protected moorage, close to the fishing grounds, with available fueling, and close to a processor.

The charter fishermen and commercial passenger boat owners responding to the Cornell survey indicated they would use the existing facilities an average of 23 additional days if they were repaired. These same respondents wanted annual slips or moorage (89 percent) and parking facilities (80 percent) among other needs.

Recreational boaters indicating a need for repaired facilities in the Juneau area suggested they would use the harbor and additional 33 days annually. Again, additional moorage and parking facilities topped the list of needs.

Juneau ports/harbors play an important role in the access to and from mineral and timber operations in the southeast region. Mines currently operating in the area are the Greens Creek Kennecott (lead, zinc, silver, gold) and the soon to be operating Kensington mine (gold).

Juneau also has a strong cruiseship industry which may benefit from expanded facilities. There were over one million cruiseship visitors arriving in Juneau in 2007.

Expected Future Condition. The demand for harbor facilities in the Juneau/Douglas/Auke Bay area is expected to remain strong. A 2002 study for Douglas found average annual benefits per vessel to be $5,933 in 2007 dollars. There are currently 1,085 moorage spaces at the various harbors in the Juneau/Douglas/Auke Bay area. Applying the average benefits from the Douglas

report to the total moorage spaces available gives us potential **average annual benefits of $6,437,300** for improved, expanded, or new harbor facilities in the area. Further analysis would be needed to identify the benefits accruing to the commercial fishing, charter vessel, and recreational fleets using the harbors in this area.

Alternative Plans. No alternative plans have been developed at this time to address the needs of Juneau/Douglas/Auke Bay harbors.

Potential Sponsors.

- State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- City and Borough of Juneau
- Kennecott Greens Creek Mine
- Kensington Mine

Proposed Action. Conduct a detailed study to analyze the need for navigational improvements and potential alternatives in the Juneau/Douglas/Auke Bay region.

Ketchikan. Ketchikan is located in the southeast region, along southwest cost of Revillagigedo Island, in the southern boundary of the Alaska border. It is approximately 235 miles south of Juneau and 679 miles north of Seattle Washington. The 2005 population estimate for the City of Ketchikan is 7,685.

Ketchikan is an industrial hub and a major port of entry in Southeast Alaska. The community's marine infrastructure includes a breakwater, four float plane landing facilities, a deep draft dock, five small boat harbors, a dry dock and ship repair yard, boat launch, and a State ferry terminal. Alaska Marine Highway System provides year-round service to Ketchikan.

Ketchikan's economy is supported primarily by commercial fishing, fish processing, tourism and timber. In 2006, 369 area residents held commercial fishing permits and had estimated gross earnings of $15.9 million. Several processing and cold storage facilities support the region's fishing industry. Cruise ships bring more than 650,000 visitors to Ketchikan each year. Ketchikan is also the largest sport fishing hub in the southeast region and a significant number of recreational boating and commercial charter fishing/passenger boats utilize Ketchikan's port/harbors.

The timber industry usage also contributes to the demand for navigational improvements in Ketchikan. As a transportation hub, Ketchikan port/harbors assist in the movement of supplies, equipment and workers to the region's timber operations.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Ketchikan region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity – especially for larger vessels
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events
- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels
- Lack of infrastructure support for economic development
- Need for working, drive down, and gear transfer floats

Existing Condition. According to the Alaska Department of Fish and Game Commercial Fisheries Entry Commission, there were 344 individual permit holders fishing 677 commercial fishing permits in 2005 with Ketchikan region mailing addresses. These vessels fished a variety of fisheries in Northwest, Southeast, and Statewide fisheries. The communities of Saxman and Hollis are included here; however, residents in these communities were not active in commercial fishing in 2005.

Table 13.
Ketchikan Area Residents Commercial Fishing Activity 2006

City Mailing	Number of Permit Holders	Number of Permits
Ketchikan	323	593
Saxman	0	0
Hollis	0	0
Total	**323**	**593**

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

Ketchikan is also a popular recreational stop with an enlarged fleet of sailboats in recent years. Smaller cruise vessels and water taxi operators also serve the area.

Ketchikan receives a number of cruiseship passengers each year similar to the experiences of Juneau with more than one million passengers in 2007. There may be opportunities to assist the cruiseship industry in Ketchikan as well.

Expected Future Condition. The demand for harbor facilities in the Ketchikan area is expected to remain strong. A 2002 study for Douglas found average annual benefits per vessel to be $5,933 in 2007 dollars. There are currently 1,199 moorage spaces at the various harbors in the Ketchikan area. Applying the average benefits from the Douglas report to the total moorage

spaces available gives us potential **average annual benefits of $7,113,700** for improved, expanded, or new harbor facilities in the area. Further analysis would be needed to identify the benefits accruing to the commercial fishing, charter vessel, and recreational fleets using the harbors in this area.

Alternative Plans. No alternative plans have been developed at this time to address the needs of Ketchikan harbors.

Potential Sponsors

- State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- Ketchikan Gateway Borough

Proposed Action. Conduct a detailed study to analyze the need for navigational improvements and potential alternatives in Ketchikan.

Petersburg. Petersburg is located in the southeastern region midway between Juneau and Ketchikan. The community is on the northwest end of Mitkof Island. The 2005 population estimate is 3,155.

Petersburg's economy is based on commercial fishing and timber activities. Petersburg is currently one of the top-ranking ports in the U.S. for the quality and value of fish landed. There were 474 area residents holding commercial fishing permits in 2006 with estimated gross earnings of $45.2 million. Operations that support the commercial fishing industry also support the Petersburg economy. The community hosts several fish processing facilities, cold storage, canneries and custom packing operations. In addition, Petersburg is the supply hub for many of the areas logging camps. Sportsmen and tourists utilize the local charter boat operations and nearby lodges. The Alaska Marine Highway System provides year-round service to Petersburg.

Petersburg port/harbor facilities include three docks, two petroleum wharves, two barge terminals, three boat harbors with moorage for 588 boats, 105 transient spaces, 2 tidal grids, a boat launch and boat haul-out. Freight arrives by barge, ferry or cargo plane. There is no deep water dock for large ships such as cruise ships. Therefore, cruiseship passengers visiting Petersburg are lightered to shore. Harbor officials estimate that approximately 94% of their permanent slips are rented out to commercial fisherman. The harbor master staff also indicated that on sunny days and weekends the current boat launch facility is often backed up with lines of cars waiting to launch. In addition, the harbormaster estimated that 50 vessels were on the waiting list for berths at the Petersburg harbor (as of Sept 2005) and the need is primarily for vessels under 30’ and above 75’. The harbor utilizes a hot berthing system to accommodate transient usage, currently estimated to be at approximately 5,000-6,000 transient visits per year.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Petersburg region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity – especially for larger vessels
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events
- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels
- Lack of infrastructure support for economic development
- Need for working, drive down, and gear transfer floats

Existing Condition. According to the Alaska Department of Fish and Game Commercial Fisheries Entry Commission, there were 474 individual permit holders fishing 1135 commercial fishing permits in 2005 with Petersburg area addresses. These vessels fished a variety of fisheries in Northwest, Southcentral, Southeast, Southwest, Yukon-Kuskokwim, and Statewide fisheries. The community of Kupreanof is included here to suggest that they might also benefit from a regional harbor in the Petersburg area. However, in 2006, there were no commercial fishing permits assigned to Kupreanof residents.

Table 14.
Petersburg Area Residents Commercial Fishing Activity 2006

City Mailing	Number of Permit Holders	Number of Permits
Petersburg	474	1135
Kupreanof	0	0
Total	**474**	**1135**

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

Petersburg does not have the same recreational and cruiseship industry participation as Juneau and Ketchikan. However, the commercial fishing fleet is very active in the area. Harbor officials estimate that 94 percent of their permanent slips are rented out to commercial fishermen. The remainder for pleasure craft. There are seven processors located in the harbor. Harbor staff reports 5,000-6,000 transient visits per year and the issuance of 500-600 annual boat launch permits. Harbor improvements are the number one priority for the City's capital improvements plan.

In addition, specific problems were identified by the Petersburg trip report accompanying the Cornell university study. The trip report found that the strong currents and shallowness in sections of the harbor creates difficulties for boats to land in their berths, occasionally caused accidents and causes wear and tear on the floating dock. To remedy this situation, the

harbormaster currently berths larger boats at the end of the dock were the current is faster, which helps displace the current coming into the harbor.

A protective breakwater and dredging in Petersburg boat harbor would increase the opportunities available to this community by: reducing harbor congestion; providing additional harbor of refuge and protective moorage; and reducing vessel damage and lowering operating costs for the commercial fishing fleet.

Expected Future Condition. Fisheries in the Petersburg area are expected to remain strong. The community has been working to attract crab harvesters so they may avoid Seattle trips for delivery of product. A 2002 study for Douglas found average annual benefits per vessel to be $5,933 in 2007 dollars. There are currently 407 moorage spaces at the various harbors in the Petersburg area. Applying the average benefits from the Douglas report to the total moorage spaces available gives us potential **average annual benefits of $3,488,600** for improved, expanded, or new harbor facilities in the area.

Alternative Plans. The City has developed a site plan for expanding the existing harbor that would add additional wharf area, provide a drive-down float, and additional moorage floats to service tour boat and other commercial operations. They are currently seeking funding for the project.

Potential Sponsors.

- State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- City of Petersburg

Proposed Action. Conduct a detailed study to analyze the need for dredging and a breakwater in Petersburg.

5.9 Southcentral Region. The Southcentral Alaska Region borders the shorelines and uplands of the Gulf of Alaska, and includes the areas of Kenai Peninsula, Cook Inlet, and Prince William Sound and extends east to the Alaska-Canada border. Commercial and sport fishing, transportation, and petroleum production are important economic activities related to the region's marine infrastructure. The major cities in this region include: Anchorage, Cordova, Kenai, Valdez, Homer, Seward, and Whittier. Almost all consumer goods, food, and household items are shipped to Alaska via ports in Washington State, and through a Southcentral port/harbor.

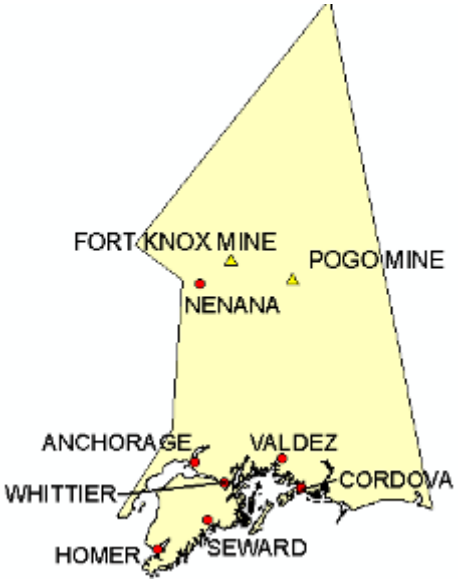


Figure 8. Southcentral and Interior Region

Southcentral Alaska contains the majority of the state's population and economic activity and has the most diverse transportation system. Likewise, the region's economy is more diverse than in the other regions in Alaska. It is the only area of the state where transportation via road and rail are available for movement of people and goods within the region. The region has five major seaports, three minor seaports, a river port, a rail and highway network, and extensive air service that link all principal population centers. The Alaska Marine Highway System provides service to the region's communities of Cordova, Homer, Seldovia, Tatitlek, Valdez, and Whittier.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Southcentral region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events

- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels
- Lack of infrastructure support for economic development

Existing Condition. According to Alaska Department of Fish and Game Commercial Fisheries Entry Commission 2005 permit file, there were 2,792 unique vessels fishing 3,266 commercial fishing permits during the 2005 season. See Table 15 for fishery participation by species.

Table 15. 2005 Fishing Permits for Southcentral Region

Southcentral Commercial Fishing Permits - 2005	
Number of permits	3,266
Number of unique vessels	2,792
Fishery participation	
Salmon	2,752
Halibut	0
Sablefish	66
Herring	371
Ling Cod	0
Rockfish	0
Sea Urchin	0
Sea Cucumber	0
Scallops	0
Clams	0
Octopi/Squid	0
Shrimp	7
Crab	70
Misc. Finfish	0
All Other	0

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

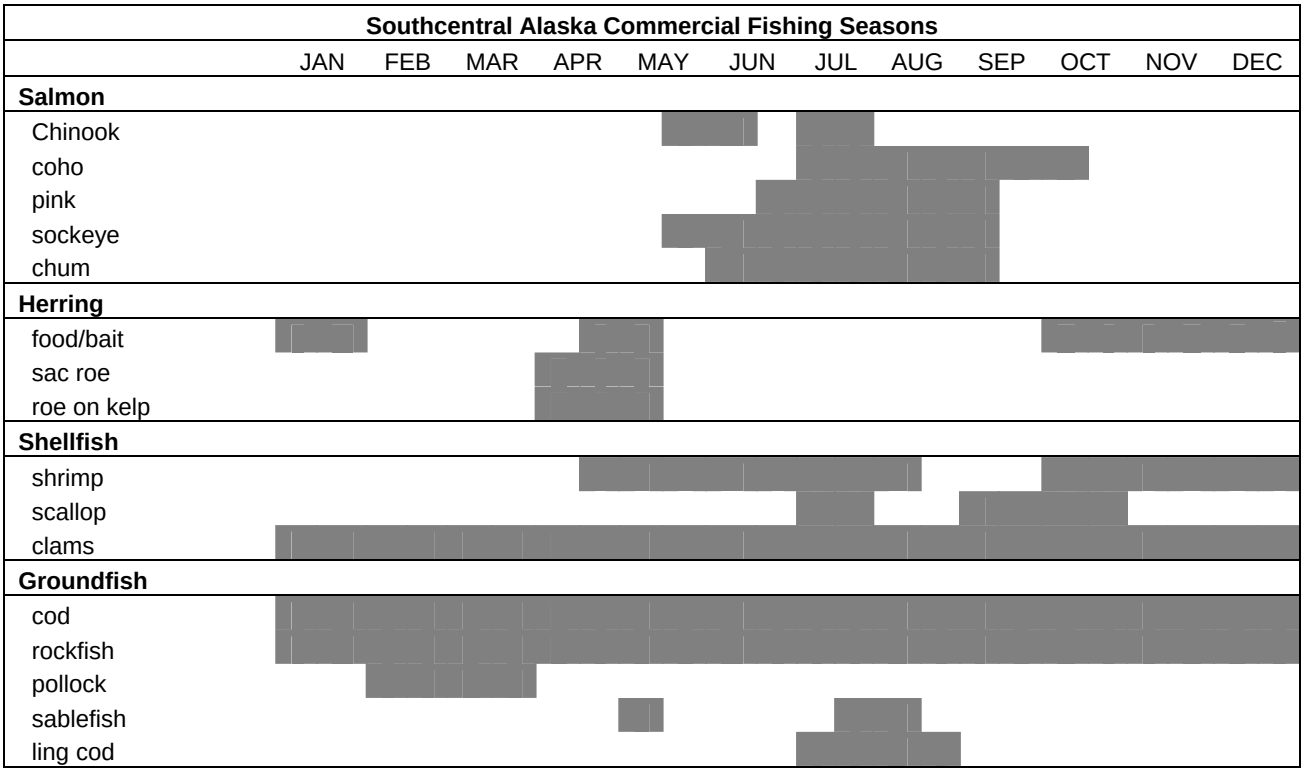
Most vessels fishing in Southcentral Alaska waters have only one permit (87 percent) with 13 percent of owners fishing at least two permits. Three percent of the Southcentral fishers held more than two fishing permits for the 2005 season. These vessels may also participate in fisheries in other regions but for purposes of this evaluation we have focused only on the Southcentral fisheries.

Table 16.
Vessel Owners with Southcentral Permits in Multiple Fisheries

Number of Permits Per Vessel 2005	
One	87%
Two	10%
Three	2%
Four	1%
Five or more	0%

These vessels fish for a variety of species and depending on the vessel's ability to modify gear types, could potentially be fishing year-round. Table 17 shows the annual combined fishing seasons for the Upper and Lower Cook Inlet and Prince William Sound/Copper River fishery management areas.

Table 17.
Southcentral Commercial Fishing Season by Fishery - 2007



Note: Fishing seasons depicted here are a combination of gear types with the Prince William Sound/Copper River and Upper and Lower Cook Inlet Management areas combined.

Source: Alaska Department of Fish and Game Division of Commercial Fisheries.

The 2006 Cornell University survey of commercial fishers, charter boat operators, and recreation boat owners revealed that Southcentral boaters would most like additional harbor facilities at Kenai, Whittier, and Ninilchik (top three choices from the survey responses). There were a total of 23 communities where survey respondents felt there was a need for additional harbor facilities. See Table 18.

Table 18.
Survey Responses for Additional Harbor Facilities
Southcentral Region

Port in need of additional facilities mentioned most often	Number of Respondents
Kenai	72
Whittier	39
Ninilchik	32
Anchor Point	25
Valdez	23
Anchorage	15
Valdez-Cordova	14
Kasilof	12
Seward	10
Cordova	6
Homer	5
Wasilla	5
Tatitlek	2
Chenega	1
Knik River	1
Nanwalek	1
Nikiski	1
Nuchek	1
Point MacKenzie	1
Port Graham	1
Seldovia	1
Soldotna	1
Susitna	1
Total	**270**

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Answers to expanded harbor facilities varied by user group. The responses for expanded or new facilities are shown by user group in Table 19. For instance, recreational boaters felt the need for new or expanded facilities was greatest in Whittier, Valdez and Anchor Point, while charter passenger operators preferred Kenai and Valdez/Cordova, and commercial fishing vessels felt the need greatest in Kenai, Ninilchik and Whittier.

Table 19.
Survey Responses for Additional Harbor Facilities by User Group – Southcentral Region

User Type	Survey Respondents	Percent
Recreation boaters		
Anchor Point	18	7%
Anchorage	7	3%
Chenega	1	0%
Homer	1	0%
Kasilof	1	0%
Kenai	12	4%
Knik River	1	0%
Nanwalek	1	0%
Nikiski	1	0%
Ninilchik	13	5%
Point MacKenzie	1	0%
Seward	4	1%
Susitna	1	0%
Tatitlek	2	1%
Valdez	20	7%
Wasilla	3	1%
Whittier	23	9%
Charter/passenger operators		
Anchorage	2	1%
Kenai	38	14%
Valdez-Cordova	14	5%
Commercial fishing vessels		
Anchor Point	7	3%
Anchorage	6	2%
Cordova	6	2%
Homer	4	1%
Kasilof	11	4%
Kenai	22	8%
Ninilchik	19	7%
Nuchek	1	0%
Port Graham	1	0%
Seldovia	1	0%
Seward	6	2%
Soldotna	1	0%
Valdez	3	1%
Wasilla	2	1%
Whittier	16	6%
Total Vessel Surveys	**270**	

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Almost 40 percent of the survey responses for this region were from commercial fishing vessel owners with recreational boaters making up 41 percent of the responses and charter/passenger vessels the rest. See Table 20.

Table 20.
Southcentral Region Survey Responses by User Group

User Type	Survey Respondents	Percent of Total
Recreational boaters	110	41%
Charter/Passenger vessels	54	20%
Commercial vessels	106	39%

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

In addition to the commercial fishing industry, the Southcentral region provides numerous opportunities for sport fishing and recreational boaters. According to the Cornell study of recreational boaters, eight of the top ten most frequently used harbors for recreational boater in Alaska in 2005 was a Southcentral port/harbor. Seward, Whittier, and Homer were used by one quarter of respondents. Likewise, the Southcentral region as a whole had the highest number of harbor users who experienced a delay. In addition, the survey of charter fishermen and commercial passenger boats revealed that the two most popular harbors used were Homer and Seward, followed by Valdez and Whittier. More importantly, the percent of users who experienced delays in those ports were also high, 42.1% and 27.8% respectively.

Expected Future Condition. Commercial fishing activity in Southcentral Alaska is expected to remain strong in the coming years. Southcentral's proximity to the large population centers in the state also make this area attractive for recreation and charter/water taxi operators.

Previous Corps navigation improvements for Southcentral found average annual benefits that might accrue as a result of harbor improvements to be approximately $5,900 per vessel.[12] There were 2,792 unique vessels with commercial fishing permits in Southcentral for the 2005 season. Assuming regional facilities could be acquired to meet the needs of these vessels, there is a potential for **average annual benefits of $16,472,800**. This probably understates the total potential for benefits as we have calculated this estimate using only commercial fishing permits. Recreational and charter/water taxi/sightseeing vessels are not examined here.

Alternative Plans. No alternative plans have been developed at this time to address the needs of Southcentral Alaska harbors.

Potential Sponsors. Following are potential sponsors for evaluating marine infrastructure in the Southcentral Alaska region:

- State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response

[12] Navigation improvements per vessel from the 2007 draft report for Valdez were $5,855 per vessel accommodated under the NED plan. Benefits include those accruing to all vessel classes, opportunity costs of time, and the avoided harbor infrastructure damages.

- Chugach Alaska Corporation – Alaska Native Regional Corporation
- Cook Inlet Regional Corporation – Alaska Native Regional Corporation
- Ahtna Inc. – Alaska Native Regional Corporation
- Doyon Ltd, - Alaska Native Regional Corporation
- Prince William Sound Economic Development District, Alaska Regional Development Organization (ARDOR)
- Kenai Peninsula Borough Economic Development District – Alaska Regional Development Organization (ARDOR)
- Mat-Su Resource Conservation and Development Inc. – Alaska Regional Development Organization (ARDOR)
- Copper Valley Development Association - Alaska Regional Development Organization (ARDOR)
- Anchorage Economic Development Corporations - Alaska Regional Development Organization (ARDOR)
- Fairbanks North Star Borough Economic Development Commission - Alaska Regional Development Organization (ARDOR)
- Kenai Peninsula Borough
- Municipality of Anchorage
- Matanuska-Susitna Borough
- Denali Borough
- Fairbanks North Star Borough

Proposed Action. Conduct a detailed regional port study to analyze the need for navigational improvements and potential alternatives in the Southcentral region of Alaska.

Cordova. Cordova is located on the western edge of the Copper River Delta in the Chugach National Forest bordered by the Gulf of Alaska at the southeastern end of the Prince William Sound. Cordova is home to the largest gill net fleet in the West Coast. It is not connected to the State road system and is only accessible by air and sea. The current population of Cordova is 2,288.

Commercial fishing is Cordova's economic base. Approximately one half of all households have at least one member directly involved in the commercial fishing harvest or processing. There are several processing facilities located in Cordova. Commercial fishermen hold approximately 600 gill net permits. Fishing is primarily for salmon and some halibut. Current harbor/port facilities include 727 berths, 900' transient dock, 2 tidal grids, and a boat launch facility. The Alaska Marine Highway System ferry provides year-round service to Cordova. The current fleet

is primarily commercial fishing vessels. However, the harbor master believes there is growing recreational demand for harbor usage.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Cordova region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are further evaluated.

- Lack of adequate wave protection
- Insufficient moorage capacity – especially for larger vessels
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events
- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels
- Lack of infrastructure support for economic development
- Need for working, drive down, and gear transfer floats

Existing Condition. According to the Alaska Department of Fish and Game Commercial Fisheries Entry Commission, there were 348 individual permit holders fishing 580 commercial fishing permits in 2006 with Cordova area mailing addresses with estimated gross earnings of $22.9 million. These vessels fished a variety of fisheries in Northwest, Southcentral, Southeast, Southwest, and Statewide fisheries. The community of Eyak is included here to suggest that they might also benefit from a regional harbor in the Cordova area. However in 2006 there were no commercial fishing permits assigned to Eyak residents.

Table 21.
Cordova Area Residents Commercial Fishing Activity 2006

City Mailing	Number of Permit Holders	Number of Permits
Cordova	342	571
Eyak	0	0
Tatitlek	3	5
Chenega	3	4
Total	**348**	**580**

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

Currently, the harbor has a 90 percent occupancy rate and rents open slips to transients when possible. During the summer months, a fast ferry runs between Cordova and Whittier, making access to the area by people living in and around Anchorage much easier and faster (residents can take the fast ferry from Whittier, a community connected by road to Anchorage). The current fleet mix is about 85-90 percent commercial with the remainder recreational vessels. It is possible that more recreational boaters might be attracted to Cordova in the future by the fast ferry access.

The harbormaster is very interested in working with the Corps and other federal and state agencies to improve the harbor, particularly the breakwater and travel lift projects. Cordova is home to the largest gillnet fleet on the West Coast. Commercial fishermen hold about 600 gill net permits. Fishing is primarily for salmon with some halibut.

Two problems identified by the harbormaster as most pressing (the need for a travel lift and protective breakwater) have been prepared for the City of Cordova before: Cordova Travel Lift Feasibility Study prepared by Northern Economics in 2004 and Cordova Small Boat Harbor Improvement Study prepared by Peratrovich, Nottingham and Drage (no date).

Expected Future Condition. Commercial fishing in Southcentral Alaska is expected to remain strong. The region's proximity to the large population center of Anchorage and relatively easy access to the Prince William Sound recreation areas make this a very popular destination as well.

A 2006 study for Valdez found average annual benefits per vessel to be $5,855. There are currently 727 moorage spaces at the various harbors in the Cordova area. Applying the average benefits from the Valdez report to the total moorage spaces available gives us potential **average annual benefits of $4,256,600** for improved, expanded, or new harbor facilities in the area.

Alternative Plans. No alternative plans have been developed at this time to address the needs and potential alternatives of Cordova area harbors.

Potential Sponsors.

- State of Alaska – this could be through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- Chugach Alaska Corporation – Alaska Native Regional Corporation
- City of Cordova

Proposed Action. Conduct a detailed study to analyze the need for navigation improvements at Cordova.

5.10 Southwestern Region. Southwest Alaska Region includes the Alaska Peninsula, Kodiak, the Aleutian Islands, the Bristol Bay area, and the Pribilof Islands. The region is divided into six census areas: Aleutians East Borough, Aleutians West Census Area, Bristol Bay Borough, Dillingham Census Area, Kodiak Island Borough, and Lake and Peninsula Borough. In the 2000 Census the Southwest Alaska Regional population was 30,078. The largest communities in Southwest Region Alaska are Kodiak, Unalaska, and Dillingham.

Figure 9. Southwestern Region

The marine infrastructure is vital to the Southwest region's economy and accessibility for the region's communities. Marine facilities support operations such as commercial fishing and the associated canneries, marketing, and distribution of the commercial fish harvest. The southwest region is home to Bristol Bay, the largest sockeye salmon fishery in the world. In addition, the region is home to the number one commercial fishing port in the U.S. (in pounds landed), Dutch Harbor. Other regional industries include a growing sport fishing/hunting industry and tourism. The number of commercial lodges, hunting- and fishing-resorts in the region has grown in recent years, especially at Katmai National Park. However, there has also been growing interest in oil and gas exploration in Bristol Bay and mineral development at the proposed Pebble Mine near Lake Iliamna. The Alaska Marine Highway System provides year round service to Chenega Bay, Kodiak, and Port Lions; and limited sailings eight times a year to the communities of Chignik, Sand Point, King Cove, Cold Bay, False Pass, Akutan, and Unalaska/Dutch Harbor.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Southwest region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events
- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels

- Lack of infrastructure support for economic development

Existing Condition. According to the Alaska Department of Fish and Game Commercial Fisheries Entry Commission 2005 permit file, there were 4,656 unique vessels fishing 6,241 commercial fishing permits during the 2005 season. See Table 22 for fishery participation.

Table 22.
2005 Fishing Permits for Southwest Region

Southwest Commercial Fishing Permits - 2005	
Number of permits	6,241
Number of unique vessels	4,656
Fishery participation	
Salmon	4,800
Halibut	0
Sablefish	0
Herring	870
Ling Cod	0
Rockfish	0
Sea Urchin	0
Sea Cucumber	21
Scallops	0
Clams	0
Octopi/Squid	0
Shrimp	0
Crab	550
Misc. Finfish	0
All Other	0

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

Most vessels fishing in Southwest Alaska waters have only one permit (78 percent) while 16 percent (748 unique vessels) fished two permits and 6 percent (289 unique vessels) fished more than two permits. Four vessel owners fished a total of eight permits during the 2005 season. In addition, these vessels may participate in other regional fisheries. For purposes of this evaluation, we have focused on only the Southwest region fisheries.

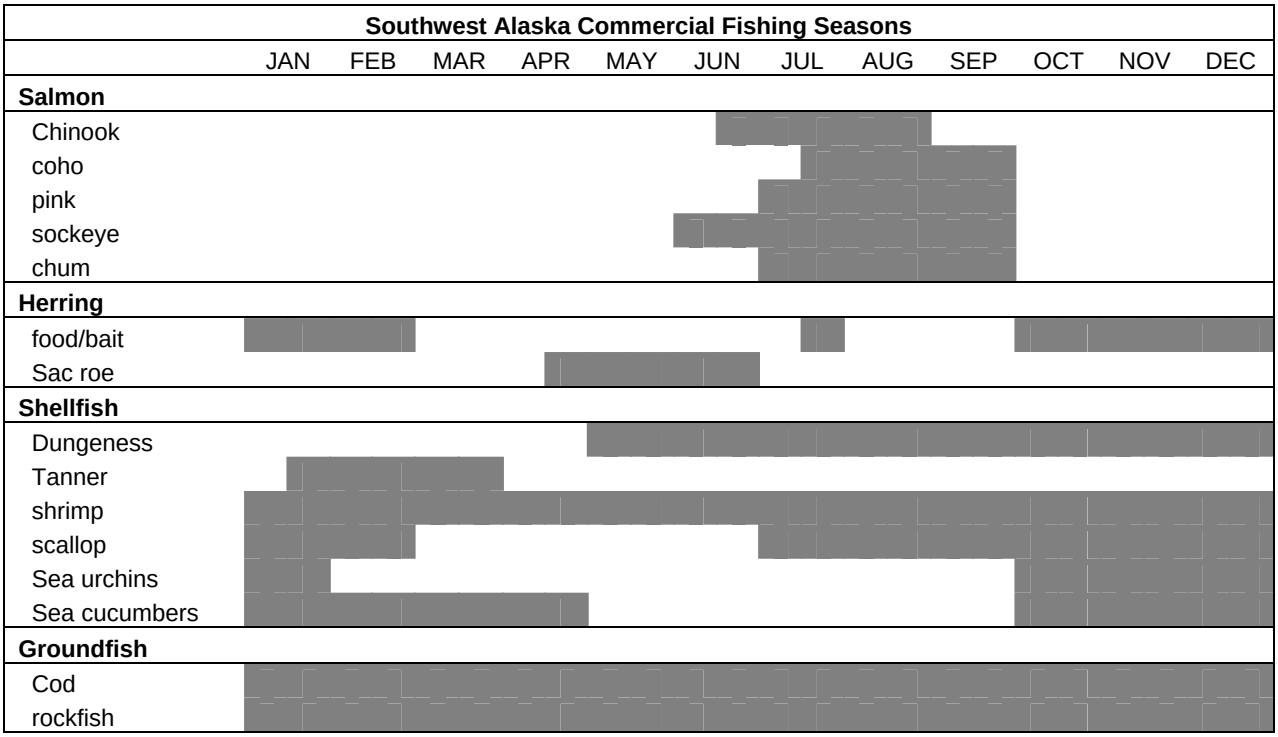
Table 23.
Vessel Owners with Southwest Region Permits in Multiple Fisheries

Number of Permits Per Vessel 2005	
One	78%
Two	16%
Three	4%
Four	1%
Five or more	1%

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

These vessels fished for a variety of species and depending on the vessel's ability to modify gear types, could potentially be fishing year-round. This has become more common in recent years as fishery participants have become more efficient and Alaska realized a shrinking of the commercial fleet in many areas. Table 24 shows the annual combined fishing seasons for the Alaska Peninsula, Chignik, and Kodiak management areas.

Table 24.
Southwest Commercial Fishing Seasons by Fishery - 2007



Note: Fishing seasons depicted here are a combination of gear types with the Alaska Peninsula, Chignik, and Kodiak Management areas combined.

Source: Alaska Department of Fish and Game Division of Commercial Fisheries.

The 2006 Cornell University survey of commercial fishers, charter boat operators, and recreational boat owners revealed that Southwest boaters would most like additional harbor facilities in Naknek, Dillingham, and Egegik (top three choices from the survey responses). There were a total of 41 communities where survey respondents felt there was a need for additional harbor facilities. See Table 25.

Table 25.
Survey Responses for Additional Harbor Facilities
Southwest Region

Port in need of additional facilities mentioned most often	Number of Respondents
Naknek	38
Dillingham	19
Egegik	19
Dutch Harbor/Unalaska	13
Kodiak	11
Chignik	10
False Pass	8
Togiak	7
Adak	5
Clarks Point	5
Akutan	4
Bristol Bay	4
St. Paul	4
Perryville	3
Port Heiden	3
Port Moller	3
Ugashik	3
Aleutians East Borough	2
Chignik Lagoon	2
Chiniak	2
Cold Bay	2
King Salmon	2
Lake and Peninsula Borough	2
Manokotak	2
Old Harbor	2
Sand Point	2
Akhiok	1
Alitak	1
Ekuk	1
Karluk	1
Levelock	1
Newhalen	1
Ouzinkie	1
Pauloff Harbor	1
Pilot Point	1
Port Lions	1
Port Obrien	1
South Naknek	1
Squaw Harbor	1
Uganik Bay	1
Unga	1
Total	**192**

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

The Southwest region of Alaska with its small population base and limited infrastructure has very little in the way of recreational boaters or charter/passenger type services. Therefore the survey answers concerning expanded harbor facilities not only varied by user group but there is a marked difference in the percent of commercial fishing vessel responses for this region. Recreational boaters noted in the following table are probably predominantly subsistence fishers. The responses for expanded or new facilities are shown by user group in Table 26. For instance, recreational boaters felt the need for new or expanded facilities was greatest in Chiniak and Dillingham, while charter passenger operators preferred Kodiak, and commercial fishing vessels felt the need greatest in Naknek, Egegik, and Dillingham.

Table 26.
Survey Responses for Additional Harbor Facilities by User Group – Southwest Region

User Type	Survey Respondents	Percent
Recreation boaters		
Chiniak	2	1%
Dillingham	2	1%
Egegik	1	1%
King Salmon	1	1%
Kodiak	1	1%
Ugashik	1	1%
Charter/passenger operators		
Aleutians East Borough	2	1%
Bristol Bay	1	1%
Dillingham	2	1%
Kodiak	4	2%
Lake and Peninsula Borough	2	1%
Commercial fishing vessels		
Adak	5	3%
Akhiok	1	1%
Akutan	4	2%
Alitak	1	1%
Bristol Bay	3	2%
Chignik	10	5%
Chignik Lagoon	2	1%
Clarks Point	5	3%
Cold Bay	2	1%
Dillingham	15	8%
Dutch Harbor/Unalaska	13	7%
Egegik	18	9%
Ekuk	1	1%
False Pass	8	4%
Karluk	1	1%
King Salmon	1	1%
Kodiak	6	3%
Levelock	1	1%
Manokotak	2	1%
Naknek	38	20%
Newhalen	1	1%
Old Harbor	2	1%
Ouzinkie	1	1%

User Type (continued)	Survey Respondents	Percent
Pauloff Harbor	1	1%
Perryville	3	2%
Pilot Point	1	1%
Port Heiden	3	2%
Port Lions	1	1%
Port Moller	3	2%
Port Obrien	1	1%
Sand Point	2	1%
South Naknek	1	1%
Squaw Harbor	1	1%
St. Paul	4	2%
Togiak	7	4%
Uganik Bay	1	1%
Ugashik	2	1%
Unga	1	1%
Total Vessel Surveys	**192**	

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Commercial fishing vessel survey responses for this region were 90 percent of the total with recreational boaters making up 4 percent of the responses and charter/passenger vessels 6 percent. See Table 27.

Table 27.
Southwest Region Survey Responses by User Group

User Type	Survey Respondents	Percent of Total
Recreational boaters	8	4%
Charter/Passenger vessels	11	6%
Commercial vessels	173	90%

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Expected Future Condition. Recent changes in the management regime for the crab fisheries assigned crab harvest quotas to fishers with historical catch. This change resulted in a contraction of the crab harvesting fleet as vessels with low historical catches sold their rights to future harvests to other vessels. Commercial fishing activity, even in the wake of crab rationalization in Southwest Alaska, is expected to remain strong in the coming years. While most of the fishing activity in the area is associated with commercial harvesters, cruiseships and charter operators have shown more interest in participating in coming years.

Previous Corps navigation improvements projects in Southwest Alaska suggest that average annual benefits that might accrue as a result of harbor improvements are approximately $11,075

per vessel.[13] There were 4,656 unique vessels with commercial fishing permits in Southwest for 2005. Assuming regional facilities could be acquired to meet the needs of these vessels, there is potential for **average annual benefits of $51,565,200**. This probably understates the total potential for benefits as this estimate was calculated using only commercial fishing permits.

Alternative Plans. No alternative plans have been developed at this time to address the needs and potential alternatives of Southwest Alaska harbors.

Potential Sponsors. Following are potential sponsors for evaluating marine infrastructure in the Southwestern Alaska region:

- State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- Aleut Corporation – Alaska Native Regional Corporation
- Koniag Inc. – Alaska Native Regional Corporation
- Southwest Alaska Municipal Conference, Alaska Regional Development Organization (ARDOR)
- Aleutian Pribilof Island Community Development Association (APICDA) – Community Development Group (CDQ)
- Bristol Bay Economic Development Corporation (BBEDC) – Community Development Group (CDQ)
- Western Alaska Community Development Association (represents all six CDQ groups)
- Bristol Bay Borough
- Lake and Peninsula Borough
- Aleutians East Borough
- Kodiak Island Borough

Proposed Action. Conduct a detailed regional port study to analyze the need for navigational improvements in the Southwest region of Alaska.

[13] Navigation improvements per vessel adjusted to 2007 dollars were $7,747 for Port Lions, $12,119 for Unalaska, and $13,357 for King Cove. Benefits include those accruing to all vessel classes, opportunity costs of time, and the avoided harbor infrastructure damages.

Dillingham. Dillingham is located in the southwest region at the northern end of Nushagak Bay in northern Bristol Bay, at the confluence of the Wood and Nushagak Rivers. The 2005 population is 2,370.

Dillingham is the economic, transportation, and public service hub for western Bristol Bay. Commercial fishing and supporting operations are the major economic activities. Several companies operate fish processing plants in Dillingham. 316 residents hold commercial fishing permits. During spring and summer, the population increases substantially due to the commercial fishing activity. Many residents depend on the subsistence harvest of marine resources to supplement their incomes.

The City of Dillingham operates a small boat harbor with 320 slips; other marine infrastructure includes a dock, barge landing, boat launch, and boat haul-out facilities. It is a tidal harbor and only available for seasonal use. The Nushagak River is ice-free from June through November. Two barge lines make scheduled trips from Seattle. There is a 23-mile gravel road to the neighboring community of Aleknagik.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Dillingham region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity – especially for larger vessels
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events
- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels
- Lack of infrastructure support for economic development
- Need for working, drive down, and gear transfer floats

Existing Condition. According to the Alaska Department of Fish and Game Commercial Fisheries Entry Commission, there were 316 individual permit holders fishing 401 commercial fishing permits in 2006 with Dillingham area mailing addresses. These vessels fished a variety of fisheries in Northwest, Southwest, Yukon-Kuskokwim, and Statewide fisheries. The community of Ekuk is included here to suggest that they might also benefit from a regional harbor in the Dillingham area. However, in 2006, there were no commercial fishing permits assigned to Ekuk residents.

Table 28.
Dillingham Area Residents Commercial Fishing Activity 2006

City Mailing	Number of Permit Holders	Number of Permits
Aleknagik	23	29
Dillingham	237	314
Clark's Point	10	11
Ekuk	0	0
Ekwok	3	3
Koliganek	18	18
New Stuyahok	25	26
Total	**316**	**401**

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

The Cornell survey study found that 43 percent of the transient vessels using the Dillingham harbor would seek a permanent slip if available.

Expected Future Condition. Commercial fishing in the Bristol Bay area is expected to remain strong. Most fishermen primarily harvest salmon. The potential for mine development at Iliamna remains a concern for many.

A 2004 study for Port Lions found average annual benefits per vessel to be $7,747 in 2007 dollars. There is currently moorage space available along dockside at the various harbors in the Dillingham area. Using the number of permit holders with address in the Dillingham area and applying the average benefits from the Port Lions report gives us potential **average annual benefits of $2,448,100** for improved, expanded, or new harbor facilities in the area.

Alternative Plans. No alternative plans have been developed at this time to address the needs and potential alternatives of the Dillingham area harbors.

Potential Sponsors.

- State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- Bristol Bay Economic Development Corporation (BBEDC) – Development Group (CDQ)
- Western Alaska Community Development Association (represents all six CDQ groups)
- Bristol Bay Borough
- City of Dillingham

Proposed Action. Conduct a detailed study to analyze the need for navigational improvements in the Southwest region of Alaska, including Dillingham.

Naknek. Naknek is located in the southwest region along on the north bank of the Naknek River at the northeastern end of Bristol Bay, 297 miles southwest of Anchorage. Naknek is accessible by air and sea, and 15.5-mile road that connect the neighboring community of King Salmon, where jet service to Anchorage is available. The 2005 population estimate is 577.

Naknek is the political and economic seat of the Bristol Bay Borough. The economy is based on government employment, salmon fishing and processing. Naknek serves as the economic hub for the seasonal sockeye salmon fishery in Bristol Bay. During the summer fishing season, several thousand people typically migrate to the area. Millions of pounds of salmon are transferred at the port. Several fish processing companies operate facilities in Naknek.

The Bristol Bay Borough maintains the cargo dock at Naknek, and operates as the Port of Bristol Bay. It has 800' of berthing space available with a concrete surface and a couple of cranes. No commercial docking facilities are available at the canneries, however, the development of a Fishermen's Dock, Freight dock and Industrial Park have been identified as regional priorities. The commercial cargo dock was built over 20 years ago and is currently operating beyond its expected lifespan. As of September 2005, repairs were being made to shore up concrete dock panels, and replace pilings. Limited facilities create competition for marine facility use.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Naknek region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity – especially for larger vessels
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events
- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels
- Lack of infrastructure support for economic development
- Need for working, drive down, and gear transfer floats
- Inadequate barge landing facility

Existing Condition. According to the Alaska Department of Fish and Game Commercial Fisheries Entry Commission, there were 201 individual permit holders fishing 233 commercial fishing permits in 2006 with Naknek area mailing addresses. These vessels fished a variety of

fisheries in Northwest, Southwest, Yukon-Kuskokwim, and Statewide fisheries. The communities of Egigik, King Salmon, South Naknek, Levelock, and Portage Creek might all benefit from new or expanded facilities in the area.

Table 29.
Naknek Area Residents Commercial Fishing Activity 2006

City Mailing	Number of Permit Holders	Number of Permits
Naknek	102	121
Egigik	21	23
King Salmon	38	47
South Naknek	34	36
Levelock	5	5
Portage Creek	1	1
Total	**201**	**233**

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

In addition to the commercial fishing activities, Naknek serves as the transfer point for moving cargo from larger barges to lightering vessels destined for the communities as far as Port Heiden in the south, west as Togiak, and the communities around Lake Iliamna.

One possible remedy for the current situation was identified in the Cornell study. The study found that the current problem could be addressed by the development of additional dock space and additional dredging. The proposed solution would increase the opportunities available to this community by: lowering operating costs for barge operators and commercial fishing vessels; improving safety for their respective crews; improving the movement of cargo top and from the Port of Naknek; and improve commercial fishing operations.

Expected Future Condition. Commercial fishing in the Bristol Bay area is expected to remain strong. Most fishermen primarily harvest salmon. The potential for mine development at Iliamna remains a concern for many.

A 2004 study for Port Lions found average annual benefits per vessel to be $7,747 in 2007 dollars. There is currently moorage space available along dockside at the various harbors in the Naknek area and two small harbors at Naknek (capacity 35 boats) and Egigik (capacity 20 boats). Using the number of permit holders with address in the Naknek area and applying the average benefits from the Port Lions report provides potential **average annual benefits of $1,557,100** for improved, expanded, or new harbor facilities in the area.

Alternative Plans. No alternative plans have been developed at this time to address the needs and potential alternatives of the Naknek area harbors.

Potential Sponsors.

- State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- Bristol Bay Economic Development Corporation (BBEDC) – Development Group (CDQ)
- Western Alaska Community Development Association (represents all six CDQ groups)
- Bristol Bay Borough

Proposed Action. Conduct a detailed study to analyze the need for navigational improvements in the Southwest region of Alaska, including Naknek.

5.11 Yukon-Kuskokwim (Y-K) Delta Region. The Yukon-Kuskokwim Delta Region includes the communities within the Bethel, Wade Hampton, and Yukon-Koyukuk Census Areas. In the 2000 Census the Yukon-Kuskokwim Delta area had a combined population of 29,585. The largest community in the region is Bethel, with an estimated 2005 population of 5,960. The region is not connected to the state road system, and is accessible only by air year round and water (in the summer months). Bethel is the economic, commercial, transportation, and social center of the Y-K Delta. It has a modern airport, the region's hospital, and a fuel storage facility that serves many Kuskokwim River villages. In winter months, many villages near Bethel are connected by ice roads on the frozen rivers. During the summer, barges supply fuel, construction materials, and consumer goods to the region. Barges from Seattle and Anchorage work their way up the Kuskokwim River to Bethel. From Bethel, smaller lightering river barges bring fuel and goods 2-3 times each season to Kuskokwim River villages, and coastal communities in the vicinity of Kuskokwim Bay. Fuel and freight is also delivered to Yukon River villages via barge from the river port of Nenana. There is no marine ferry service to and from the region.

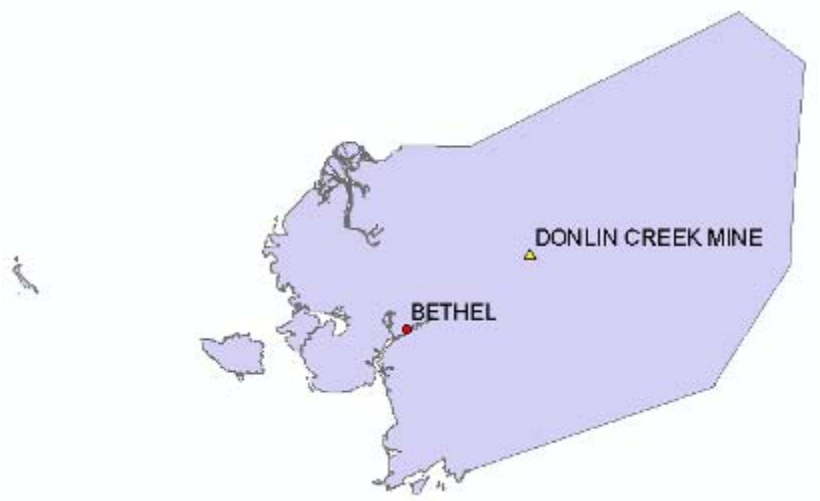


Figure 10. Yukon-Kuskokwim Region

The regions commercial fisheries include salmon, herring, and halibut. Subsistence hunting for marine mammals, fish, and waterfowl, is also a large percentage of many of the region's household diets.

The Community Development Quota (CDQ) program has provided opportunities for local participation in the region's commercial fisheries. As a result, the region's commercial salmon fishermen can now deliver fish to processing facilities in the communities of Emmonak, Marshall, Quinhagak, and a salmon buying operation in Bethel. Halibut is processed at small processing facilities in Chefornak, Hooper Bay, Kipnuk, Mekoryuk, Toksook Bay and Tununak. The region's commercial catch is typically flown into Bethel, and then transferred to a jet destined for Anchorage.

Sport fishing and hunting opportunities are currently limited in the region. However, there is growing interest in eco and cultural tourism. In 2003, a cruiseship company made Nash Harbor on Nunivak Island a regular stop on three of its Bering Sea cruises and provided opportunities for village residents to provide educational, adventure cultural tours to cruiseship clients.

Other potential uses for the region's limited marine facilities include the proposed Donlin Creek gold deposit, located upriver from Bethel near the community of Crooked Creek. In the past few years, the development has generated significant interest. According to a 2006 study, the proposed mine has the potential to produce an estimated 1.4 to 1.885 million ounces of gold per year for 22 years making it one of the largest undeveloped gold resources in North America. If developed, the mine would employ several hundred people, and require a power plant and possibly a road(s) to be built in the region, therefore, it has the potential to significantly increase marine traffic to and from the mine's location and along the Kuskokwim River and delta.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Yukon-Kuskokwim region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events
- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels
- Lack of infrastructure support for economic development

Existing Condition. According to Alaska Department of Fish and Game Commercial Fisheries Entry Commission 2005 permit file there were 1,586 unique vessels fishing 2,190 commercial fishing permits during the 2005 season. See Table 30 for fishery participation by species.

Table 30. 2005 Fishing Permit for Yukon-Kuskokwim Region

Yukon-Kuskokwim Commercial Fishing Permits - 2005	
Number of permits	2,190
Number of unique vessels	1,586
Fishery participation	
Salmon	1,623
Halibut	0
Sablefish	0
Herring	310
Ling Cod	0
Rockfish	0
Sea Urchin	0
Sea Cucumber	0
Scallops	0
Clams	0
Octopi/Squid	0
Shrimp	16
Crab	241
Misc. Finfish	0
All Other	0

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

Three-quarters of the vessels fishing in the Yukon-Kuskokwim regional waters have only one permit with 16 percent (261 vessels) fishing two permits and 126 vessels fishing three or more permits. These vessels may also participate in regions outside of the Yukon-Kuskokwim region but for purposes of this evaluation we have focused only on the Yukon-Kuskokwim fisheries.

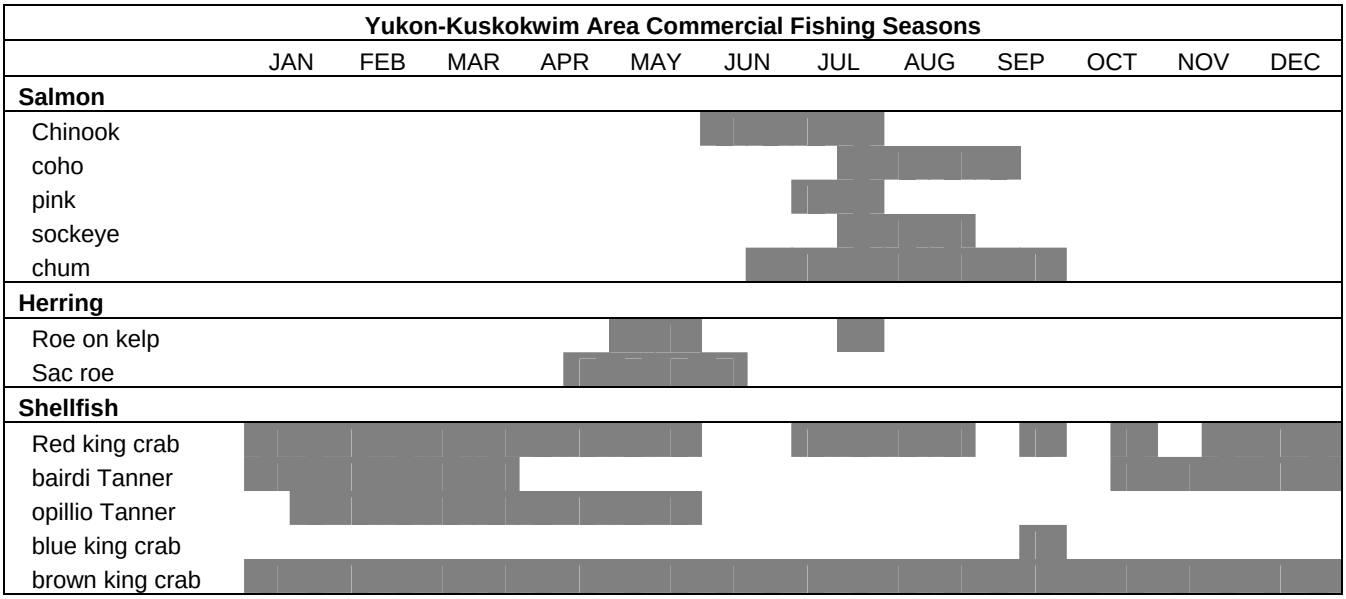
Table 31.
Vessel Owners in the Yukon-Kuskokwim Region with Multiple Permits

Number of Permits Per Vessel 2005	
One	75%
Two	16%
Three	5%
Four	2%
Five or more	1%

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

It is more difficult for Yukon-Kuskokwim permit holders to fish for multiple species as the seasons are short and modifying gear from a salmon fishery to a crab fishery can be problematic and expensive. These vessels probably travel to other regions to fish when there are closures in the Yukon-Kuskokwim area. See Table 32 for a summary of commercial fishery openings in this area.

Table 32.
Commercial Fishing Seasons by Fishery - 2007



Note: Fishing seasons depicted here are a combination of gear types with the Bristol Bay/Bering Sea and Arctic-Yukon-Kuskokwim Management areas combined.

Source: Alaska Department of Fish and Game Division of Commercial Fisheries.

The 2006 Cornell University survey of commercial fishers, charter boat operators, and recreational boat owners revealed that Yukon-Kuskokwim boaters would most like additional harbor facilities in Mekoryuk, Kotlik, and Toksook Bay (top three choices from the survey response). There were a total of 23 communities were survey respondents felt there was a need for additional harbor facilities. Table 33 lists all these communities and may be a reflection of the need for economic activity as each of these communities is relatively small and none of them are connected to the road system in the state.

Table 33.
Survey Responses for Additional Harbor Facilities
Yukon-Kuskokwim Region

Port in need of additional facilities mentioned most often	Number of Respondents
Mekoryuk	7
Kotlik	3
Toksook Bay	3
Akiachak	2
Eek	2
Goodnews Bay	2
Kipnuk	2
Quinhagak	2
Alakanuk	1
Anvik	1
Bethel	1
Chefornak	1
Emmonak	1
Hooper Bay	1
Kongiganak	1
Mountain Village	1
Nelson Island	1
Nunapitchuk	1
Platinum	1
St. Marys	1
Tuntutuliak	1
Tununak	1
Wade Hampton	1
Total	**38**

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

The Yukon-Kuskokwim region of Alaska with its small population base and limited infrastructure has very little in the way of recreational boaters or charter/passenger type services. Survey responses to questions concerning expanded harbor facilities not only varied by user group but there is a marked difference in the percent of commercial fishing vessel responses for this region. Recreational boaters noted in the following table are probably predominantly subsistence fishers. The responses for expanded or new facilities are shown by user group in Table 34. For instance, recreational boaters felt the need for new or expanded facilities was greatest in Chefornak and Toksook Bay, while charter passenger operators preferred Wade Hampton which is not really a place but a region, and commercial fishing vessels felt the need greatest in Mekoryuk, and Kotlik.

Table 34.
Survey Responses for Additional Harbor Facilities by User Group – Yukon-Kuskokwim Region

User Type	Survey Respondents	Percent
Recreation boaters		
Chefornak	1	3%
Toksook Bay	1	3%
Charter/passenger operators		
Wade Hampton	1	3%
Commercial fishing vessels		
Akiachak	2	5%
Alakanuk	1	3%
Anvik	1	3%
Bethel	1	3%
Eek	2	5%
Emmonak	1	3%
Goodnews Bay	2	5%
Hooper Bay	1	3%
Kipnuk	2	5%
Kongiganak	1	3%
Kotlik	3	8%
Mekoryuk	7	18%
Mountain Village	1	3%
Nelson Island	1	3%
Nunapitchuk	1	3%
Platinum	1	3%
Quinhagak	2	5%
St. Marys	1	3%
Toksook Bay	2	5%
Tuntutuliak	1	3%
Tununak	1	3%
Total Vessel Surveys	**38**	

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Commercial fishing vessel survey responses for this region were 92 percent of the total with recreational boaters making up 5 percent of the responses and charter/passenger vessels 3 percent. See Table 35.

Table 35.
Yukon-Kuskokwim Region Survey Responses by User Group

User Type	Survey Respondents	Percent of Total
Recreational boaters	2	5%
Charter/Passenger vessels	1	3%
Commercial vessels	35	92%

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Expected Future Condition. The annual ice pack on the western and northern coast of Alaska has formed later and broken up earlier in recent years. The North Pacific Fisheries Management Council is currently wrestling with data showing that many Alaskan fish species appear to be moving north as a result of the warming trend. This warming trend is expected to continue in the foreseeable future. Commercial fishers are currently traveling farther from the processing plants than they have in previous years. The need to process the harvest in a timely manner will lead to fish processing plants moving further north in order to be closer to the harvesting grounds.

In addition, open leads in the arctic have allowed freighters, cruiseships, and other vessels to traverse the North Pole at certain times of the year. This traffic will grow with the expectation that the warming trend will continue.

Expanded traffic, be it freighters, commercial fishers, or sightseers, puts the Yukon-Kuskokwim communities at risk, particularly when there is limited opportunity for these vessels to seek shelter in the harsh arctic waters. Most of these communities rely on subsistence activity for their livelihoods as there is limited work for pay opportunities available.

A 2005 navigation improvements project for Unalakleet found potential annual benefits of $241,000 and there were 120 commercial fishing permits with Unalakleet addresses in that year. This is an average annual benefit of approximately $2,100 per vessel. This does not capture degradation of fish product due to delayed delivery or subsistence activity. There were 1,586 unique commercial fishing vessels in the Yukon-Kuskokwim region in 2005. Using the Unalakleet average annual benefits amount results in potential Y-K **benefits of $3,330,600**.

Another study conducted in 1996 for St. Paul found average annual benefits of $12,910 per vessel served (mostly the crab fleet). Using the St. Paul benefits which have been adjusted to 2007 dollars, potential average annual benefits in the Yukon-Kuskokwim region could reach **$20,475,000**. Depending on the problem to be addressed and given the rural and remote setting of most of these communities, the approach of **subsistence harbor improvements** may be more beneficial.

Alternative Plans. No alternative plans have been developed at this time to address the needs and potential alternatives of Yukon-Kuskokwim region harbors.

Potential Sponsors. Following are potential sponsors for evaluating marine infrastructure in the Yukon-Kuskokwim Alaska region:

- State of Alaska – this could be through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- Calista Native Corporation – Alaska Native Regional Corporation
- Lower Kuskokwim Economic Development Council, Alaska Regional Development Organization (ARDOR)
- Coastal Villages Region Fund – Community Development Group (CDQ)
- Central Bering Sea Fishermen's Association – Community Development Group (CDQ)
- Western Alaska Community Development Association (represents all six CDQ groups)

Proposed Action. Conduct a detailed regional port study to analyze the need for navigational improvements in the Yukon-Kuskokwim region of Alaska.

5.12 Northwest Region. The Northwest Region includes the Nome Census Area, the Northwest Arctic, and North Slope Boroughs. In the 2000 Census, the Northwest region area had a population of 23,789. With the exception of the Dalton Highway to Prudhoe Bay, the remainder of the region is not connected to the state road system and there are no roadways connecting any of the villages with each other. Nome, Kotzebue, and Barrow are commercial centers, shipping hubs, and transfer points for goods arriving from Anchorage destined for surrounding communities. There is direct air service from Nome, Kotzebue, and Barrow to Anchorage and Fairbanks. Smaller planes provide service to surrounding villages. There is no marine ferry service to and from the region.

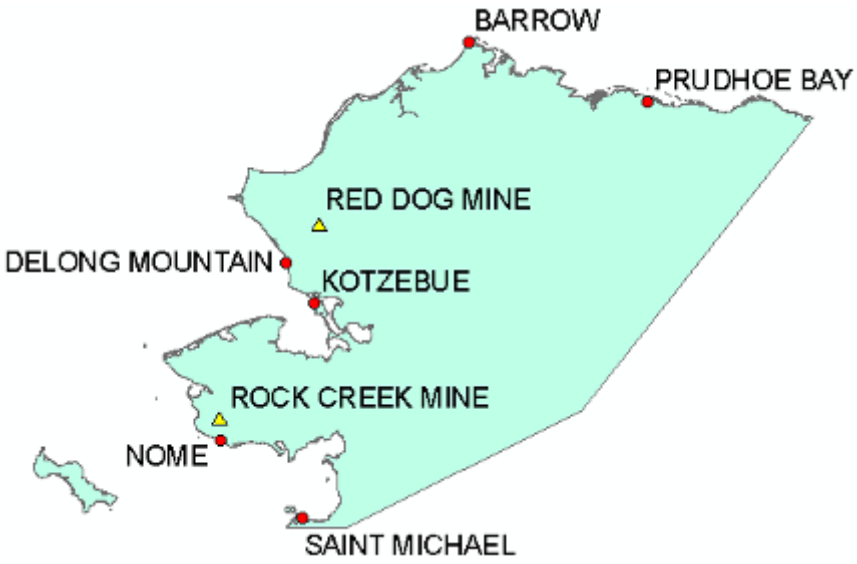


Figure 11. Northwestern Region

Marine infrastructure is directly related to the economic well-being of the Northwest region. Region residents are dependent on air and water transportation for the delivery of goods, fuel, and subsistence activities. The mineral industry is a major contributor to the region's economic base and relies on Northwest port/harbor facilities for: access to the region's natural resources; the shipment of fuel, equipment and supplies; and transportation for workers to remote locations. Red Dog Mine, the largest zinc mine in the world is located in the region. Due to the shallow port conditions, small barges and tugboats lighter the concentrate from Red Dog to ships anchored offshore. Similarly, the port facility at Nome provides access and supports the operations of several small gold mines in the surrounding area.

In addition to the mineral industry, commercial fishing is an important economic activity that relies on the region's port/harbor facilities. The Community Development Quota (CDQ) program has provided opportunities for local participation in the Northwest region's fisheries. Likewise, the increase in local participation in commercial fisheries has contributed to an increase in demand for protected moorage at the regions limited port/harbor facilities. Furthermore, the subsistence harvest of marine resources continues to supplement the diets of a large percentage of the regions residents and contributes to the increase in demand for port/harbor facilities.

Problems and Opportunities. The following lists potential problems and opportunities to address in a study of the Northwest region. This is not a comprehensive list. Project sponsors' needs may drive the problems and opportunities that are evaluated further.

- Lack of adequate wave protection
- Insufficient moorage capacity
- Crowded conditions causing damage to vessels and infrastructure
- Limited safe moorage during storm events
- Operational conflicts caused by mixed use harbors (commercial fishing, charter/water taxi/sightseeing, other watercraft, and recreational vessels)
- Lost fishing and leisure opportunities for commercial vessels
- Lack of infrastructure support for economic development

Existing Condition. According to Alaska Department of Fish and Game Commercial Fisheries Entry Commission 2005 permit file, there were 576 unique vessels fishing 680 commercial fishing permits during the 2005 season. See Table 36 for fishery participation by species.

Table 36.
2005 Fishing Permits for Northwest Region

Northwest Commercial Fishing Permits - 2005	
Number of permits	680
Number of unique vessels	576
Fishery participation	
Salmon	332
Halibut	0
Sablefish	0
Herring	278
Ling Cod	0
Rockfish	0
Sea Urchin	0
Sea Cucumber	0
Scallops	0
Clams	0
Octopi/Squid	0
Shrimp	0
Crab	70
Misc. Finfish	0
All Other	0

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

Most vessels fishing in the northern waters have only one permit but 11 percent (63 vessels) fished for at least two permits and 16 vessels fished three or more permits. These vessels may also participate in fisheries in other regions but for purposes of this evaluation we have focused only on Northwest fisheries. Northern region communities are more subsistence-based, often whaling communities and while participation in fisheries may be high, data demonstrating this activity is unavailable because there is no commercial market for the activity.

Table 37.
Vessels Owners with Northwest Region Permits in Multiple Fisheries

Number of Permits Per Vessel 2005	
One	86%
Two	11%
Three	2%
Four	1%
Five or more	0%

Source: Alaska Department of Fish and Game, Commercial Fisheries Entry Commission permit file.

The Alaska Department of Fish and Game does not have a Northern management area. Most of these vessels are fishing for herring or salmon out of Norton Sound or in the Kotzebue region.

The 2006 Cornell University survey of commercial fishers, charter boat operators, and recreational boat owners revealed that Northwest region boaters would most like additional harbor facilities in nine different communities as shown in Table 38. There is very little in the way of charter or recreational boat activity currently taking place in the Northwest region so these would primarily be commercial fishing boat owners.

Table 38.
Survey Responses for Additional Harbor Facilities
Northwest Region

Port in need of additional facilities mentioned most often	Number of Respondents
Barrow	1
Brevig Mission	1
Deadhorse	1
Koyuk	1
Norton Sound	1
Nuiqsut	1
NW Arctic	1
Snake River, Nome	1
Unalakleet	1
Total	**9**

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

The Northwest region of Alaska with its small population base and limited infrastructure has very little in the way of recreational boaters or charter/passenger type services. So the answers to expanded harbor facilities not only varied by user group but there is a marked difference in the percent of commercial fishing vessel responses for this region. Where the Y-K Region showed 92 percent of the respondents were commercial fishing vessel owners and the Southwest Region shows 90 percent, the Northwest Region percentage of participation is much lower. Recreational boaters noted in the following table are probably predominantly subsistence fishers. The responses for expanded or new facilities are shown by user group in Table 39.

Table 39.
Survey Responses for Additional Harbor Facilities by User Group – Northwest Region

User Type	Survey Respondents	Percent of Total
Recreational boaters		
Barrow	1	11%
Brevig Mission	1	11%
Deadhorse	1	11%
Koyuk	1	11%
Nuiqsut	1	11%
Charter/passenger operators		
NW Arctic	1	11%
Commercial fishing vessels		
Norton Sound	1	11%
Snake River, Nome	1	11%
Unalakleet	1	11%
Total Vessel Surveys	**9**	

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Commercial fishing vessel survey responses for this region were 33 percent of the total with recreational boaters making up 56 percent of the responses and charter/passenger vessels 11 percent. See Table 40.

Table 40.
Northwest Region Survey Responses by User Group

User Type	Survey Respondents	Percent of Total
Recreational boaters	5	56%
Charter/Passenger vessels	1	11%
Commercial vessels	3	33%

Source: Survey data from Cornell University Human Dimensions Research Unit May 2006.

Expected Future Condition. The Northwestern Alaska region is changing as a result of warmer seas, later icepack formation and early breakups, increased vessel traffic to the Arctic Ocean, and expanded offshore oil and gas development. For these reasons, examination of the potential for regional ports supporting commercial fishing in the Northwest region is limiting. A regional port in this area must be capable of supporting research vessels, tugs, barges, freighters, and the growing eco-tourism and cruiseship industries. Average annual benefits for the Nome navigation improvements updated to 2007 dollars ranged from **$8.2 million to $10.1 million** and similar benefits could accrue to an alternate site in the Northwestern region of the state.

Alternative Plans. There are no alternative plans for harbor improvements in the Northwest region developed at this time.

Potential Sponsors. Following are potential sponsors for evaluating marine infrastructure in the Northwest Alaska region:

- State of Alaska through the Department of Transportation, Department of Natural Resources – Division of Mining Land and Water, the Department of Environmental Conservation – Division of Spill Prevention and Response
- NANA Regional Corporation– Alaska Native Regional Corporation
- Arctic Slope Regional Corporation – Alaska Native Regional Corporation
- Bering Strait Development Council, Alaska Regional Development Organization (ARDOR)
- Yukon-Delta Fisheries Development Association – Community Development Group (CDQ)
- Norton Sound Economic Development Corporation – Community Development Group (CDQ)
- Western Alaska Community Development Association (represents all six CDQ groups)
- Northwest Arctic Borough
- North Slope Borough

Proposed Action. Conduct a detailed regional port study to analyze the need for navigational improvements in the Northwestern region of Alaska.

6. ENVIRONMENTAL ANALYSIS. Potential impacts to environmental resources from a proposed action would be evaluated in detail during the feasibility study phase. A detailed assessment of the impacts the project's construction, operation, and dredging activities might have on intertidal and subtidal habitat, benthic invertebrates, and anadromous fish migration pathways would be conducted in the feasibility study phase. Mitigation measures such as construction windows and turbidity control measures would also be evaluated during this phase.

Feasibility level studies to examine any proposed action would be required to conduct evaluations under the Clean Water Act, National Historic Preservation Act, Coastal Zone Management Act, Essential Fish habitat, Endangered Species Act, and Fish and Wildlife Coordination Act. It is uncertain at this time if an environmental assessment or environmental impact statement would be produced in compliance with National Environmental Policy Act.

7. FEDERAL INTEREST. Harbor alternatives were not developed during this study. To determined if further Federal interested is warranted, an upper range cost of harbor development was used for comparison against estimated benefits. Based on cost of numerous harbor projects within Alaska, the high range cost of a potential harbor project is $35,000,000 to $45,000,000, with an average annual cost range of $1,900,000 to $2,400,000. It's unlikely that the full potential of economic benefits in a region (see summary table below) would be realized.

However, even with a fifty percent reduction of the potential benefits there is still a significant Federal interest and the potential benefits outweigh the project costs. Benefits to the Nation would include reduced damage costs, increased commercial, subsistence, and recreational opportunities, reduced storm avoidance costs, and development of commercial seafood processing.

Study	Average Annual Regional Benefits
Statewide Marine Transportation Plan	Unknown
Statewide Harbors of Refuge	Unknown
Industry Support (mining, oil and gas, cruise)	Unknown
Subsistence Harbors	Unknown
Regional Plans	
➢ Southeast including Juneau/Douglas/Auke Bay, Ketchikan, and Petersburg	$13,300,000
➢ Southcentral including Cordova	$16,500,000
➢ Southwest including Dillingham and Naknek	$51,600,000
➢ Yukon-Kuskokwim	$10,000,000
➢ Northwest	$9,000,000

8. PRELIMINARY FINANCIAL ANALYSIS. Numerous potential non-Federal sponsors have been identified and have expressed an interest in participating in detailed cost-shared feasibility studies. The local sponsor(s) will be required to provide 50 percent of the cost of the feasibility phase. The local sponsor(s) is also aware of the cost sharing requirements for potential project implementation.

9. SUMMARY OF FEASIBILITY STUDY ASSUMPTIONS. No deviations from ER 1105-2-100 are anticipated.

10. FEASIBILITY PHASE MILESTONES. Study milestones and schedules will be developed during scoping of the feasibility studies. It is estimated that each study will be completed in two to three years.

11. FEASIBILITY PHASE COST ESTIMATE. The total study cost for the comprehensive master plan and regional plans is estimated at $15,000,000. Study costs for the harbors of refuge, industry support, and subsistence harbors add another $9,000,000 for a total of $24,000,000.

12. RECOMMENDATIONS. I recommend further studies (see list below) to determine the feasibility of providing systems-based navigation improvements throughout Alaska. The first step would involve preparation of a comprehensive plan to evaluate the needs for navigation improvements for ports and harbors in Alaska. This would be followed by regional studies to recommend specific projects for authorization.

The recommendations contained herein reflect the policies governing formulation of individual projects and the information available at this time. They do not necessarily reflect program and budget priorities inherent in the local and State programs, or the formulation of a national Civil Works water resources program. Consequently, the recommendations may be modified at higher levels within the executive branch before they are used to support the funding. However, prior to initiating the feasibility study, the local sponsor(s) will be advised of any modifications and will be afforded an opportunity to comment further.

Feasibility Study Recommendations	Estimated Study Cost
• Statewide Marine Transportation Plan	$5,000,000
• Statewide Harbors of Refuge	$2,000,000
• Industry Support (mining, oil and gas, cruise, timber)	$5,000,000
• Balboa Bay	$2,000,000
• Subsistence Harbors	$2,000,000
Regional Plans:	
• Southeast including Juneau/Douglas/Auke Bay, Ketchikan, and Petersburg	$2,000,000
• Southcentral including Cordova	$2,000,000
• Southwest including Dillingham and Naknek	$2,000,000
• Yukon-Kuskokwim	$2,000,000
• Northwest	$2,000,000

13. POTENTIAL ISSUES AFFECTING INITIATION OF FEASIBILITY PHASE. None.

14. VIEWS OF OTHER RESOURCE AGENCIES. Because of the funding and time constraints of the reconnaissance phase, only limited and informal coordination has been conducted with other resource agencies.

15. PROJECT AREA MAP. A map of the project area is shown on Figure 6.

KEVIN J. WILSON

Colonel, Corps of Engineers

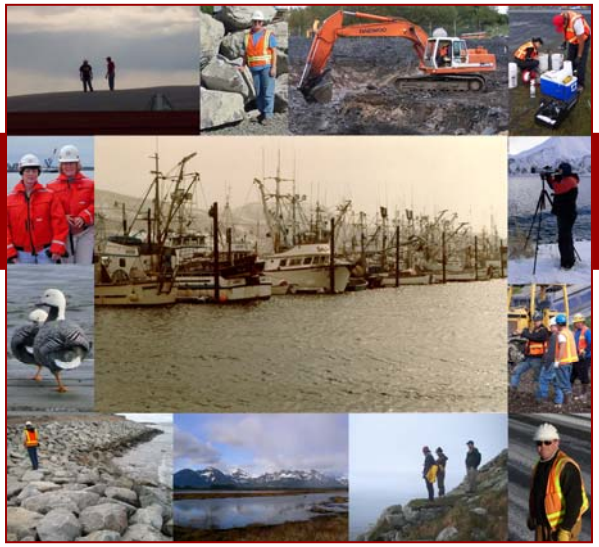
MAY 27 2008

2008 Alaska Regional Ports and Harbors Conference

January 10-11, 2008

U.S. Army Corps of Engineers, Alaska District

EXECUTIVE SUMMARY



2008 Alaska Regional Ports and Harbors Conference

U.S. Army Corps of Engineers, Alaska District

January 10-11, 2008

Executive Summary

On 10 and 11 January, over 125 people from local, state and federal government agencies, private transportation businesses and tribal entities responded to an invitation from the USACE to look together at the future of ports and harbors in Alaska.

2008 Conference Goals

- Bring Alaska's marine transportation users, providers and agencies together to discuss future of Alaska's Ports and Harbors
- Identify water resources problems, issues and opportunities facing Alaska
- Work together to identify action items to support development and protect resources
- Discuss long-term vision through panelist presentations and breakout sessions

The Corps presented baseline information and a briefing packet outlining Alaska projects and process

Introductory Speakers included:

- Lois Munson - Dena'ina Elder, Native Village of Eklutna
- Colonel Kevin Wilson - Commander, Alaska District
- Gary Loew - Chief, Civil Works Programs, Integration Division
- George Cannelos - Federal Co-Chair, Denali Commission
- Rich Schiavoni - Chief, Civil Works Programs, Integration Division
- Sarah Barton - Facilitator, RISE Alaska

20 panelists gave short, catalytic presentations

Panel 1 – Commercial Transportation Users

- Steven Borell, Alaska Miners Association
- Bill Deaver, TOTE
- John Goll, Minerals Management Service
- Mike Black, Alaska Dept. of Commerce Community and Economic Development
- Mark Van Dongen, Port MacKenzie

Panel 2 – Commercial Transportation Providers

- Tessa Rinner, Denali Commission
- Jeff Ottesen, Alaska Department of Transportation
- Pat Gamble, Alaska Railroad Corporation
- Gov. Bill Sheffield, Port of Anchorage
- John Stone, State Harbormaster Association
- Ben Ellis, Institute of the North

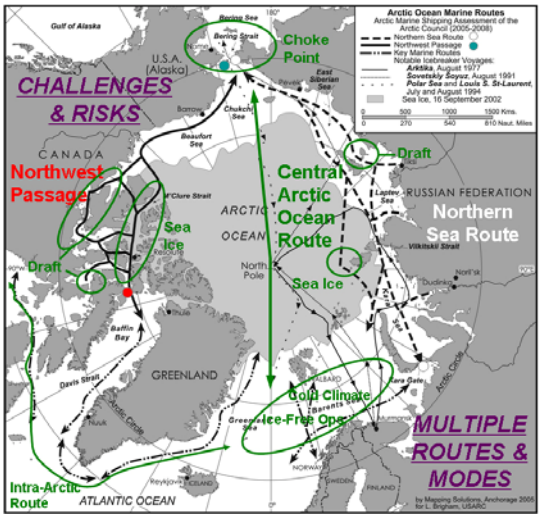
Additional Conference Panelists

Panel 3 – Government Agencies

- Capt. Michael Inman, Response Division 17th USCG District
- Phillip Oates, City of Seward
- Michael Catsi, Southwest Alaska Municipal Conference
- Peter Larsen, Nature Conservancy

Panel 4 – Alaskan Communities

- Bob Juettner, Aleutians East Borough
- Eugene Asicksik, Norton Sound Economic Development Corp. (Former CEO)
- Mayor Siikauraq Whiting, Northwest Arctic Borough
- Tom Harris, Tyonek Native Corporation
- Molly McCammon, Alaska Ocean Observing System



Topics ranged from the Northern Sea Route, ship traffic in the Arctic, global warming, Canadian rail extension to community relocation, barge access and the USACE appropriation process.

The intent was to stimulate thinking among transportation providers and users, government agencies and communities.

Participant comments exhibited much alignment.

Selected Comments from Participants –
Why Are We Here Today?

- Partner with USACE to improve process and planning
- Identify how we can work together and collaborate on planning for future of AK ports and harbors
- Address need for a regional system approach for Alaska, instead of competing ports against each other
- Discuss how to ensure development benefits local Alaskans
- Look at alternative energy sources (i.e. geothermal)
- Discuss impact of global warming on arctic (i.e. fish stocks migrating north, sea ice melting, higher traffic in arctic)
- Develop new data; share it

Selected Comments from Participants –
Alaska's Transportation Users

- Build rail line connection to trans-Canada
- Develop resources in rural Alaska
- Improve inter-community transportation (i.e. connectivity of ports, roads, rail and air)
- Partner with State, small businesses, agencies, tribes and local communities to accomplish goals
- Look at development vs. environmental concerns
- Strategically look at Port MacKenzie
- Develop comprehensive ports and harbors plan for Alaska
- Evaluate feasibility of regional transportation systems

Selected Comments from Participants –
Alaska's Transportation Providers

- Improve permitting process with the Corps
- Engage State leadership in planning for ports and harbors
- Cost-share with local communities
- Respond to increased cruise ship traffic; identify who is responsible for clean-up and salvage
- Look at integrated marine transportation for large and small community facilities
- Cultivate cooperation from all agencies

Selected Comments from Participants –
Other Government Agencies

- Use holistic approach in planning and project development
- Develop partnerships to get things done
- Include ports and harbors in State's Long Term Transportation Plan, with State as active partner
- Be smart about investing our limited funding dollars – strategic development planning
- Look at big picture and economic drivers
- Involve local communities, tribes and agencies in planning activities

Selected Comments from Participants –
Alaskan Communities

- Include rural communities and tribal councils in process
- Train local people for future jobs using distance learning technology and on-the-job training
- Ensure visions and long term plans are flexible and collaborative (20/50/75 years)
- Develop more ways to share information and communicate
- Move Corps administrative offices into rural Alaska
- Promote “multi-use” of Alaska’s ports harbors (oil/gas, fishing, import, export)
- Install weather monitors in harbors, as well as airports

Action Items –
What Will We Do Together?

A partnership agreement and vision statement was developed by Colonel Wilson and his staff. It was signed by most attendees. Key State agency representatives indicated conceptual support and will pursue support at the State Cabinet level.

The overwhelming mandate from this group was the need for ongoing collaboration, comprehensive planning and leadership.

Develop a Long Range Comprehensive Plan for Alaska's Ports and Harbors

- Develop shared vision for Alaska navigation, transportation system
- Identify a facilitating agency to take the lead on a plan
- Form a steering committee
  - State, federal government, local agencies, USACE, private sector, local communities, tribal councils and other stakeholders
  - Engage Governor Palin and State of Alaska
- Include items such as: future demand projections, water resources, coastal infrastructure, funding and needed improvements
- Actively engage USACE planning skills to support State plan

Engage in Effective Communication

- Set up communication tools among stakeholders to keep everyone aligned
- Post draft reports, action steps, issues, development progress and projects
- Invite stakeholders and public to post comments and good ideas
- Hold regular *Alaska Regional Ports and Harbors Conference* to maintain momentum and achieve progress
- Link to DOT statewide transportation planning

Leadership

- Set timelines for action items
- Create accountability and responsibility
- Schedule regular meetings
- Maintain focus on responsible development
- Identify issues that need immediate attention and form smaller groups to work on them
- Continue to collect signatures for commitment to shared vision presented by the Corps

Conference documents and summary are posted online at

http://www.poa.usace.army.mil/en/cw/index.htm