

State of Alaska  
Coastal Impact Assistance Program

**FINAL PLAN 2008**

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State of Alaska  
Coastal Impact Assistance Program  
Project Descriptions proposed by

**STATE OF ALASKA**

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**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF HABITAT MANAGEMENT AND PERMITTING**

**PROJECT TITLE: Stikine River Mining Activity Risk Assessment**

**PROJECT CONTACT:**

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**PROJECT LOCATION:**

The Stikine River. The Stikine River is approximately 335 miles long, in northwestern British Columbia, Canada, and southeastern Alaska, in the United States. The project would occur in the Stikine River and delta located opposite Mitkof Island, approximately 25 miles north of Wrangell, Alaska.

**PROJECT DURATION**

1 year

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>	
<b>TOTAL</b>	<b>Year 1</b>
58,000	58,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
58,000	0	58,000	0	0

**PROJECT DESCRIPTION:**

The Stikine River delta is a haven for over 120 species of migratory birds in the spring and fall, including over 150,000 shorebirds. In April, the second largest concentration of eagles in the world occurs when as many as 1,600 arrive to feed on the annual Eucharion run. The Stikine River supports a major transboundary salmon fishery and the annual harvest of Dungeness crab on the Stikine flats exceeds 400,000. The Stikine River delta is a highly productive ecosystem supporting a diverse assemblage of fish and wildlife resources.

The Stikine River drainage includes areas with rich mineral reserves; plans to develop mineral resources (copper and precious metals) in the Galore Creek<sup>1</sup> and Schaft Creek drainages have recently been proposed. Natural background loading of metals occurs in some of the streams in the Stikine River drainage.

The State reviews and evaluates proposals for pending hard-rock mines to identify and predict possible changes to aquatic habitats with the goal of ensuring the proper protection of fish and wildlife resources. To conduct a thorough review, it is necessary to evaluate existing data and to identify and request additional baseline data on water quality before project construction commences. Baseline data from the Stikine drainage must include sampling of the river and its delta. We propose to contract with an individual with expertise in biogeochemistry and entomology to review the status of current and future mining proposals with the intent of preparing analyses of the existing baseline data and to identify what additional data are needed. The focus of this review and baseline data analyses would be to determine what constitutes an adequate baseline sampling program (parameters to measure, frequency of sampling, quality control and quality assurance) to form the basis for detecting any changes that may occur over time, and how those changes might affect valuable fish and wildlife resources in the Stikine River and its delta. The Environmental Effects Monitoring (EEM) programs for both mining projects will also be reviewed to ensure the ability to detect changes against baseline data, verify predictions of the environmental effects assessment and compliance with respect to discharge limits. Infrastructure associated with the construction of the Galore and Schaft Creek mines will likely increase the potential for more mineral development in the Stikine River drainage. The review of baseline and environmental effects monitoring programs by an individual with expertise in entomology and biogeochemistry will result in recommendations to ensure the protection of coastal resources.

**MEASURABLE GOALS AND OBJECTIVES:**

The outcome of this project will be a technical report documenting existing baseline data specific to water quality, sediments, and selected aquatic organisms that may affect the various fish and wildlife resources in the Stikine River Delta. Technical Report data would be used to determine if adequate baseline data exists or whether additional baseline work is needed. If additional baseline data were needed, the report would identify the parameters to measure and the frequency of sampling.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use Number 1, “*Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands,*” because it will provide baseline data analyses. Knowledge of existing conditions in the Stikine River, through acquisition of baseline data, is essential to evaluating the effects of

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<sup>1</sup> In late November 2007, it was announced that construction on the Galore Creek project has been suspended, but given the high mineral potential, it is likely that a future mining proposal will emerge. In 2008 NovaGold and Teck Cominco announced an aggressive review of the project with the objective of identifying an alternative development strategy that would allow the partners to resume construction and advance Galore Creek toward production.

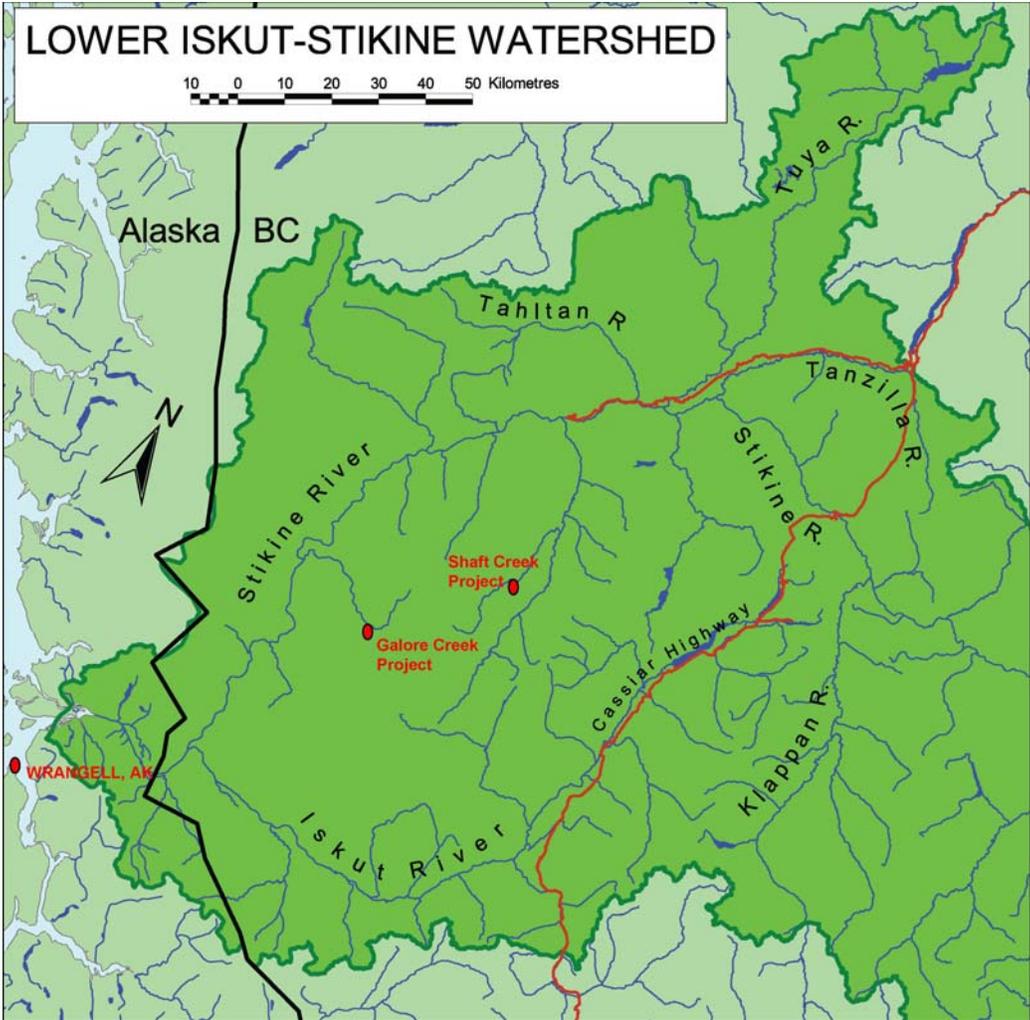
development projects in the area, and is essential to developing appropriate measures to protect the important coastal resources of the Stikine River from project effects. This project will identify the existing gaps in baseline data and identify the data needed to develop measures to effectively protect coastal resources from anticipated mines, such as the Galore and Shaft Creek mines, and other potential development projects in the Stikine River watershed. Attachment E of The Pacific Salmon Treaty commits both the United States and Canada to “maintain adequate water quality and quantity.” The treaty provides the State of Alaska the authority to comment on projects located in Canada if they are within the Stikine watershed and to develop project stipulations that would protect coastal resources downstream, within Alaska’s coastal area.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The project has been discussed with National Marine Fisheries staff. Results of this project will be shared with Federal and State agencies for use in future comments on proposed mining activity.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds will not be used for cost sharing or matching purposes.



**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF COASTAL AND OCEAN MANAGEMENT**

**PROJECT TITLE: ShoreZone Mapping Project**

**PROJECT CONTACT:**

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**PROJECT LOCATION:**

See attached maps

**PROJECT DURATION**

4 years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
800,000	195,000	200,000	205,000	200,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
800,000	175,000	20,000	200,000	405,000

**PROJECT DESCRIPTION:**

DCOM has been involved in this ongoing project to conduct research on biological resources and geological features of the Alaska shoreline using the ShoreZone Inventory methodology pioneered by Coastal and Ocean Resources, Inc. (CORI), of Sidney, British Columbia. ShoreZone inventory of a designated shoreline is conducted in two phases. The first phase, imaging, involves aircraft and on-board science crew and is conducted in a very brief window of time determined by hours of daylight, tide cycle, and weather. The second phase, interpretation (the mapping component, with associated production of spatial and other data) is conducted over a period of months. To date, approximately 50% of the 44,500 miles of Alaskan coastline has been flown and imaged. The ultimate goal is to develop ShoreZone imagery and mapping of the entire Alaska coastline. The attached

map shows the areas yet to be completed. CIAP funding will be used to image and map at least 8,000 kilometers (km) of coastline not yet completed.

ShoreZone is a coastal habitat mapping and classification system in which georeferenced aerial imagery is collected specifically for the interpretation and integration of geological and biological features of the intertidal zone and nearshore environment.

Oblique low-altitude aerial video and digital still imagery of the coastal zone is collected during summer low tides (zero tide level or lower), usually from a helicopter flying at <100 m altitude. The flight trackline is recorded at 1-second intervals using electronic navigation software and is continuously monitored in-flight to ensure all shorelines have been imaged.

Video and still imagery are georeferenced. Video imagery is accompanied by continuous, simultaneous commentary by a geologist and a biologist aboard the aircraft. The imagery and commentary are later used in the definition of discrete along-shore coastal habitat units and the “mapping” of observed physical, geomorphic, sedimentary, and biological features in those units. Units are digitized as shoreline segments in ArcView or ArcGIS, and then integrated with the along-shore and across-shore geological and biological data housed in a relational database. Mapped habitat features include degree of wave exposure, substrate type and morphology, sediment texture, intertidal biota, and some nearshore subtidal biota.

Research and practical applications of ShoreZone coastal mapping data and imagery include: natural resource planning and environmental hazard mitigation (e.g. by resource managers in evaluating project impacts); linking habitat use and life history strategy of nearshore fish and other intertidal organisms; habitat capability modeling (e.g. predicting the spread of invasive species); providing regional framework for site-specific shore station surveys; and public use for recreation, education, and outreach, and as a tool for developers during the project planning phase. Other applications include using ShoreZone to model areas sensitive to climate change, and as a tool to support future oil remediation efforts and oil spill response planning, as well as restoration activities, such as possible herring intervention programs like moving spawn to rearing areas.

**MEASUREABLE GOALS AND OBJECTIVES:**

This four year project will:

- Create video and still imagery and, or map 2,000 km annually of coastline in Alaska, with specific areas to be determined from the attached maps.
- Support the maintenance of this publicly available data via the National Oceanic and Atmospheric Administration (NOAA) ShoreZone website.
- Develop a peer reviewed paper on preliminary estuarine classification system for Southeast Alaska.
- Continue field verification through selected site visits.

The video and imagery components of this project must happen in the summer because this is when the lowest tides of the year occur, coupled with adequate vegetation growth for interpreting the biological characteristics along the shore and weather conditions. As

such, the schedule will possibly change, and the determination of which phase(s) of the project will be funded annually will change accordingly. However, the overall project outcomes will remain the same- a combination of imagery and mapping will be generated for 8,000 km of Alaskan coastline.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use Number 1:

*Projects and activities for the conservation, protection, or restoration of coastal areas, including wetland.*

Because of its scale and complexity, an inventory of the region's coastal habitats has only been feasible with recent developments in photo-electronics and associated mapping methodologies. In order to take conservation, protection, and restoration actions along Alaska's coastline, it is critical to have a baseline inventory of the coastal resources. Traditional ground-based inventory techniques are too costly and time consuming for the approximately 44,500 miles of the entire Alaska coastline.

A complete region-wide database of nearshore features will, for the first time in the state of Alaska, provide baseline data to coastal communities, managers, scientists, and the public, in order to make informed decisions on coastal development, conservation priorities, invasive species abatement, and oil spill response.

Examples of how the ShoreZone imagery and data are currently being applied to conservation and protection of coastal and wetland areas include:

- Determining the placement oil spill response equipment, when timing of boom placement is of the essence to protect sensitive habitats;
- Direct use in coastal development permitting – For the first time in Alaska, all local, state and federal agency representatives have direct access to imagery and data of the proposed project areas in order to make informed decisions surrounding development projects, when travel costs and the remote nature of Alaska's coastline impeded adequate project review. The information will enable resource managers to identify the most critical areas to protect during project review;
- Predicting invasive species habitat on a region wide basis, through habitat modeling of areas that had not been mapped or inventoried;
- One of the State of Alaska's partners in coastal conservation, The Nature Conservancy (TNC), is applying the ShoreZone imagery and data inventory to identify high priority conservation sites. By working with local, state and federal partners, TNC will develop appropriate conservation strategies to ensure the long-term viability of ecologically productive nearshore and estuarine systems of Alaska's coasts by 2010;

These examples lead to protection, restoration, and or conservation of coastal areas through better management of coastal habitat and resources.

One major opportunity to address with this project is to develop a publicly available set of video imagery, thousands of still photos, and a parallel data set for the entire coast of Alaska. The digital imagery is then made public through NOAA National Marine Fisheries website. The ShoreZone partners also have a communications and outreach plan to develop training tools to communicate the utility and applications of the ShoreZone imagery, data, and maps to ShoreZone users, including to Geographic Information Systems (GIS) analysts, oil spill response crews, community and state planners, research scientists, coastal residents, and tourism operations.

This project will result in further development of a tool to assist users in obtaining valuable information online providing baseline biological and geomorphological data, which has been used for natural resource planning, protection and restoration of coastal areas. The base line data will provide critical information in the event of an oil spill. Should a spill occur the data base will provide the necessary information to identify the habitats most at risk allowing managers to prioritize resources and protect the most critical coastal areas. The data base will also be used to assess impacts to coastal areas after a spill occurs. This assessment is necessary to develop appropriate restoration of damaged areas.

Geophysical information, wave energy exposure, biological banding, substrate types and upland features can all be seen using ShoreZone. ShoreZone goes further providing images of potentially affected shoreline to allow for detailed planning of boom placement, staging areas collection beaches.

Southeast Alaska Petroleum Resource Organization (SEAPRO) used ShoreZone during a September 2007 exercise for US and Canada spill response trainees for identification of sensitive habitat areas, potential staging areas, and docking locations. Also, SEAPRO used the ShoreZone imagery and data during an oil spill, which occurred off southwest Prince of Wales, in February 2008. When the spill was reported at 1:00 am, staff immediately accessed the ShoreZone imagery on the internet. The imagery provided valuable coastal resource information for planning response activities, including areas appropriate for landing boats and sensitive habitats that should receive priority for protection.

A third example of direct application of the ShoreZone imagery and data is the use of this information in restoration planning efforts in Prince William Sound. Zach Nixon from Research Planning, Inc. pointed out that they used the 2004/2007 videography acquired by the ShoreZone mapping team as an integral part of the 2007-2008 Exxon Valdez Oil Spill Lingering Oil Study. He noted that "the videography was used to identify and delineate fine-scale geomorphic features thought to be related to the persistence of subsurface oil from the Exxon Valdez Oil Spill in portions of Prince William Sound in south-central Alaska. The videography - acquired at consistent shoreline offset and altitude - enabled this process to be rapidly completed. Fieldwork to acquire these data would have been prohibitively expensive. As such, access to this extremely valuable resource will hopefully enable more accurate evaluation of the distribution of remaining

subsurface oil, and a better understanding of why and where oil persists in the environment.” This leads to protection, restoration, and or conservation of coastal areas through better planning and implementation of oil spill response, which improves the health of coastal habitat and resources.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Other partners, such as the Alaska State Department of Fish and Game, NOAA, and the Nature Conservancy have contributed time and money to the ShoreZone mapping project in the State of Alaska. These parties also meet annually for a ShoreZone steering committee meeting to discuss important issues related to the project (upcoming site priorities, e.g.) For a list of all ShoreZone partners in Alaska, visit <http://www.coastalandoceans.com/shorezone.html>.

The final ShoreZone product is publicly available and maintained by NOAA at <http://www.fakr.noaa.gov/maps/szintro.htm>.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds will not be used for cost sharing or matching purposes.

SHOREZONE COASTAL HABITAT MAPPING PROGRAM IN ALASKA

**Imaged and Mapped**  
23,999 km

- Aniakchak (170 km)
- Katmai (806 km)
- Kodiak (4,981 km)
- Cook Inlet (2,364 km)
- Outer Kenai (1,955 km)
- PWS04 (1,543 km)
- SE04-05 (6,454 km)
- SE06 (5,726 km mapped as of Feb08)

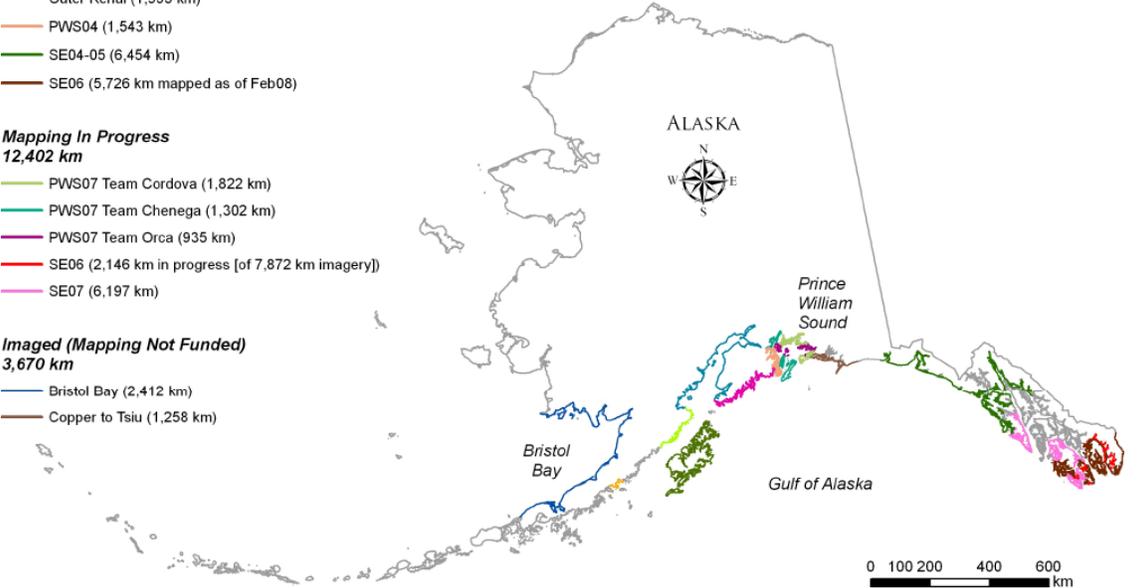
**Mapping In Progress**  
12,402 km

- PWS07 Team Cordova (1,822 km)
- PWS07 Team Chenega (1,302 km)
- PWS07 Team Orca (935 km)
- SE06 (2,146 km in progress [of 7,872 km imagery])
- SE07 (6,197 km)

**Imaged (Mapping Not Funded)**  
3,670 km

- Bristol Bay (2,412 km)
- Copper to Tsiu (1,258 km)

Total Imagery in Alaska = 40,071 km  
(73% of State Shoreline [55,000 km] imaged)  
  
Imagery in SE Alaska = 20,523 km  
(61% of SE Shoreline [33,600 km] imaged)



- Alaska - Not Imaged**
- Beaufort Sea - 2765 km
  - Kotzebue to Barrow - 2070 km
  - Seward Peninsula - 2990 km
  - Cape Newenham to Nome - 5640 km
  - Bering Sea Islands - 1365 km
  - Aleutian Islands - 6215 km
  - South Peninsula to Katmai - 5405 km
  - Southeast - 8115km



**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**PROJECT TITLE: Fish Monitoring Project**

**PROJECT CONTACT:**

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**PROJECT LOCATION:**

The fish monitoring program involves sampling of several species of fish from across the State of Alaska. Samples will be collected from coastal, estuary and marine areas throughout the state.

**PROJECT DURATION**

This is an on going project. However, the portion to be funded by CIAP is 3 years.

**ESTIMATED COST:**

This is a continuing program with estimated annual costs of \$1 million, although the number of samples collected and analyzed can be reduced depending on funding levels. The following CIAP funding levels are proposed. The Alaska Department of Environmental Conservation (DEC) will seek funding from other sources to maximize the number of samples collected and analyzed.

<b>Spending Estimate (\$)</b>			
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
1,600,000	700,000	600,000	300,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
1,600,000	0	700,000	600,000	300,000

**PROJECT DESCRIPTION:**

This project will assess the impact of environmental contaminants on the coastal and marine ecosystems in Alaska's oceans by testing muscle tissue from a variety of fish species.

The primary source of these contaminants is long range transport from distant sources, primarily industrial regions of Asia. Atmospheric conditions, weather patterns, and ocean

currents carry the contaminants such as PCB congeners, dioxins, furans, brominated fire retardants (PBDEs), and heavy metals such as mercury. However, local contamination can occur secondary to industrial development projects; mining, solid waste disposal sites and accidental discharges. The adverse biological effects on the marine ecosystem from exposures to these contaminants can range from altered growth and development, reduced reproductive capacity to decreased resistance to infection and disease. They will also impact the endangered marine mammals and seabirds that feed on marine life and specifically the fish.

The Alaska Department of Environmental Conservation has been conducting opportunistic surveillance of these contaminants in various species of fish for the past five years. Fish have been chosen because they represent the top of the food marine ecosystem and tend to bioaccumulate these contaminants; and fish can be used as a sensitive screening or biomonitoring tool for the presence of these chemical compounds. The initial data illustrate some trends and regional differences, but there is not enough information yet to evaluate the significance of these findings. The need for additional baseline data is critical for trend analysis in future years. The impacts of this research will also help us understand the influence of several factors including climate change on contaminant deposition and movement in the coastal ecosystem.

Some of the species to be analyzed are: halibut, pacific cod, lingcod, sablefish, rockfishes, Pollock, Sheefish, burbot, white fishes and northern pike. Coastal and marine areas of specific interest include: Kotzebue, Norton Sound, Yukon River, Kuskokwim River, Bristol Bay, Bering Sea, Dutch Harbor/Unalaska, Kodiak, Cook Inlet, Prince William Sound, Cordova, Juneau and Ketchikan. Global Positioning Satellite coordinates will be recorded for each collection site and mapped on a grid. This will allow for a spatial comparison of the fish populations as well as accurate re-sampling in the future.

Collaborative partners collecting fish include: International Pacific Halibut Commission; National Oceanic Atmospheric Administration (NOAA) ground fish observer program, the Alaska Monitoring and Assessment Project (AKMAP), Alaska Department of Fish and Game (F&G), as well as commercial, recreational and Native fisherman. All fish samples will be shipped to the Environmental Health Laboratory (DEC EH) to be processed. A lab technician will enter all physical data into a database, remove the otoliths (for aging the fish) and fillet the fish. The skinless fillets will be homogenized and put into sample containers. The heavy metals (lead, total arsenic, total chromium, cadmium, nickel and methyl mercury) will be analyzed at the DEC EH lab. A portion of the samples will be sent to a contract laboratory for analysis of PCB congeners, pesticides, dioxins, furans, PBDE, and inorganic arsenic.

Funding would be used to collect samples, ship them to the DEC EH Lab, and analysis of the tissue for chemical contaminants. A portion of funds will be used to pay a contract laboratory to conduct specialized testing mentioned above.

This project will help satisfy the vital need to collect data about environmental contaminants in Alaska's oceans and coastal ecosystems. There are currently no studies

in Alaska that are evaluating contaminant exposure of fish in all major marine water bodies surrounding the state. Monitoring for contaminants by using fish as a bio-indicator of exposure will produce data on contaminant concentration, including geographic identification, about areas throughout Alaska's marine environment.

Working with toxicologists in the Department of Health and Social Services (DHSS) and biologists at F&G to evaluate the data, we can determine if the current level of contaminants in the fish have any implications to other components of the coastal ecosystem. The data can be used by wildlife biologists to compare the environmental quality guidelines that have been developed by various organizations (International Joint Commission, US EPA, and Environment Canada) for the protection of aquatic life and fish eating wildlife. These guidelines have been derived using estimated contaminant concentrations rather than real data. Information from this program could be used to identify the threshold for effects in sensitive fish eating wildlife species as well as the specific bioaccumulation and biomagnification rates of particular substances.

The data are being recorded in a database at the DEC EH Laboratory. Currently a new database is being developed to provide better access to the information. The new database will include a unique code number to link the sample data, the geographic location, species of fish, age, length and weight. If results indicate elevated contaminant levels, additional samples will be collected and analyzed to confirm the findings. This information will be available to other researchers and others interested in expanding our understanding in these areas.

The data and current information are available on the DEC website: <http://www.dec.state.ak.us/eh/vet/fish.htm> . Results of the study will also be available to the public via written publications/reports and in town/community meetings. In addition, the data would also be presented at informational meetings with other organizations such as Alaska Forum on the Environment, and the Native American Fish and Wildlife Association.

**MEASURABLE GOALS AND OBJECTIVES:**

The measurable goals and objectives are the same for each of the three project years.

1. A computer database information system that will provide Alaska marine and coastal information on contaminants in a manner that is readily useable to state, federal local and tribal agencies, non-governmental organizations and the public.
2. Baseline data on the level of contaminants provided in a geographic orientation of the marine and coastal habitats. This information can be used to identify the presence of any health risks to the wildlife in these habitats and the human populations residing nearby. It will also be helpful in identifying and tracking the possible source of the contaminants.
3. A clearinghouse of information of the current research being conducted in Alaska allowing collaboration between research partners and identify knowledge gaps in order to allow the state to establish and advocate an overall research plan. This will also encourage research partners to use common analytical methods and

reporting procedures so the results of different studies may be easily compared and consolidated.

4. Annual reports of project activities and findings including analysis and findings on species, temporal and areal bases.

**CIAP AUTHORIZED USE:**

This project is consistent with CIAP authorized use #1:

*Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

This project will yield information on levels of contaminants in fish species. That information can be used by resource managers to initiate steps to address sources and to reduce contamination and thereby protect fish and the wildlife that consume fish, and to take steps to protect and restore coastal areas and wetlands affected by the presence of persistent pollutants.

Local sources, such as mines, other industrial developments, and abandoned military sites are potential sources for a contaminant load in any given habitat. The adverse biological effects from exposures to these contaminants can range from altered growth and development, reduced reproductive capacity, and decreased resistance to infection and disease. They can also add stress to endangered marine mammals and seabirds that feed on these fish. The project has collected samples from estuaries that are impacted by surface water from historic and recent industrial activity such as oil drilling platforms in Cook Inlet, to monitor the impact on the ecosystem. This data is being used by state and local communities to evaluate the safety of the industrial activity on their coastal area. This work will help to protect and restore coastal areas and wetlands affected by the presence of persistent pollutants.

With existing data, the project has already identified regional differences in contaminants found in marine fishes across the Aleutian Islands. We have developed a statistically sound sampling method in collaboration with the International Pacific Halibut Commission to better understand those differences in accumulation. With more data, the local communities will be able to focus on protecting and conserve more vulnerable marine estuaries.

**COORDINATION WITH OTHER STATE AND FEDERAL RESOURCES OR PROGRAMS:**

The concern about the impact of environmental contaminants on coastal marine ecosystems has been growing for sometime and researchers are beginning to focus more attention on Alaska due to the added impact of global warming. However, coordination among projects is sometimes lacking. The main concern that needs to be addressed is method usage. The data is not comparable if researchers use different analytical methods for detection. As part of this project, DEC will work with other agencies and organizations performing contaminant research to encourage the use of standard analytical methods and reporting levels so the results from various studies can be easily

consolidated and compared to help direct future work understanding the coastal ecosystems of the state. We will also work to identify knowledge gaps in the current research projects to establish and advocate a collaborative effort to fill those needs.

Through DEC's collaborative efforts, the Fish Tissue Monitoring Program has avoided duplication of existing projects and provided data to other state and federal agencies as well as local communities concerned about contaminants in the coastal habitat. We have also established a list of contacts and links to information on research that is currently being conducted in Alaska by other state, national and Tribal organizations. Through these contacts, we know that no current studies are evaluating the concentration of environmental contaminants in fish to assess the marine and coastal habitats on a spatial statewide basis. We have made great efforts to inform other researchers, especially scientists at the University of Alaska, and the public of the extent of our work by posting information on the DEC web page and making frequent presentations.

Over the past five years, we have worked closely with our federal and state partners. This work is supported specifically by NOAA, The Environmental Protection Agency (EPA), the Fish and Wildlife Service (FWS), the International Pacific Halibut Commission (IPHC), Alaska DHSS, and Alaska F&G. We have established scientific protocols for collecting, processing and chemical analysis of samples that have been peer reviewed by Alaska DHSS, Alaska DF&G, NOAA and the EPA. Samples are predominantly collected by the ADF&G, IPHC and the NOAA Ground Fish Observer Program assuring the collection of high quality fish samples. The program has received funding from many of these partners over the years, which is a testament to their involvement and support.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

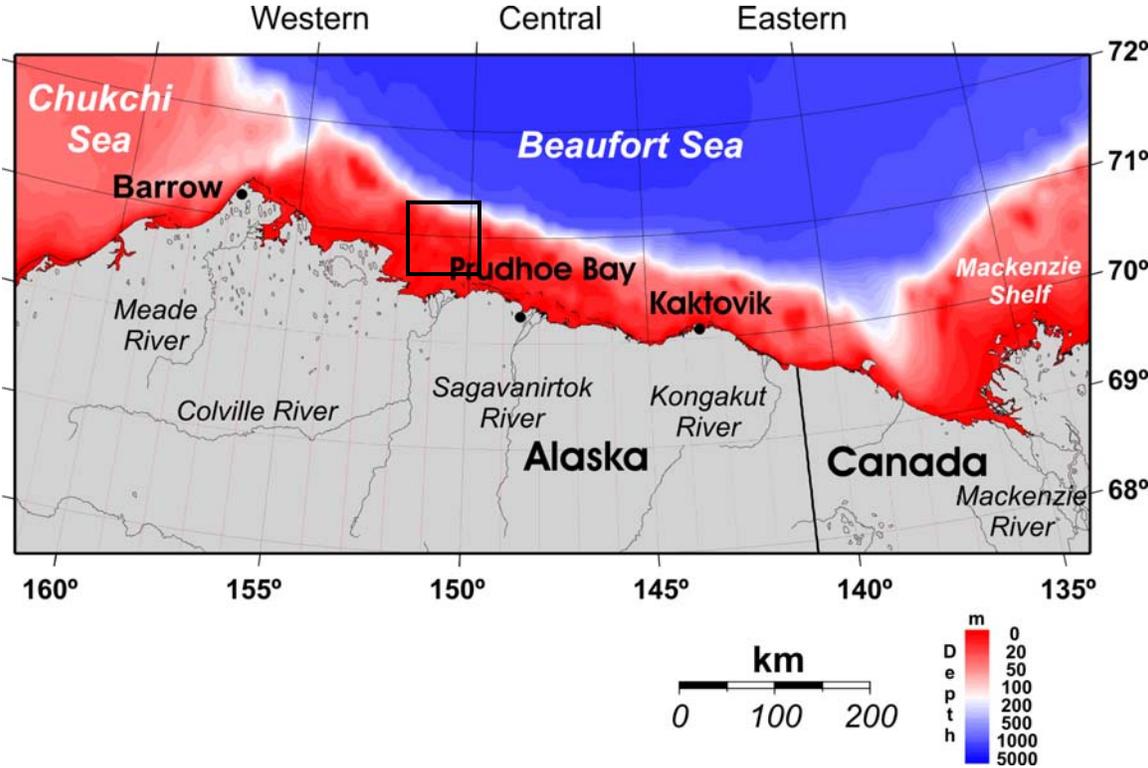
STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**PROJECT TITLE:**  
**Current Measurements in Potential Oil Exploration and/or Development Areas of the Landfast Ice Zone of the Alaskan Beaufort Sea.**

**PROJECT CONTACT:**  
Contact Name: Larry Dietrick, Director, Division of Spill Prevention & Response  
Address: Alaska Department of Environmental Conservation, 410 Willoughby Avenue, Ste 303, Juneau, AK 99801  
Telephone Number: (907) 465-5250  
Fax Number: (907) 465-5262  
E-mail Address: larry.dietrick@alaska.gov

**PROJECT LOCATION:**  
Offshore of the Colville River Delta in the Alaska Beaufort Sea. The work will be conducted between Cape Halkett and Oliktok Point and in water with depths of between 20 and 120 feet.



**PROJECT DURATION**

1 year

**ESTIMATED COST:**

Spending Estimate (\$)	
TOTAL	Year 1
67,000	67,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
67,000	0	67,000	0	0

**PROJECT DESCRIPTION:**

Measurements of shallow water currents in the nearshore, or landfast ice influenced, zone of the Alaskan Beaufort Sea are required to assess oil spill risks, develop oil spill response protocols, and design offshore structures. There are, however, only a few year-round current measurements from the landfast ice zone of the Alaska Beaufort Sea and all of these are in water depths of 30 feet or less. The previous measurements were the first made in this region, which extends from the coast to the 100 foot isobath; a distance of 30 – 40 kilometers. However, the current in water depths of 30 feet or less are not representative of currents in deeper waters so that guidelines developed for shallow waters may not be applicable offshore. The differences are likely due to the increased complexity of the landfast ice topography offshore, more frequent breakouts of the landfast ice over deeper water, and swifter currents offshore of the landfast ice edge interacting with water beneath the landfast ice. There will also be differences in the summer currents due to differences in water depth, the breakup and meltback characteristics of sea ice, and the effects of river discharges. We propose to use Coastal Impact Assistance Funds to improve our understanding of the oceanography of the *outermost portion* of the Alaskan Beaufort landfast ice zone. We will do this by deploying an oceanographic mooring in 75 feet of water offshore of the Colville River delta. This bottom-mounted mooring will measure ocean currents throughout the water column, ice thickness and velocity, and temperature, salinity, and pressure for one year. Mooring deployment will occur prior to (mid- to late August) or after (October) whaling season, which occurs in September. Moreover, the study location is approximately 50 miles west of Cross Island; the main hunting site for Nuiqsuit whalers. The village of Nuiqsuit and the North Slope Borough have been notified of this project.

**MEASURABLE GOALS AND OBJECTIVES:**

- Deploy bottom-mounted oceanographic mooring offshore of Colville River delta for the period from August to September.
- Synthesize and report measured ocean current, ice thickness and velocity, temperature, salinity and pressure data.

**CIAP AUTHORIZED USE:**

This project is consistent with CIAP authorized use #1:

*Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

This project will yield information on sea currents that can be used to assess oil spill risks, develop oil spill response protocols, and design offshore structures. These data will be particularly relevant to the Alaskan Beaufort Sea, where the oil industry has recently and dramatically shown interests in offshore leasing and exploration. This information will be used by resource managers and others to help protect or restore coastal marine environments and mitigate damage to the marine ecosystem. For example, the current meter data will be used to estimate water parcel trajectory probabilities for different seasons and durations. This analysis was specifically requested by the Alaska Department of Environment Conservation (ADEC) for their oil spill contingency planning purposes with the results presented in a report to ADEC (Danielson, S. L. and T. J. Weingartner, 2007, [Estimates of Oil Spill Dispersion Extent in the Nearshore Alaskan Beaufort Sea Based On In-Situ Oceanographic Measurements](#), 154 pp., which can be downloaded from <http://www.ims.uaf.edu/beaufort/index3.html>). This report has also been made available to John Whitney, Alaska Scientific Support Coordinator, NOAA-Hazmat, the North Slope Borough (Craig George, Dept. of Wildlife Management), and the Minerals Management Service. As emphasized in that report, the results are likely very dependent upon the water depth (which was ~130 feet or less) and the proximity to the landfast ice edge. This report cautions that current magnitudes (and directions) seaward of the 30 foot isobath, could differ substantially from those inshore of this depth. There are no year-round measurements of currents within the landfast ice zone at depths between 30 and 90 feet. The proposed measurements will assist in establishing oil spill response criteria. Indeed, the current measurements provided by the three moorings will provide the only data on the spatial variation of currents within the 15 – 20 mile wide landfast ice zone of the Alaskan Beaufort Sea.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The CIAP funds would cover the costs of the oceanographic equipment and one month of technician time needed to purchase the equipment and fabricate one mooring. This mooring will complement two other moorings being funded by the Office of Naval Research (ONR) that will be deployed in 30 and 60 feet of water over the same period. ONR is also providing the vessel time and costs associated with data analyses. Those analyses will include a report to ADEC summarizing the data in a manner useful in devising oil spill response criteria. The results will also be made available via scientific journal publications and on a website.

**COST SHARING OR MATCHING OF FUNDS:**

This project does not envision using CIAP funds for cost sharing or matching purposes required by another grant.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PROPOSAL**

**DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER**

**PROJECT TITLE: Matanuska-Susitna Trail Rehabilitation and Wetland Restoration**

**PROJECT CONTACT:**

Neil Shishido  
 Division of Mining, Land and Water  
 550 W. 7<sup>th</sup> Ave. Suite 900C  
 Anchorage, AK 99501  
 Phone: (907) 269-8564 Fax: (907) 269-8913  
 E-mail: [neil.shishido@alaska.gov](mailto:neil.shishido@alaska.gov)

**PROJECT LOCATION:**

Wetlands will be restored in the Matanuska and Susitna Valleys. The specific areas will be identified in Year 1 of the project. The areas restored will be either within the coastal area, or within the watershed draining immediately into the coastal area. (See attached map)

**PROJECT DURATION:**

4 years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
140,000	50,000	30,000	30,000	30,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
140,000	0	50,000	45,000	45,000

**PROJECT DESCRIPTION:**

The Matanuska and Susitna Rivers are the two major rivers that drain Southcentral Alaska and the major rivers that empty into Cook Inlet. There are a number of regionally significant trails in this area that serve as transportation corridors for multiple uses. The rapidly expanding OHV (off highway vehicles) use and the large area of wetlands that makes crossing them inevitable has contributed to miles of degraded trails which are rapidly increasing as the intensity of use increases. Most of these trails are unmaintained and once the original alignment becomes degraded, trail users are forced to widen the trail and to go around the degraded section. This process has been repeated over and over again eventually resulting in trail braiding and to severely damaged wetland areas (see

attached photographs). Some trails may be rerouted so that they take advantage of drier and more stable soils on forested ridges. In other areas, the most sustainable alignment will be identified and modern trail hardening techniques will be implemented to improve the trail so that a single route can be used to cross the wetland area allowing the degraded wetland areas to revegetate and rehabilitate.

This project will identify wetland areas that have been highly impacted by trails in the Matanuska-Susitna Valleys; then restore, rehabilitate or reroute trails on state lands with the objective of protecting or restoring damaged wetlands and natural resources that negatively affect the watersheds feeding the coastal areas (see attached maps for examples of trails within the coastal zone). Many of the multiuse trails in these valleys have substantial erosion issues because of unplanned development and trail construction techniques. The resulting soil erosion from these degraded trails eventually ends up in the Susitna River, which eventually drains into Cook Inlet. Trail improvements or rerouting trails around these wetlands decrease the amount degraded wetlands and the amount of siltation entering the river system and eventually the coastal area. Appropriate mitigation and rehabilitation of wetland areas will substantially reduce the amount of siltation entering the wetlands and anadromous streams. The acceptable mitigation will need to be designed to require limited maintenance.

These trails receive increasing public recreational use, inclusive of hunting and fishing access. The valleys have a mix of land ownership with many trails that are not legally established. This project will only focus on trails that are on state lands where there is legal public access to the land. The intent is to make one time improvements to portions of the trails, creating more sustainable trails that can support increased use without increased impacts to the wetlands, natural resources and streams.

The planned result will be an improved trail segment that will lessen the amount of erosion runoff, which eventually ends up in the estuarine waters of the coastal area.

**MEASURABLE GOALS AND OBJECTIVES:**

Year 1: Develop a report supported with GPS/GIS map products assessing trail condition with an inventory of specific trails to quantify and qualify the magnitude of damage, prioritize the rehabilitation needs, and develop recommended prescriptions with cost for materials and labor to mitigate damages. GPS photo linked images of degraded trail segment before and after trail rehabilitation will be included.

Year 2: Restore, rehabilitate or reroute at least 1,000 linear feet of trails.

Year 3: Restore, rehabilitate or reroute at least 1,000 linear feet of trails.

Year 4: Restore, rehabilitate or reroute at least 1,000 linear feet of trails.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use number 1 - *projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands*. Hardening, or rerouting trails will restore wetlands by defining a single travel route or avoiding the wetland all together and thereby allowing the degraded wetland area an opportunity to rehabilitate. This will also improve water quality in adjacent anadromous streams.

**COORDINATION WITH OTHER FEDERAL RESOURCES OR PROGRAMS:**

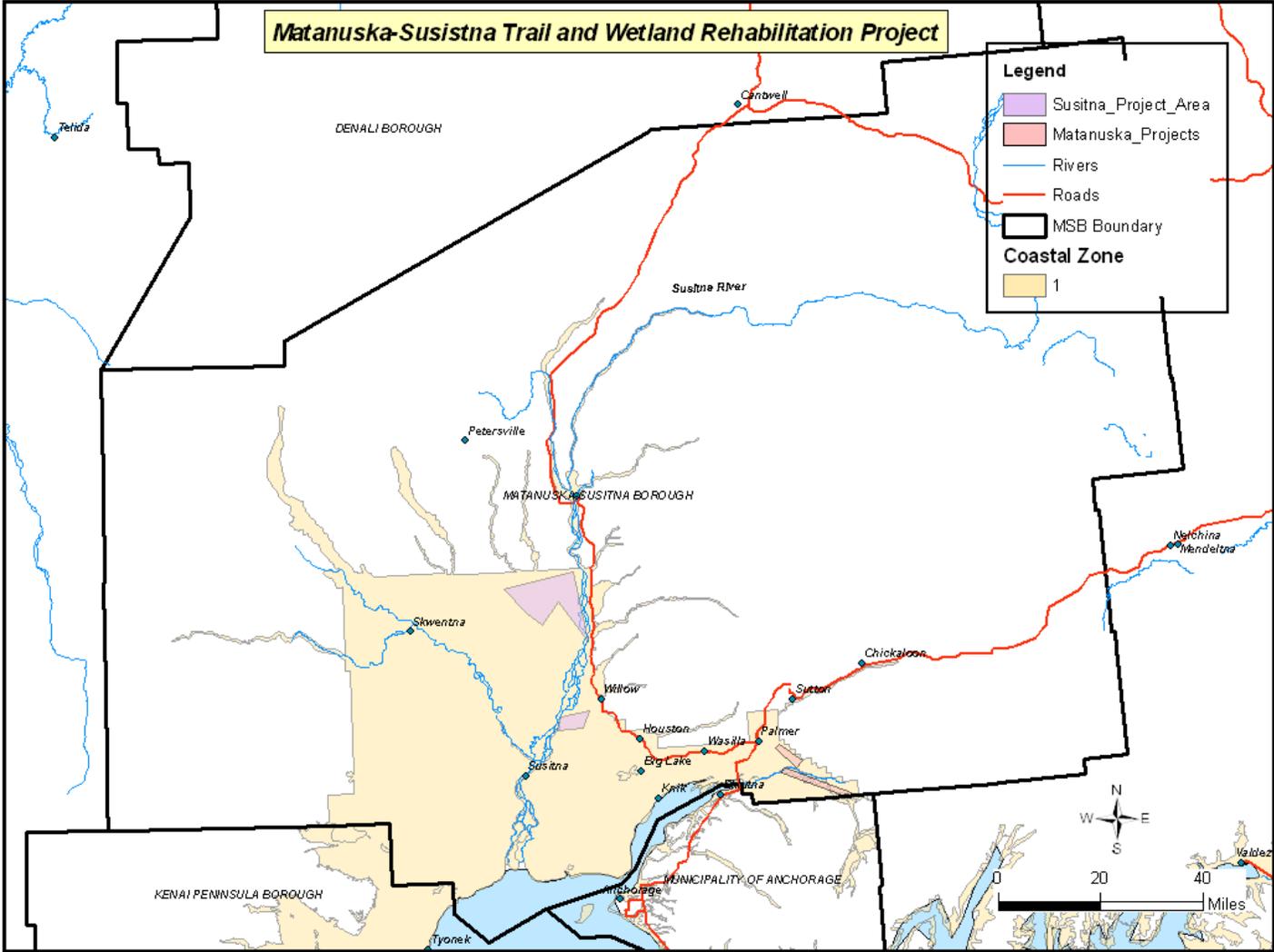
There are no Federal programs that are currently providing funding support or contributing resources to this project.

**OTHER FUNDING SOURCES:**

The division receives some support from the Mat-Su Borough that funds a position to work on certain trail projects, primarily to establish legal easements. We may be able to coordinate some of that person's time to assist in this project if the Borough concurs. The project would be coordinated to not duplicate any efforts of other trail project funding. The other identified sources would be the Recreational Trail Grants or the Alaska Trails Initiative administered through the Division of Parks and Outdoor Recreation and the Wildlife Habitat Improvement Project funded through the Natural Resource Conservation Service.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.



Damaged wetlands caused by braided trail



Siltation into anadromous fish stream caused by unmaintained trail



Wetland bog degraded by OHV use

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF COMMERCE, COMMUNITY AND ECONOMIC  
DEVELOPMENT**

**PROJECT TITLE: Mertarvik Waterfront Management and All Hazards Plan, Nelson Island, Alaska**

**PROJECT CONTACT:**

Contact Name: Sally Russell Cox, Planner III  
 Address: Alaska Department of Commerce, Community, and Economic Development; Division of Community and Regional Affairs; 550 West 7th Avenue, Suite 1770; Anchorage, Alaska 99501-3510  
 Telephone Number: 907-269-4588  
 Fax Number: 907-269-4563  
 E-mail Address: [sally.cox@alaska.gov](mailto:sally.cox@alaska.gov)

**PROJECT LOCATION:**

Mertarvik, the Village of Newtok’s relocation site, is on Nelson Island within the Yukon Delta National Wildlife Refuge. See attached map

**PROJECT DURATION**

2 years

**ESTIMATED COST:**

Spending Estimate (\$)		
TOTAL	Year 1	Year 2
150,000	75,000	75,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
150,000	0	75,000	75,000	0

**PROJECT DESCRIPTION:**

This project involves the development of a Waterfront Management and All Hazards Plan for the Village of Newtok’s relocation site, Mertarvik, on Nelson Island. A waterfront management and all hazards plan, and baseline data to support the plan, is critically needed to provide a strategy for efficient relocation and community development activities and to reduce the impacts of these activities to the surrounding Yukon Delta National Wildlife Refuge. The potential benefits of this project reach beyond the Nelson Island area because the Newtok relocation effort is being viewed as a model for future relocation of Alaskan villages affected by flooding and coastal erosion.

In 2003, Newtok Native Corporation received 10,943 acres of land on Nelson Island in a land exchange with the U.S. Fish and Wildlife Service (United States Public Law 108-129). The purpose of the land exchange was to provide land for the Village of Newtok to relocate to as a result of progressive and unmitigatable erosion that threatens the existence of the current village, nine miles to the north of the Mertarvik site.

Newtok and the new village site, Mertarvik, are located within the coastal zone of the Yukon Delta National Wildlife Refuge. The Yukon Delta National Wildlife Refuge encompasses more than 26 million acres of land and water and is dominated by the Yukon-Kuskokwim Delta, one of the largest river deltas in the world. An abundance of water and wetland types combine to make the Refuge some of the finest waterfowl habitat in North America.

Newtok is a traditional Yup'ik Eskimo village whose residents rely directly on the Refuge's fish and wildlife resources for the majority of their food supply. In addition to subsistence uses, commercial fishing is important to the village economy. Currently, twenty-seven residents hold commercial fishing permits.

Some planning efforts have occurred and are ongoing for relocating Newtok to Mertarvik. The Newtok Traditional Council and Newtok Native Corporation are actively working with a multi-government agency group, the Newtok Planning Group, for the planning and design of infrastructure, housing and waterfront facilities at Mertarvik. A barge ramp and staging area, under contract management by the Alaska Department of Commerce, Community and Economic Development and funded through the Economic Development Administration and the Alaska Department of Transportation and Public Facilities, will be built in 2008. Construction of a fisheries support center by Coastal Villages Region Fund will follow completion of the barge facility.

Additional waterfront development is likely for the future community. It is anticipated that once the Newtok community is established at Mertarvik, there will be an increased demand for larger boats that must be stored in the water, requiring small boat harbor development. In addition, construction of a breakwater or similar protective structure may be necessitated because the Mertarvik shoreline is not naturally protected. There are portions of the shoreline near the future barge landing site that are exposed to 20 to 30 miles of open water across Baird Inlet with the potential for fairly large waves. There are also areas of the shoreline that may be exposed to high currents, particularly during storm surge events.

The new village site is within two miles of Baird Inlet Island -- a low, wet, grassy island that supports a large colony of nesting Pacific brant. Baird Inlet Island is a critical production area for these geese. There are concerns that relocation and development activities such as increased air traffic and boating activity, could impact critical wildlife habitat on the island and surrounding areas.

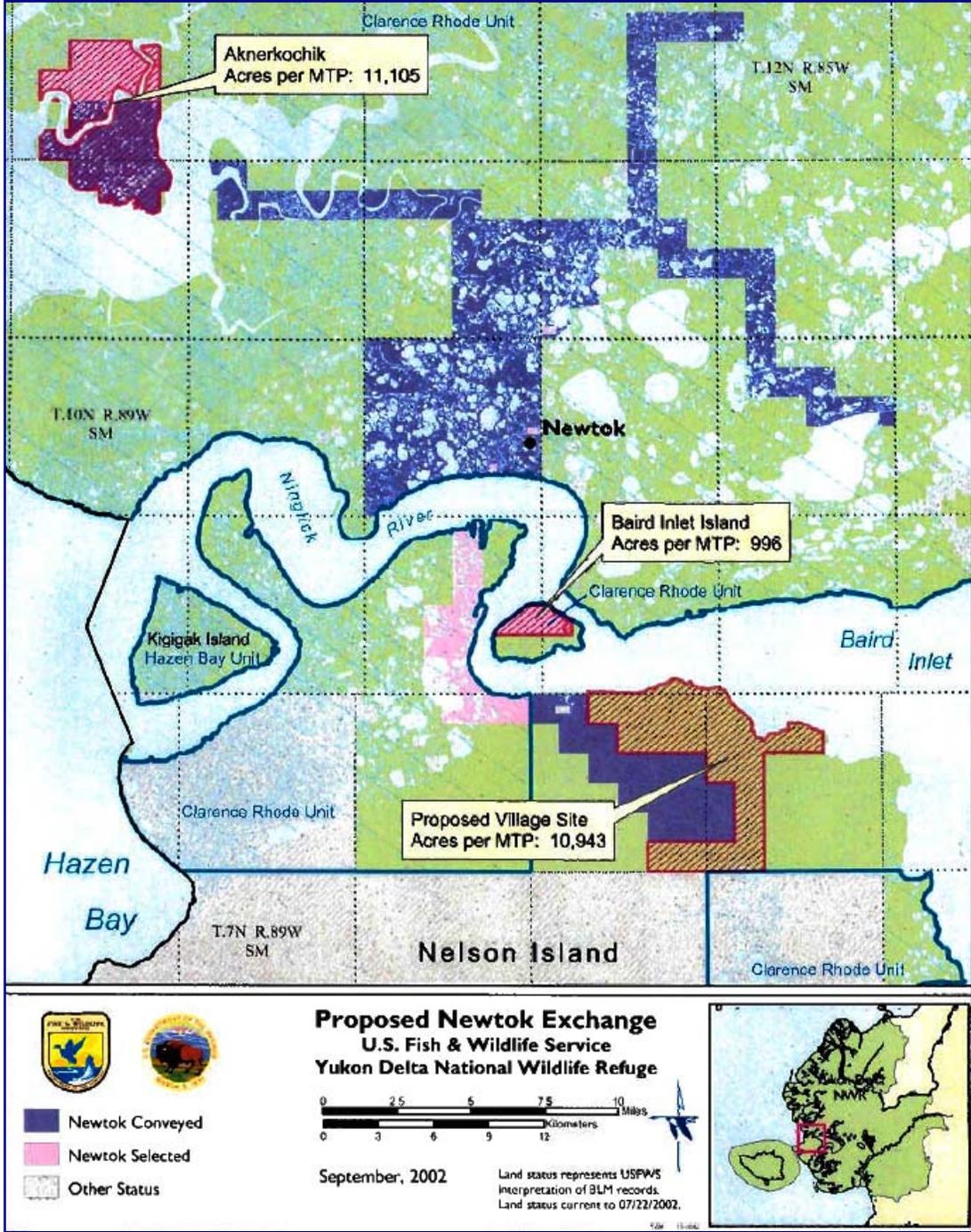


Figure 1: Location of Newtok, the village relocation site of Mertarvik (transferred to Newtok Native Corporation in 2003), and Baird Inlet Island. USFWS figure.

It is critical that a waterfront management plan be developed for the new community in order to address stakeholder needs and to reduce impacts to the surrounding Yukon Delta National Wildlife Refuge. Without such a plan, the transportation of materials and equipment to Mertarvik is likely to impact a larger area of the intertidal and uplands nearshore areas. With a waterfront management plan, information on critical fish and

wildlife construction time windows would be provided. More information should result in more efficient and environmentally acceptable plans and actions.

**MEASURABLE GOALS AND OBJECTIVES:**

This project will result in a strategic management planning document that will provide criteria and guidelines for relocation and community/waterfront development at Mertarvik. This document is intended to strategically plan and organize sustainable activities to guide the relocation with no or minimal impacts on the surrounding Yukon Delta National Wildlife Refuge. A two-year strategic planning approach will be taken in the development of this document, summarized as follows:

Year 1:

- Collection of baseline data of the Mertarvik and surrounding Yukon Delta National Wildlife Refuge environment, including an inventory of the physical environment (such as critical fish and wildlife habitat and natural hazard areas), geography, history, community characteristics, and the identification of the major stakeholders involved with village relocation and community development activities (including government agencies and regional organizations). This information will be summarized in the planning document, with more detailed data summaries provided in the planning document appendices. An important purpose of this information will be to develop critical fish and wildlife construction time windows that will be incorporated into the overall relocation schedule.

Year 2:

- Identification of major stakeholder issues and the development of goals and objectives of the relocation and community/waterfront development process. Stakeholder participation in this process is critical and will be carried out through a series of meetings. A summary of this process, including the participants and findings, will be provided in the planning document.
- Development of a work breakdown structure and implementation plan that describes the actions required for carrying out the relocation and waterfront development strategy, including:
  - The tasks or activities that will happen.
  - The entities responsible for specific tasks or activities. The roles of the stakeholders (including the community and government agencies) in relocation and development activities will be defined and clarified.
  - The resources required.
  - The schedule for activities. Development of a strategic management schedule for relocation and community/ waterfront development activities will be an important product. In addition to being described in the planning document narrative, the schedule will be presented as a Gantt chart.

Additional stakeholder meetings will be held as part of this process.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USES:**

This project complies with CIAP Authorized Use number 2. *Mitigation of damage to fish, wildlife, or natural resources.*

This project will help reduce impacts to the coastal area of northern Nelson Island and the surrounding Yukon Delta National Wildlife Refuge. The development of a waterfront management plan will provide vital information on critical fish and wildlife construction time windows that will mitigate impacts to fish, wildlife and other natural resources in the area during relocation activities. A strategic management schedule can reduce impacts to intertidal and uplands nearshore areas during the transportation of materials and equipment to Mertarvik as part of the relocation process. The development of a waterfront management plan will also provide an important venue through which the many stakeholders in village relocation activities can become involved in the decision-making that affects the resources of the Yukon Delta National Wildlife Refuge. This project has the potential to have an even wider reaching impact because the collaboration of State and Federal agencies on the Newtok relocation is being viewed as a model for how agencies can work together on other village relocation efforts throughout the State.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Through the coordination of the Newtok Planning Group, several state and federal agencies and regional organizations are collaborating on a number of projects, including those listed below, for the relocation of Newtok to Mertarvik:

(See [http://www.commerce.state.ak.us/dcra/planning/pub/Newtok\\_History4.pdf](http://www.commerce.state.ak.us/dcra/planning/pub/Newtok_History4.pdf) ).

**Grant for Mertarvik Barge Landing and Staging Area**

- The Alaska Department of Commerce, Community and Economic Development (DCCED) applied, on behalf of the Newtok Traditional Council (NTC), for an Investment Assistance Grant through the U.S. Department of Commerce Economic Development Administration (EDA). The grant application was for the design and construction of a barge landing and staging area at Mertarvik.
- The U.S. Army Corps of Engineers (USACE) and the Alaska Department of Transportation and Public Facilities (DOT/PF) assisted with the environmental narrative and conceptual drawings for the grant application.
- DOT/PF offered to provide the \$200,000 state match for the project. The EDA \$800,000 grant was subsequently awarded to DCCED and the NTC.

**Project Management of Design/Construction of Mertarvik Barge Landing and Staging Area**

- In order to utilize DOT/PF's construction authority and design expertise, DCCED and DOT/PF have entered into a project agreement for the management of the Mertarvik Barge Landing and Staging Area. DCCED and DOT/PF are working cooperatively to fulfill the grant administration and project management tasks to successfully carry out this project.

**Community Layout Plan for the New Village at Mertarvik**

- DCCED provided technical assistance to NTC in the preparation of an application for a Mini-Grant to fund development of community layout. The Mini-Grant Program is administered by DCCED/DCRA through funding provided by the Denali Commission.
- The Alaska Department of Environmental Conservation Village Safe Water Program (DEC/VSW) “jumped-started” the community layout process by funding a contractor to develop a layout for water and wastewater infrastructure at Mertarvik. A site was selected for a test well. The community site was selected to take advantage of gravity flow, which will eliminate the need for lift stations.
- After the NTC was awarded the \$30,000 Mini-Grant, staff from DCCED/DCRA, DEC/VSW and the USACE served on the Newtok Traditional Council’s proposal evaluation team to select a consultant to prepare the community layout.
- DCCED/DCRA staff worked with the consultant to carry out community planning workshops in Newtok.

**Geotechnical Studies and Water Drilling at Mertarvik**

- In the summer of 2007, USACE and VSW collaborated on the contracting of a drilling company to carry out geotechnical and test well drilling at Mertarvik. Bore samples were taken of the proposed sites for the barge landing staging area, barge landing road and evacuation center.
- The drill rig was left at Mertarvik and in spring 2008, DOT/PF contracted with the same drilling company to take tideland samples new the proposed barge landing.
- DOT/PF will also be using the same drilling contractor for geotechnical investigations of the proposed runway sites at Mertarvik in summer, 2008.

**Design and Construction of Evacuation Road and Center at Mertarvik**

- The USACE used Section 117 funding to initiate design and construction of the evacuation road and center at Mertarvik. The Environmental Assessment and Finding of No Significant Impact has been released for public review.
- DCCED, NTC and other Newtok Planning Group members are participating in a USACE value engineering session on the evacuation center.
- The Alaska Governor’s Climate Change Subcabinet Immediate Action Workgroup (IAW) recommended that funding be provided for the evacuation road and center. State Fiscal Year 2009 Capital Budget funding provided \$3.3 million for this project. (DCCED and the USACE were co-chairs of the IAW).
- DCCED, in collaboration with the Denali Commission, has applied to the Department of Defense’s Innovative Readiness Training Program (IRT) to build the road and evacuation center.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds for this project will not be used for cost sharing or matching purposes for any other project.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF COMMERCE, COMMUNITY AND ECONOMIC  
DEVELOPMENT**

**PROJECT TITLE: Newtok Environmental Site Inventory and Assessment**

**PROJECT CONTACT:**

Contact Name: Sally Russell Cox, Planner III  
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Development; Division of Community and Regional Affairs; 550 West 7th  
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Telephone Number: 907-269-4588  
Fax Number: 907-269-4563  
E-mail Address: sally.cox@alaska.gov

**PROJECT LOCATION:**

The Village of Newtok is located on the west bank of the Newtok River, just north of the Ninglick River and approximately 9 miles northwest of Nelson Island, in Western Alaska. The village is located within the Yukon Delta National Wildlife Refuge.

**PROJECT DURATION**

2 years

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>		
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>
<b>100,000</b>	50,000	50,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
<b>100,000</b>	0	50,000	50,000	0

**PROJECT DESCRIPTION:**

This project involves the inventory of hazardous substances and sources of potential or known contamination in the Village of Newtok. Due to the progressive and unmitigatable erosion<sup>2</sup> of the Ninglick River, the village is in the process of relocating to a new site on

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<sup>2</sup> The village is being critically threatened by the high rate of erosion of the Ninglick River bank adjacent to the village. This erosion has been occurring for years and is recognized as a critical threat to the community. Between 1954 and 2003, the Ninglick River eroded away approximately 3,320 linear feet of land in front of the village. The average annual erosion rate for this period was 68 feet per year. However, in 2003, 110

Nelson Island, nine miles to the south of the current village site<sup>3</sup>. An inventory, assessment and cleanup strategy of the current village site is necessary. The purpose of the inventory would be to document the impacts to the surrounding environment if the village structures and facilities are washed away as a result of erosion.

The Village of Newtok is a coastal community on the west bank of the Newtok River, just north of the Ninglick River and approximately 9 miles northwest of Nelson Island, in Western Alaska. The Ninglick River connects the Bering Sea with the Baird Inlet, upstream from Newtok. The village is located within the Yukon Delta National Wildlife Refuge (See **Figure 1**).

The Yukon Delta National Wildlife Refuge encompasses more than 26 million acres of land and water and is dominated by the Yukon-Kuskokwim Delta, one of the largest river deltas in the world. An abundance of water and wetland types combine to make the Refuge some of the finest waterfowl habitat in North America. The manner in which the Newtok village site is dealt with after it has been vacated could significantly impact the surrounding Refuge environment.

This project will identify existing and potential recognized environmental conditions associated with residences and public facilities (including village fuel tank farm, power plant) within the Newtok village site. Investigations will be conducted in general accordance with "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" established by the American Society for Testing and Materials (ASTM Designation E1527-00). The project will identify alternatives and preliminary costs for remediation, and examine potential impacts if village structures were released to the environment if they were not cleaned up prior to the erosion activities washing them into the Bering Sea.

The potential benefits of this project reach beyond the Village of Newtok because the Newtok relocation effort is being viewed as a model for future relocation of Alaskan villages affected by flooding and erosion.

### **MEASURABLE GOALS AND OBJECTIVES**

The inventory, assessment and clean-up strategy will be documented in a project report, which will be the final deliverable of this project. The report components will be completed over 2 years and are summarized as follows:

Year 1:

- An inventory of hazardous substances and sources of potential or known contamination in the Village of Newtok. Existing and potential recognized environmental conditions associated with residences and public facilities (including village fuel tank farm, power plant, and landfill) will be identified. The

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linear feet of land between the river and the village was washed away. Studies conducted over the past two decades have concluded that there is no permanent and cost effective alternative available for remaining at the current site and that the village must relocate.

<sup>3</sup> In 2003, Newtok Native Corporation received 10,943 acres of land on Nelson Island in a land exchange with the U.S. Fish and Wildlife Service (United States Public Law 108-129).

purpose of the inventory will be to document the impacts to the surrounding environment if the village structures and facilities are washed away as a result of erosion. The inventory will be published in the final project report with the assessment of identified conditions and clean up strategy.

**Interim Deliverable:** The results of the hazardous substances and contaminants inventory will be made publicly available at the end of year 1.

Year 2:

- An assessment of identified conditions. Investigations will be conducted in general accordance with "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" established by the American Society for Testing and Materials (ASTM Designation E1527-00). The project will identify alternatives and preliminary costs for remediation, and examine potential impacts if village structures were released to the environment if they were not cleaned up prior to the erosion activities washing them into the Bering Sea.
- The development of a cleanup strategy of the village site based on the inventory and assessment. The clean-up strategy will be implemented after the community has relocated to the new village site.

**Final Deliverable:** The final deliverable of this project will be a published report on the Newtok Environmental Site Inventory, Assessment and Clean-up Strategy.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USES:**

This project complies with the following authorized use for CIAP funding:

*2. Mitigation of damage to fish, wildlife, or natural resources.*

The project will identify alternatives and preliminary costs for remediation, and examine potential impacts if village structures were released to the environment if they were not cleaned up prior to the erosion activities washing them into the Bering Sea. This information can be used to mitigate adverse impacts to the fish, wildlife, and natural resources of the current village of Newtok and the surrounding Yukon Delta National Wildlife Refuge through the development and implementation of a cleanup strategy of the village site. The clean-up strategy will be implemented after the community has relocated to the new village site.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:** Several State and Federal Agencies are or have been engaged in projects and/or studies of the area, including the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and the Alaska Departments of Transportation and Public Facilities, Environmental Conservation (Village Safe Water Program), and Commerce, Community,

and Economic Development. See [http://www.commerce.state.ak.us/dcra/planning/pub/Newtok\\_History4.pdf](http://www.commerce.state.ak.us/dcra/planning/pub/Newtok_History4.pdf)

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds for this project will not be used for cost sharing or matching purposes for any other project.



**Figure 1.** The Yukon Delta National Wildlife Refuge showing the central location of Newtok (US Fish and Wildlife Service figure).

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF COASTAL AND OCEAN MANAGEMENT (DCOM)

**PROJECT TITLE:** Administration of the Alaska Coastal Impact Assistance Program (CIAP)

**PROJECT CONTACT:**

Contact Name: Sylvia Kreel  
Address: Department of Natural Resources/ Division of Coastal and Ocean Management, P.O. Box 111030, Juneau, Alaska 99811-1030  
Telephone Number: (907) 465-3177  
Fax Number: (907) 465-3075  
Email Address: [sylvia.kreel@alaska.gov](mailto:sylvia.kreel@alaska.gov)

**ADMINISTRATIVE CONTACT:**

Contact Name: Administrative Officer  
Address: Department of Natural Resources/ Division of Coastal and Ocean Management, P.O. Box 111030, Juneau, Alaska 99811-1030  
Telephone Number: (907) 465-3564  
Fax Number: (907) 465-3075

**PROJECT LOCATION:**

Juneau, Alaska

**PROJECT DURATION**

4 years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
372,014	1,250	122,914	117,800	130,050

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
372,014	1,250	122,914	117,800	130,050

**PROJECT DESCRIPTION:**

The purpose of this project is to provide for planning and administration of the Alaska CIAP. The Division of Coastal and Ocean Management (DCOM) within the Department

of Natural Resources has the authority to manage, implement and monitor the Alaska CIAP. All state contact with Mineral Management Service (MMS) will be through DCOM. DCOM will manage the grants for the distribution of \$1,576,250 allocated annually to the state in 2007, 2008, 2009 and 2010<sup>4</sup>. All grant applications for state projects will be submitted to MMS by DCOM and all CIAP funds will be issued from MMS to DCOM. DCOM will prepare Reimbursable Service Agreements (RSA) to transfer money to the state agency conducting the project.

DCOM will provide assistance, as needed, to state agencies and the coastal political subdivisions (CPS's) to review grant proposals.

DCOM will regularly communicate with state project contacts and monitor project progress. DCOM will provide a template for project updates that will focus the updates on achievement of milestones, progress on measurable objectives, unexpected challenges, and expenditures. At a project's conclusion DCOM will verify and document the successful completion of the measurable outcomes. Should the outcomes not be met, DCOM will work with the project contact to determine what steps and budget is necessary to complete the project. Should a project change courses or fall short of projected outcomes DCOM will work as a liaison between the project agency and MMS in order to keep MMS apprised of project revisions or to amend the grant as needed.

DCOM intends to review the Alaska CIAP plan annually to evaluate whether or not it still reflects the state's and CPS's priorities. Should priorities shift, DCOM will revise the state's plan. The revised plan will go out for public review and will be submitted to MMS for approval.

**MEASURABLE GOALS AND OBJECTIVES:**

DCOM will produce the following products, which will demonstrate its successful management, implementation and monitoring of the Alaska CIAP:

- A final approved State of Alaska CIAP plan
- An RSA for each of the state CIAP projects that will transfer funds from DCOM to the state agency conducting the project
- Project update template
- All required state grant reports to be submitted to MMS
- Documentation of project completion for each CIAP grant issued to the State of Alaska
- Amendments or revisions for state plan to be submitted to MMS as needed
- Annual balance sheet accounting for expenditures of state CIAP funds

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<sup>4</sup> This project description is written as though the allocation for 2009 and 2010 will remain at \$1,576,250. It is expected that this number will increase due to increased revenue in 2008. An increase in revenue will require the state to submit an amended plan. This project will be resubmitted with the amended plan to reflect the increased allocation.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use Number 3: *Planning assistance and the administrative costs of complying with CIAP*

This project will cover DCOM's costs of administering the Alaska CIAP.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The primary function of DCOM is to implement and administer the Alaska Coastal Management Program (ACMP), a federally approved program consistent with the Federal Coastal Zone Management Act. DCOM coordinates multi-agency state and federal project reviews for consistency with the ACMP. It also administers the distribution of Federal 306 funding to coastal communities and state agencies for their implementation of the ACMP as well as special projects related to coastal management. As the administrator of both the ACMP grant funding and the CIAP funding, DCOM can ensure project coordination and can assist the grantees in developing projects that build on each other.

CIAP funds will not be used to meet cost sharing or matching requirements of other federal grants.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER (DMLW)

**PROJECT TITLE: Coastal Processes Seminars**

**PROJECT CONTACT:**

Contact Name: Roselynn Ressa Smith, ACMP Coordinator, Division of Mining, Land and Water  
Address: 3700 Airport Way, Fairbanks, AK 99709  
Telephone Number: (907) 451-2727  
Fax Number: (907) 451-2751  
E-mail Address: [Roselynn\\_Smith@dnr.state.ak.us](mailto:Roselynn_Smith@dnr.state.ak.us)

**PROJECT LOCATION:**

The DMLW will provide the seminars in Juneau, Fairbanks, Anchorage, Kotzebue, and one additional location yet to be determined.

**PROJECT DURATION**

2 years

**ESTIMATED COST:**

Spending Estimate (\$)		
TOTAL	Year 1	Year 2
40,486	30,136	10,350

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
40,486	0	30,136	10,350	0

**PROJECT DESCRIPTION:**

This project will provide training to agency and coastal district staff involved in project review and permitting of proposed development and use along the coast. Dr. Orson Smith, P.E. Ph.D., Professor of Arctic Engineering at the University of Alaska-Anchorage <http://www.engr.uaa.alaska.edu/faculty/smith/index.cfm> has agreed to conduct a series of seminars pro bono. The seminars will be held in Juneau, Anchorage, Fairbanks, and Kotzebue during the first year. During year two, a seminar will be held in conjunction with the biennial Alaska Coastal Management Program Coastal District Conference. The purpose of the seminars will be to introduce attendees to coastal processes, coastal hazards such as erosion and storm surges, extraction of material from

coastal waters, and construction of revetments, groins, docks, and other structures along the coast. A better understanding of issues involving coastal development will facilitate the responsible use and protection of coastal resources.

**MEASURABLE GOALS AND OBJECTIVES:**

Year 1: The DMLW will conduct coastal processes seminars in Juneau, Anchorage, Fairbanks and Kotzebue. The DMLW will document the seminar dates, attendance, agenda topics, and evaluations. Handouts, reference material, or other pertinent information will be posted to the ACMP web site.

Year 2: The DMLW will conduct a fifth coastal process seminar (location yet to be decided). The DMLW will document the seminar dates, attendance, agenda topics, and evaluations. Handouts, reference material, or other pertinent information will be posted to the ACMP web site.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use number 4 - *Implementation of a federally approved marine, coastal or comprehensive conservation management plan.* The Alaska Coastal Management Program (ACMP) is a federally approved plan. Agency and district staff implement the ACMP by applying state standards to projects constructed in the Alaska coastal zone. On an annual basis over 350 projects are reviewed for consistency. Knowledge of coastal processes is necessary to implement specific components of the ACMP standards, including the following:

***11 AAC 112.210. Natural hazard areas.***

*(c) Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.*

***11 AAC 112.230 Energy Facilities***

*(a) The siting and approval of major energy facilities by districts and state agencies must be based, to the extent practicable, on the following standards:*

- (1) site facilities so as to minimize adverse environmental and social effects while satisfying industrial requirements;*
- (2) site facilities so as to be compatible with existing and subsequent adjacent uses and projected community needs;*
- (8) select harbors and shipping routes with least exposure to reefs, shoals, drift ice, and other obstructions;*
- (11) site facilities so as to minimize the probability, along shipping routes, of spills or other forms of contamination that would affect fishing grounds, spawning grounds, and other biologically productive or vulnerable habitats, including marine mammal rookeries and hauling out grounds and waterfowl nesting areas;*

*(14) site facilities in areas of least biological productivity, diversity, and vulnerability and where effluents and spills can be controlled or contained;*

*(15) site facilities where winds and air currents disperse airborne emissions that cannot be captured before escape into the atmosphere;*

**11 AAC 112.240. Utility routes and facilities.**

*(b)(1) Utility routes and facilities along the coast must avoid, minimize, or mitigate alterations in surface and ground water drainage patterns;*

**11 AAC 112.260. Sand and gravel extraction.**

*Sand and gravel may be extracted from coastal waters, intertidal areas, barrier islands, and spits if there is no practicable alternative to coastal extraction that will meet the public need for the sand or gravel.*

**11 AAC 112.300. Habitats.**

*(b)(2)(A) estuaries must be managed to avoid, minimize, or mitigate significant adverse impacts to adequate water flow and natural water circulation patterns; and*

*(b)(3) wetlands must be managed to avoid, minimize, or mitigate significant adverse impacts to water flow and natural drainage patterns;*

*(b)(4)(A) tideflats must be managed to avoid, minimize, or mitigate significant adverse impacts to water flow and natural drainage patterns; and*

*(b)(5)(A) rocky islands and sea cliffs must be managed to avoid, minimize, or mitigate significant adverse impacts to habitat used by coastal species;*

*(b)(6) barrier islands and lagoons must be managed to avoid, minimize, or mitigate significant adverse impacts*

*(A) to flows of sediments and water;*

*(B) from the alteration or redirection of wave energy or marine currents that would lead to the filling in of lagoons or the erosion of barrier islands; and*

*(C) from activities that would decrease the use of barrier islands by coastal species, including polar bears and nesting birds;*

*(b)(7) exposed high-energy coasts must be managed to avoid, minimize, or mitigate significant adverse impacts*

*(A) to the mix and transport of sediments; and*

*(B) from redirection of transport processes and wave energy;*

By educating coastal and land managers about coastal processes and the influences of human alterations, they can better evaluate proposed activities and development in coastal areas and use the information to implement the ACMP standards identified above.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

DMLW will invite Federal agency staff that implement the ACMP through project reviews to participate in the seminars. While CIAP will be used to put the seminars on,

Section 306 or Section 309 funds will pay for a portion of the attendees' time and cost of participating.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds will not be used for cost sharing or matching purposes.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF HABITAT MANAGEMENT AND PERMITTING**

**PROJECT TITLE: Geohazard Evaluation and Geologic Mapping For Coastal Communities**

**PROJECT CONTACT:**

Contact Name: De Anne Stevens, Chief  
 Address: Engineering Geology Section, Alaska Division of Geological & Geophysical Surveys, 3354 College Road, Fairbanks, AK 99709  
 Telephone Number: (907) 451-5014  
 Fax Number: (907) 451-5050  
 E-mail Address: [deanne.stevens@alaska.gov](mailto:deanne.stevens@alaska.gov)

**PROJECT LOCATION:**

At least five high-risk coastal communities in Alaska, to be determined in consultation with the Alaska Division of Community and Regional Affairs, Alaska Coastal Management Program staff, the U.S. Army Corps of Engineers (COE), the Denali Commission, and affected coastal districts. Preliminary findings indicate that Kivalina, Shishmaref, and Newtok are likely to be high-priority target communities for the first studies. Other communities that are less well-studied will also be evaluated as potential targets.

**PROJECT DURATION**

4 years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
1,123,500	209,200	358,100	358,100	198,100

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
1,123,500	0	209,200	358,100	556,200

**PROJECT DESCRIPTION:**

This project will initiate a coastal community geohazards evaluation and geologic mapping program in support of community and district planning. The Division of Geological & Geophysical Surveys (DGGS) will collect the necessary field data to

produce and publish surficial and engineering-geologic/hazards maps of Alaskan coastal communities, prioritized in consultation with the Alaska Division of Community and Regional Affairs, Alaska Coastal Management Program staff, the U.S. Army Corps of Engineers (COE), the Denali Commission, and affected coastal districts. The maps will identify local natural hazards that must be considered in the siting, design, construction, and operations of development projects to ensure protection of the coastal area. Maps may include proposed community relocation sites in response to the severe coastal erosion problems now facing various Alaskan communities. Mapping will be completed at local and/or regional scales as needed to address specific local problems and to understand and evaluate the larger geologic context of the area. The engineering-geologic/hazards maps will be published in GIS format with standard metadata and will delineate areas where natural hazards such as erosion, slope instability, active faults, flooding, and earthquake effects should be considered at a more detailed level to fully evaluate construction risk and to ensure that the coastal areas are not damaged by planned and proposed development. Project work will be coordinated with current U.S. Geological Survey coastal studies to ensure there is no duplication of effort.

Approximately 6,600 miles of Alaska's coastline and many low-lying areas along the state's rivers are subject to severe flooding and erosion. The United States General Accounting Office (GAO; now the U.S. Government Accountability Office) reported in 2004 that flooding and erosion affects 184 out of 213 (86 percent) of Alaska Native villages, and most of these are coastal communities. Many of the problems are long-standing, although some studies indicate that increased flooding and erosion is being caused in part by changing climate. The GAO found that four villages – Kivalina, Koyukuk, Newtok and Shishmaref – are in imminent danger from flooding and erosion, and planning is underway to relocate these villages further inland. Of the top four at-risk villages, all but Koyukuk are coastal communities.

These findings were reinforced in 2006, when the U.S. Army Corps of Engineers examined erosion issues in the communities of Bethel, Dillingham, Kaktovik, Kivalina, Newtok, Shishmaref, and Unalakleet as part of its Alaska Village Erosion Technical Assistance Program. The coastal villages of Kivalina, Newtok, and Shishmaref were determined to have only 10-15 years left in their current locations before being irretrievably lost to erosion if countermeasures were not implemented.

Even more recently, the Immediate Action Workgroup of the Alaska Governor's Subcabinet on Climate Change (2008) identified the communities of Kivalina, Koyukuk, Newtok, Shaktoolik, Shishmaref, and Unalakleet as being in greatest peril due to climate change phenomena and therefore in most need of immediate actions to prevent loss of life and property. The Workgroup recognized the necessity of developing a "methodology for prioritization of needs based on the risk to lives, health, infrastructure, homes, businesses, subsistence harvests, significant cultural attributes, and the quality of life." Furthermore, "villages with declining populations, which already cannot support continuation of vital services such as a school, would likely be a lower priority than those which are likely to sustain viable communities during the foreseeable future." These first

steps, taken in coordination with the affected communities, are a start at developing a prioritization of target communities for the geologic investigations of this project.

The final report of the Alaska Climate Impact Assessment Commission to the Alaska State Legislature on March 17, 2008, found that “specific communities are in need of more detailed geologic and hydrologic mapping, including geophysical hazard mapping, in order to define the adequacy of the local terrain for adapting to coastal and riverine erosion and permafrost thawing.” The Commission specifically recognized the need to provide “adequate resources to the Division of Geologic and Geophysical Surveys (DGGS) in the Department of Natural Resources, to coordinate state-federal engineering surveys of potential evacuation routes, village relocation sites, and material sources, including gravel and armor rock. This coordinated effort will insure that sites will prove sustainable and can optimize local resources in a cost effective manner.” The Commission singled out the same GAO-targeted communities of Kivalina, Newtok, Shishmaref, and Koyukuk as being particularly impacted, and found that as many as twenty other Alaskan villages may suffer from similar strategic short-comings.

The current proposal follows the Commission’s recommendation that the criteria by which a community is identified as “at risk” and in need of relocation due to erosion or other potential damage as a result of climate change be developed in conjunction with the state administration, the Denali Commission, and the U.S. Army Corps of Engineers (COE). Our prioritization metrics will include assessment of the relative potential value and usefulness of conducting studies in a given area.

DGGS will use the requested funding to fill two new positions dedicated to this project. We will hire a Geologist IV/Project Manager with strong education and experience in coastal geology and hazards. We will also hire a Geologist I to provide field and office assistance as well as technical, database, and GIS support for preparing maps, reports, and metadata for publication.

**MEASURABLE GOALS AND OBJECTIVES:**

Year 1: Develop prioritized list of coastal communities needing detailed geologic mapping.

Publish engineering-geologic/hazards maps and reports for one coastal community.

Year 2: Publish engineering-geologic/hazards maps and reports for a second coastal community.

Year 3: Publish engineering-geologic/hazards maps and reports for a third coastal community.

Year 4: Publish engineering-geologic/hazards maps and reports for two additional coastal communities for a total of five coastal communities.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use number 4, *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan*, because the products will be directly applicable to development and amendment of coastal district coastal management plans. There are 35 coastal districts in Alaska (only 28 of the districts are currently active). District plans are a component of the Alaska Coastal Management Program (ACMP), a federally approved and funded program. Geologic and hazard maps produced by the proposed project will provide the scientific basis required for the designation of natural hazard areas by coastal districts and the Department of Natural Resources under state regulations, 11 AAC 112.210(a): “*Such designations must provide the scientific basis for designating the natural process or adverse condition as a natural hazard in the coastal area, along with supporting scientific evidence for the designation.*” Designation of natural hazard areas are important to the implementation of the ACMP because state regulations *require* that a designation exist in order for the coastal districts or the state to implement related district enforceable policies or the state ACMP natural hazard standard, 11 AAC 112.210 (c): “*Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.*”

Because of Alaska’s size and active geologic processes, many geologic hazards jeopardize the integrity of the state’s infrastructure and the safety of its people and environment. These include active faults, earthquakes, tsunamis, volcanoes, landslides, snow avalanches, erosion, flooding, and permafrost, among others. However, very little field data currently exist in Alaska on which to delineate and describe many of these hazards. Even minimal baseline data are nonexistent in many areas targeted for hazards assessment. Without supporting scientific documentation, reliable natural hazards designations can not be made and significant harm to life, property, and the environment may result.

Identification and evaluation of geologic hazards are critical elements in the planning and design process for all kinds of infrastructure to guide location choices and prevent structural failure. Such information has been extensively used in the past to successfully prevent damage, injuries, and environmental impacts from geologic hazards. For example, severe environmental damage was avoided during the 2002 magnitude 7.9 Denali Fault earthquake, even though the Trans-Alaska oil pipeline was violently shifted several feet where it crosses the fault. Because the fault location and potential motion had been identified on the basis of pre-construction geologic studies, the pipeline was properly engineered to accommodate this fault offset. Breakage could have resulted in the spilling of large quantities of crude oil that would have flowed down the Delta, Tanana, and Yukon Rivers, causing significant environmental damage along the way and potentially impacting coastal habitats of the Yukon Delta. Without the basic geologic mapping and evaluation to identify and characterize the geologic hazard, the pipeline

could not have been engineered to withstand the lateral offset and seismic shaking to which it was exposed during the earthquake.

Very specific to the coastal setting and the proposed project are the ramifications of villages currently sited along the Alaska coast that are experiencing severe impacts from erosion and flooding. Mitigation of these impacts, both in the short- and long-term, will run the gamut from simple beach armoring to construction of elaborate erosion-control structures to complete relocation of entire settlements. Baseline surficial and engineering-geologic/hazards maps will be critical to coastal districts as they develop and administer their coastal management plans in the context of these major undertakings.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

DGGS maps geology and geohazards around the state of Alaska with State General Fund and Capital Improvement Project funding, and with secondary funding from sources such as the Federal STATEMAP program through the U.S. Geological Survey. In the past, these projects have rarely had a coastal hazards component. CIAP funds would add a strong coastal focus to DGGS mapping programs and enhance ongoing hazard mapping efforts. DGGS recently received Capital Improvement Project funding for mapping geologic hazards in Alaska, with particular emphasis on hazards that could potentially be exacerbated by climate change. This funding could potentially be leveraged with Federal STATEMAP funds (pending approval of the DGGS Geologic Mapping Advisory Board) and CIAP funds to develop a comprehensive Alaska geohazards program.

**COST SHARING OR MATCHING OF FUNDS:**

DGGS does not intend to use CIAP funds for cost sharing or matching purposes with other Federal agencies.

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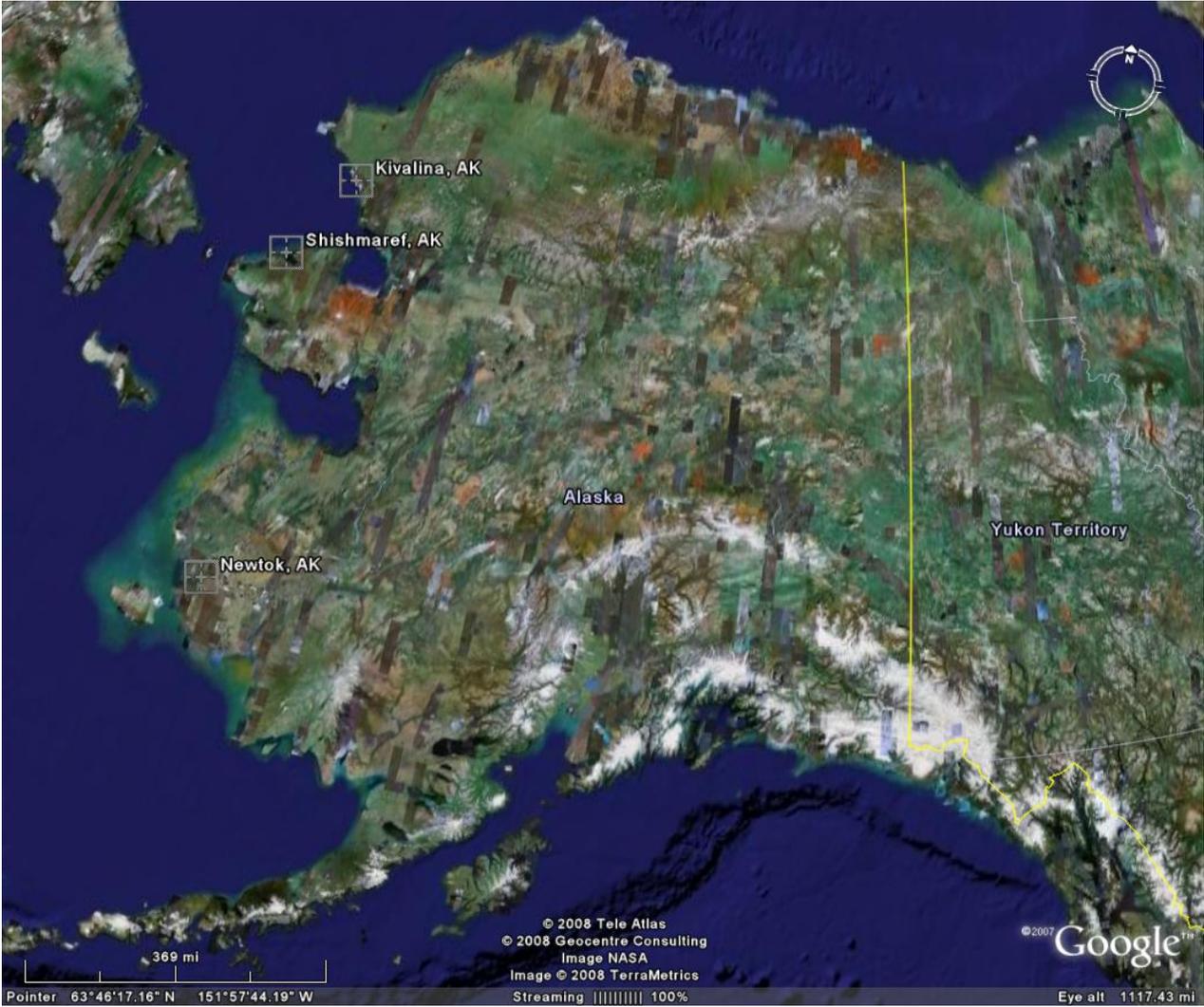
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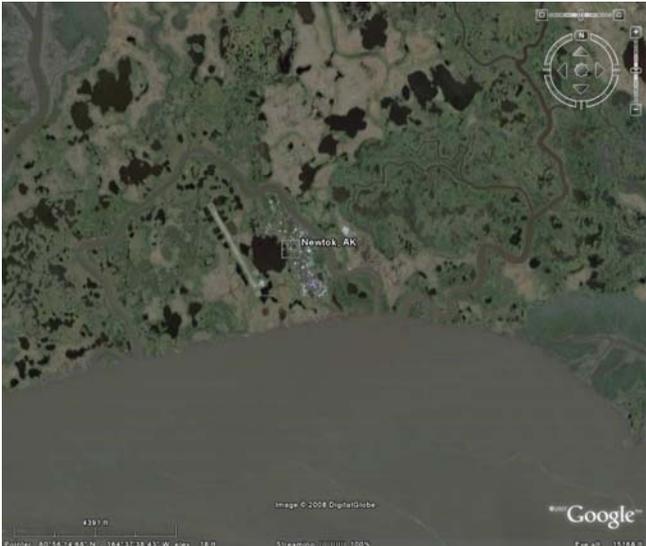




Shishmaref



Kivalina



Newtok

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**PROJECT TITLE:**

**Alaska Monitoring and Assessment Program -Chukchi Sea Coastal Survey**

**PROJECT CONTACT:**

Contact Name: Lynn Kent, Director, Division of Water  
 Address: Alaska Department of Environmental Conservation, 555 Cordova Street  
 Anchorage, AK 99501-2617  
 Telephone Number: (907) 269-7599  
 Fax Number: (907) 334-2415  
 E-mail Address: lynn.kent@alaska.gov

**PROJECT LOCATION:**

Chukchi Sea

**PROJECT DURATION**

4 years

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>				
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
1,400,000	168,000	560,000	560,000	112,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
1,400,000	1,400,000	0	0	0

**PROJECT DESCRIPTION:**

In the 1990s, the Environmental Protection Agency (EPA) and National Oceanic and Atmospheric Administration (NOAA) embarked upon a National Coastal Assessment developed as part of the Environmental Monitoring and Assessment Program (EMAP) to survey the environmental condition of the Nation's coastal water resources. Alaska containing over 50% of the nation's coastline was left out of the survey until 2001, when five coastal survey regions were established for Alaska. The Alaska Department of Environmental Conservation (DEC) implemented this program as the Alaska Monitoring and Assessment Program (AKMAP). The AKMAP program is focused on conducting applied environmental research to provide, through the use of a random sampling design, estimates of the spatial extent of water quality status based on stressors (chemical contaminants, water quality parameters, and physical changes, e.g. temperature, salinity) and indicators (e.g., benthic fish histopathology, macroinvertebrate diversity). This

information can be used by resource managers and others to help protect or restore coastal marine environments and mitigate damage to the marine ecosystem. DEC has completed initial status surveys of Southcentral and Southeast, with field work to be just completed for the Aleutian survey. The report for the Southcentral Alaska coastal survey has been completed and can be found at [http://www.dec.state.ak.us/water/wqamp/emap\\_sc.htm](http://www.dec.state.ak.us/water/wqamp/emap_sc.htm). Funding has not been forthcoming to implement and complete surveys of the remaining two regions, and we propose to utilize CIAP funds to complete a baseline coastal survey of one of three sub-regions within the “Northwest Alaska Beaufort and Chukchi Sea” region. The Chukchi Sea sub-region, from Barrow to Point Hope, is seeing major oil and gas resource survey and development pressure. Within the currently requested funding amount, the survey work will be focused on this sub-region adjacent to the Minerals Management Service (MMS) lease sale area #193. This coastal survey is key to responsibly protecting our coastal regions. It will also provide resource managers with the high quality scientific information they need to manage resource development.

**MEASURABLE GOALS AND OBJECTIVES:**

This section provides several specific, though not the only, measurable outcomes of the AKMAP work.

- AKMAP sampling plan, Quality Assurance Project Plan, and administrative/contract documents will be completed in 2008 and pre-field season 2009.
- AKMAP survey team will complete sample collection and analyze water, sediment and biological samples during 2 years of field work in 2009 and 2010.
- AKMAP assessment results will be presented in a final DEC report in 2011, and future National Coastal Assessment reports, with information on:
  - Percent of area that has sediments with trace metals or organic contaminants levels exceeding Alaska Water Quality Standards criteria or other benchmarks.
  - Estimate of percentage of fish with chemical contaminants that exceed or do not exceed human or ecological health criteria.
- Public outreach will be conducted on the AKMAP Chukchi and Beaufort Assessments at the Alaska Forum on the Environment in 2009, 2010 and in 2011. A report that includes the presentations will be provided. Additional outreach will be detailed in the full project scope of work.
- All survey data, after undergoing a rigorous QA/QC, will be archived within the National EPA STORET system, and provided over the AKMAP website.
- Macroinvertebrate voucher collections will be maintained and established at the University of Alaska Fairbanks in addition to the taxonomic data provided in the final datasets.

**CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use Number 4: *Implementation of a federally approved marine, coastal or comprehensive conservation management plan.*

This project will continue implementation of the U.S. Environmental Protection Agency's Environmental Monitoring and Assessment Program, a federally approved comprehensive plan for the development of a long-term research effort to enable status and trend assessments of aquatic ecosystems across the U.S. The assessment results will also be incorporated into the State of Alaska's federal Clean Water Act Section 305(b) report on the condition of Alaska's waters. The project will help establish a baseline and identify what proportions, if any, of the coastal marine environment, such as sediments, water, or fish tissue, have contaminant levels that indicate potential impacts. Only this type of assessment can effectively provide state and federal resource managers and the public with an unbiased, statistically valid assessment of the condition of Alaska's coastal aquatic resources. AKMAP baseline assessment and future trend assessments are critical to establishing environmentally protective measures and evaluating their effectiveness in the coastal region as oil and gas development takes place.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Other partnerships, that could include in-kind services, equipment loans, splitting funding for vessel support, include 1) MMS environmental monitoring of the proposed lease sales or active leases in the Chukchi Sea area, 2) some level of support by EPA and NOAA, 3) University of Alaska (UA) School of Fisheries participation under the DEC/UA Memorandum of Understanding, 4) logistical support potentially for some areas provide for by resource developers, such as BP (who has provided DEC with a letter of support for AKMAP coastal assessments) and 5) potential participation and input from the North Slope Borough (North Slope Borough has provided DEC with a letter supporting AKMAP coastal assessments) and Northwest Arctic Borough.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF FISH AND GAME**

**PROJECT TITLE: Monitoring Steller Sea Lions at Remote Sites in the Bering Sea**

**PROJECT CONTACT:**

Contact Name: Lauri Jemison  
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110024, Juneau, AK 99811  
Telephone Number: (907) 465-8171  
Fax Number: (907) 475-4272 (fax)  
E-mail Address: lauri.jemison@alaska.gov

**PROJECT LOCATION:**

Survey sights include SW Cape (St. Lawrence Island), Cape Newenham, and Sea Lion Rocks (Amak Island). Additional work to expand on-going surveys at Round Island (in Togiak Bay) may also occur. See attached map

**PROJECT DURATION**

3 years

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>			
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
124,000	44,000	40,000	40,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
124,000	0	44,000	40,000	40,000

**PROJECT DESCRIPTION:**

We will collect baseline data (i.e., counts, sex and age composition, identification of branded or tagged animals) on endangered Steller sea lions use of remote, rarely-surveyed sites in the Bering Sea, which will help assess the potential effects of oil and gas development (e.g., North Aleutian Basin) and possibly the on-going, large-scale commercial fisheries. We will survey three sites: SW Cape (St. Lawrence Island), Cape Newenham, and Sea Lion Rocks (Amak Island), and provide additional support to expand on-going surveys at Round Island (in Togiak Bay). Counts will provide a greater understanding of population trends at Cape Newenham, Round Island, and Sea Lion Rocks where counts have been conducted periodically (survey frequency varies greatly by location) in the past and populations appear to have declined dramatically. Photo-documentation of branded and tagged animals will contribute to age-specific survival

estimates, dispersal rates, and distribution patterns; documentation of animals entangled in marine debris, including fishing gear, will help us evaluate effects of commercial fisheries. No systematic surveys of this sort have been conducted at SW Cape and a great deal of information can be gained from this site, including much-needed baseline data on numbers and sex/age composition, and perhaps most interesting, the origin of animals hauling out at SW Cape (it is unknown whether these animals are from rookeries in Alaska, Russia, or a combination).

**MEASURABLE GOALS AND OBJECTIVES:**

The following measurable goals and objectives are for each of the three project years.

- Conduct 2-5 surveys per year (depending on site and weather) at Sea Lion Rocks, Cape Newenham, and SW Cape. Record number of seal lions hauled out, photograph branded and tagged animals, and document entanglements in marine debris.
- Produce a report that:
  - Estimates population trends of Steller sea lions in Bristol Bay (based on surveys at Cape Newenham and Round Island).
  - Compares new counts from Sea Lion Rocks and SW Cape with historical counts.
  - Identifies the country of origin and natal rookery of branded Steller sea lions hauling out at SW Cape, Cape Newenham, and Sea Lion Rocks.
  - Records the sex/age composition of Steller sea lions at SW Cape and Cape Newenham. Composition data from Cape Newenham will be compared with data from the early 1990s.
  - Describes the types of marine debris entangling Steller sea lions and when possible, evaluate the origin of the entangling materials (*e.g.*, commercial / sport fisheries, dumping).
- Provide brand data to the National Marine Mammal Lab (NMML), NOAA for inclusion in their age-specific survival estimates of Western Stock Steller sea lions.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project would fit under CIAP Use Number 4, *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan.*

This project will provide critical baseline data essential to implementing the Alaska Coastal Management Program (ACMP), a federally approved program. Projects located within the coastal zone that require state or federal permits, as well as federal activities, must be found consistent with the state standards that are part of the ACMP, including the following:

*11 AAC 112.300(b)(5)*

*(5) rocky islands and sea cliffs must be managed to*

*(A) avoid, minimize, or mitigate significant adverse impacts to habitat used by coastal species; and*

*(B) avoid the introduction of competing or destructive species and predators;*

Basic data on sea lion numbers, distribution, and movements gathered by this project will provide information necessary for resource managers to effectively avoid, minimize, or develop appropriate measures to mitigate impacts to sea lions from development. This will be especially useful information if oil and gas development proceeds in this region. Minerals Management Service is currently evaluating the North Aleutian Basin Lease Sale 214 in the project area.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Steller sea lions are currently listed as an endangered species west of Cape Suckling, Alaska (Long. 144') and as threatened in the eastern stock throughout Southeast Alaska. The western population has experienced a decline in excess of 80% over the last 30 years while the eastern population has increased. The reasons for these trends are unknown. However, by comparing different parameters between the populations, the Alaska Department of Fish and Game (ADF&G), in close cooperation with NMML, hopes to find measurable factors to help explain the population differences. In order to examine any hypotheses comparing these two apparently different populations, basic demographic data are needed, especially individual age-specific data. In closely coordinated studies, the Steller sea lion programs of ADF&G and NMML have marked sea lions for individual identification. Resightings of these individuals are used to estimate age-specific survival rates, reproductive rates, and to describe distribution and movement patterns. ADF&G and NMML have extensive brand-resight programs throughout most of Alaska; however, Cape Newenham and SW Cape, in the Bering Sea, have not been regularly (or ever) surveyed. For several years, ADF&G and NMML have discussed options for surveying these sites but have been unable due to logistics and expense of working in these areas. Data collected from these sites would benefit both agencies in understanding Steller sea lion population trends, movements, and distribution patterns. Brand-resight data would be used in estimates of age-specific survival rates and those rates compared between animals born in the eastern and western stocks. ADF&G and NMML have a long history of sharing brand-resight data and have worked closely to ensure that surveys are conducted throughout Alaska. Data from Sea Lion Rocks during July will be used in survival rate estimates but may also be used to estimate reproductive rates. In addition to our closely coordinated studies with NMML to collect and analyze Steller sea lion brand-resight data, ADF&G also works with Glacier Bay National Park, the University of British Columbia, the Oregon Department of Fish and Wildlife, and the Alaska Sea Life Center to collect observations of branded animals.

ADF&G, through a NOAA cooperative grant, will cover the majority of salary costs to conduct surveys, analyze data, and write a report. Observations of branded animals from the western stock will be included in analyses conducted by NMML. Round Island staff are supported by the ADF&G Watchable Wildlife Program and the U.S. Fish and Wildlife Service. Equipment and logistic support will be provided by ADF&G and NMML. The Alaska Department of Public Safety will provide logistics support to survey Sea Lion Rocks/Amak Island.

**COST SHARING OR MATCHING OF FUNDS:**

We do not intend on using CIAP funds for cost sharing or matching purposes.



Map of Steller sea lion study sites (red diamonds) in relation to Lease Sale 214

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF FISH AND GAME**

**PROJECT TITLE: Hydro-acoustic Monitoring of Ambient Noise and Marine Mammals in the Chukchi Sea**

**PROJECT CONTACT:**

Contact Name: Robert J. Small  
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 1255 West 8<sup>th</sup> Street, Juneau, AK, 99811-5526  
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 E-Mail Address: [bob.small@alaska.gov](mailto:bob.small@alaska.gov)

**PROJECT LOCATION:**

Chukchi Sea

**PROJECT DURATION**

3 year

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>			
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
330,000	150,000	80,000	100,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
330,000	0	150,000	80,000	100,000

**PROJECT DESCRIPTION:**

Monitoring the levels of both natural (i.e., ‘ambient’) and anthropogenic sources of noise in the marine waters of Alaska is needed to establish a baseline that is necessary to determine possible impacts of noise on marine mammals. Hydro-acoustic instruments and associated computer software are available that can record and distinguish among ambient noise, anthropogenic activities, and calls made by marine mammals. Hydro-acoustic instruments will be deployed in the Chukchi Sea, an area where future outer continental shelf (OCS) activity is planned and is also recognized as important to numerous species of marine mammals. Further, substantial changes in the marine ecosystem of the Chukchi Sea are anticipated due to climate change, which could alter acoustic propagation due to the thinning and reduction of sea ice. Thus, changes in natural noise sources, combined with a probable increase in anthropogenic noise sources due to oil and gas activity and vessel traffic, will likely occur in the Chukchi Sea.

Establishing a baseline prior to these probable increases in noise from increased anthropogenic activities, and before the distribution and abundance of marine mammals shifts in response to changing sea ice conditions, is crucial to the development of effective mitigation measures.

**MEASURABLE GOALS AND OBJECTIVES:**

Year 1:

- Convene a workshop to develop a strategy for hydro-acoustic monitoring in the Chukchi Sea, with participants from the oil and gas industry, Alaska Native marine mammal organizations, the North Slope Borough, the State of Alaska, National Oceanic and Atmospheric Administration (NOAA) Fisheries, and Minerals Management Service (MMS). Issues to be addressed include (1) determining priority research objectives, (2) temporal and spatial considerations of instrument deployments, (3) the type of instruments to be deployed, and (4) deployment logistics. A report summarizing the recommendations within the overall strategy will be produced and made available within 2 months following the workshop.
- Following the recommendations of the strategy for hydro-acoustic monitoring developed in the above workshop, deploy three hydro-acoustic instruments in the Chukchi Sea to establish a baseline of both natural (ambient) and anthropogenic sources of noise in marine waters.

Year 2:

- Refurbish and redeploy the 3 hydro-acoustic instruments in the Chukchi Sea.

Year 3:

- Complete analysis of data acquired in Years 1 and 2. Document findings in a report.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project meets CIAP Authorized Use number 4, *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan*. The Alaska Coastal Management Program (ACMP) is a federally approved plan. Agency and North Slope Borough staff implement the ACMP by applying state standards to projects constructed in the Alaska coastal zone. The project area has been proposed by the North Slope Borough as a marine mammal subsistence use area. The state has approved this designation. This project would provide information about existing noise levels and possible impacts on marine mammals. This information will provide background or baseline information necessary to assess impacts of oil and gas development projects and to minimize or mitigate impacts in order to comply with the ACMP. The project will help implement the following specific regulations of the ACMP:

***11 AAC 112.230. Energy facilities.***

*(a) The siting and approval of major energy facilities by districts and state agencies must be based, to the extent practicable, on the following standards:*

*(1) site facilities so as to minimize adverse environmental and social effects while satisfying industrial requirements;*

*(11) site facilities so as to minimize the probability, along shipping routes, of spills or other forms of contamination that would affect fishing grounds, spawning grounds, and other biologically productive or vulnerable habitats, including marine mammal rookeries and hauling out grounds and waterfowl nesting areas;*

*(12) site facilities so that design and construction of those facilities and support infrastructures in coastal areas will allow for the free passage and movement of fish and wildlife with due consideration for historic migratory patterns;*

*(13) site facilities so that areas of particular scenic, recreational, environmental, or cultural value, identified in district plans, will be protected;*

*(14) site facilities in areas of least biological productivity, diversity, and vulnerability and where effluents and spills can be controlled or contained;*

**11 AAC 112.240. Utility routes and facilities.**

*(b)(2) Utility routes and facilities along the coast must avoid, minimize, or mitigate disruption in known or reasonably foreseeable wildlife transit;*

**11 AAC 112.270. Subsistence.**

*(a) A project within a subsistence use area designated by the department or under 11 AAC 114.250(g) must avoid or minimize impacts to subsistence uses of coastal resources.*

*(b) For a project within a subsistence use area designated under 11 AAC 114.250(g), the applicant shall submit an analysis or evaluation of reasonably foreseeable adverse impacts of the project on subsistence use as part of*

*(1) a consistency review packet submitted under 11 AAC 110.215; and*

*(2) a consistency evaluation under 15 C.F.R. 930.39, 15 C.F.R. 930.58, or 15 C.F.R. 930.76.*

**11 AAC 112.300. Habitats.**

*(b) (1) offshore areas must be managed to avoid, minimize, or mitigate significant adverse impacts to competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;*

*(b)(9)(B) important habitat identified under (c)(1)(B) or (C) of this section must be managed to avoid, minimize, or mitigate significant adverse impacts to the special productivity of the habitat.*

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Hydro-acoustic projects have recently been conducted in the Beaufort and Bering seas, yet there is a paucity of data from the Chukchi Sea. This project will seek to maximize collaboration with federal, private, and university entities to secure additional funding,

along with scientific expertise and logistical support. Such synergism with the Alaska Department of Fish and Game marine mammal program has been successfully achieved in previous studies. The Project Contact developed the goals and objectives for this proposed project in coordination with a Science Specialist with NOAA Fisheries that has participated in numerous successful collaborative acoustic research projects on whales in Alaska and has over two decades of research experience on the ecology of whales in Alaska. Further coordination took place with a Marine Ecologist in the MMS Environmental Studies Section (Alaska OCS Region) to ensure an understanding of other acoustic research in the Arctic marine waters. Additional coordination took place with a Wildlife Scientist of the North Slope Borough familiar with current acoustic projects and seismic operations in the Chukchi Sea.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

# State of Alaska

## Coastal Impact Assistance Program Project Descriptions proposed by

### STATE OF ALASKA

#### TIER 2 PROJECTS

1. Geographic Response Strategies (GRS)
2. Potential Places of Refuge Project (PPOR)
3. Emergency Towing Systems (ETS) for Alaska
4. Coastal Community Spill Response Capability Enhancement
5. Alaska Monitoring and Assessment Program (AKMAP) Alaska Bering Sea Coastal Survey
6. Mercury Deposition Monitoring in Coastal Alaska
7. Knik River Public Use Area Erosion Control
8. Kachemak Bay Drainage Basin Sustainable Access Routes Reservation and Improvement
9. Alaska Coastal Management Program Implementation Workshops
10. Marine Debris Clean-up

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**PROJECT TITLE: Geographic Response Strategies (GRS) Project**

**PROJECT CONTACT:**

Contact Name: Larry Dietrick, Director, Division of Spill Prevention & Response  
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Fax Number: (907) 465-5262  
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**PROJECT LOCATION:**

Aleutian Islands region (exclusive of zones already completed); Bristol Bay region;  
Northwest Arctic region; Western Alaska region.

**PROJECT DURATION**

1 year

**ESTIMATED COST:**

The estimated cost is \$250,000 to develop GRS documents for the regions mentioned above. Funding will be applied to retain a contractor, convene the primary stakeholders, and develop and publish the detailed documents.

**PROJECT DESCRIPTION:**

Geographic response strategies are developed to protect sensitive areas from impacts following an oil spill. These map-based strategies are pre-developed with the intention of saving time during the critical first few hours of an oil spill response. The response strategies show responders where environmentally sensitive areas are located and where to place oil spill protection resources with the goal of minimizing impacts to coastal resources. Local communities, stakeholders and resource agencies identify, prioritize and develop the site specific response strategies that are used to protect sensitive areas for all spills that may impact or threaten state resources. Delays in protecting sensitive resources may result in additional economic and environmental damage to local resources.

Several previous projects have successfully developed GRS for Prince William Sound, Southeast Alaska, Cook Inlet and Kodiak. An ongoing project is addressing the Aleutians region, specifically the immediate Unalaska Island area and the primary northern ship transiting routes through the Bering Sea. GRS have not been developed for the Northwest Arctic and Bristol Bay region where outer continental shelf oil and gas activities are proposed or planned.

Past projects have proved very successful and the Alaska Department of Environmental Conservation (ADEC) is proposing to expand GRS development for several other locations in the State, including the remainder of the Aleutians, Bristol Bay, Northwest Arctic and Western Alaska, plus revisiting other locations if funding allows. The requested funds will be used to develop comprehensive and detailed planning and response documents for primary emergency responders at the federal, state, and local level. Funding will be applied to retain a contractor, convene the primary stakeholders, and develop and publish the detailed documents.

**MEASURABLE GOALS AND OBJECTIVES:**

This project yields work products in the form of new map-based Geographic Response Strategies for four regions.

- Geographic Response Strategy for Aleutian Islands region (exclusive of zones already completed).
- Geographic Response Strategy for Bristol Bay region.
- Geographic Response Strategy for Northwest Arctic.
- Geographic Response Strategy for Western Alaska.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use Number 1: *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

Alaska's local communities, pristine environment, and socio-economic status could be significantly impacted if marine spills are not responded to and contained immediately. The GRS provides spill responders with pre-identified tactics and strategies for rapidly deploying spill response equipment. By improving the timeliness and effectiveness of oil spill response, this project will both protect coastal areas from the effects of oil spills as well as mitigate damage to fish, wildlife and other natural resources in the event of a spill.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

GRS workgroup participants include State and Federal resource trustee agencies and local spill response experts. Public involvement is essential to ensure that the sites selected and the strategies developed reflect the environmental protection priorities of local communities, stakeholders, and resource users. Primary project participants include: Alaska Department of Environmental Conservation; U.S. Coast Guard; Department of Interior; U.S. Environmental Protection Agency; National Oceanic & Atmospheric Administration; local spill response experts; local communities and resource users.

**COST SHARING OR MATCHING OF FUNDS:**

This project does not envision using CIAP funds for cost sharing or matching purposes required by another grant.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**PROJECT TITLE: Potential Places of Refuge Project (PPOR)**

**PROJECT CONTACT:**

Contact Name: Larry Dietrick, Director, Division of Spill Prevention & Response  
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Fax Number: (907) 465-5262  
E-mail Address: larry.dietrick@alaska.gov

**PROJECT LOCATION:**

Bristol Bay, Northwest Arctic, Southeast Alaska, and one other coastal location provided funding is available.

**PROJECT DURATION**

1 year

**ESTIMATED COST:**

\$150,000 to develop three PPOR documents. Funding will be used to retain a contractor, convene the primary stakeholders, and develop and publish the detailed documents.

**PROJECT DESCRIPTION:**

Potential places of refuge are pre-identified sites where disabled vessels may seek a sheltered location with adequate water depth to repair or lighter the vessel in order to minimize the amount of spilled product. Some incidents require emergency responders to immediately identify a safe refuge with little time to find a location that minimizes environmental damage, and discuss the potential impacts with local communities and stakeholders. This project will ensure local communities, stakeholders and resource users pre-identify the best alternatives for taking a vessel to a place of refuge. If leaking vessels are not repaired, oil or other hazardous substance released from the vessel can impact downstream environmental resources and shorelines.

Several potential places of refuge have been identified for Prince William Sound, and similar work is in progress for Cook Inlet, Kodiak, and the Aleutians. Decision-makers must address both environmental and operational issues when deciding where to take stricken vessels. The decision-makers may use the collected information to refer to pre-identified sites that aid them in responding to a vessel in distress. Prior coordination and pre-identification of potential places of safe refuge significantly enhance the decision-making process and facilitate the overall response operation.

Early efforts have proved very successful and the Alaska Department of Environmental Conservation (ADEC) is proposing to expand PPOR development for three other locations in the State, including Bristol Bay, Northwest Arctic, Southeast Alaska, and one other coastal location provided funding is available.

**MEASURABLE GOALS AND OBJECTIVES:**

This project yields work products in the form of a public process to evaluate the suitability of PPOR sites and map-based documents identifying potential places of refuge:

- Convene PPOR work groups in communities in each of three regions including one or more communities in the Bristol Bay region, Northwest Arctic, and Southeast Alaska.
- Produce map-based PPOR documents that identify potential places of refuge and associated information for each of the three regions of the State.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP authorized use #1:

*Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

Alaska's local communities and pristine environment could be significantly impacted if marine spills are not responded to and contained immediately. The PPOR effort provides a key tool to respond to a disabled vessel and to take steps to prevent oil spills. By improving the state response system and reducing the risk of coastal oil spills, this project will both protect coastal areas from the effects of oil spills as well as mitigate potential damage to fish, wildlife and other natural resources.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Primary project and workgroup participants include: Alaska Department of Environmental Conservation; U.S. Coast Guard; Department of Interior; Alaska Marine Pilots Association; National Oceanic & Atmospheric Administration; Shippers and shipping agents; Army Corp of Engineers; local spill response experts; State resource trustees; local communities and resource users.

**COST SHARING OR MATCHING OF FUNDS:**

This project does not envision using CIAP funds for cost sharing or matching purposes required by another grant.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**PROJECT TITLE:** Emergency Towing Systems (ETS) for Alaska

**PROJECT CONTACT:**

Contact Name: Larry Dietrick, Director, Division of Spill Prevention & Response  
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Avenue, Ste 303, Juneau, AK 99801  
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E-mail Address: larry.dietrick@alaska.gov

**PROJECT LOCATION:**

This project will station ETS equipment packages in the following locations.

- Southeast Alaska.
- St. Paul Island.
- Cook Inlet.
- Kodiak.
- Two other locations to be determined.

**PROJECT DURATION**

1 year

**ESTIMATED COST:**

The spending estimate is \$300,000 to develop and deploy six towing packages.

**PROJECT DESCRIPTION:**

Within the last decade, several distressed or stricken vessel incidents have occurred in Alaska and have impacted coastline communities, with severe environmental repercussions. In each situation, the vessel was a large tramper or cargo type vessel, which generally carries fuel in bottom tanks thus posing a significant pollution risk in grounding. Specific incidents include the Motor Vessel (M/V) Kuroshima and the M/V Selendang Ayu. Other near-misses have also occurred where a large vessel lost propulsion or steering capacity, and went adrift for some time before regaining control.

Following the near grounding of the *Salica Frigo* on March 9, 2007, the Mayor of Unalaska convened a Disabled Vessel Workgroup to discuss issues and proactive solutions, which prompted the ETS workgroup. The goal of the workgroup was to develop an emergency towing capability for disabled vessels in the Aleutians subarea utilizing locally available tugboats and an emergency towing system.

The U.S. Coast Guard has jurisdiction over the movement of vessels in US waters and the responsibility to assume command and control of any search and rescue operation. However, there is a long tradition that requires any mariner to aid another mariner in distress. Many foreign vessels transiting US waters don't carry appropriate or reliable towing systems. The ETS may be airlifted to the distressed ship via USCG helicopter and are also designed to be deployed to a disabled ship from the stern of a by resident, transient tugboats, or vessels-of-opportunity. The ETS consists of a towline capable of towing a distressed vessel, a messenger line to assist in deploying the towline, a line-launcher, a buoy, and chaffing gear. Two ETS were purchased to cover most vessels transiting the Aleutian Islands.

This pilot project proved very successful and the Alaska Department of Environmental Conservation (ADEC) is proposing to expand ETS capabilities at several other locations in the State. The requested funds will be used to purchase and pre-position a minimum of six similar ETS packages at other locations in the state to include but not limited to Southeast Alaska, St Paul Island, Cook Inlet, Kodiak, and other locations. (Project website: <http://www.dec.state.ak.us/spar/perp/aiets/home.htm> )

**MEASURABLE GOALS AND OBJECTIVES:**

This project yields work products in the form of procuring and stationing ETS equipment packages in the following locations.

- Southeast Alaska.
- St. Paul Island.
- Cook Inlet.
- Kodiak.
- Two other locations to be determined.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP authorized use #1:

*Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

Alaska's local communities and pristine environment could be significantly impacted if marine spills are not responded to and contained immediately. The ETS packages serve to reduce the potential for oil spills by positioning equipment that can be used to rescue disabled vessels. By reducing the risk of oil spills, this project will both protect coastal areas from the effects of coastal oil spills as well as mitigate potential damage fish, wildlife and other natural resources.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Primary project and workgroup participants include Alaska Department of Environmental Conservation; U.S. Coast Guard; Alaska Marine Pilots Association; Shippers and shipping agents; local spill response and salvage experts; and local communities.

**COST SHARING OR MATCHING OF FUNDS:**

This project does not envision using CIAP funds for cost sharing or matching purposes required by another grant. DEC will provide continuing operating and maintenance funding.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**PROJECT TITLE: Coastal Community Spill Response Capability Enhancement**

**PROJECT CONTACT:**

Contact Name: Larry Dietrick, Director, Division of Spill Prevention & Response  
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E-mail Address: larry.dietrick@alaska.gov

**PROJECT LOCATION:**

Three communities in Alaska. Specific communities have yet to be determined.

**PROJECT DURATION**

1 year

**ESTIMATED COST:**

\$300,000 to establish three additional community spill response agreements and to purchase and pre-position spill response containers.

**PROJECT DESCRIPTION:**

This initiative expands the development of partnerships with local communities and enhances Alaska's oil and hazardous substance spill response capabilities and readiness. Thousands of oil and hazardous substance spills occur across Alaska each year and these spills can cause serious damage to the environment. Because of the vast size of the State and the remote location of many of its cities and communities, local residents are frequently the first line of defense in responding to oil and hazardous substance releases. Alaska's communities play an important role in minimizing the impacts of oil and hazardous substance spills. This initiative provides for coordination and effective response, and expands the existing network of resources available to protect the environment from the risks associated with oil and hazardous substance spills.

The Alaska Department of Environmental Conservation (ADEC) establishes community spill response agreements with local governments based on the community's interest, needs, location and potential oil spill impact or risk. There are a total of 145 organized city governments in Alaska that ADEC could consummate formal spill response agreements. ADEC currently maintains over 43 agreements with local communities in the State and 46 response containers. The number of containers staged in a community is based on location, frequency/history of spills and geographic location. Additional community spill response agreements are consummated each year.

After the agreement is signed, the department evaluates whether a response equipment container is needed in the community and pre-positions containers in high-risk areas. Each container has personal protective safety gear to ensure the local first responders are able to safely respond to the spill and response equipment. The response equipment also includes containment, collection and waste treatment systems. This equipment provides tools for community responders to effectively and efficiently respond to the spill.

**MEASURABLE GOALS AND OBJECTIVES:**

This project yields minimum work products as follows:

- Develop and execute local response agreements with a minimum of three communities.
- Purchase a minimum of three spill response containers and equipment packages.
- Station a minimum of one spill response equipment container per community that enters into a local response agreement with ADEC.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP authorized use #1:

*Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

Alaska's local coastal communities provide a first line of defense against spills to the marine environment. Pre-positioning spill response assets and maintaining a trained cadre of personnel at the local level significantly enhances the State's ability to successfully respond and minimize the impacts of any oil spill in the State. Improving local response capacity will improve the timeliness and effectiveness of oil spill response efforts. In so doing, this project will both protect coastal areas from the effects of coastal oil spills as well as mitigate spill damage to fish, wildlife and other natural resources.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Primary project participants include the Alaska Department of Environmental Conservation; U.S. Coast Guard; U.S. Environmental Protection Agency; local spill response experts; local communities and resource users.

**COST SHARING OR MATCHING OF FUNDS:**

This project does not envision using CIAP funds for cost sharing or matching purposes required by another grant.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**PROJECT TITLE:** Alaska Monitoring and Assessment Program (AKMAP) Alaska Bering Sea Coastal Survey

**PROJECT CONTACT:**

Contact Name: Lynn Kent, Director, Division of Water  
Address: Alaska Department of Environmental Conservation, 555 Cordova Street,  
Anchorage, AK 99501-2617  
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E-mail Address: lynn.kent@alaska.gov

**PROJECT LOCATION:**

Alaska Bering Sea

**PROJECT DURATION**

4 years

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>				
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
2,000,000	100,000	900,000	900,000	100,000

**PROJECT DESCRIPTION:**

In the 1990s, the Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) embarked upon a National Coastal Assessment developed as part of the Environmental Monitoring and Assessment Program (EMAP) to survey the environmental condition of the Nation's coastal water resources. Alaska containing over 50% of the nation's coastline was left out of the survey until 2001, when five coastal survey regions were established for Alaska. The Alaska Department of Environmental Conservation (DEC) implemented this program as the Alaska Monitoring and Assessment Program (AKMAP). The AKMAP program is focused on conducting applied environmental research to provide, through the use of a random sampling design, estimates of the spatial extent of water quality status based on stressors (chemical contaminants, water quality parameters, and physical changes, e.g. temperature, salinity) and indicators (e.g., benthic fish histopathology, macroinvertebrate diversity). This information can be used by resource managers and others to help protect or restore coastal marine environments and mitigate damage to the marine ecosystem. DEC has completed initial status surveys of Southcentral and Southeast, with field work just completed for the Aleutian survey. The report for the Southcentral Alaska coastal survey

has been completed and can be found at [http://www.dec.state.ak.us/water/wqamp/emap\\_sc.htm](http://www.dec.state.ak.us/water/wqamp/emap_sc.htm). Funding has not been forthcoming to implement and complete surveys of the remaining two regions. This CIAP proposal for a coastal survey of the Alaska Bering Sea includes the proposed Northern Aleutian Basin oil and gas lease sale area. The coastal surveys are key to responsibly protecting our coastal regions. They also provide resource managers with the high quality scientific information needed to manage resource development.

**MEASURABLE GOALS AND OBJECTIVES:**

This section provides several specific, though not the only, measurable outcomes of the AKMAP work.

- AKMAP sampling plan, Quality Assurance Project Plan, and administrative/contract documents will be completed in 2009 and pre-field season 2010.
- AKMAP survey team will complete sample collection and analyze water, sediment and biological samples during 2 years of field work in 2010 and 2011.
- AKMAP assessment results will be presented in a final DEC report in 2012, and future National Coastal Assessment reports, with information on:
  - Percent of area that has sediments with trace metals or organic contaminants levels exceeding Alaska Water Quality Standards criteria or other benchmarks.
  - Estimate of percentage of fish with chemical contaminants that exceed or do not exceed human or ecological health criteria.
- Public outreach will be conducted on the AKMAP Bering Sea Assessment at the Alaska Forum on the Environment in 2009, 2010 and in 2011. A report that includes the presentations will be provided. Additional outreach will be detailed in the full project scope of work.
- All survey data, after undergoing a rigorous QA/QC, will be archived within the National EPA STORET system, and provided over the AKMAP website.
- Macroinvertebrate voucher collections will be maintained and established at the University of Alaska Fairbanks in addition to the taxonomic data provided in the final datasets.

**CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use Number 4: *Implementation of a federally approved marine, coastal or comprehensive conservation management plan.*

This project will continue implementation of the EPA's Environmental Monitoring and Assessment Program, a federally approved comprehensive plan for the development of a long-term research effort to enable status and trend assessments of aquatic ecosystems across the U.S. The assessment results will also be incorporated into the State of Alaska's federal Clean Water Act Section 305(b) report on the condition of Alaska's waters. The project will help establish a baseline and identify what proportions, if any, of the coastal marine environment, such as sediments, water, or fish tissue, have contaminant levels that indicate potential impacts. Only this type of assessment can effectively provide state and

federal resource managers and the public with an unbiased, statistically valid assessment of the condition of Alaska's coastal aquatic resources. AKMAP baseline assessment and future trend assessments are critical to establishing environmentally protective measures and evaluating their effectiveness in the coastal region as oil and gas development takes place.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Other partnerships, that could include in-kind services, equipment loans, splitting funding for vessel support, include 1) Minerals Management Service environmental monitoring of the proposed lease sales in the Northern Aleutian Basin, 2) some level of support by EPA and NOAA, 3) University of Alaska School of Fisheries participation under the DEC/UA Memorandum of Understanding, 4) logistical support potentially for some areas provide for by resource developers, and 5) potential community participation and input from the Aleutian East Borough, Bristol Bay, Lakes and Peninsula Boroughs and all Bering Sea communities.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**PROJECT TITLE:** Mercury Deposition Monitoring in Coastal Alaska

**PROJECT CONTACT:**

Contact Name: Alice Edwards, Acting Director, Division of Air Quality  
Address: Alaska Department of Environmental Conservation, 619 East Ship  
Creek, Suite 249, Anchorage, AK 99501  
Telephone Number: (907) 269-7634  
Fax Number: (907) 269-3098  
E-mail Address: alice.edwards@alaska.gov

**PROJECT LOCATION:**

Wet deposition monitoring of a suite of trace metals in Kodiak, Kotzebue and Unalaska and mercury sampling in Kotzebue and Unalaska

**PROJECT DURATION**

This project would be funded by CIAP for 3 years.

**ESTIMATED COST:**

The total cost is estimated at \$266,500. The Department of Environmental Conservation is currently supporting part of the sampling infrastructure for this project through their regular air quality grant.

<b>Spending Estimate (\$)</b>			
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
266,500	86,500	60,000	120,000

**PROJECT DESCRIPTION:**

This project will assess the deposition of heavy metal contaminants in Alaska's coastal ecosystems. Mercury and a suite of trace metals commonly found in emissions from major stationary sources are sampled by wet deposition.

Mercury and a group of trace metal contaminants are common byproducts of power production and other industrial processes. In the U.S., coal fired power plants are the major source of mercury, followed by medical waste incineration and municipal waste combustion. EPA estimates that US sources only contribute approximately 8% of all mercury airborne levels measured in the US, with the remaining 92% being attributed to long range transport. Since 2000, Asian sources have annually contributed more than 50% of the total mercury emissions worldwide. With industrial development expanding in Asia, these numbers are anticipated to increase over the next decade.

Long range transport of pollutants has been documented for decades. Arctic haze is one of the most famous examples of long range transport of pollutants. The combination of contaminants measured in a location is dependent on the transport path, elevation and transport duration time. Each source has a characteristic signature of chemical composition. Localized weather patterns at the source determine the updraft of pollution into the free troposphere, where pollutants can be transported for many thousands of miles. Global circulation patterns are responsible for the main transport directions. Localized weather conditions determine deposition sites and to what extent source impacts are registered abroad.

Although long range transport plays an important role in the deposition of heavy metals in the Arctic and Sub-Arctic, local sources can not be neglected. Generally, in areas of high deposition there is a significant local and regional contributor, potentially contributing up to 50%. Recently, mercury levels in halibut sampled during the Alaska Department of Environmental Conservation Fish Tissue Monitoring Study in the Bering Sea have shown a 250% (personal communication Dr. Bob Gerlach, Alaska State Veterinarian) increase in mercury from halibut samples collected in 1969 (Hall et al.: Mercury in Fish and Shellfish of the Northeast Pacific. I. Pacific Halibut, *Hippoglossus stenolepis*, Fishery Bulletin: Vol. 74, No. 4). Fish tissue samples taken in the areas around Attu and Adak in the Aleutian Islands have shown the most significant increase, while sampling in the Gulf of Alaska and in South East Alaska did not show the same increase. This local disparity in mercury level trends might indicate impact from unknown local or regional sources. Similar geographic patterns of mercury concentration have been noted in bald eagle eggs, with the highest concentrations in the western Aleutians and lower concentrations in the eastern Aleutians. (Anthony, et. al. 2007; Environ.Tox. and Chem. Vol. 26). Elevated levels of contaminants in Aleutian Island avifauna have been documented, but the great distance from potential industrial sources and the region's complex military history have confounded identification of contaminant origins. (Rocque et al.: Biomonitoring of Contaminants in Birds from two Trophic Levels in the North Pacific, Environmental Toxicology and Chemistry, Vol. 23, No. 3, pp. 759–766, 2004)

The impact on the coastal ecosystem can be significant, mercury levels in some animals is approaching the point of negative health effects. In recent years, increasingly effects have been documented, including behavioral, neurochemical, hormonal, and reproductive changes in fish and wildlife exposed to environmentally relevant levels of methylmercury. (Scheuhammer et. al: Recent Advances in the Toxicology of Methylmercury in Wildlife, *Ecotoxicology* (2008) 17:67–68,) Back-trajectory analysis coupled with trace metal concentration data might help pinpoint local pollution sources and help quantify a currently unknown or unsuspected local source contribution. Local sources, such as mining operations, industrial development and power production as well as abandoned military installations are potential sources.

The project will expand an existing limited small scale project in Kodiak operated by DEC staff. A wet deposition sampler currently is operated to measure mercury contamination in rain and snowfall. This proposal seeks funding to expand the laboratory analysis of the Kodiak sample to include the following trace metals: lead, cadmium, copper, nickel, zinc, chromium, beryllium, arsenic, and selenium. These compounds are typically found in the exhaust of major stationary sources and have been used to identify

source emission's signatures. In addition, two new wet deposition monitoring sites, one in Unalaska and one in Kotzebue will be established to measure mercury deposition along with the above mentioned trace metal contaminants in rain or snowfall. This Alaska Coastal Deposition Network, consisting of the two new sites and the existing site in Kodiak will be operated using the techniques and quality assurance protocols of the Mercury Deposition Network (MDN), managed by the National Atmospheric Deposition Program. No additional staff time is necessary to operate the Kodiak site. The site in Unalaska will be operated by DEC staff, while the site in Kotzebue will require a private contractor to perform the weekly sampling and maintenance. The budget is based upon a three-year monitoring study in order to define trends and cumulative mass loadings.

The data gathered by the coastal deposition network will be used to determine if deposition is localized or if Alaska's coastal ecosystem is uniformly impacted. As transport of airborne pollution is the major contamination pathway, the data collected should be considered essential for use in preventative ecosystem management. Increases in airborne pollutants will slowly make their way into the ecosystem, thus deposition data can be used to predict future ecosystem impacts, plan mitigation strategies, and assist ecosystem management. In addition, deposition data can be used to develop and corroborate models for mitigation strategies and opportunities.

Working with department and National Weather Service meteorologists and atmospheric scientists, schooled in the analysis of back trajectories, the trace metal and mercury data will be combined with local and global meteorological data to assess long range and short range transport patterns to identify potential local, regional and international source regions. The mercury data will be available on the Mercury Deposition network (MDN) web page. The trace metal data will be stored in a database at the DEC AQ office and will be linked with the mercury and meteorological data. The reports will be shared with the fish tissue monitoring program and any interested parties. A final report will be posted on the DEC web page.

**MEASURABLE GOALS AND OBJECTIVES:**

Measurable sampling project goals and objectives will be the same for all three project years.

- 1) Weekly samples will be collected at the three Coastal Alaskan Mercury Deposition Network sites.
- 2) All samples will be analyzed for mercury, lead, cadmium, copper, nickel, zinc, chromium, beryllium, arsenic, and selenium.
- 3) All mercury data will be displayed on the national MDN network web page
- 4) DEC staff will store all mercury and trace metal data in a central data base.
- 5) Annual data reports will be developed and distributed to interested parties.

In addition in Year 1 two new wet deposition monitoring sites will be set up – one in Unalaska and one in Kotzebue. A contract with the MDN network and the lab analyzing or trace metals will be established. A site operator for the Kotzebue sampling site will be hired. In Year 3, a contract will be established with an atmospheric scientist/university to analyze meteorological models and calculate back-trajectories for the three year sampling

period. In cooperation with DEC and NWS staff, the back-trajectory analysis will be combined with the sampling data to assess transport pattern and mechanism. At the end of Year 3 the sampling sites will be de-installed and the instrumentation retrieved if no further funding can be found to keep the site operational. A final report will be made available to all interested parties.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP authorized use #1: *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

This project will yield critical information on weekly levels of air-borne mercury and trace metal contaminants that will provide a basis for understanding and estimating rates at which contaminants are deposited in coastal waters. Such information can be used by resource managers to initiate steps to address contaminant sources in an effort to better protect and ultimately restore the quality of coastal waters. Some possible mitigation strategies to manage or reduce potential source impacts are establishing tighter emission controls, reviewing existing control strategies and ensuring compliance with these controls, and strategically plan, implement and prioritize site clean up of abandoned military installations or other abandoned industrial sites. Understanding and where possible controlling transport and deposition of air-borne contaminants is essential to protecting Alaska's wildlife resources and coastal ecosystems.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

This data produced in this project can also be tied into a larger statewide network. Independent of the Department's efforts, the National Park Service (NPS) is in the process of establishing three mercury deposition sampling sites, one inland and two along the coast. By the end of CY 2008, the NPS will begin operating one mercury sampling sites; in Bettles, in the Brooks Range, one in Bartlett Cove in Southeast Alaska and one at Katmai National Park. Operation of these NPS sites, the Department's site in Kodiak, and the proposed sites in Unalaska and Kotzebue will provide a comprehensive network for the evaluation of airborne mercury and trace metals entering Alaska's coastal regions, and the first evidence as to how local and distant sources may be impacting Alaska's air and ocean resources. The Division of Air Quality has a good working relationship with the Alaska National Park Service's air quality staff and will share all collected data and coordinate future sampling efforts with the NPS.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER**

**PROJECT TITLE: Knik River Public Use Area Erosion Control**

**PROJECT CONTACT:**

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Anchorage, AK 99501  
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**PROJECT LOCATION:**

This project is within the Knik River Public Use Area (KRPUA), located approximately 40 miles north and east of Anchorage on the western edge of the Chugach Mountains. The attached map shows the KRPUA.

**PROJECT DURATION**

4 year

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
100,000	25,000	25,000	25,000	25,000

**PROJECT DESCRIPTION:**

This project seeks to control erosion caused by detrimental impacts of recreational users on trails, streams, wetlands, and lake shores throughout the Knik River Public Use Area (KRPUA). The KRPUA was recently established as a “Public Use Area” in an effort to preserve and protect a full spectrum of public uses, including the maintenance and enhancement of off-road motorized vehicle and non-motorized recreational pursuits. The area has a long history of recreational use due to its close proximity to Anchorage and the Matanuska-Susitna Valley communities of Wasilla, Palmer, and the Butte. These communities are growing at a rapid pace, and along with this growth come impacts from recreational uses, including boating, all-terrain vehicles, hiking, wildlife viewing, biking, hunting, and fishing. The Knik River drainage is popular for hunting moose, Dall sheep, bears, and migratory waterfowl. The area also supports one of the largest Coho salmon fisheries in the Matanuska-Susitna Valley.

Unrestricted multiple-use recreation and unplanned trail development occurring over the years have contributed to significant erosion and degradation of riparian areas and trails

(See attached photographs). The banks and shorelines of lakes and streams have become trampled, destroying vegetation and accelerating erosion into waters used by anadromous fish. Trails created from unrestricted recreational use have been developed without planned construction techniques, contributing to severe erosion problems, impacts to wetland areas, and destabilized stream crossings. These user impacts have led to poor drainage patterns, bank destabilization, deep rutting, mud holes, widened tread, damage to vegetation, and year-round standing water. A combination of poor trail location and unsuitable terrain has increased erosion and enhanced trail braiding.

In an effort to minimize detrimental impacts to riparian areas and wetlands, the Alaska Department of Natural Resources (DNR) intends to reroute trails to avoid sensitive habitat; alleviate lake shore degradation by hardening access points; stabilize eroding lake and stream banks; improve stream crossings with appropriate structures; and rehabilitate severely degraded wetland areas through trail hardening, closures and/or use restrictions. Proposed projects include shoreline restoration of highly impacted public access points by adding soil, plantings, structures, and signs; stream crossing structures such as bridges or rock fords to reduce erosion and sedimentation of streams; trail reroutes to avoid sensitive habitat; switchback construction on trails with steep gradients; implementation of erosion control structures such as geo block, gravels, water bars, check dams, turnpikes, etc.; restoration of highly degraded wetland areas through closures and/or use restrictions, and/or by providing alternate routes; and regulatory/educational sign placement.

**MEASURABLE GOALS AND OBJECTIVES:**

Year 1: GPS trails mapping of over 10,000 acres of wetlands and riverbed

Year 2: Restoration and erosion prevention of 6,000 linear feet of trail degraded by motorized and non-motorized recreational use

Year 3: Restoration and erosion prevention of 6,000 linear feet of trail degraded by motorized and non-motorized recreational use

Year 4: Restoration and erosion prevention of 500 linear feet of lake shore (salmon bearing waters) degraded by motorized and non-motorized recreational use

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use #1 - *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands*. Ecological restoration, tread hardening, erosion control structure installation, and trail rerouting will restore wetlands and improve water quality in adjacent anadromous streams. Work will be done on trails and riparian areas in the coastal zone or on lands near the coastal zone, which drain into and thereby impact the coastal zone.

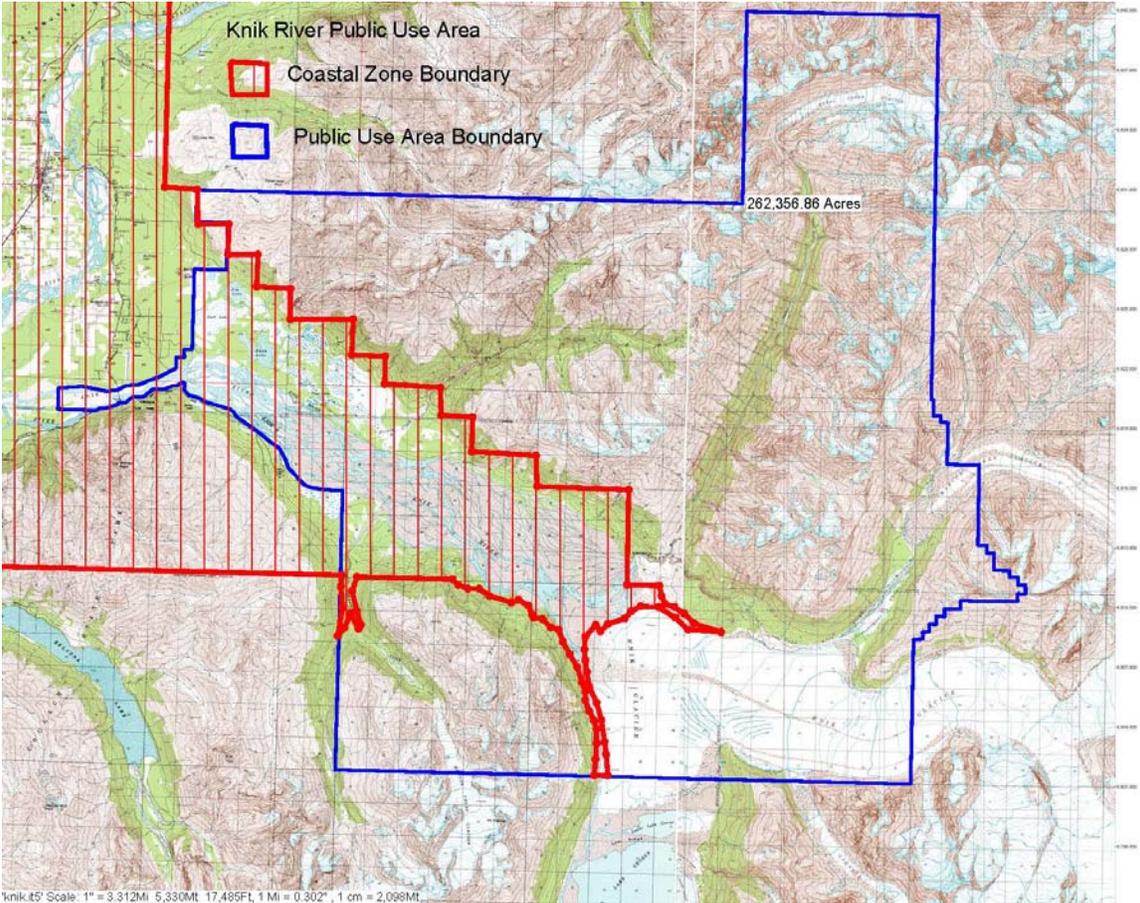
**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

While DNR has not yet coordinated with Federal agencies on this project, The Alaska Department of Natural Resources manages the KRPUA through partnerships with local

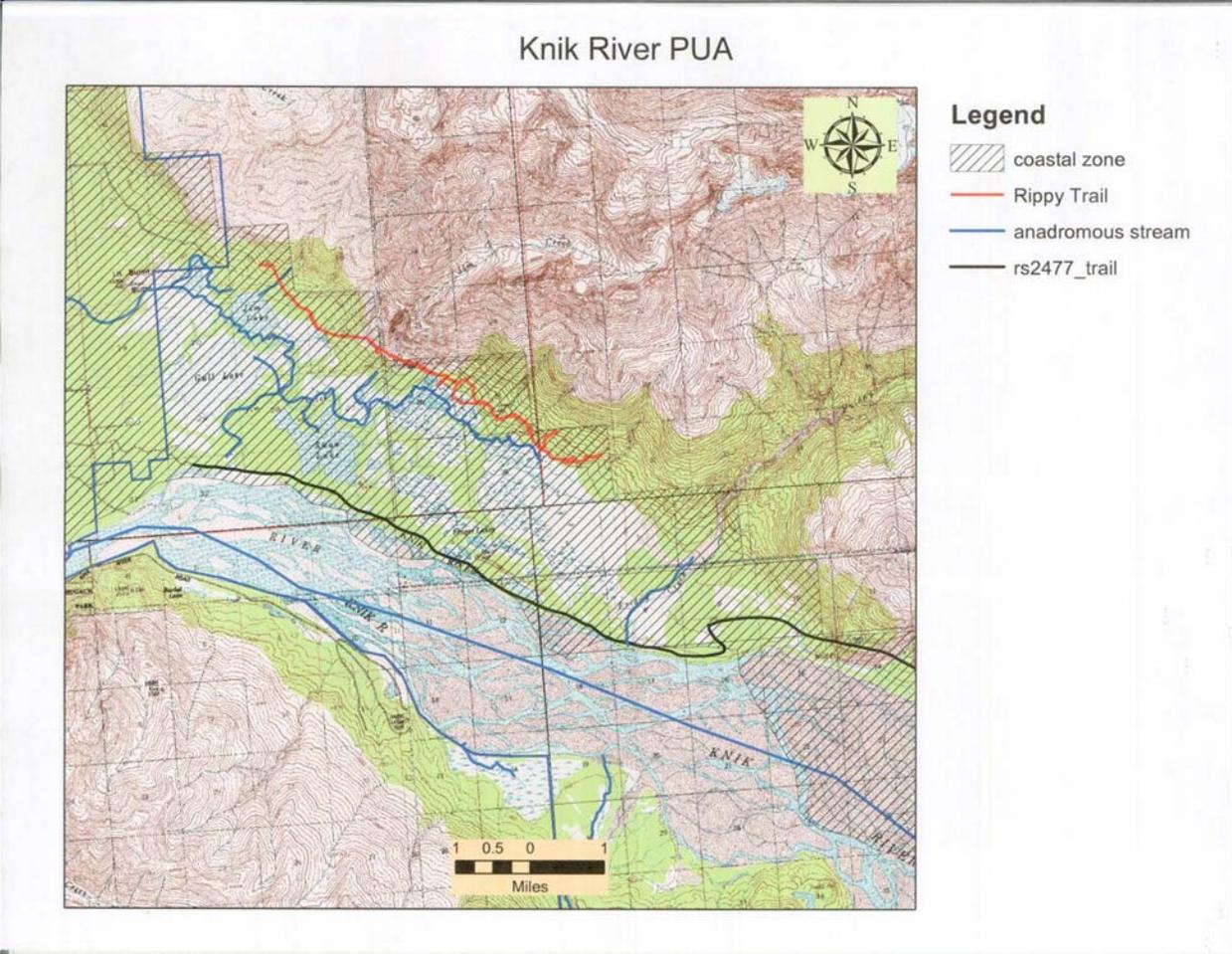
law enforcement, other state and federal agencies, non-profit organizations, and local residents. The KRPUA planning boundary encompasses approximately 60,000 acres of federal lands managed by the Bureau of Land Management (BLM). DNR has worked closely with BLM land managers identifying trails for easements and assessing trail impacts on a state owned right of way crossing through their lands. At this time DNR has not secured any other funding, however grants from the Alaska Department of Natural Resources Recreational Trails Program (RTP) may also provide funds for trail related environmental protection, safety and educational projects.

**COST SHARING OR MATCHING OF FUNDS:**

If CIAP funds are used for cost sharing or matching requirements, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency’s program allows the use of Federal funds to meet cost sharing or matching requirements.



Knik River Public Use Area



The following photos depict lake shore and trail impacts occurring within the coastal zone on state owned lands managed by the State of Alaska Department of Natural Resources, Division of Mining, Land, and water, Southcentral Region Land Office.



**Knik Glacier Trail (erosion and rutting)**



**Wetland Recreation Routes (breaking of vegetative mat)**



**Knik Glacier Trail (standing water)**



**Rippy Trail (wetlands spur trail)**



**Rippy Trail (wetlands spur trail)**



**Jim Lake Public Use Site (anadromous waters)**

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINING, LAND AND WATER**

**PROJECT TITLE: Kachemak Bay Drainage Basin Sustainable Access Routes Reservation and Improvement.**

**PROJECT CONTACT:**

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**PROJECT LOCATION:**

Kachemak Bay Drainage Basin

**PROJECT DURATION**

3 year

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>			
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
200,000	50,000	75,000	75,000

As a Tier 2 project, no CIAP funding allocation year is determined. The State of Alaska will identify the funding allocation year in the grant application, if the project is funded.

**PROJECT DESCRIPTION:**

The objective of the project is to protect the hydrologic and wildlife habitat functions of Kachemak Bay Drainage Basin area wetlands from continued degradation caused by increased development of unplanned and unauthorized motor access trails. Toward this end, the Department intends to locate and reserve legal public trail routes utilizing established and emerging trail sustainability and manageability criteria developed for application in Alaska by the National Parks Service and other expert agencies. The Kachemak Bay Drainage Basin is an environmentally sensitive area surrounded by the Fox River Flats Critical Habitat Area to the south, the Caribou Hills Special Land Use Area to the west, and the Kenai National Wildlife Refuge and Wilderness to the east. Approximately 50% of the proposed project area lies within the boundary of the State’s Coastal Zone.

Prior federal and state land disposal programs in the vicinity proposed for service by this project have resulted in the creation of over 300 parcels of residential use lands and the establishment of large tracts of agricultural use lands currently employed for cattle grazing, horse grazing, and hay production purposes. The rate of development activities on private parcels has increased substantially over the past several years, and interest in additional conveyances of public lands in to private hands remains high throughout the region, including near Kachemak Bay. In addition, the Kachemak Bay Drainage area is experiencing increased use as a tourist destination; supporting guided commercial hunting activities as well as popular all-terrain vehicle and horse back tours. The area continues to be relied upon by local residents for personal hunting and fishing purposes. One highly visible impact resulting from accelerated economic and development activities is the proliferation of ATV and snow machine trails along what initially appear to be the quickest and easiest routes across the marshy flats that feed the headwaters of Kachemak Bay. However, attempted regular use of unplanned trail routes through poorly drained wetland meadows quickly results in the formation of impassible, meandering, rutted, muddy areas devoid of vegetation, some of which range to 100 feet wide. These trails contribute to conditions such as channelization, diversion of water from existing streams, sedimentation, and slope failure, which are believed to threaten the local nursery habitat and refugia for important populations of anadromous fish in the adjacent critical habitat area. In addition, the lack of planned access routes within legally established easements is contributing to increased incidents of user-group conflicts including trespass across private lands and unpermitted development of private infrastructure on public use lands. Proposed project components include evaluation of existing trails and disturbed areas, identification of feasible, sustainable access routes, establishment of legal public access easements, and initial installation of appropriate trail hardening materials to encourage regular usage of consolidated, authorized routes; thereby reducing future impacts to the surrounding marsh system and allowing for its recovery.

**MEASURABLE GOALS AND OBJECTIVES:**

Year 1: Locate, dedicate to public use, at least five linear miles of trail across DMLW managed lands between the Caribou Lake and Fox Creek vicinities of the Kachemak Bay Drainage area.

Year 2: Harden at least 2,500 linear feet of trail.

Year 3: Harden at least 2,500 linear feet of trail.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use number 1 - *projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands*. The location and dedication of legal public access easements will mitigate the effects of human impacts on the area by reducing the proliferation of randomly chosen individual trail routes. Trail hardening efforts will promote the consolidation of public access activities and protect wetlands in the Kachemak Bay Drainage area from degradation caused by continued, unplanned motorized use, and will allow the wetlands to be restored to a more natural state.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS AND OTHER FUNDING SOURCES:**

The Kachemak Bay Drainage Basin project will complement similar trail reservation and improvement efforts in the adjoining Caribou Lake area undertaken by the Homer Soil and Water Conservation District with funding and assistance provided by the National Parks Service; and will contribute to ongoing Kenai Peninsula trail network documentation and improvement efforts funded by prior CIAP allocations in addition to State of Alaska sources (Division of Parks and Outdoor Recreation, Division of Environmental Conservation).

**COST SHARING OR MATCHING OF FUNDS:**

CIAP monies are not proposed to provide cost sharing or matching funds for other grants.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF COASTAL AND OCEAN MANAGEMENT**

**PROJECT TITLE: Alaska Coastal Management Program Implementation Workshops**

**PROJECT CONTACT:**

Contact Name: Sylvia Kreel,  
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Juneau, AK 99811-1030, MS 1020/JNU  
Telephone Number: 907-465-3177  
Fax Number: 907-465-3562  
E-mail Address: sylvia.kreel@alaska.gov

**PROJECT LOCATION:**

Specific workshop locations have yet to be determined. Locations will be determined based on the location of the target audience.

**PROJECT DURATION**

3 year

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>			
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
105,000	35,000	35,000	35,000

**PROJECT DESCRIPTION:**

In order to effectively implement the Alaska Coastal Management Program (ACMP), the Alaska Department of Natural Resources (DNR), Division of Coastal and Ocean Management (DCOM) will develop and present workshops to ACMP participants. Alaska Legislative changes in 2003 required DNR to change ACMP regulations and required coastal districts to amend their district coastal management plans. There are currently 28 active coastal districts in Alaska. Each district plan becomes part of the state's federally approved coastal management program after approval from the National Oceanic and Atmospheric Administration, office of Ocean and Coastal Resource Management (OCRM). The regulatory changes have increased the need for training. ACMP participants include state and federal resource agencies, coastal districts, project applicants and the public. The workshops will specifically focus on presenting tools to improve program implementation. Examples of potential workshops include:

- Partnership/relationship building between ACMP participants
- Designated areas

- District implementation workshops
- Coastal Resource Service Area board workshops

**MEASURABLE GOALS AND OBJECTIVES:**

DCOM will present at least one implementation workshop each of the 3 years. DCOM will prepare binders for each workshop that will include the workshop agenda, participant list, presentations and handouts. DCOM will post the binders on the ACMP website.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

Authorized Use # 4: *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan.*

This project will comply with CIAP Authorized Use # 4 because it will develop and present information and tools to ACMP participants that will assist the participants in implementing the ACMP, a federally approved coastal management program. The ACMP involves coastal districts, state and federal resources agencies, and the public in district plan development and project consistency review. Each workshop presented will target specific ACMP participants and specific implementation components addressed in the ACMP.

In the past, DCOM has regularly conducted implementation workshops. They have proven a valuable means of improving program implementation. For example, DCOM provided several workshops on how to amend district coastal management plans. These workshops provided valuable guidance to local district planners on how to craft approvable enforceable policies. DCOM regularly provides districts and agencies information on how to effectively participate in the ACMP and comment on development projects occurring in the coastal zone. Over the years, such workshops have led to greater participation by ACMP stakeholders and more effective implementation of the ACMP. In light of the revised program changes since 2003, as well as the continuous need to train new stakeholders, additional workshops funded through CIAP will continue to enhance ACMP implementation`.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS**

Federal 306 and 309 funds have typically funded implementation workshops. However, these funding sources have decreased in recent year. By using the CIAP funds for workshops, DCOM can reprogram grant funds to other uses. OCRM annually approves how the state uses Federal 306 and 309 funds. The National Marine Fisheries Service, U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers regularly participate in ACMP project consistency review. Staff from these agencies will be invited to agency oriented workshops.

**OTHER FUNDING SOURCES:**

CIAP funds will not be used for cost sharing or matching purposes.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF COASTAL AND OCEAN MANAGEMENT**

**PROJECT TITLE: Marine Debris Clean-up**

**PROJECT CONTACT:**

Contact Name: David Gann

Address: Department of Natural Resources/Division of Coastal and Ocean Management,

P.O. Box 111030, Juneau, AK 99811-1030, MS 1030/JNU

Telephone Number: (907) 465-3529

Fax Number: (907) 465-3075

E-mail Address: [david.gann@alaska.gov](mailto:david.gann@alaska.gov)

**PROJECT LOCATION:**

Yet to be determined.

**PROJECT DURATION**

3 year

**ESTIMATED COST:**

Spending Estimate (\$)			
TOTAL	Year 1	Year 2	Year 3
99,000	33,000	33,000	33,000

**BACKGROUND:**

During the Alaska Coastal Management Program Northern District Workshop and Coastal Resource Service Area Board Training, many districts' greatest concern was problems associated with marine debris. According to the U.S. Commission on Ocean Policy, marine debris poses a "serious threat to fishery resources, wildlife, and habitat, as well as human health and safety." The communities around Alaska are unique in that using the coastal waters is not just a commercial activity or recreational opportunity, but rather a way of life. Marine debris threatens this way of life.

**PROJECT DESCRIPTION:**

The Division of Coastal and Ocean Management (DCOM) will partner with the Marine Conservation Alliance Foundation (MCAF) to plan, coordinate and attend marine debris cleanups in three coastal districts where marine debris is documented by the MCAF.

Personal service funds to pay for DCOM staff hours will be used to coordinate and plan the clean-ups with the coastal district contacts and the MCAF. The travel funds will be used for DCOM staff to travel to the districts to participate and conduct the coordination of the cleanups. The marketing/publication funds will be used to advertise the event and

to document the results. The contractual funds will be used to fund the pickup and removal of the debris collected.

Previous marine debris removal projects in Alaska have proven very successful. MCAF used 2001 CIAP funds to complete the following marine debris clean up projects:

**Norton Sound**

Marine Conservation Alliance Foundation (MCAF) contracted with the Norton Sound Economic Development Corporation (NSEDC) on several projects in the Norton Sound area, two of which were completed in 2007. A summertime cleanup around Shaktoolik removed 45,150 pounds of debris including nets of both domestic and foreign origin. The total area of beach is not yet reported. The project was contracted at \$32,994 and paid for with funds provided by the 2001 CIAP funding in lieu of previously authorized funding from the National Oceanic and Atmospheric Administration (NOAA).

NSEDC crews finished cleanup work begun last year near Unalakleet, where they removed 107,000 pounds from south of the village. The debris included 16 derelict skiffs, some up to 24 feet in length; several abandoned snow machines and all-terrain vehicles, and over 195 nets. The Unalakleet project was budgeted at \$17,832 and was also funded by 2001 CIAP funds in lieu of previously authorized funding from NOAA.

**Unalaska**

The Qawalangin Tribe of Unalaska was contracted to clean road accessible beaches around Unalaska such as Summer Bay, Humpy Cove and Morris Cove. A small crew spent several weeks on the cleanup work and reported accumulations of less than 2,000 pounds. Among the debris picked up were a computer monitor and a washing machine. Billing came to \$8,578 and was paid for by 2001 CIAP funding in lieu of approved NOAA funding.

**MEASURABLE GOALS AND OBJECTIVES:**

DCOM will coordinate and participate in a minimum of three marine debris cleanup projects (one each project year). Each clean up will be documented in a report noting the date, location, participants, tonnage of removed debris and any associated marketing material developed for the event.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use number 1, *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetland*, because it will provide conservation and restoration of coastal areas. Recent research has proven that debris has serious effects on the marine environment, marine wildlife, the economy and human health and safety. In fact, marine debris has become one of the most widespread pollution problems facing the world's oceans and waterways, and derelict fishing gear, including nets, lines, and buoys, is especially problematic in Alaska. Marine

debris can entangle marine mammals and seabirds. Lost fishing gear can entrap fish. Colored plastics mistaken as food clog digestion tracks of seabirds and marine mammals. Removal of this debris would protect wildlife from such impacts. Additionally derelict boats and other motorized vehicles found in coastal areas erode and often leak fluids contaminating coastal habitats. Their removal will help protect, preserve and restore such coastal areas.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The clean-ups will be completed in collaboration with funding from MCAF. The science and research Director, of the NOAA Alaska Fisheries Science Center helps advise the MCAF board. NOAA provides much of the funding for MCAF marine debris clean up efforts. CIAP funding will supplement this NOAA funding, with MCAF coordinating the projects.

There is a possibility that districts will provide in-kind donation of services to help coordinate the clean-ups as this was the case during the 2007 marine debris clean-ups.

**OTHER FUNDING SOURCES:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

# State of Alaska

## Coastal Impact Assistance Program Project Descriptions proposed by

### COASTAL POLITICAL SUBDIVISIONS

#### Municipality of Anchorage – Tier 1

1. Anchorage Creeks CIAP Restoration Project

#### Kenai Peninsula Borough – Tier 1

1. Crooked Creek Bank Restoration and Habitat Protection
2. Kasilof Personal Use Fisheries Habitat Protection Assistance
3. Crooked Creek State Recreational Area River Bank Restoration
4. CIAP Planning and Administration

#### Kodiak Island Borough – Tier 1

1. Metal Debris Clean Up and Removal
2. Trail Hardening or Relocation to Enhance and Improve Coastal Water Quality and Stream Habitat
3. Public Education on the Value of Conserving Wetlands and Other Coastal Habitats
4. Mapping of Coastal and Marine Resources

#### Kodiak Island Borough – Tier 2

1. Coastal Erosion Study

#### Lake and Peninsula Borough – Tier 1

1. Lake and Peninsula Borough Beach Erosion Tracking Program and Community Profile Map Additions and Updates
2. Lake and Peninsula Borough Mapping Update for the Protection of Critical Coastal Resources and Identification of Land Status
3. Lake and Peninsula Borough Coastal Management Plan Amendment – Community Outreach Component

#### Matanuska-Susitna Borough – Tier 1

1. *“Protect the Edge: Where the Water Meets the Land”* a Full-color 40-60 Page Publication About Protecting Riparian Habitat and Wetlands
2. Ortho-rectified Imagery of the Matanuska-Susitna Coastal Zone

#### North Slope Borough – Tier 1

1. Restoration and Rehabilitation of Coastal Areas Through the Installation of Hardened Trail
2. Assessment of the Biotic and Abiotic Factors Influencing the Ikpikpuk River Delta, which is Needed for Predicting Changes and Developing Plans to Conserve and Protect the Delta
3. Assessment of the Health and Biology of Arctic Marine Mammals for the Development and Evaluation of Mitigation Measures to Reduce Impacts from a Changing Arctic Environment
4. Assessment of the Vulnerability of Archaeological and Cultural Sites to Coastal Erosion and the Development of Plans to Protect the Sites
5. Implementation and Enhancement of Permitting Activities of the North Slope Borough

#### Northwest Arctic Borough – Tier 1

1. Protecting Coastal Areas through Region-wide Waste Management Improvement
2. Protecting Coastal Areas through Planning and Guidance for Sustainable Tourism
3. Improving Management Capacity to Protect Coastal Areas
4. Protection of Coastal Areas from Marine Debris
5. Administrative Costs
6. Improving Subsistence Information to Implement Federal Plans
7. Improving Public Involvement for Implementation of Federally Approved Plans

#### Northwest Arctic Borough – Tier 2

1. Village-based Environmental Monitoring to Protect Coastal Areas

# MUNICIPALITY OF ANCHORAGE

## TIER 1 CIAP PROJECT

### 1. Anchorage Creeks CIAP Restoration Project



**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**MUNICIPALITY OF ANCHORAGE**

**PROJECT TITLE: Anchorage Creeks CIAP Restoration Project**

**PROJECT CONTACT:**

David Wigglesworth, Municipality of Anchorage  
Creeks Community Development Manager  
632 W. 6th Avenue, Suite 870  
P.O. Box 196650, Anchorage, AK 99519-6650  
E-mail: [wigglesworthdt@muni.org](mailto:wigglesworthdt@muni.org)  
Phone: 907-343-7116  
Fax: 907-343-4318

**PROJECT LOCATION:**

The project is currently planned to occur within the Campbell Creek Watershed, within the Municipality of Anchorage. The Campbell Creek Watershed drains approximately 78 square miles, stretches roughly 112 miles, including the forks and major tributaries. Campbell Creek starts from an alpine source high in the Chugach Mountains and flows through relatively undisturbed stream sections through Bicentennial Park and then through many of Anchorage’s residential neighborhoods, with some diversions through commercial areas west of the Seward Highway, before spilling into the marine waters of Turnagain Arm and Cook Inlet. As project selection occurs, the City will also compare identified Campbell Creek projects against other projects identified for the adjacent Chester Creek watershed. Both Chester Creek and Campbell Creek, including the forks and major tributaries are located within the coastal zone. The attached map shows both watersheds.

**PROJECT DURATION:**

4 Years

**ESTIMATED COST:** \$551,071.52 over four years

<b>Spending Estimate (\$)</b>				
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>
551,071.52	137,767.88	137,767.88	137,767.88	137,767.88

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
551,071.52	137,767.88	137,767.88	137,767.88	137,767.88

**PROJECT DESCRIPTION:**

Specifically, funds will be used to re-establish bank vegetation for better riparian function, fish habitat and bank stabilization at a selected site (or sites) and/or to remove barriers to fish passage (for example, road crossing culverts that create slope and/or velocity barriers) to spawning and rearing areas. Selected restoration and/or related fish passage projects may also include interpretive signage and structures to direct public access. Project tasks include design and construction of one or more fish passage and stream bank restoration projects – designed and constructed pursuant to the Stream bank Revegetation and Restoration – a Guide for Alaska, latest edition and ADFG and City fish passage design criteria.

The Municipality of Anchorage will select final project site(s) with guidance from the Municipal Watershed Task Force – a multi-agency organization comprised of non-governmental organizations and federal, state, and local resource agencies.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

The proposed project activities are most closely aligned with CIAP Authorized Use #2, mitigation of damage to fish, wildlife, or natural resources

The proposed project has a direct benefit to conservation of coastal aquatic habitat within the Anchorage coastal district. Project activities will focus on mitigating impacts to fish habitat caused by development by restoring previously disturbed or ongoing deteriorated salmon and aquatic habitat and improve salmon access to spawning and/or rearing areas.

Increased development due to population growth within the Municipality of Anchorage has the ongoing and historical potential to negatively impact salmon and salmon habitat in the Anchorage coastal area. Five species of pacific salmon annually return to local creeks in Anchorage and Chester and Campbell Creeks offer some of the best salmon spawning habitat within the Municipality. In recent years, the riparian areas of Chester and Campbell Creeks have shown increased development and encroachment into the Campbell Creek flood plain. This has reduced fish habitat, riparian vegetation and riparian function. Preserving, restoring, and rehabilitating riparian function, improving fish passage and salmon habitat in Campbell and other creeks is one important and measurable activity that can mitigate development impacts to salmon and salmon habitat. Moreover increased development activity in the Anchorage coastal area and in Upper Cook Inlet has the potential to increase the number of people working and living in Anchorage and the number of recreational fishers– increasing impacts to riparian area and creek banks through human activity.

The results of this highly visible project (s) will benefit salmon habitat resources of Anchorage watersheds. The completed work will help mitigate development impacts by resulting in quantifiable increased fish habitat, fish passage, and improvements to riparian vegetation and riparian function; and/or increased river bank stability.

**MEASURABLE GOALS AND OBJECTIVES:**

The Municipality will implement this project in coordination with the Municipal Watershed Task Force and other Salmon in the City initiative partners (salmoninthecity.muni.org). This project will achieve quantitative and qualitative outcomes. Project objectives and related outcomes are briefly described below. Additional details will be provided as specific statements of work are prepared for grant agreements between the Municipality Of Anchorage and Alaska DNR.

**Year 1**

Document and select candidate site(s) for restoration, enhancement, and preservation.

Obtain agency permits for candidate site(s) and implement professional services contract(s). As necessary, pursue and secure necessary funds from other sources for candidate sites.

**Year 2 - 4**

Restore 300 feet of stream bank vegetation, fish habitat and riparian function through the rehabilitation of impacted fish habitat using bio-engineered techniques and other permitted techniques.

If necessary, construct one or more access stairs or fencing to direct access and to sustain restored bank and riparian function.

Conduct two (one in year 2 and one in year 4) stream bank restoration workshops for Municipality of Anchorage staff, state and federal agencies, watershed groups, non-profit organizations, contractor and private consultants.

**Year 4**

Produce a summary report detailing project results and identifying additional barriers to fish passage and other restoration projects that would improve fish passage and improve riparian function.

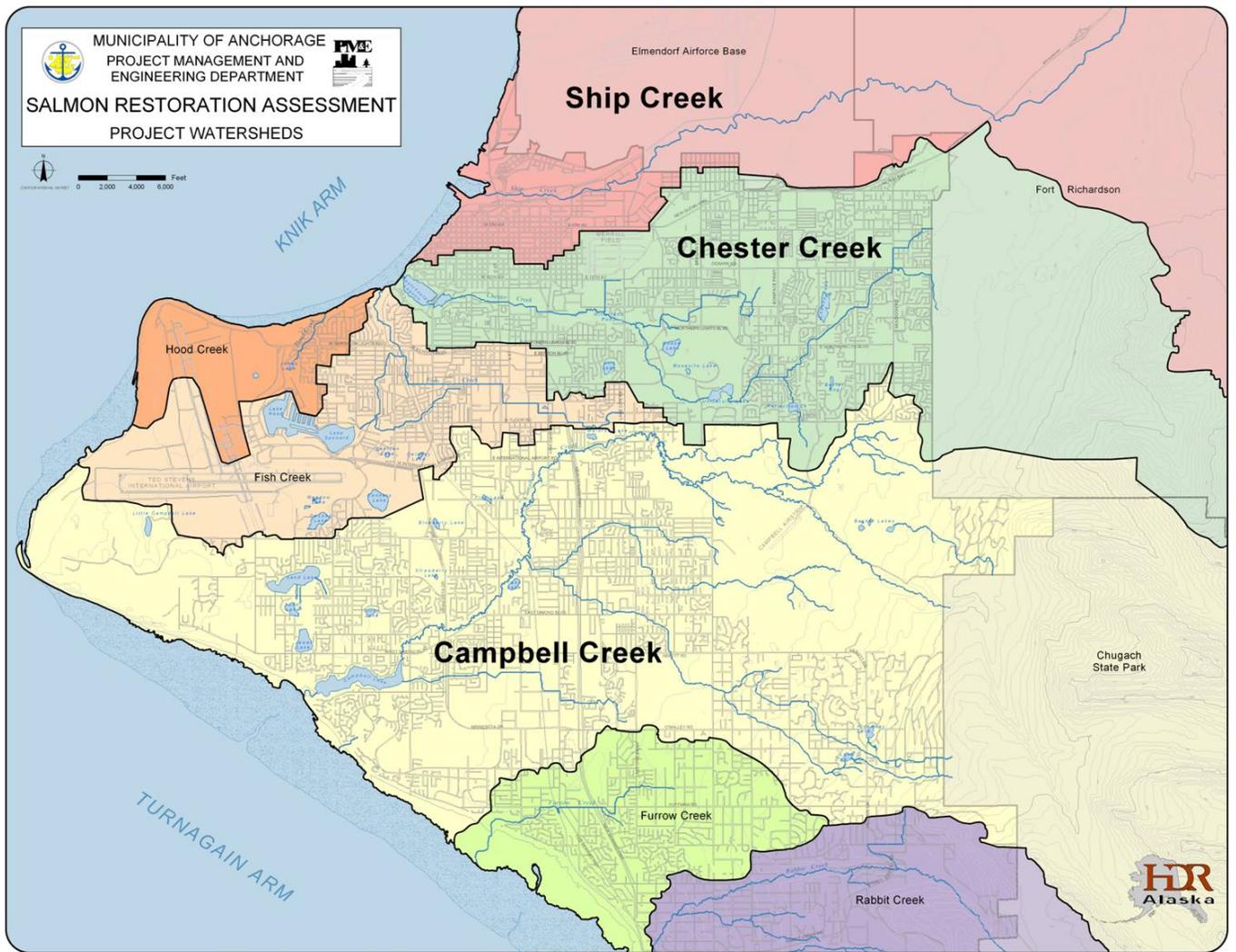
**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Municipality of Anchorage has had substantial coordination with federal and state resources agencies on this project. At the federal level, the Municipality has worked closely with the National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency and National Park Service. At the state level the Municipality is actively coordinating with the Alaska Department of Fish and Game, Sport Fish and Wildlife Divisions, the Southeast Sustainable Salmon Fund, and the Department of Natural Resources, Office of Habitat Management and Permitting. The Municipality is taking care not to duplicate projects. The Salmon in the City partnership, a multi agency stewardship initiative created by Mayor Begich in 2005, is creating the kind of collaboration and coordination needed to avoid duplication. Coastal America recently recognized this partnership for its ability to successfully integrate federal actions with state and local governmental and non-governmental coastal

habitat restoration and education efforts. Coastal America is chaired by the White House Council on Environmental Quality and all federal agencies are members.

**COST SHARING OR MATCHING OF FUNDS:**

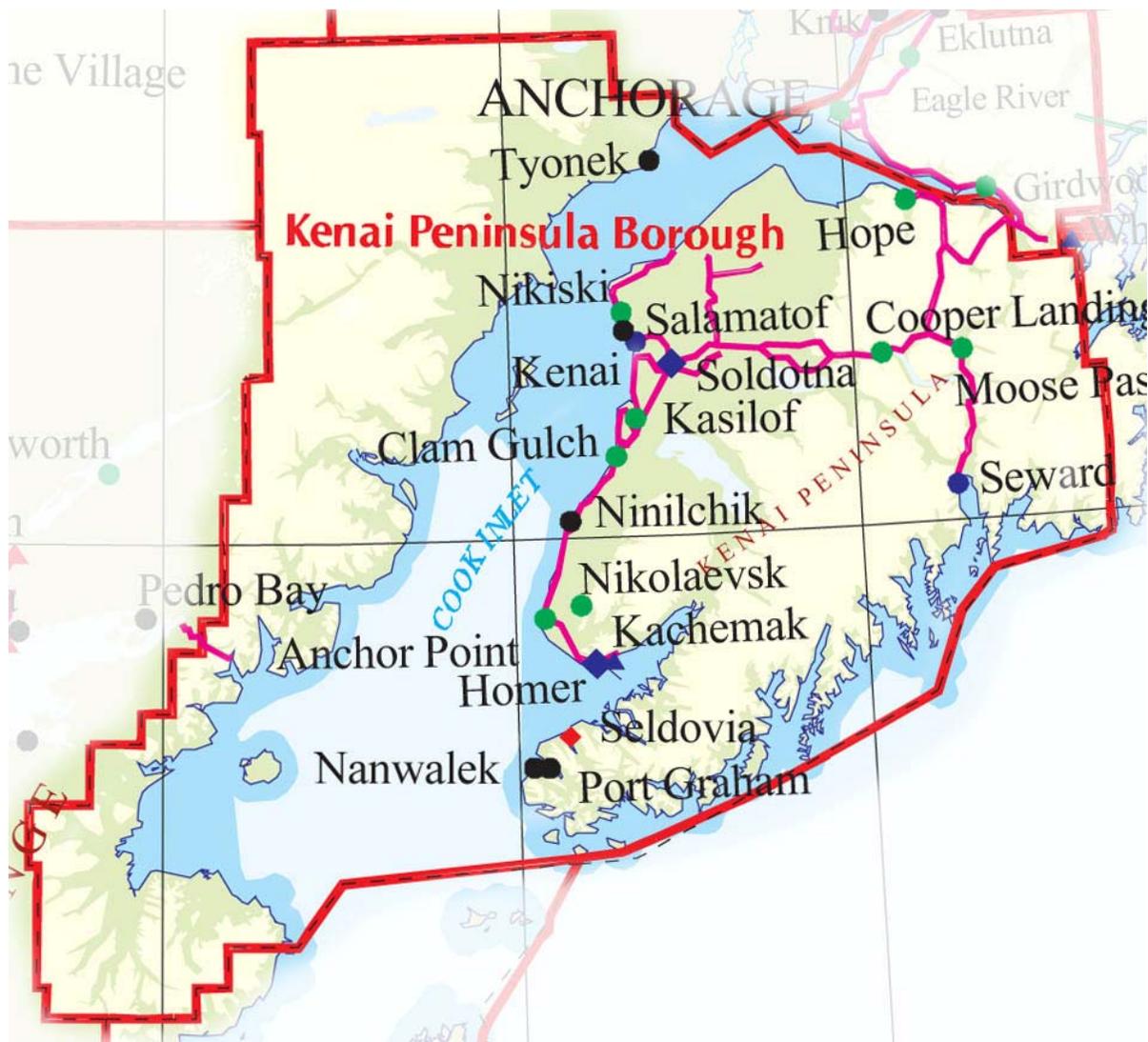
It is unclear at this time whether CIAP funds will be used for cost sharing or matching purposes. If these funds are used for these purposes, the final CIAP grant application will include a letter from the state, federal, or local agency charged with administering the program that includes the cost sharing or matching requirement indicating that the other agency's program allows the use of federal CIAP funds to meet cost sharing or matching requirements.



# KENAI PENINSULA BOROUGH

## TIER 1 CIAP PROJECTS

1. Crooked Creek Bank Restoration and Habitat Protection
2. Kasilof Personal Use Fisheries Habitat Protection Assistance
3. Crooked Creek State Recreational Area River Bank Restoration
4. CIAP Planning and Administration



STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

KENAI PENINSULA BOROUGH

**PROJECT TITLE: Crooked Creek Bank Restoration and Habitat Protection Project**

**PROJECT CONTACT:**

Gary Williams, Kenai Peninsula Borough Coastal District Program Coordinator  
514 Funny River Road, Soldotna, Alaska 99669  
Telephone Number: (907) 714-2216  
Fax Number: (907) 260-5992  
E-Mail: [gwilliams@borough.kenai.ak.us](mailto:gwilliams@borough.kenai.ak.us)

**PROJECT LOCATION:**

Crooked Creek is a tributary of the Kasilof River, which is located on the western Kenai Peninsula in southern Alaska. The Kasilof River begins at Tustumena Lake and flows northwest to Cook Inlet near the community of Kasilof. Both the Kasilof River and Crooked Creek are located within the coastal zone.

**PROJECT DURATION:**

1 Year

**ESTIMATED COST:**

Spending Estimate (\$)	
TOTAL	Year 1
15,000	15,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
15,000	15,000	0	0	0

**PROJECT DESCRIPTION:**

This project will restore the riparian habitat of a section of a fish stream whose banks are composed of very steep, unstable and un-vegetated loose gravel. The restoration will create habitat for several species of anadromous fish and protect the stream bank from further habitat degradation. The restoration process is called Brush Layering and will involve placing a coir log at the toe of the area being restored followed by a thick layer of willow cuttings and a layer of soil covered by revegetation fabric. The final process includes a revegetated mat placed well above the high water mark. The work will be performed by a qualified contractor.

**MEASURABLE GOALS AND OBJECTIVES:**

Restore and protect the riparian habitat in the project area by placing 80 linear feet of brush layering according to technical standards as described in the Streambank Revegetation and Protection, A Guide for Alaska, 2005 revised edition.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

The proposed project activities are most closely aligned with CIAP Authorized Use #1, Project and activities for the conservation, protection, or restoration of coastal areas.

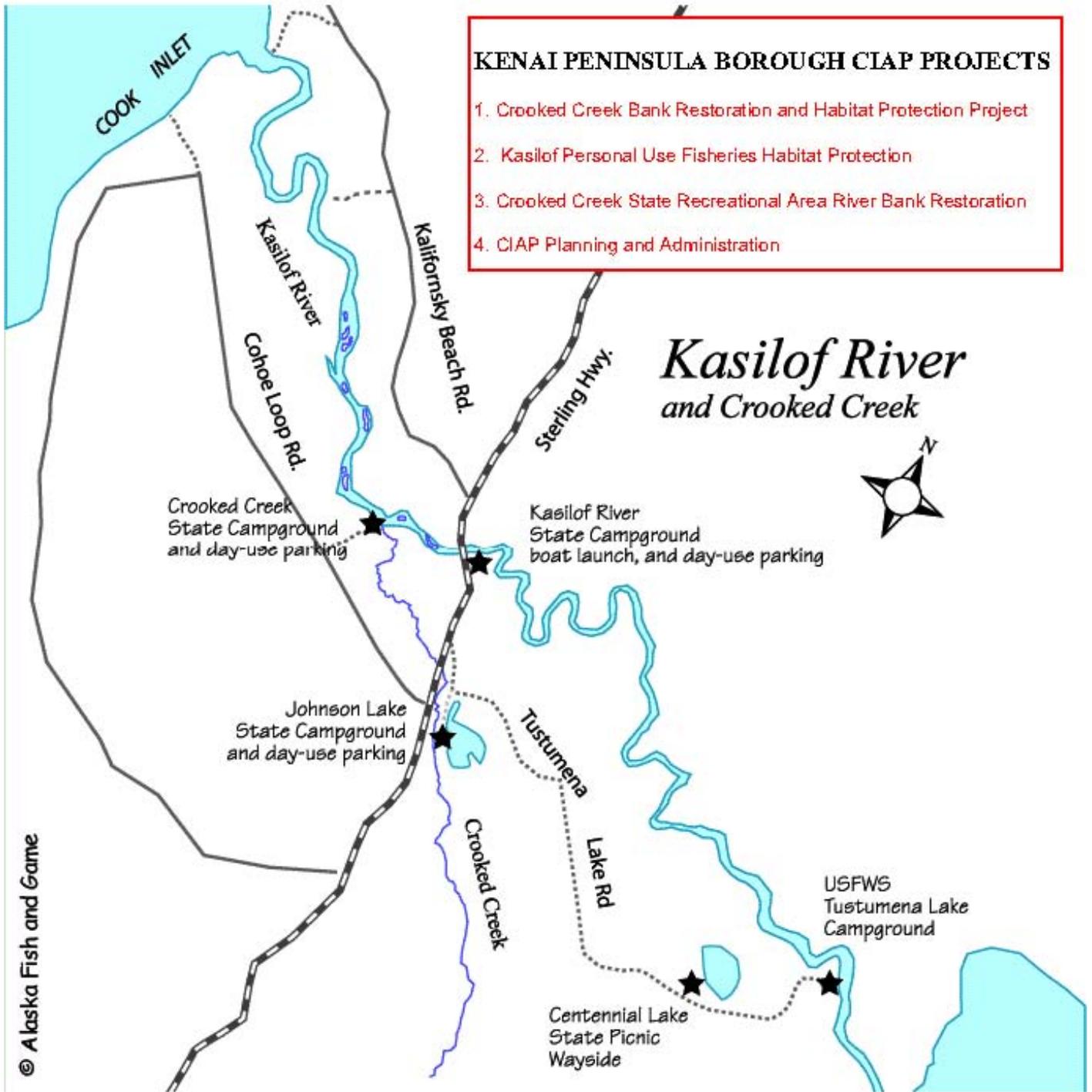
Crooked Creek is a major tributary to the Kasilof River and supports spawning and rearing or substantial runs of chinook and coho salmon and one of the northernmost steelhead runs. The creek is experiencing increasing stream bank use and impact by visitors viewing salmon and by fishers but receives little conservation attention and funding compared to the nearby Kenai River. This project will restore the bank and riparian habitat along a portion of the river which has eroded due to the increased foot traffic. This approach will protect the area being restored until it has returned to a natural state.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Kenai Peninsula Borough developed this project in coordination with the Kenai River Center, a state and federal multi-agency resource and permitting facility.

**COST SHARING OR MATCHING OF FUNDS:**

No cost sharing or matching funds have been identified for this project.



STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

KENAI PENINSULA BOROUGH

**PROJECT TITLE: Kasilof Personal Use Fisheries Habitat Protection**

**PROJECT CONTACT:**

Gary Williams, Kenai Peninsula Borough Coastal District Program Coordinator  
514 Funny River Road, Soldotna, Alaska 99669  
Telephone Number: (907) 714-2216  
Fax Number: (907) 260-5992  
E-Mail: [gwilliams@borough.kenai.ak.us](mailto:gwilliams@borough.kenai.ak.us)

**PROJECT LOCATION:**

Crooked Creek is a tributary of the Kasilof River, which is located on the western Kenai Peninsula in southern Alaska. The Kasilof River begins at Tustumena Lake and flows northwest to Cook Inlet near the community of Kasilof. The Kasilof River is located within the coastal zone.

**PROJECT DURATION:**

1 Year

**ESTIMATED COST:**

Spending Estimate (\$)	
TOTAL	Year 1
8,000	8,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
8,000	8,000	0	0	0

**PROJECT DESCRIPTION:**

This project will provide for three-porta potties and two-6 cubic yard dumpsters on the southern and northern sides of the Kasilof River during the months of May, June and July, and the first week of August 2008. Facilities provided may be adjusted as demand becomes apparent during the season. The project includes twice-weekly pick-up/cleaning of the facilities. The facilities will be placed as nearly adjacent as possible to the point where Personal Use fishers congregate. The project is initiated in response to the habitat degradation that occurs during spring and summer due to human waste pollution that is deposited on Kasilof sand dunes and riparian areas with negative effect on bird nesting

habitat and fragile sand dunes. The Kenai Peninsula Borough will begin a dialogue with agencies responsible for management of the mouth of the Kasilof River to find a long-term solution to the problem.

**MEASURABLE GOALS AND OBJECTIVES:**

The Kenai Peninsula Borough will locate three porta-potties and two-6 cubic yard dumpsters (perhaps modified as demand becomes apparent) on the southern and northern sides of the Kasilof River during the months of May, June and July and the first week of August, for one season. The Kenai Peninsula Borough will record evidence of dialogue between the Alaska Department of Natural Resources and the Borough on possible long-term solutions to this problem.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

The proposed project activities are most closely aligned with CIAP Authorized Use #1, Project and activities for the conservation, protection, or restoration of coastal areas.

The population growth of southcentral Alaska and the popularity of personal use fishing at the mouth of the Kasilof River have out-stripped government response to habitat degradation in the area. By providing fishers with alternative bathroom and garbage facilities, this measure will offer protection and conservation to sensitive sand dunes and riparian areas at the mouth of the Kasilof River while a longer-term solution to the problem is addressed. The City of Kenai has successfully utilized porta-potties and dumpsters as a pollution mitigation measure in other high- use recreational areas. Such efforts have resulted in immediate improvements to habitat protection.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Kenai Peninsula Borough will coordinate in concert with the Kenai River Center, a state and federal multi-agency resource and permitting facility, and the Alaska Department of Natural Resources to find a more permanent solution to the problem.

**COST SHARING OR MATCHING OF FUNDS:**

No cost sharing or matching funds have been identified for this project.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

KENAI PENINSULA BOROUGH

**PROJECT TITLE: Crooked Creek State Recreational Area River Bank Restoration**

**PROJECT CONTACT**

Gary Williams, Kenai Peninsula Borough Coastal District Program Coordinator  
514 Funny River Road, Soldotna, Alaska 99669  
Telephone Number: (907) 714-2216  
Fax Number: (907) 260-5992  
E-Mail: [gwilliams@borough.kenai.ak.us](mailto:gwilliams@borough.kenai.ak.us)

**PROJECT LOCATION:**

Crooked Creek is a tributary of the Kasilof River, which is located on the western Kenai Peninsula in southern Alaska. The Kasilof River begins at Tustumena Lake and flows northwest to Cook Inlet near the community of Kasilof. Both the Kasilof River and Crooked Creek are located within the coastal zone.

**PROJECT DURATION:**

4 Years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
189,240	30,000	53,080	53,080	53,080

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
189,240	30,000	53,080	53,080	53,080

**PROJECT DESCRIPTION:**

The riverbank adjacent to the confluence of Crooked Creek and the Kasilof River has experienced severe trampling by fishers over many years. The bank is eroding to the extent that trees are becoming islands and fish habitat is being lost. This project will restore a portion of the damaged area by installing coir log, spruce tree revetment at the water's edge and a willow shrub mat in the adjacent upland to restore the trampled area. The restoration will occur according to technical standards as described in the Streambank Revegetation and Protection, A Guide for Alaska, 2005 revised edition. The

project will also include light penetrating walkways and stairs to enable fishers to access the river without trampling vegetation.

**MEASURABLE GOALS AND OBJECTIVES:**

Year 1:

- Install barriers in areas slated for restoration in Year 2 so further trampling of the riverbank will not occur. Create at least one low impact access point for anglers to use during restoration.
- Install at least one sign at the restoration site to acknowledge the source of funding, to describe the purpose for the project, to direct fishers to appropriate access points, and to protect the area of restoration from access.

Year 2:

- Restore 100 feet of riverbank by installing spruce tree revetment, coir log, willow shrub mat and other restorative measures as appropriate.
- Maintain at least one sign to acknowledge the source of funding, to describe the purpose for the project, to direct fishers to appropriate access points, and to protect the restored area from access public access.
- Maintain at least one low impact public access point to enable the public to access the river.
- Maintain barriers around the restored area as needed to protect restored areas.

Year 3:

- Restore 100 feet of riverbank (200 feet total) by installing spruce tree revetment, coir log, willow shrub mat and other restorative measures as appropriate.
- Install and maintain barriers around the restored areas as needed to protect the restored area from public access.
- Maintain at least one sign to acknowledge the source of funding, to describe the purpose for the project, to direct fishers to appropriate access points, and to protect the area of restoration from access.
- Maintain at least one low impact public access point to enable the public to access the river.
- Maintain barriers around areas restored in previous years as needed to protect restored areas.

Year 4:

- Install 70 linear feet of light penetrating walkways and stairways.

- Maintain at least 1 sign to acknowledge the source of funding, to describe the purpose for the project, to direct fishers to appropriate access points, and to protect the area of restoration from access.
- Maintain at least one low impact public access points to enable the public to access the river.
- Maintain barriers around areas restored in previous years as needed to protect restored areas.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE**

The proposed project activities are most closely aligned with CIAP Authorized Use #1, *Project and activities for the conservation, protection, or restoration of coastal areas.*

This area has been heavily impacted by fishers for many years without riparian management to keep the river bank from being eroded by foot traffic. The project will restore riverbank and riparian habitat along a portion of the affected area. This approach will protect the area being restored until it has returned to a natural state.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Kenai Peninsula Borough developed this project in coordination with the Kenai River Center, a state and federal multi-agency resource and permitting facility.

**COST SHARING OR MATCHING OF FUNDS:**

It is unclear at this time whether CIAP funds will be used for cost sharing or matching purposes. If these funds are used for these purposes, the final CIAP grant application will include a letter from the state, federal, or local agency charged with administering the program that includes the cost sharing or matching requirement indicating that the other agency's program allows the use of federal CIAP funds to meet cost sharing or matching requirements.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

KENAI PENINSULA BOROUGH

**PROJECT TITLE: CIAP Planning and Administration**

**PROJECT CONTACT:**

Gary Williams, Kenai Peninsula Borough Coastal District Program Coordinator  
514 Funny River Road, Soldotna, Alaska 99669  
Telephone Number: (907) 714-2216  
Fax Number: (907) 260-5992  
E-Mail: [gwilliams@borough.kenai.ak.us](mailto:gwilliams@borough.kenai.ak.us)

**PROJECT LOCATION:**

Kenai River Center, Kenai Peninsula Borough

**PROJECT DURATION:**

4 Years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
25,500	6,375	6,375	6,375	6,375

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
25,500	6,375	6,375	6,375	6,375

**PROJECT DESCRIPTION:**

The Coastal District Coordinator will manage the flow of money to projects and insure that the projects are conducted according to contractual agreements. The Coordinator will provide reports to the Kenai Peninsula Borough Administration and other state and federal entities as required.

**MEASURABLE GOALS AND OBJECTIVES:**

Contracts are effectively administered to achieve intended results. Reports are filed in a timely manner.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with CIAP Authorized Use #3: *Planning assistance and the administration of complying with this section.*

The borough has learned through previous CIAP projects that attention to the administration and contract compliance assurance is key to insuring that money is spent appropriately and maximum benefit is achieved. The Coastal Coordinator is a seasoned project and contract administrator.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Coastal District Coordinator who will be managing the CIAP grants also implements the Alaska Coastal Management Program (ACMP) for the borough and manages the ACMP Grants, which are provided through Federal Section 306 and 309 funding. This connection allows for enhanced coordination of project funding efforts.

**COST SHARING OR MATCHING OF FUNDS:**

No cost sharing or matching funds have been identified for this project.

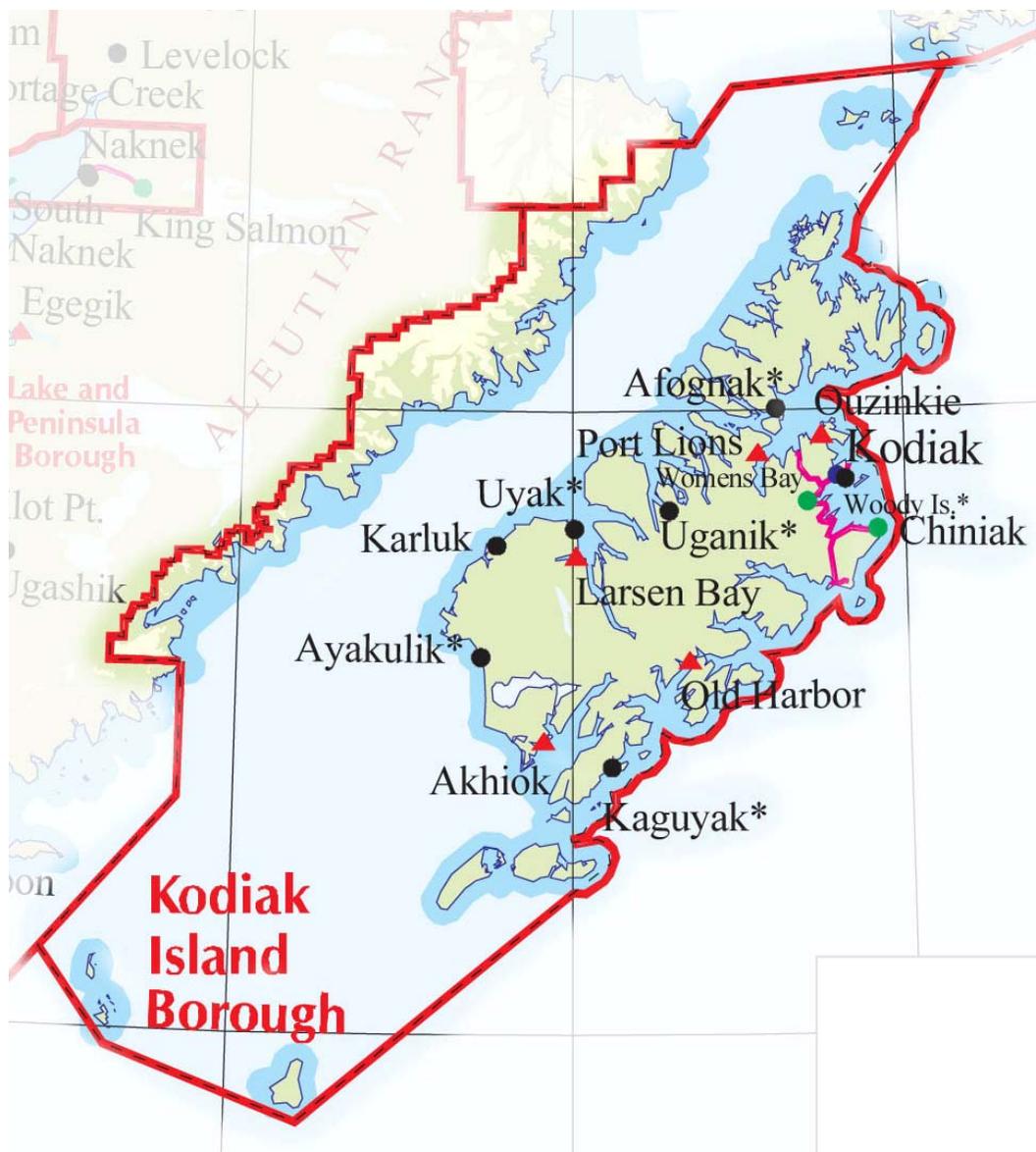
# KODIAK ISLAND BOROUGH

## TIER 1 CIAP PROJECTS

1. Metal Debris Clean Up and Removal
2. Trail Hardening or Relocation to Enhance and Improve Coastal Water Quality and Stream Habitat
3. Public Education on the Value of Conserving Wetlands and Other Coastal Habitats
4. Mapping of Coastal and Marine Resources

## TIER 2 CIAP PROJECTS

1. Coastal Erosion Study



STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

KODIAK ISLAND BOROUGH

**PROJECT TITLE: Metal Debris clean-up and removal**

**PROJECT CONTACT:**

Charles E. (Bud) Cassidy, Director, Community Development Department  
Kodiak Island Borough  
710 Mill Bay Road, Kodiak, Alaska 99615  
Telephone Number: 907-486-9360  
Fax Number: 907-486-9396  
E-Mail: bcassidy@kib.co.kodiak.ak.us

**PROJECT LOCATION:**

- 1) Spruce Cape Beach
- 2) Monashka Bay/VFW Beach
- 3) Kodiak Communities of Ouzinkie, Port Lions, Larsen Bay, Karluk, Akhiok, and Old Harbor

**PROJECT DURATION:**

4 Years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
160,000	40,000	40,000	40,000	40,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
160,000	40,000	40,000	40,000	40,000

**PROJECT DESCRIPTION:**

This project will clean-up and remove hazardous material and metal debris in Kodiak Island Borough communities and along selected shoreline segments. Kodiak is an island archipelago. The only viable methods of recycling and disposal are expensive due to the high cost of shipping.

Spruce Cape Beach is a former community waste dump where solid waste was for years simply dumped over the side of the high bank by the City of Kodiak in order for the tide to take the trash out to sea as a means of disposal. Of course, this practice was abandoned

many years ago; however, all that remains now are larger pieces of metal which were too large to be moved by the tide. These abandoned metal parts pose an aesthetic blemish on the beach. However, more importantly they also constitute a safety hazard to marine mammals. The abandoned metals act as an artificial reef attracting near shore prey species, which then attract marine mammals. The marine mammals such as seals, sea lions and otters may become injured upon the abandoned metal in pursuit of prey.

The VFW beach along Monashka Bay was the site of a ship grounding sometime after WWII. The vessel has long been determined to be of no historical significance. It was a retired vessel used in WWII that was intended to be scuttled off shore. The chosen method of scuttling, however, was to use the vessel for target practice rather than opening sea doors or using demolition techniques. The vessel did not sink as planned and eventually drifted ashore to where it now rests. Over the years, no effort was made to preserve, sustain or salvage the rusting hulk. Most of the vessel has rusted away except for the substantial keel and ship bottom, which protrudes from the beach sand. Large panels of rusting steel from the hull have become detached from the hulk, are scatter along the beach, and have become embedded in the near shore habitat zone. Similar to the Spruce Cape Beach segment, the rusting metal has become scattered and embedded in the nearshore habitat such that it has become a safety hazard for marine mammals and human users alike who use this area for subsistence salmon fishing.

Metal and household hazardous waste removal has always been a problematic waste issue in the villages of the Kodiak Archipelago. It is very expensive to ship batteries and hazardous materials from the villages, including household hazardous materials, antifreeze, etc. As a result, vehicles, appliances and metal containers that are shipped to the villages are very seldom disposed of appropriately. The villages of Kodiak are small enough (less than 300 people each) that their landfills are only minimally regulated by the Alaska Department of Environmental Conservation. Metals are often segregated and stockpiled in the villages awaiting shipment back to Kodiak for proper disposal.

The villages of Kodiak Island are located in areas adjacent to lagoons, estuaries and anadromous streams, which are prime nursing and spawning areas for marine mammals and many fish and shellfish species.

In the past, the Kodiak Island Borough has purchased a barrel crusher, oil/water separator, and a used oil burner. The borough provided training for each village to assist with making it easier to back haul the waste containers back to the main borough landfill and recycling center. Many of the containers shipped to the villages are used to transport petroleum products and household hazardous materials. Even though the communities have been good about crushing the metal containers, they have been building up in the communities for a number of years. Each container likely contains a small amount of residue from the original product and the cumulative total of those crushed cans represents a substantial threat to the local environment both from the standpoint of terrestrial mammals to that of anadromous species.

In addition, there are also many abandoned vehicles and appliances stored in these communities. In many cases, the threat is not so much from the metal in the junk vehicle or appliance as it is from the fluids and insulation contained in these items. Undrained oils and lubricants in vehicles, antifreeze residue, insulation in refrigerators and freezers as well as the refrigerant itself all present a hazard to the local flora and fauna when left to deteriorate in the local village landfill (or in some cases on residential lots in the town).

Abandoned metals are often wrecked or vandalized so that the fluids and insulation padding is exposed, making it more likely that a hazardous release or spill may occur. In addition, the insulation and padding associated with abandoned cars and appliances represents a desirable nesting material for many species of bird and mammal which can spread the material far and wide.

In other cases, the piles of junk vehicles and appliances stored near a remote landfill can become a nesting site for small animals, which makes it an attractive nuisance for larger mammals like fox and bear. Sometimes the junk vehicles and appliances are attractive to non-native species such as rats and mice imported to the community in food shipments or on commercial vessels. At other times, they may harbor feral dogs and cats no longer tended to by village residents.

**MEASURABLE GOALS AND OBJECTIVES:**

Year 1:

- Remove and dispose of (or recycle) residual shipwreck metal debris at VFW beach. May require U.S. Army Corps of Engineers permit, ADNR permit, ADF&G or FWS (timing) permit.

Year 2:

- Remove and dispose of (or recycle) large metal wastes from former dumpsite along the shoreline at Spruce Cape.

Year 3:

- Remove and dispose of (or recycle) household hazardous waste and related metals stockpiled in the communities of Old Harbor, Akhiok and Karluk

Year 4:

- Remove and dispose of (or recycle) household hazardous waste and related metals stockpiled in the communities of Larsen Bay, Port Lions and Ouzinkie.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is most closely aligned with CIAP Authorized Use #1, *Project and activities for the conservation, protection, or restoration of coastal areas.*

There are no authorized metal disposal sites in the outlying borough communities and metals from abandoned or wrecked vessels, domestic appliances and automobiles are collected and stockpiled by the local communities for eventual removal. While removal costs are beyond the reach of these communities, the stockpiled metals are slowly rusting

and oxidizing away in close proximity to beach marine environments and near anadromous streams. Removal of the metal debris stockpiled in remote villages and along identified shoreline segments will protect coastal areas around the Kodiak Island Borough from the contaminants associated with the debris and from the safety hazards the contaminants pose to wildlife.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

With the exception of Port Lions and Ouzinkie, the other four villages located within the Kodiak Island Archipelago are also located within the Kodiak National Wildlife Refuge. The refuge shares the borough's concern about the environmental quality in these areas and the impact that harboring non-native species may have on the natural flora and fauna of the refuge.

Both the refuge and the Kodiak Island Borough subscribe to the best practices of the Kodiak Island Archipelago Bear Management Plan, which was developed, by the Alaska Department of Fish and Game. This document covers a great number of bear concerns and suggests "best practices" on how to manage and improve bear habitat both within and outside of the refuge proper. In the Kodiak "Road System," the community has spared no expense to purchase bear resistant dumpsters and electric fences to surround all active landfill and to adopt a pro-active approach to avoiding negative human/bear encounters. The outlying village communities of Kodiak also share these values; however, their ability to enact "best practices" has been hampered by geography and economics.

The borough would also expect to coordinate with the Natural Resource Conservation Service, which maintains a local office in Kodiak. With regard to moving metals from the nearshore tidal area, borough staff would confer with the National Oceanic and Atmospheric Administration (NOAA), which maintains an office locally, to ensure that any best practices are followed by a qualified metal removal contractor.

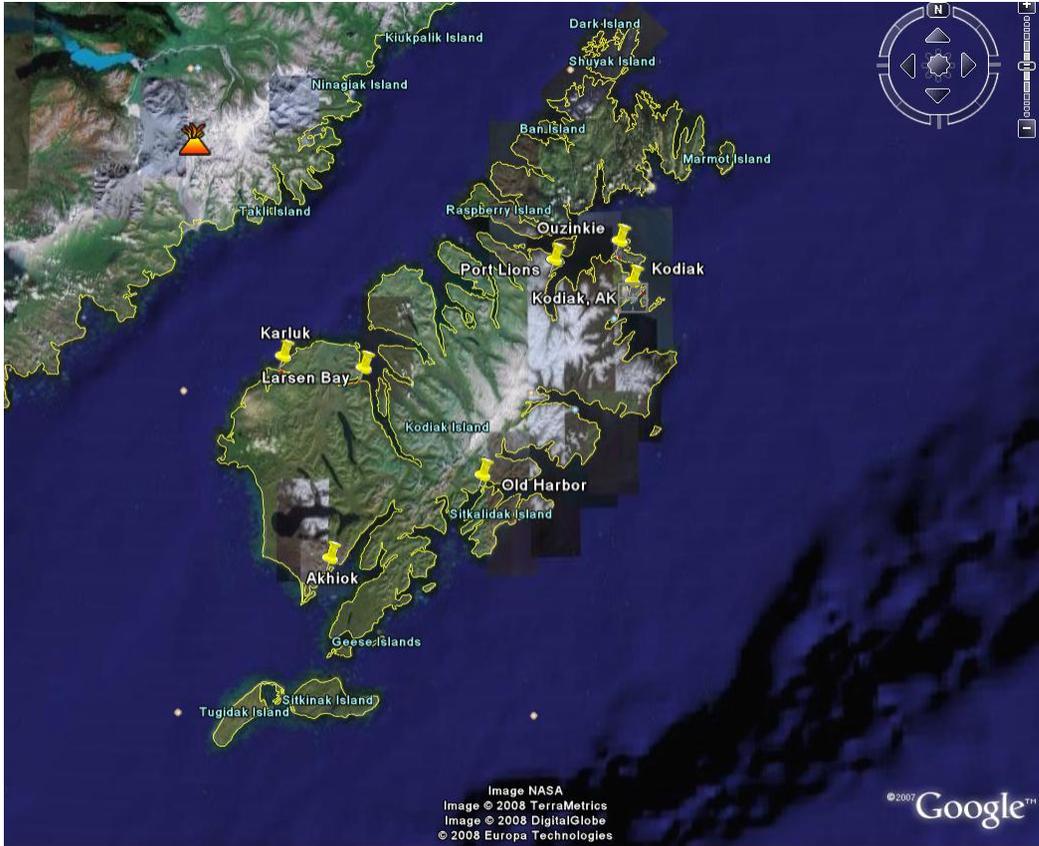
Removing metal from the beach sites may require a permit from the U.S. Army Corps of Engineers due to the potential beach disturbance, which may be required to affect the clean up. This will be determined at the time the project is slated to move forward.

Lastly, the borough will also coordinate with the United States Coast Guard regarding regulations pertaining to the handling and shipping of household hazardous waste and related metal in the form of vehicles, appliances and waste containers, which may have a potential for hazardous material release in transit to a recycling or approved waste disposal site.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost of sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

# Kodiak Island Borough, Project 1



# Kodiak Island Borough, Project 1

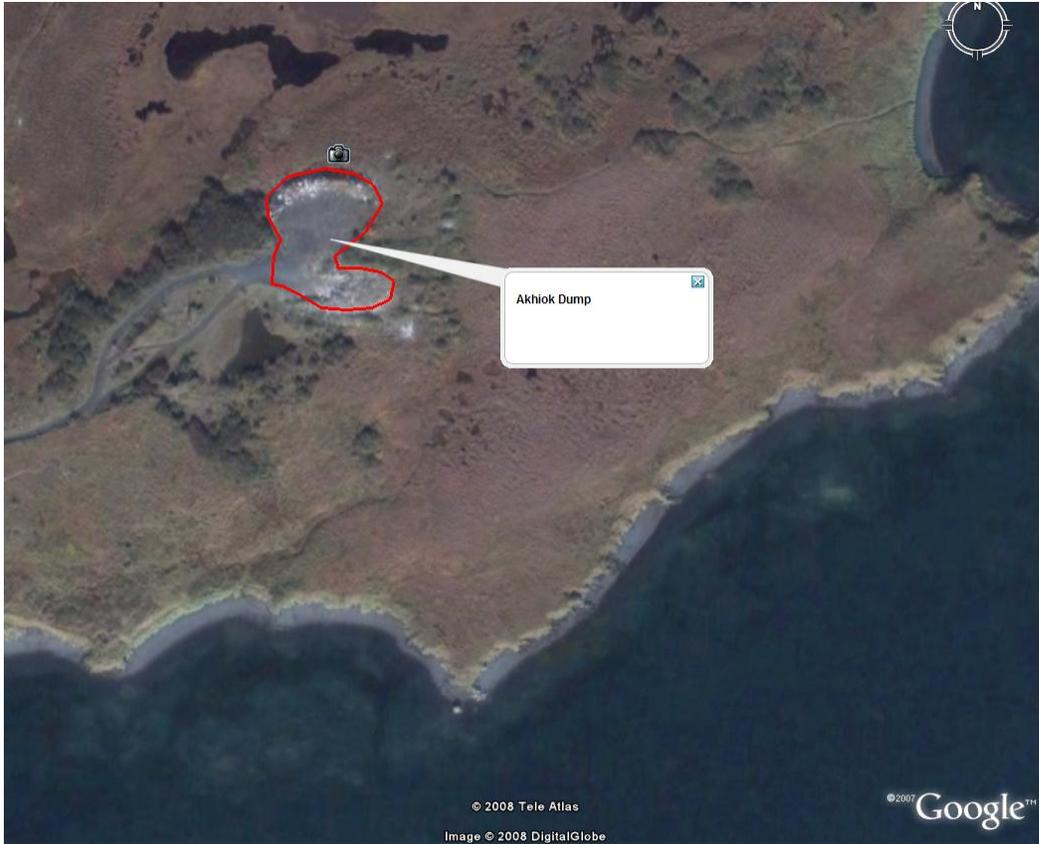


# Kodiak Island Borough, Project 1



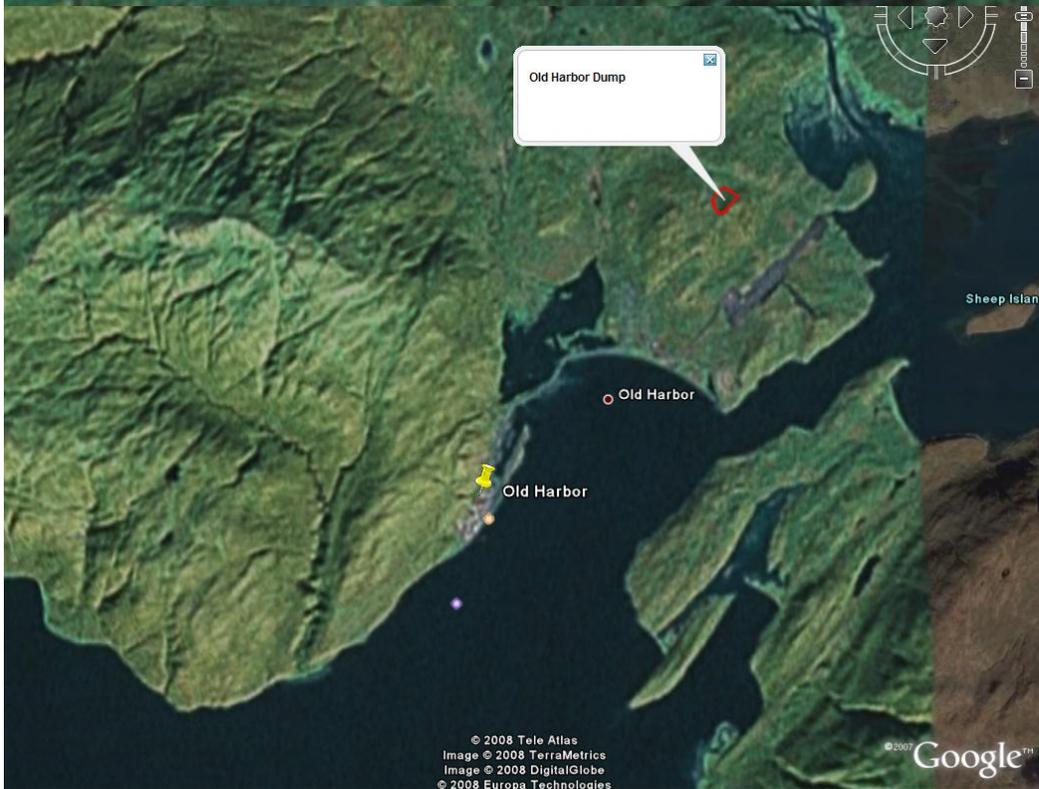
# Kodiak Island Borough, Project 1



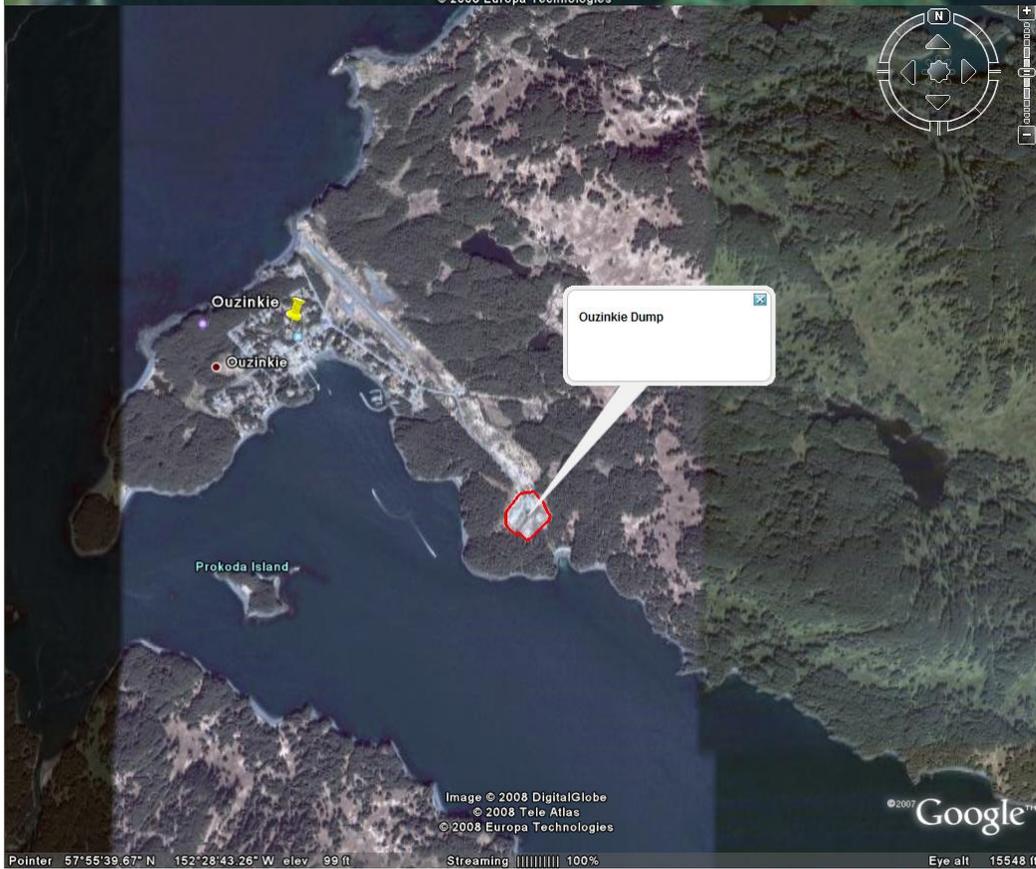
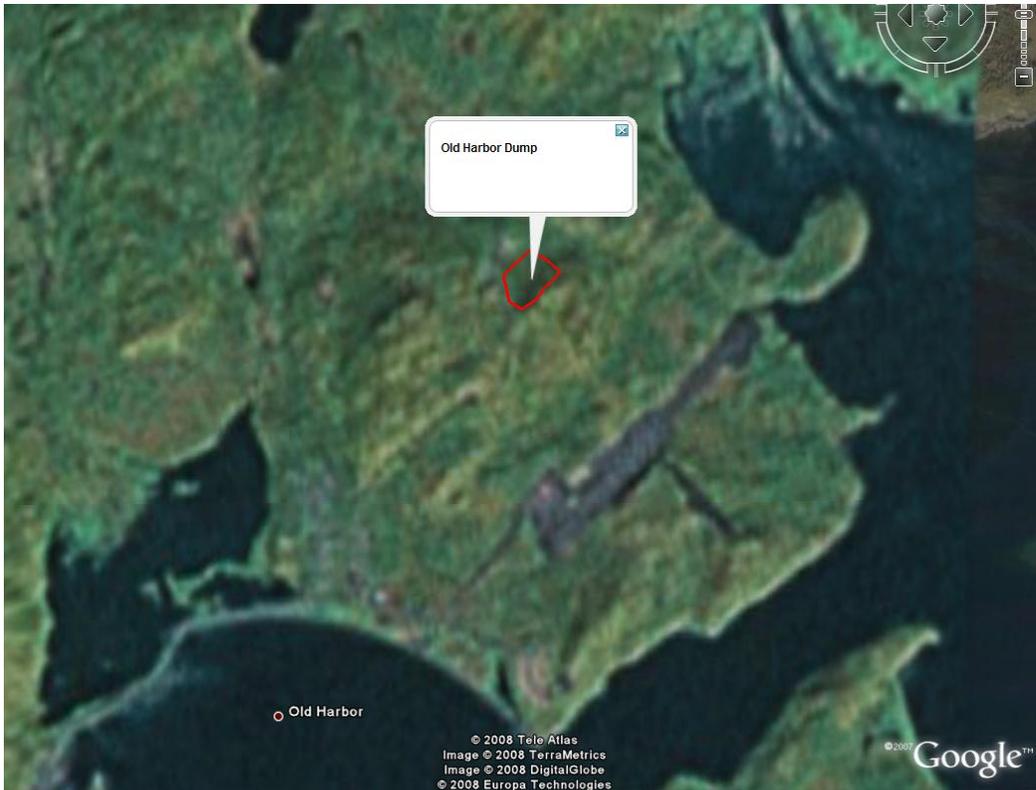




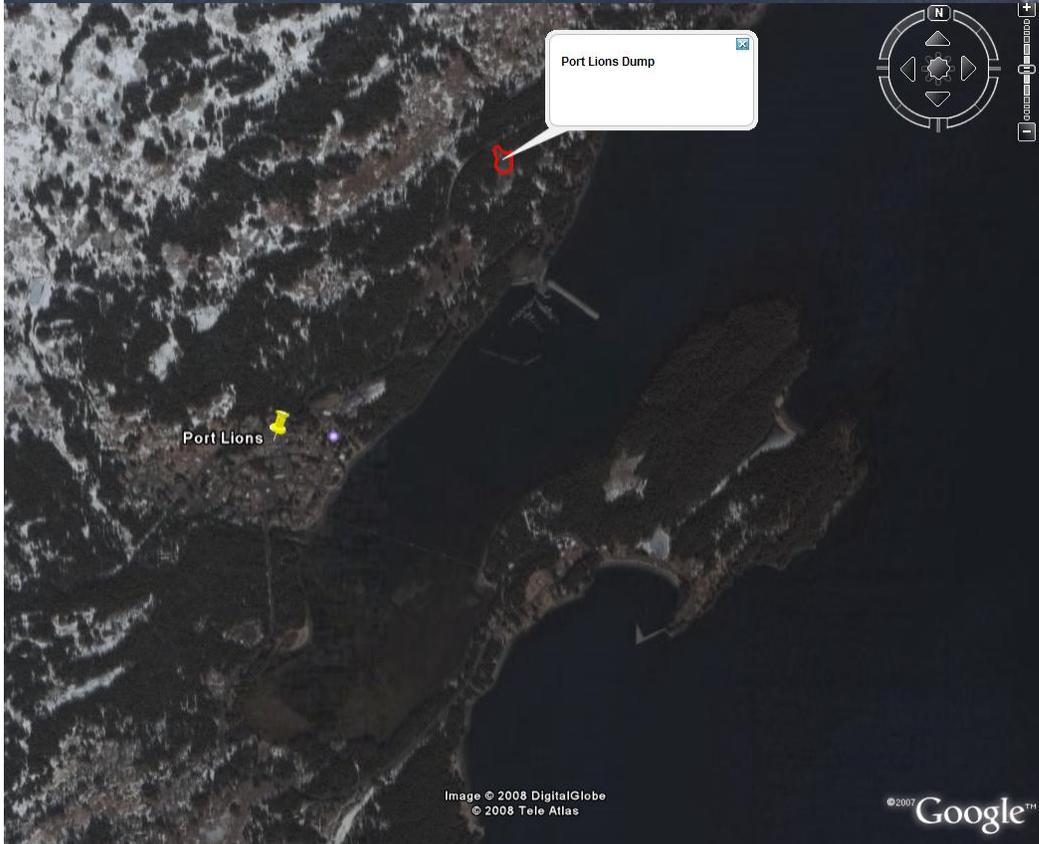
# Kodiak Island Borough, Project 1

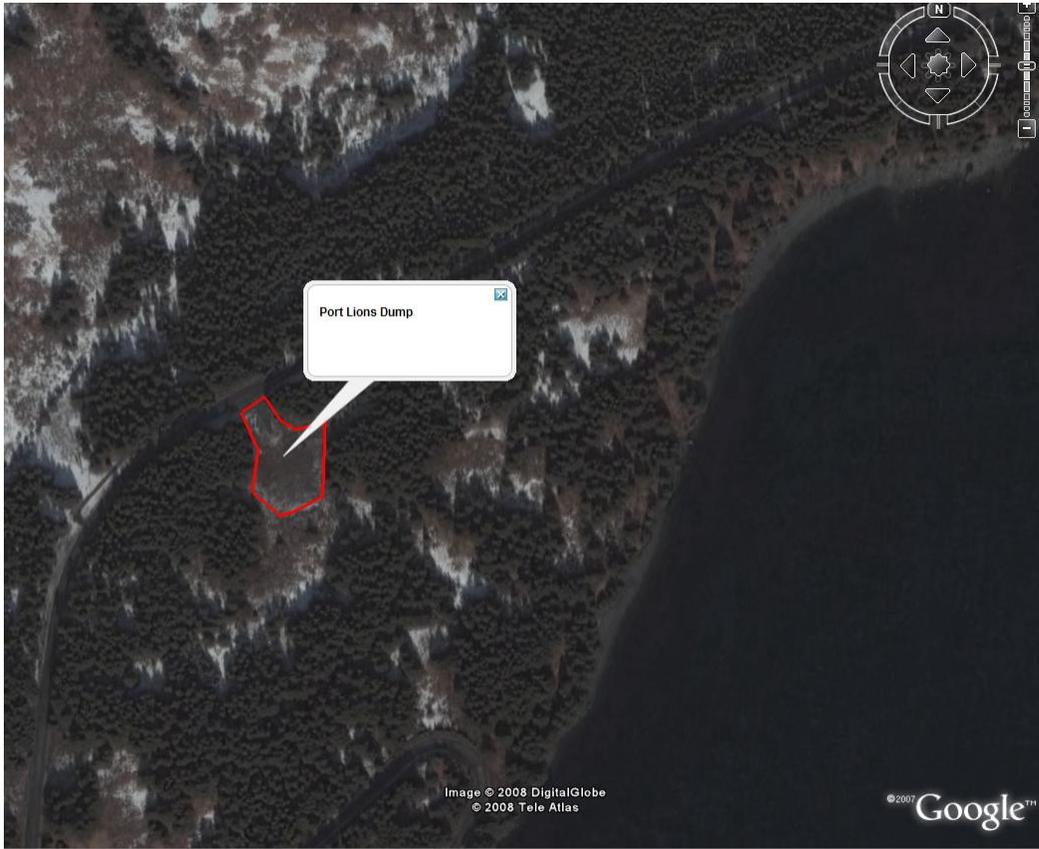


# Kodiak Island Borough, Project 1



# Kodiak Island Borough, Project 1





STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

KODIAK ISLAND BOROUGH

**PROJECT TITLE: Trail Hardening or Relocation to Enhance and Improve Coastal Water Quality and Stream Habitat**

**PROJECT CONTACT:**

Charles E. (Bud) Cassidy, Director, Community Development Department  
Kodiak Island Borough  
710 Mill Bay Road, Kodiak, Alaska 99615  
Telephone Number: 907-486-9360  
Fax Number: 907-486-9396  
E-Mail: bcassidy@kib.co.kodiak.ak.us

**PROJECT LOCATION:**

This project includes updating the Kodiak Island Borough (KIB) “Road System” Trails Plan and hardening or relocating selected segments of the following trails:

- Saltery Cove Road/Trail
- Portage Cove Trail
- Antone Larsen Bay to Sharatine Bay Trail

All the trail work proposed is within the coastal zone.

**PROJECT DURATION:**

4 Years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
94,000	23,500	23,500	23,500	23,500

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
94,000	23,500	23,500	23,500	23,500

**PROJECT DESCRIPTION:**

In 2003 and 2004, the borough embarked upon the first phase of a trail planning process to consider the use of existing all-terrain vehicle (ATV) and off-road vehicle (ORV) trails accessible from the Kodiak “road system.” A background study and trail user survey was completed, as well as some GPS mapping of trails, during this period. This CIAP project will build on these initial efforts by first identifying the trail segments exhibiting the

highest habitat values and the greatest degree of environmental degradation due to trail use. The project will then harden or relocate certain unimproved off-road vehicle and multi-use trails in order to enhance and improve coastal water quality and anadromous stream habitat.

Unrestricted all-terrain vehicle and off-road vehicle use, and unplanned trail development occurring over the years have contributed to significant erosion and degradation of riparian areas and trails in the Kodiak Island Borough. Both permitted and non-permitted ATV and ORV stream fords have caused trampled stream banks, destroying vegetation and accelerating erosion into waters used by anadromous fish. Trails created from unrestricted recreational use have been developed without planned construction techniques, contributing to severe erosion problems, impacts to wetland areas, and destabilized stream crossings. These user impacts have led to poor drainage patterns, bank destabilization, deep rutting, mud holes, widened tread, damage to vegetation, and year-round standing water. A combination of poor trail location and unsuitable terrain has increased erosion and enhanced trail braiding.

In an effort to minimize detrimental impacts to riparian areas and wetlands and improve stream habitat, the KIB will relocate trails to avoid sensitive habitat; stabilize eroding stream banks and construct bridges to improve stream crossings; and rehabilitate severely degraded wetland areas through trail hardening.

In the initial year of the project, the Kodiak Island Borough will complete the KIB “Road System” Trail Plan in order to update all trail data. The Trail Plan will identify those trail segments that are most in need of hardening or relocation in order to restore streams and wetland areas degraded by ATV and ORV use. The KIB will use nationally recognized trail management criteria, techniques and “best management practices” to establish a priority list of potential trail projects in those areas accessible to the bulk of the borough population.

In the second, third and fourth years of the project, the KIB will partner with the Kodiak Soil and Water Conservation District (KSWCD), or other not-for-profit trail or conservation groups to relocate and/or harden trails located in wetlands or sensitive habitat on the Saltery Cove Road/Trail, Portage Cove trail and the Anton Larsen Bay to Sharatin Bay Trail. Bridges will be installed as appropriate at ORV stream fords to reduce the impact off-road vehicle fords have had on anadromous streams. All the trail improvements will occur within the coastal zone.

### **MEASURABLE GOALS AND OBJECTIVES:**

#### **Year 1:**

Complete a KIB “Road System” Trail Plan in order to update all trail data and identify the trail segments that are most in need of hardening or relocation.

Establish a priority list of potential trail projects in those areas accessible to the bulk of the borough population.

Year 2:

Relocate and/or harden 2,000 lineal feet of trail located in wetlands or sensitive habitat along the Saltery Cove Road/Trail.

Year 3:

Relocate and/or harden 2,000 lineal feet of trail located in wetlands or sensitive habitat along the Portage Cove Trail.

Year 4:

Relocate and/or harden 2,000 lineal feet of trail located in wetlands or sensitive habitat along the Anton Larsen Bay to Sharatin Bay Trail.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

These projects are eligible under CIAP Authorized Use #1, *Project and activities for the conservation, protection, or restoration of coastal areas.*

Trail improvements on heavily used trails will protect and restore anadromous coastal areas and wetlands. Recent trail studies, as part of a borough “Road System” Trails Plan identified several trail segments with high public use characteristics, which were subject to observable soil erosion and vegetative disturbance directly affecting anadromous streams and wetlands. These trails are ANCSA 17(b) easements or located on public (State of Alaska) lands, which cannot be otherwise managed to exclude or restrict off-road vehicle usage so that trail hardening is deemed the only viable method of improving the coastal water quality and anadromous stream habitat. To the extent feasible, trail alignments will be fixed (with the approval of the underlying landowner) and the trails hardened or relocated in order to eliminate braided trail segments and trail alignments on steep slope areas that are most vulnerable to erosion. Additional bridging effort will be considered to improve water quality in the downstream vicinity of approved and non-approved stream fords.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

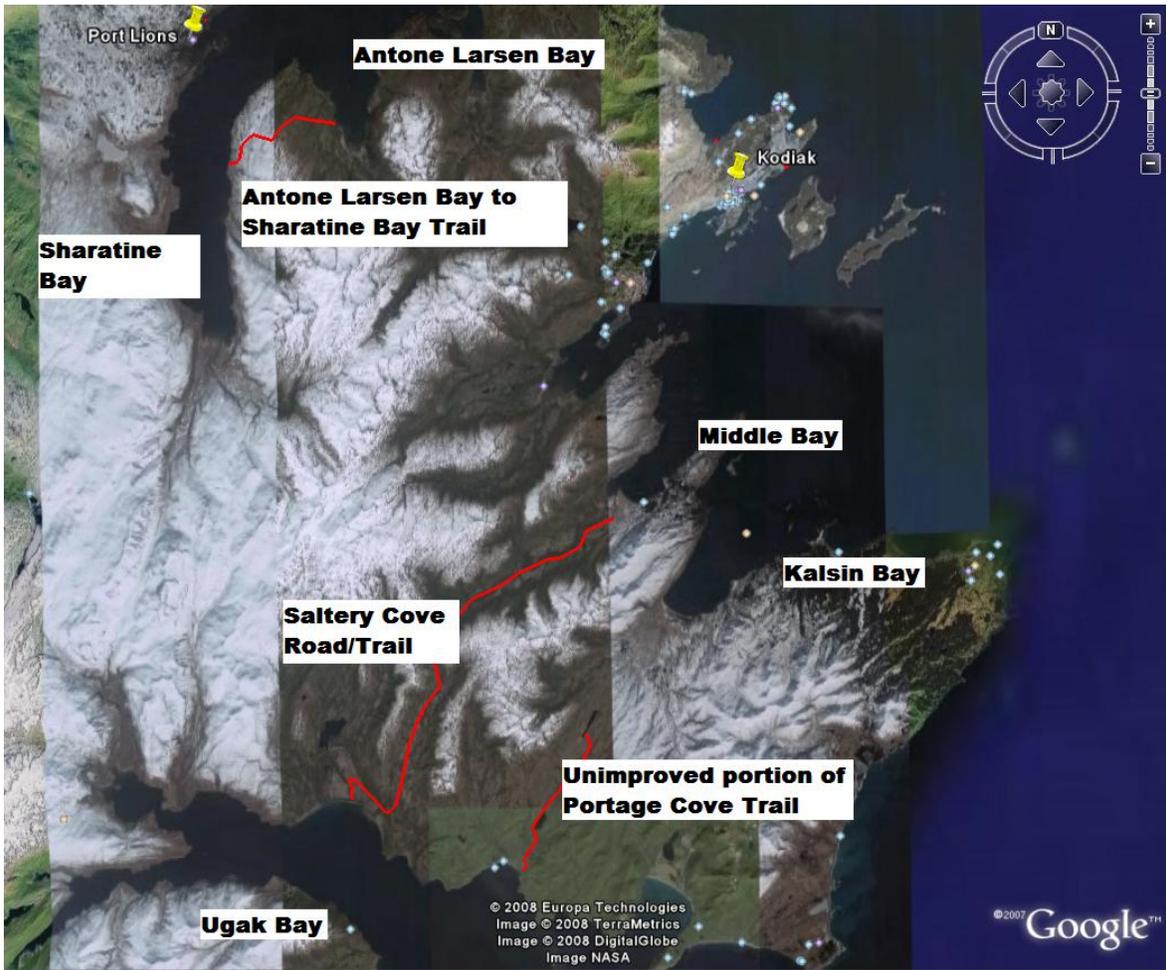
The Kodiak Island Borough would coordinate these planning and trail improvement activities with the Natural Resource Conservation Service (NRCS) and a local non-profit trails organization called the Island Trails Network. Many of the trails along the Kodiak “Road System” provide access to state lands that are used for grazing and public recreation purposes. Improvements to trails that are designated as ANCSA part 17B easements may require some coordination with Bureau of Land Management or other responsible federal custodian for such designated trail easements.

In the past, the Kodiak Island Borough has requested and received technical support in its trail planning efforts from the National Park Service (NPS). The borough would try to include the NPS to the greatest extent possible in development of the planning process, assisting with meeting facilitation and providing other technical assistance with mapping and best management practices as appropriate.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost of sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

Efforts will be made within the community to match grant dollars with volunteer labor and equipment time by working with local trail groups such as the Island Trail Network and other unincorporated trail user groups.



STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

KODIAK ISLAND BOROUGH

**PROJECT TITLE: Public Education on the Value of Conserving Wetlands and Other Coastal Habitats**

**PROJECT CONTACT:**

Charles E. (Bud) Cassidy, Director, Community Development Department  
Kodiak Island Borough  
710 Mill Bay Road, Kodiak, Alaska 99615  
Telephone Number: 907-486-9360  
Fax Number: 907-486-9396  
E-Mail: bcassidy@kib.co.kodiak.ak.us

**PROJECT LOCATION:**

Borough wide

**PROJECT DURATION:**

1 Year

**ESTIMATED COST:**

Spending Estimate (\$)	
TOTAL	Year 4
\$9,670.52	\$9,670.52

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
\$9,670.52	0	0	0	\$9,670.52

**PROJECT DESCRIPTION:**

This project focuses on educating the general public about the value of conserving wetlands and other coastal habitats through the following efforts:

1. Update, publish, and distribute an educational brochure about the damage caused by crossing salmon streams with all terrain vehicles (ATVs) and off road vehicles (ORVs), featuring “Lester Lightfoot,” the state trail mascot.
2. In partnership with recreation and conservation groups such as the Kodiak Audubon Society, Island Trail Network or Kodiak Soil and Water Conservation District, develop and deliver an educational hike program for all ages and abilities in order to educate people about value of conserving coastal habitat. The hikes

will occur in coastal areas, near anadromous streams or near high value wetland habitat

The need for public education on the value of conserving wetlands and other coastal habitats was one of the findings made by the “ATV Stakeholder Committee” which was empaneled by the KIB Assembly in 2003 and 2004. This finding was based on evidence that most environmental damage and reckless use of ATV’s and ORV’s was due to ignorance of the importance of wetlands, anadromous streams and other coastal habitats.

One of the reasons for this finding relates to the fact that Kodiak is home to the largest U.S. Coast Guard (USCG) base in the nation, based on the number of service personnel. The USCG base is like a city unto itself, except for the fact that fully 1/3 of its population rotates to other duty stations or separates from service each year. In addition to the typical in-migration/out-migration that Kodiak might otherwise see, many of these service personnel fit the demographic of generally younger persons with disposable incomes that allow for ATV purchase and a high interest in outdoor recreational activities, whether that means going fishing on an ATV or just riding the ATV itself.

Over the years, unrestricted all-terrain vehicle and off-road vehicle use, and unplanned trail development have contributed to significant erosion and degradation of riparian areas and trails in the Kodiak Island Borough. Both permitted and non-permitted ATV and ORV stream fords have caused trampled stream banks, destroying vegetation and accelerating erosion into waters used by anadromous fish. Trails created from unrestricted recreational use have been developed without planned construction techniques, contributing to severe erosion problems, impacts to wetland areas, and destabilized stream crossings. These user impacts have lead to poor drainage patterns, bank destabilization, deep rutting, mud holes, widened tread, damage to vegetation, and year-round standing water. A combination of poor trail location and unsuitable terrain has increased erosion and enhanced trail braiding.

In 2004, Stacy Studebaker, a teacher, member of the local Audubon Society, and a member of the ATV Stakeholder Committee developed an educational brochure. he developed the “Lester Lightfoot” character, which the Kodiak Island Borough and State of Alaska has now adopted as a symbol on some of its educational materials. This project will update the brochure to show current approved stream crossings, and will print and distribute the brochure (the original brochure is included with this project description). The ATV Stakeholder Committee highlighted the need for environmental education for ATV users. The brochure effectively distributed the message. Since its development, the local ATV dealers have been handing the brochures out with each new ATV purchase and the USCG includes the brochure in each welcoming packet for new arrivals. Additionally, the brochures are available at tourist kiosks around town and distributed to specific trail user groups.

Since the formation of the ATV Stakeholder Committee and the development of the brochure, there has been an increase in local interest and involvement in environmental protection through improved trail maintenance. A local trail non-profit has recently been

formed, the Island Trail Network, Inc. Several trail improvement projects have been undertaken with grant funds in order to repair and relocate certain damaged trails to improve habitat while still allowing multiple use of the trails. These projects have been successful largely due to the volunteer labor provided by local ATV enthusiasts who have shown the ability to mobilize their human and motorized resources when the need is made apparent to them. These efforts demonstrate the success of the ATV Stakeholder Committee and its educational efforts.

The second component of this project involves the development of an environment education hiking program. Local groups such as the Kodiak Audubon Society and the Island Trails Network already have a program of guided hikes that provides both an opportunity for familiarization with the local trails themselves but also may provide some educational information about the local flora and fauna unique to each trail locale. In particular, the Kodiak Island Borough has in the past funded the insurance for the Audubon Hiking Program; thereby leveraging its magnitude as an insured organization to obtain insurance coverage for this worthwhile community project. Based on this existing relationship, we would ask of the Audubon Society (and other trail organizations in the community) to designate a small percentage of their hikes to focus on a discussion of trail use and habitat preservation for those trail walks in or near coastal areas, wetlands or anadromous streams.

### **MEASURABLE GOALS AND OBJECTIVES:**

- Publish and distribute 7,500 educational brochures about the damage caused by crossing salmon streams with ATVs and ORVs within one year of grant award.
- Conduct five educational hikes in coastal areas, near anadromous streams or near high value wetland habitat in order to educate people about the value of conserving coastal habitat.

### **PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

These projects are eligible under CIAP Authorized Use #1, *projects and activities for the conservation and protection of coastal areas.*

Only an informed public will have an interest in voluntary conservation or protective efforts. This proposed public education project will work to protect coastal areas and wetlands in conjunction with a separate on-the ground trail hardening project also proposed under CIAP (Kodiak Island Borough CIAP Project 2). While the trail hardening will consolidate the trails, allowing degraded wetland areas to be restored to a more natural state, the education component described in this project will emphasize the value of adhering to the trails and respecting the environment. As noted above, much of the population in Kodiak is transient. New comers are often unfamiliar with the value of coastal areas, anadromous fish streams, and wetlands and are not aware of the need to protect such areas. The increased public interest in protecting coastal areas created by the original brochure has led to increased volunteer involvement in trail rehabilitation projects, leading to restored wetlands. The educational hiking program will target a separate group of citizens. It is presumed that an increase in awareness of human impacts

on the coastal environment will continue to result in an increased interest in protecting the environment and volunteer conservation or protection efforts.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The KIB will request technical assistance from the National Park Service to help to develop a simple and standardized educational program based on Kodiak trail and habitat values. The KIB will also pursue partnering with the local office of the National Resource Conservation Service in this regard.

The Kodiak Island Borough will request that the USCG continue to distribute the brochures to new arrivals.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost of sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.



# WE ALL LOVE FISH

Protecting Salmon Habitat = Good Fishing for many generations of humans, bears, eagles and foxes!

Wild Salmon are one of Kodiak's most valuable renewable resources. Our fish are worth millions of dollars to the commercial, sport, personal use and subsistence fishing economies. Not to mention, they are important food for Kodiak's bears, foxes and eagles.



## HERE'S WHAT YOU CAN DO TO HELP!

Please pick up all of your trash and pack it out.

**Yuki!**



Operating a motorized vehicle in anadromous streams or river beds, along gravel banks and lakeshores, unless at designated or posted crossings (see map on back), is illegal at all times of the year without a permit from the Alaska Department of Fish and Game. (see AS 16.05.870.b)

- Know your trail before riding:
- Increased siltation from erosion can smother salmon eggs and kill tiny young salmon.
- The weight of your vehicle can damage essential spawning pools by flattening the stream bed.
- Your vehicle can crush salmon eggs and compact gravel where tiny salmon seek protection from predators and depend on air spaces to breathe.
- Vehicles can drip oil or gas, which can pollute fresh water and harm young salmon.



Thanks! and remember: "We ALL live downstream!"

## Kodiak Salmon are ANADROMOUS

That means, they migrate up rivers and streams from the sea to breed in fresh water.



Silver or Coho Salmon



King or Chinook Salmon



Chum or Dog Salmon



Sockeye or Red Salmon



Pink or Humpy Salmon

## Protecting Salmon Habitat = Good Fishing

**Fish & Game Stipulations for designated ford sites**

Vehicles may not exceed 9,000 pounds gross vehicle weight. Heavier vehicles will require individual permits from ADF&G.

Vehicular crossing is authorized only within 20 feet of the centerline of the traditional crossing of the stream.

- ADF&G designated ATV stream crossings

**Please join us in helping to protect salmon habitat.**

Kodiak Island Borough

**Go Lightly on Kodiak**

**WHEN YOU'RE OUT HAVING FUN ON YOUR OFF-ROAD VEHICLE**

*Lester Lightfoot says:*

**PLEASE RESPECT SALMON HABITAT**

**"We are known by the tracks we leave"**

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**KODIAK ISLAND BOROUGH**

**PROJECT TITLE: Mapping of Coastal and Marine Resources**

**PROJECT CONTACT:**

Charles E. (Bud) Cassidy, Director, Community Development Department  
 Kodiak Island Borough  
 710 Mill Bay Road, Kodiak, Alaska 99615  
 Telephone Number: 907-486-9360  
 Fax Number: 907-486-9396  
 E-Mail: bcassidy@kib.co.kodiak.ak.us

**PROJECT LOCATION:**

Kodiak Island Borough (KIB): Borough Wide

**PROJECT DURATION:**

3 Years

**ESTIMATED COST:**

Spending Estimate (\$)			
TOTAL	Year 1	Year 2	Year 3
29,011.56	9,670.52	9,670.52	9,670.52

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
29,011.56	0	9,670.52	9,670.52	9,670.52

**PROJECT DESCRIPTION:**

For the past several years, the Kodiak Island Borough has been in the process of converting its AutoCAD based mapping system into a GIS based cadastral database. At this point, the focus of this project has been to support the activities of the Assessing Department, which has provided the land ownership, and attribute database. This emphasis has resulted in the mapping priorities of the Community Development Department, nominally responsible for maintaining the GIS shapefiles, spending its time on the mapping of surveys and subdivisions only.

With the recent adoption of the Kodiak Island Borough revised Coastal Management Plan, the broader range of resource issues described therein has pointed out a substantial deficiency in current borough mapping with regard to the mapping of coastal and marine

resources. Current KIB GIS maps do not include mapping for such resources, even though these resources are of great importance to borough residents.

Some mapping provided in the revised KIB CMP has brought together resource maps and data from many diverse sources. These maps were either copied wholesale from their original documents or in other cases were literally hand drawn on some kind of electronic base mapping in order to meet the criteria for coastal management planning. The purpose of this project would be to integrate such information directly into the KIB GIS system in order to make this information more obvious when the borough contemplates new planning projects or coastal development reviews. Easier access to the information will result in improved implementation of the KIB Coastal Management Plan and enhance environmental protection through more thorough review of proposed development projects. In addition, it is the borough's intention to make this GIS information generally available to the public online in a seamless borough wide GIS that would help people find this kind of information without having to search all the other marine resource agencies for documents and maps. Proper attribution of the source materials in metadata will ensure that those persons who need more in depth information may more easily locate the source documents through the KIB GIS as a "one-stop" online property and marine resource inventory.

**MEASURABLE GOALS AND OBJECTIVES:**

Year 1:

- Convert maps in the revised Kodiak Island Borough Coastal Management Plan into shape files, which can be added to the borough's GIS and subsequently published online along with the narrative plan information.

Year 2:

- Create a large format borough wide map for public display at borough offices. The map will include coastal resource information on all communities and shoreline areas of the borough.
- Create a large format color map for each one of the five incorporated communities within the Kodiak Island Borough for display at the city hall of each respective community.

Year 3:

- Integrate coastal and marine resources as a layer of information contained in the KIB GIS, which would then make the information available to the public via the Internet through the borough's web pages.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is eligible under CIAP Authorized Use #4, *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan.*

This project will help local planners implement the Kodiak Island Borough Coastal Management Plan. The coastal management plan is a component of the Alaska Coastal

Management Program (ACMP), a program requiring federal approval by the National Oceanic and Atmospheric Administration. Improved mapping of coastal resources will assist local planners to protect and conserve coastal areas and wetland habitats when they review development projects for consistency with the ACMP. Given the geographical area of the borough, it is often not possible to schedule an onsite visit for every review conducted under the ACMP. A concise and easily accessible map and database will capture the data necessary to do high quality site level reviews. The database and maps will provide planners information on the environmental resources necessary to implement the enforceable policies in the KIB Coastal Management Plan and the statewide ACMP standards. KIB recently revised its coastal management plan in response to Alaska legislation passed in 2003. The funding available for the revisions to the KIB Coastal Management Program went largely to the policy development portion of the planning process and several required revisions thereto. The plan maps associated with the recent revisions were completed to a minimally acceptable standard in order to obtain plan approval and are not in a format that is generally accessible to the public or easily reproducible by KIB staff when reviewing projects for consistency with the ACMP.

### **COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Kodiak Island Borough has a longstanding relationship with the Kodiak National Wildlife Refuge (KNWR) and with the federal Fish & Wildlife Service (FWS). Currently the KIB is participating in an aerial photo effort the KNWR is coordinating to obtain remote imagery for a large area in and around Larsen Bay. In this project the borough is splitting the cost of a ground control survey with the Koniag Regional Native Corporation so that the resulting public domain imagery will have greater value to the public by virtue of being more suitable for inclusion in the KIB GIS and other GIS based project documents.

The borough would expect to continue this close relationship with the KNWR and to a lesser degree with the Kodiak Maritime National Wildlife Refuge (KMNWR), which is not based in Kodiak.

With regard to the exploitation of coastal and marine resources, the KIB would also request technical assistance from the National Park Service (NPS) for trail mapping and trail planning activities. This is particularly important for areas in close proximity to rural communities, some of which have extended trail networks that may provide alternate transportation to certain resource areas traditionally accessed by boat or by air transport only. The borough would also consult with the Bureau of Land Management regarding the status of certain ANCSA part 17B easements. As the easements have never been surveyed, mapping a representation of the trails, as described in the creating documents, may be at odds with the physical evidence located on the ground.

### **COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that

includes the cost of sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**KODIAK ISLAND BOROUGH**

**PROJECT TITLE: Coastal Erosion Study**

**PROJECT CONTACT:**

Charles E. (Bud) Cassidy, Director, Community Development Department  
Kodiak Island Borough  
710 Mill Bay Road, Kodiak, Alaska 99615  
Telephone Number: 907-486-9360  
Fax Number: 907-486-9396  
E-Mail: bcassidy@kib.co.kodiak.ak.us

**PROJECT LOCATION:**

Kodiak Island Borough “Road System” and vicinity of outlying communities in the borough

**PROJECT DURATION:**

1 Year

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>	
<b>TOTAL</b>	<b>Year 1</b>
\$40,000	\$40,000

This is a Tier 2 project. Funding per allocation year of CIAP will depend on availability of funds.

**PROJECT DESCRIPTIONS:**

The Kodiak Island Borough proposes to do a shoreline erosion study similar to the one that was done for the City of Homer in 2004. In 2004, the City of Homer contracted with the Kachemak Bay National Estuarine Research Reserve (KBNERR) to conduct a coastal erosion study. KBNERR acquired historical aerial photos, and drew a line at the top of the coastal bluff for each photograph set. Then, the researchers calculated the average rate of erosion for each part of the Homer shoreline. The researchers extrapolated how much erosion could happen over the next 50 years, based on the 1975-current erosion rate, and the overall known erosion rate from 1951.

This program involved developing a number of components that the City of Homer uses to better understand and manage its coastal resources. In particular, city planners have an estimate of coastal bluff erosion based on a series of aerial surveys, a description of the salt marsh plant communities and their extent within the city, and a survey of beach habitats. They use this information in order to develop land use policies and regulations.

The shoreline mapping effort was conducted using standard techniques (Kaminsky et al. 1999, Moore 2000, Moore and Griggs 2002, Ruggeiero et al. 2003). The map of coastal erosion rates was developed by mapping the bluff edge on aerial maps collected in 1951, 1961, 1968, 1975, 1996, and 2003. Each set of images was rectified with an emphasis on points above the shoreline bluff and below the large bluffs north of the city. The images were initially rectified to common features with those found in the 1996 images to provide a rough rectification. A more precise rectification was accomplished by sequentially rectifying each set of images, i.e. 1975 was rectified to 1996 and 1968 rectified to 1975. This sequential approach allowed more features common to each image set, to be identified and used in the rectification.

The Homer coastal erosion study resulted in a GIS project containing the mosaic of rectified images and a derived coastline for each aerial survey. The map showed coastal erosion rates and included a spreadsheet of estimated erosion between sets of imagery and the overall erosion rate. A PowerPoint presentation was also developed based on the results of this project. The presentation has been shown in KBNERR's exhibit area at the Alaska Islands and Ocean Visitors Center in Homer, Alaska. The presentation includes the overall erosion rate and then focuses on eight areas of interest. At each area of interest the focus is on a small area of the coastline as the viewer cycles through the aerial images. To provide a reference point, the 1951 coastline is provided on each image. At the end of each sequence a summary slide with all of the coastlines is provided.

The products from this project have been of great value to the residents of Homer, Alaska as it has reduced the amount of property loss or damage that occurs due to structures being built too close to the bluff. Community planning has taken place with real understanding of coastal erosion. Recognizing the areas most susceptible to erosion along the shoreline has ensured that human activities potentially contributing to erosion can be curtailed.

In order to obtain this same kind of product, the Kodiak Island Borough project proposes the following actions.

- 1) Prepare a coastal erosion study for the Kodiak "Road System," similar to the 2004 study completed in Homer, Alaska, using historical aerial photography and other analytical techniques in order to identify areas where coastal erosion is likely to be a problem in the future.
- 2) Identify a 25 mile stretch of coastal area near the population centers of the Kodiak Island Borough where human activity and development are most likely to impact areas of coastal erosion or to be impacted by coastal erosion.
- 3) Hire a qualified consultant to conduct the study and facilitate policy development meetings.
- 4) Study the impacts of coastal development to assist in the development of local land use policies, which will protect the coastal zone from unsuitable uses and

developments based on the variable carrying capacity of the lands along the shoreline throughout the Kodiak Island Borough.

**MEASURABLE GOALS AND OBJECTIVES:**

- Prepare a coastal erosion study that identifies coastal areas most prone to erosion and addresses the impacts of development on these areas.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is eligible under CIAP Authorized Use #4, *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan.*

The proposed coastal erosion study will help local planners and state resource agencies implement the natural hazard standard of the Alaska Coastal Management Program (ACMP), a federally approved program. Development projects located within the coastal zone that require state or federal authorizations, or are a federal activity, are required to be consistent with the state ACMP standards prior to issuance of the authorizations. The ACMP standards aim to strike a balance between development and environmental protection by applying project stipulations intended to minimize environmental impacts. In particular, the ACMP natural hazard standard at 11 AAC 112.210(c) states the following:

*“Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.”*

In order for the KIB to apply the above standard the state must first designate a project area as a natural hazard area. ACMP regulations at 11 AAC 112.210(a) require scientific evidence to make such a designation.

*“Such designations must provide the scientific basis for designating the natural process or adverse condition as a natural hazard in the coastal area, along with supporting scientific evidence for the designation.”*

The coastal erosion study proposed will provide the scientific basis required for the designation of natural hazard areas, thereby allowing for the implementation of the natural hazard standard.

Additionally, the erosion study will provide the basis for the development of local land use policies. Coastal erosion is recognized as a natural phenomenon which can degrade the productivity of coastal habitats and anadromous streams. Determining appropriate management strategies can help mitigate the effects of this phenomenon and help avoid human activity that might contribute to coastal erosion.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Kodiak Island Borough would coordinate this project with the Natural Resource Conservation Service as a local source of information regarding soils conditions and characteristics. In areas where applicable, some coordination would also be appropriate with NOAA regarding ocean currents and aquatic species, the Federal Fish & Wildlife Service regarding marine mammals and the Kodiak Maritime National Wildlife Refuge in areas so designated along the coastline.

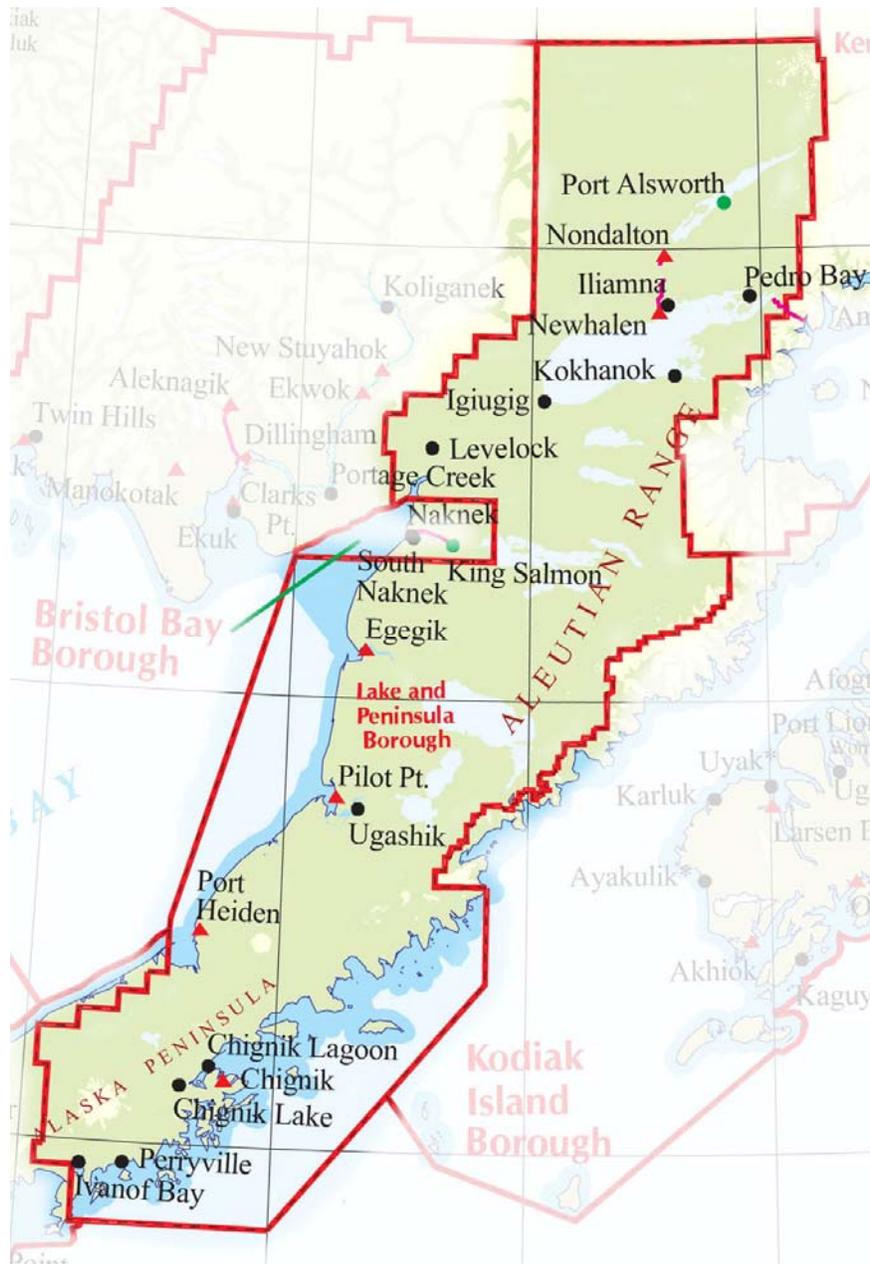
**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost of sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or match requirements.

# LAKE AND PENINSULA BOROUGH

## TIER 1 CIAP PROJECTS

1. Lake and Peninsula Borough Beach Erosion Tracking Program and Community Profile Map Additions and Updates
2. Lake and Peninsula Borough Mapping Update for the Protection of Critical Coastal Resources and Identification of Land Status
3. Lake and Peninsula Borough Coastal Management Plan Amendment – Community Outreach Component



**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**LAKE AND PENINSULA BOROUGH**

**PROJECT TITLE: Lake and Peninsula Borough Beach Erosion Tracking Program and Community Profile Map Additions and Updates**

**PROJECT CONTACT:**

Marv Smith  
P.O. Box 495, King Salmon, AK 99613  
Phone: 907-246-3421  
Fax: 907-246-6602  
Email: [marvsmith.lpboro@starband.net](mailto:marvsmith.lpboro@starband.net)

**PROJECT LOCATION:**

Lake and Peninsula Borough (L&PB)

**PROJECT DURATION:**

3 years

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>			
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
105,273	36,237	34,518	34,518

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
105,273	0	36,237	34,518	34,518

**PROJECT DESCRIPTION:**

The purpose of this project is to establish a Borough Beach Erosion Tracking Program within the borough in order to protect the natural resources on the coastal shores within the Lake and Peninsula Borough. This will be accomplished in two manners with aerial photography mapping and by using a wooden stake measuring system to track erosion.

The aerial photography and mapping will be accomplished with in and near the communities within the Lake and Peninsula Borough that are experiencing significant erosion problems that impact key ocean front habitat and could possibly affect key infrastructures near the beach. This mapping will be accomplished in specific identified areas near the communities that were not mapped during the original borough mapping project. In addition we will remap areas where significant erosion has occurred or is occurring presently near the communities. The goal is to have aerial photography that is approximately 5 years apart for historical data. The measurable objective will be to

identify the loss of beach in feet on an annual basis from each community that is identified in the study.

The L&P Borough will work together with the L&P Borough School District and the individual local school in each community as a school project to participate in this Beach Erosion Tracking Program. To go along with the mapping the school children and class will develop a method to track the erosion in the community from a known location. For example in the Community of Levelock the School Teacher Housing is approximately 150 feet from the Bristol Bay shore and Kvichak River Bank. *This* portion of the river is very tidally affected and the bank of the Kvichak River can loose 10 feet in one storm. The soil composition here is a silt and sand combination with small alder vegetation growth that periodically fall into the river during an active storm. The possibility of doing a bank stabilization project here is very unlikely as the soil is too sandy and the wave and tidal action too strong along with the normal river current.

We propose to install a wooden stake tracking system from the corner of the teacher housing to the river or beach bank by installing wooden stakes every ten feet from the corner of the housing to the river/beach bank. The stakes would be installed in a straight line with numbers painted on each stake to track the number of stakes to reach the shoreline. In addition to *this* specific location, the school children will pick two other locations in the community to install this wooden stake tracking system to identify the amount of erosion that occurs annually in these locations. The students will also provide photos at least three times each school term of the current erosion loss identified at the selected erosion points in each community.

Another community that has lost approximately 200 feet of beachfront in the last 6 years is Port Heiden. They presently have the potential to loose a fuel service header due to significant erosion within the next year. The soil composition here is a silt and sand combination that has only tundra vegetation growth that periodically fall into the river during an active storm. The possibility of doing a bank stabilization project here is very unlikely as the soil is too sandy and the wave and tidal action too strong.

We are also proposing to partner with the Port Heiden School or the City to install the same stake tracking system from the corner of the Port Heiden Fuel Storage facility to the beach and passing the fuel header with that straight line of wooden stakes with numbers. In addition, the school children will identify two other locations in the community to install this wooden stake tracking system to identify the amount of erosion that occurs annually in these locations. The students will also provide photos at least three times each school term of the current erosion loss identified at the selected erosion points in each community.

The borough will encourage each community school within the borough that has an erosion problem in their community to install the wooden stake tracking system and participate in the erosion tracking program. The mapping along with the wooden stake tracking system will, through a period of time, provide a matrix to predict the possible future erosion that could occur in each community. Most importantly, this project will

provide justification to State and Federal agencies for funding to move valuable infrastructure, such as fuels storage tanks located near the shoreline or river banks that could cause environmental damage to the local beach and to the coastal waters of Alaska if damaged by erosion.

**MEASURABLE GOALS AND OBJECTIVES**

This project will result in the following outcomes:

1. A report documenting beach loss due to erosion in at least three coastal communities.
2. Community profile maps that identify erosion prone areas through aerial photography in at least three coastal communities.
3. A wooden stake tracking system to accurately measure distances from known infrastructure locations to the beach erosion points in at least two communities.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project addresses CIAP authorized use 1: *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.* The erosion mapping and tracking information will assist in the protection of coastal areas. When projects come up for a coastal consistency review in the borough these maps and erosion tracking information will be used to make key decisions. There will be data to determine the impact proposed projects could have on the local environment and determine the most appropriate location for projects in relation to nearby erosion impacted shorelines, salmon spawning grounds, eel grass beds, bird nesting areas and other critical wildlife habitat that could possibly be impacted if a project were placed in a certain location. The data on erosion will also show potential risks to infrastructure thereby providing support for hazard mitigation projects that may prevent the damage from occurring. Damage to infrastructure from erosion has the potential to impact coastal areas through increased marine debris, oil spills, landfill failure, etc. Projects that prevent such damage help to protect coastal areas.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The borough has not coordinated this project with any other federal resources or programs.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**LAKE AND PENINSULA BOROUGH**

**PROJECT TITLE: Lake and Peninsula Borough Mapping Update for the Protection of Critical Coastal Resources and Identification of Land Status**

**PROJECT CONTACT:**

Marv Smith  
P.O. Box 495, King Salmon, AK 99613  
Phone: 907-246-3421  
Fax: 907-246-6602  
Email: [marvsmith.lpboro@starband.net](mailto:marvsmith.lpboro@starband.net)

**PROJECT LOCATION:**

Lake and Peninsula Borough

**PROJECT DURATION:**

1 year

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>	
<b>TOTAL</b>	<b>Year 1</b>
10,000	10,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
10,000	10,000	0	0	0

**PROJECT DESCRIPTION:**

The Lake and Peninsula Borough (LPB) encompasses a land area of nearly 28,890 square miles. All of the land within the Borough boundaries, except for perennially snow-capped mountains, glaciers, and volcanoes are located within the coastal zone. The Borough does not currently have a comprehensive map in GIS format readily available for public use. Such a map is needed for the borough, the public, and agencies alike to access current and accurate information to effectively implement the Alaska Coastal Management Program (ACMP). This project will involve hiring a contractor to develop a comprehensive GIS map. The map will show geographic features (e.g. wetlands, estuaries, streams, beaches) and will identify all land status (federal, state, borough and privately owned) within the Borough boundaries. This project will incorporate the map into the Borough Geographical Information System (GIS) providing the capacity to

reproduce the map and update it when land status changes. The map will be produced in several formats and distributed throughout the Borough. Two 8 foot by 6 foot copies will be displayed on the walls within the Lake and Peninsula Borough offices (one upstairs and one downstairs). These copies will be framed and covered in Plexiglas to protect them from damage by usage. Additionally, each Borough school, city and village council will receive a framed 2 foot by 4-foot version of the map to display in their School or community building. The Borough will initiate an amendment to the Lake and Peninsula Borough Coastal Management Plan to include the map within the plan.

The map will assist in the protection of natural resources within the Lake and Peninsula Borough. When projects in the Borough are identified for review through the ACMP or for resource extraction, the Borough will be able to easily identify natural resources and sensitive habitats in the area, and know who the actual landowners and neighboring landowners are that could possibly be affected. This will assist the Borough in effectively participating in the ACMP consistency review process and assuring protection of coastal areas. It will also assist the Borough in the notification process of the project review by ensure all parties affected are properly notified and have the opportunity to comment. Additionally, the map will assist the Borough in the large task of managing the 125,000 acres of Municipal Land Entitlements the Borough has received or will be receiving in the future from the State of Alaska.

There are a large number of mining claims and mineral extractions that are presently occurring, or will be occurring, in the future within the Borough boundaries. This project will increase the Borough's ability to clarify their locations and review extraction proposals. Two recent mining proposals were directly located on beaches where resource usage is a conflict between fishermen and mining claims.

### **MEASURABLE GOALS AND OBJECTIVES:**

This project will result in a Borough wide map, in GIS format showing geographic features (e.g. wetlands, estuaries, streams, beaches) and land status (federal, state, Borough or private ownership). The map will be reproducible on the Borough plotter and easily updated. Large format prints will be displayed in the Borough offices (approximately 6 feet by 8 feet) and in the Borough schools, cities, and village offices (approximately 2 feet by 4 feet). The map will be submitted to the State of Alaska as an amendment to the Lake and Peninsula Coastal Management Plan.

### **PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project addresses CIAP authorized use 4: *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan*. This project will result in a comprehensive map providing information necessary to effectively implement the Alaska Coastal Management Program. The ACMP is a federally approved program. As a component of the ACMP, the Lake and Peninsula Borough Coastal Management Plan is also federally approved. Projects within the coastal zone that require state or federal authorizations, or are a federal activity must be consistent with state standards and the Borough's enforceable policies. When a project comes up for a coastal consistency review in the Borough the map will be available at the Borough and in each community

to identify the geographic features that support such resources as salmon spawning grounds, eel grass beds, bird nesting areas and other critical wildlife habitat that could possibly be affected by development projects. Easy identification of such areas will facilitate the effective implementation of the ACMP state standards including the following:

- 11 AAC 112.210 Natural Hazards
- 11 AAC 112.230 Energy Facilities
- 11 AAC 112.240 Utility Routes and Facilities
- 11 AAC 112.260 Sand and Gravel Extraction
- 11 AAC 112.280 Transportation Routes and Facilities
- Habitat 11 AAC 112.300

Each of these standards requires an applicant to avoid, minimize or mitigate impacts to specific areas. The maps will help identify the areas.

The map will be useful for program implementation immediately upon completion. However, amending the ACMP to formally include the map in the coastal plan will expand its availability to the state and federal resource agencies, and the broader public that participates in implementing the ACMP, and may support the Borough's efforts to designate certain areas as important habitat areas, or natural hazard areas.

### **COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The ACMP project review process is a coordinated effort that includes state, federal and borough agencies. Through this process, the Borough regularly coordinates with federal agencies either as an authorizing agent or as a project proponent. Through this regular coordination, the Borough is familiar with the informational needs of the federal agencies. The proposed map will be available to federal agency use

### **COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

LAKE AND PENINSULA BOROUGH

**PROJECT TITLE: Lake and Peninsula Borough Coastal Management Plan Amendment – Community Outreach Component**

**PROJECT CONTACT:**

Marv Smith  
P.O. Box 495, King Salmon, AK 99613  
Phone: 907-246-3421  
Fax: 907-246-6602  
Email: [marvsmith.lpboro@starband.net](mailto:marvsmith.lpboro@starband.net)

**PROJECT LOCATION:**

Lake and Peninsula Borough (LPB)

**PROJECT DURATION:**

1 year

**ESTIMATED COST:**

Spending Estimate (\$)	
TOTAL	Year 1
22,800	22,800

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
22,800	22,800	0	0	0

**PROJECT DESCRIPTION:**

The purpose of the project is to supplement the update of the LPB Coastal Management Plan resource inventory information and develop new natural hazards and subsistence designations that will be incorporated into the LPB Coastal Management Plan as a two-year section 309 Enhancement Grants Project.

The LPB encompasses a land area of nearly 28,890 square miles. It also displays considerable topographical and biological diversity between its northern and southern limits, and even varies widely across the Peninsula from the Bristol Bay lowlands on the north to rocky shorelands with glaciers and snow fields adjoining Shelikof Strait and the Pacific Ocean along its southern boundary. The Borough directly adjoins marine waters

of Bristol Bay between Port Heiden and Kvichak Bay (north side Alaska Peninsula), and marine waters of the Pacific between Kupreanof Point and Cape Kilokak (south side Alaska Peninsula). Seventeen communities are present within the borough, and the lifestyle and economies of these communities are highly dependent on the maintenance and continued productivity of Borough coastal resources.

Through the Alaska Coastal Management Program (ACMP), the borough has received approval of a Federal Section 309 Enhancement Grant for state fiscal year 2009. The grant provides funds to complete the following:

- Revise 40 community maps to conform to the ACMP requirements. The maps will show natural hazard areas to be included as designated areas within the LPB Coastal Management Plan. Thirty-one of the maps will include subsistence use areas to be included as designated areas within the LPB Coastal Management Plan.
- Revise the resource inventory of the LPB Coastal Management Plan to include information to justify designation of new subsistence use areas.
- Research existing Alaska Department of Fish and Game (ADF&G) documented subsistence studies to gather the information needed to justify the designations. The consultant would review the more than 40 ADF&G technical papers on subsistence in the Southwest Region of Alaska and compile them as appropriate to develop additional subsistence designations.

As proposed, the Section 309-funded natural hazards and subsistence designations would be developed based solely on a literature search. The only community outreach and “ground-truthing” would occur through interaction with the LPB Planning Commission at monthly meetings via teleconference. If the CIAP funds were made available to supplement the 309 project, the project would be significantly improved by adding a local knowledge component. CIAP funds would be used to travel to the seventeen communities located within the coastal zone of the Lake and Peninsula Borough to meet with community representatives, ground-truth results of the literature search and ensure that local knowledge is incorporated into the development of natural hazard and subsistence designations.

### **MEASURABLE GOALS AND OBJECTIVES:**

1. Forty community maps. The maps will show natural hazard areas to be included as designated areas within the LPB Coastal Management Plan. Thirty-one of the maps will include subsistence use areas to be included as designated areas within the LPB Coastal Management Plan. The proposed designated areas on the maps will reflect the findings of the community meetings and verified in the field.
2. A revised resource inventory to the LPB Coastal Management Plan that includes local knowledge to justify designation of new subsistence use areas.
3. A report summarizing the information discovered in the research of technical papers on subsistence in the Southwestern Region of Alaska and confirmed

through personal contact with the 17 communities in the borough and verified in the field.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project addresses CIAP authorized use 4: *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan.*

This project will result in improvements to the LPB Coastal Management Plan. Once approved by the state and the National Oceanic and Atmospheric Administration, the plan becomes a component of the Alaska Coastal Management Program, a federally approved program established under the federal Coastal Zone Management Act. The information generated by this project will help the LPB, state and federal agencies, and developers implement the ACMP when projects are proposed for development within the coastal zone. Specifically, the information is needed to implement the LPB natural hazard and subsistence enforceable policies, the state ACMP natural hazard standard at 11 AAC 112.210, and the state ACMP subsistence standard at 11 AAC 112.270. The ACMP regulations *require* that natural hazard and subsistence use designations be made in order to apply the standards and enforceable policies

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

This CIAP project builds on a project funded by a federal 309 Enhancement Grant. The 309 grant has been awarded to the LPB by the Alaska Department of Natural Resources, Division of Coastal and Ocean Management (DCOM). Per the federal requirements regarding Section 309 funding, the project will result in a change to the Alaska Coastal Management Program. DCOM has reviewed both the 309 grant proposal and this proposal to insure they compliment each other and do not duplicate efforts.

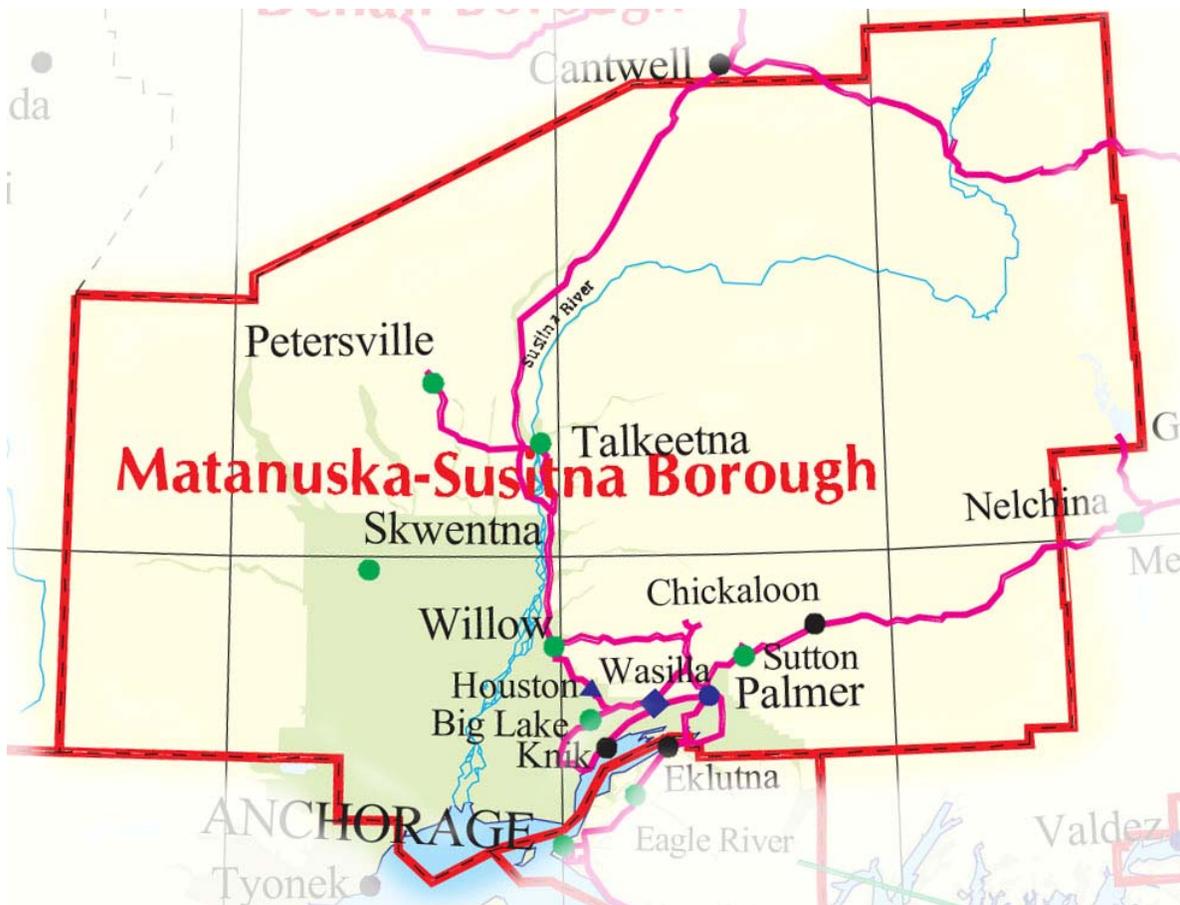
**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

# MATANUSKA-SUSITNA BOROUGH

## TIER 1 CIAP PROJECTS

1. *“Protect the Edge: Where the Water Meets the Land”* a Full-color 40-60 Page Publication About Protecting Riparian Habitat and Wetlands
2. Ortho-rectified Imagery of the Matanuska-Susitna Coastal Zone



STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

MATANUSKA - SUSITNA BOROUGH

**PROJECT TITLE:** *“Protect the Edge: Where the Water Meets the Land”* a Full-Color 40 - 60 Page Publication About Protecting Riparian Habitat and Wetlands

**PROJECT CONTACT:**

Susan Lee, Planner II  
Matanuska-Susitna Borough  
350 E. Dahlia Avenue, Palmer, AK 99645  
Telephone Number: 907-745-9862  
Fax Number: 907-745-9876  
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**PROJECT LOCATION:**

Matanuska-Susitna Borough (MSB)

**PROJECT DURATION:**

2 Years

**ESTIMATED COST:**

Spending Estimate (\$)		
TOTAL	Year 1	Year 2
20,000	10,000	10,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
20,000	20,000	0	0	0

Estimated costs include preproduction design, writing and printing costs. The number of copies printed will be determined based on funds available after the preproduction costs are funded. MSB may be able to contribute to the printing costs to increase the quantities printed.

**PROJECT DESCRIPTION:**

The Matanuska-Susitna Borough and other federal and state agencies have identified protection of riparian habitat as a high priority within the Mat-Su Borough due to increased impacts of rapid development on water quality, native vegetation and fisheries. Providing educational information for the public has been recommended as an effective strategy to address the concerns about riparian habitat in the region. MSB has an out-dated publication called “Shoreline Landscaping” which needs to be expanded, revised

and upgraded. This publication was very popular and was reprinted several times for public distribution. The information in the booklet is no longer current so it cannot be reprinted again.

The Kenai River Center has just published a full color 80-page publication called “On the River” which we would use as a model for our new publication as well as a publication by the Copper River Watershed Project called “Sharing the Edge.” Our publication would be made available to the public free of charge and would be a major part of our community educational programs. A local nonprofit community planning group, Friends of Mat-Su (FoMS), is conducting a water quality education campaign, which started last year with a grant from the US Fish & Wildlife Service and support from MSB. FoMS will be continuing this project in neighborhoods surrounding water bodies and can use this publication as part of their campaign.

MSB started a mandatory land use permit in March 2008. Any landowner applying for a permit who lives near a water body is provided with information about best management practices for development around water bodies. Our new publication will be provided during this permitting process as a more comprehensive educational source for water body protection.

**MEASURABLE GOALS AND OBJECTIVES:**

- Produce a full-color educational book about protecting, conserving and restoring native vegetation, riparian habitat and wetlands for distribution to the public.
- Distribute publication to the public through community educational campaigns and permitting processes.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project will support authorized use #1: *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

The rapid development within the Matanuska-Susitna Borough has increased the impacts on water quality, native vegetation and fisheries. This measure will provide educational information to the public as an effective strategy to address the concerns about riparian habitat in the region. By reducing impacts on the riparian habitat through education, coastal areas will be protected.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The MSB publication will be created with input and review by federal and state agencies. We currently have a multi-agency advisory group on water quality, which will be the group that develops the format and content list for the publication. We will include information about other agency permitting processes in the publication, so we will coordinate with them to provide current information. Funding and technical assistance from other federal and state agencies to develop and print the publication will be solicited.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

MATANUSKA - SUSITNA BOROUGH

**PROJECT TITLE:** Ortho-rectified Imagery of the Matanuska-Susitna Coastal Zone

**PROJECT CONTACT:**

Susan Lee, Planner II  
Matanuska-Susitna Borough  
350 E. Dahlia Avenue, Palmer, AK 99645  
Telephone Number: 907-745-9862  
Fax Number: 907-745-9876  
E-Mail: [slee@matsugov.us](mailto:slee@matsugov.us)

**PROJECT LOCATION:**

Matanuska-Susitna Borough

**PROJECT DURATION:**

4 Years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
105,596	11,399	31,399	31,399	31,399

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
105,596	11,399	31,399	31,399	31,399

**PROJECT DESCRIPTION:**

The Matanuska-Susitna Borough coastal management zone is over 4,000 square miles in size and the watersheds directly supporting the zone are at least another 6,000 square miles in area. The zone contains more than 60,000 residents, including the fastest growing community in Alaska. It also supports the second most productive salmon spawning region in the state, has over 10,000 miles of waterways, and more than 2,000 square miles of wetlands. These facts, combined with the proximity to the over 250,000 residents of Anchorage, create the largest seasonal influx of recreational users of coastal zone fisheries, and other resources, in Alaska. The development and use pressure on the coastal zone are growing rapidly.

Development and use pressure is particularly strong along watercourses and is encroaching into wetlands at an increasing pace. The state and federal resource protection agencies have increased their emphasis on dealing with “cumulative” impacts resulting from the increased density and intensity of development and use in the coastal zone. The borough’s coastal management zone has experienced recent disasters, ranging from flooding, erosion, and wildfires. The vulnerability, and the potential costs of damage, is increasing because of the high growth rate in higher risk areas.

The informational database, which is fundamental to manage, protect, or enhance coastal resources has not kept pace with the rapid growth. An abundance of information exists about the coastal resources of the Matanuska-Susitna Borough, and data continues to be collected by many sources. Most data is collected for a single project or specific purpose with no provision for sharing. Unfortunately, the information collection and distribution has not been coordinated and is not easy to locate or used with other data due to different formats. Some is redundant and many gaps exist about specific subjects and locations. For example, photographic images of the entire coastal management zone are not available at a scale useful for identifying or evaluating existing development. This situation increases costs for information gathering and analysis associated with individual projects without benefiting others who may need the same information later.

The MSB and other agencies that share jurisdiction within the borough’s boundaries have a common interest to use data that reflects a higher mapping standard than what was available on a larger regional level. While this problem characterizes Alaska overall, this project improves the mapping standard by acquiring higher quality imagery for the high growth areas of the borough’s coastal management zone. This project will produce ortho-rectified imagery that integrates with the MSB’s geographic information system and is tailored to the management needs of the coastal management zone. The imagery products will be designed to grow and incorporate new data generated by multiple sources, thereby, becoming increasingly useful for years beyond the grant period.

### **MEASURABLE GOALS AND OBJECTIVES:**

The requested project funds will be used to cover the costs of acquisition of high quality, 1-meter pixel resolution, ortho-rectified imagery of the higher developed regions of the coastal zone within the Matanuska-Susitna Borough

### **PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project will support authorized use #1, *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

The imagery acquired will be used to identify trends and impacts upon coastal resources caused by development, clearing and runoff, contaminants, flooding, wildfires, erosion, and invasive species, thereby improving the Borough’s ability to protect and conserve coastal areas from such impacts. Additional uses for the imagery, outside of this project, include emergency response, land use planning and regulations, water body management, public works development, forestry, agriculture, and fishery management.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Matanuska-Susitna Borough has been a cooperative partner with the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), under its National Agriculture Imagery Program (NAIP) for the past 5 years. The National Agriculture Imagery Program acquires imagery during the agricultural growing seasons in areas within the United States. This cooperative agreement is to work together and provide joint funding to develop hi-resolution ortho-imagery for portions of the Matanuska-Susitna Borough.

The Matanuska-Susitna Borough's GIS Division is currently in the process of setting up a new Geospatial Data Acquisition Project Fund to help new efforts in collecting geospatial datasets including imagery, LIDAR, Digital Elevation Models, and other critical datasets, which are now lacking in many parts of the borough. This effort will entail building inter-agency agreements and memorandums of agreements between parties interested in collecting these important datasets. Talks are also currently underway with the local communities and City's on these coordinated mapping tasks.

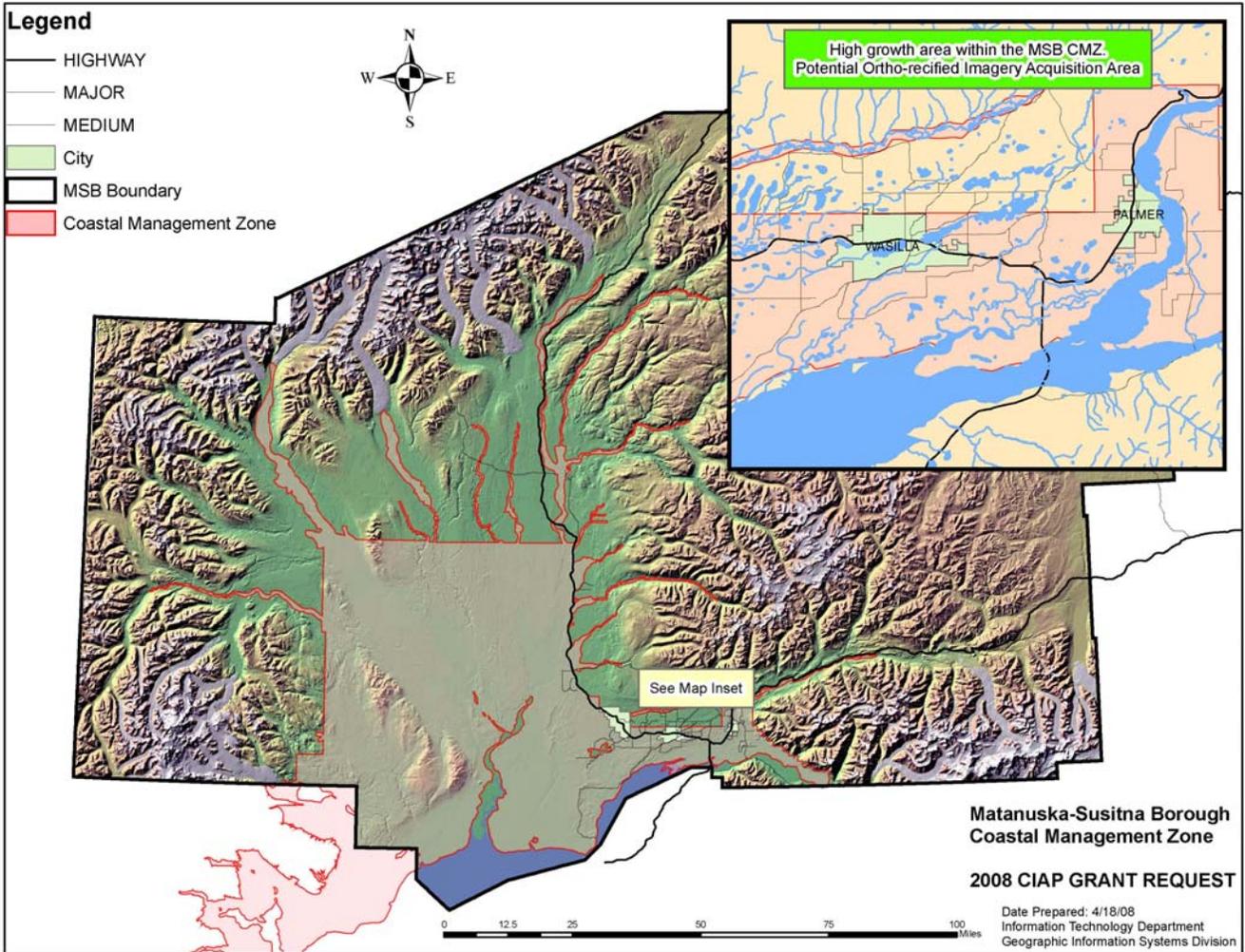
All of these efforts are modeled after the geospatial one-stop concept under the E-Government initiative supported by the President to provide government services and improved financial management to the public and other agencies.

The MSB will also provide in-kind support from the Information Technology Department including project coordination, mapping/analysis software, any required additional monetary support, and all required computer and networking infrastructure.

**COST SHARING OR MATCHING OF FUNDS:**

It is unclear at this time whether CIAP funds will be used for cost sharing or matching purposes. If these funds are used for these purposes, the final CIAP grant application will include a letter from the state, federal, or local agency charged with administering the program that includes the cost sharing or matching requirement indicating that the other agency's program allows the use of federal CIAP funds to meet cost sharing or matching requirements.

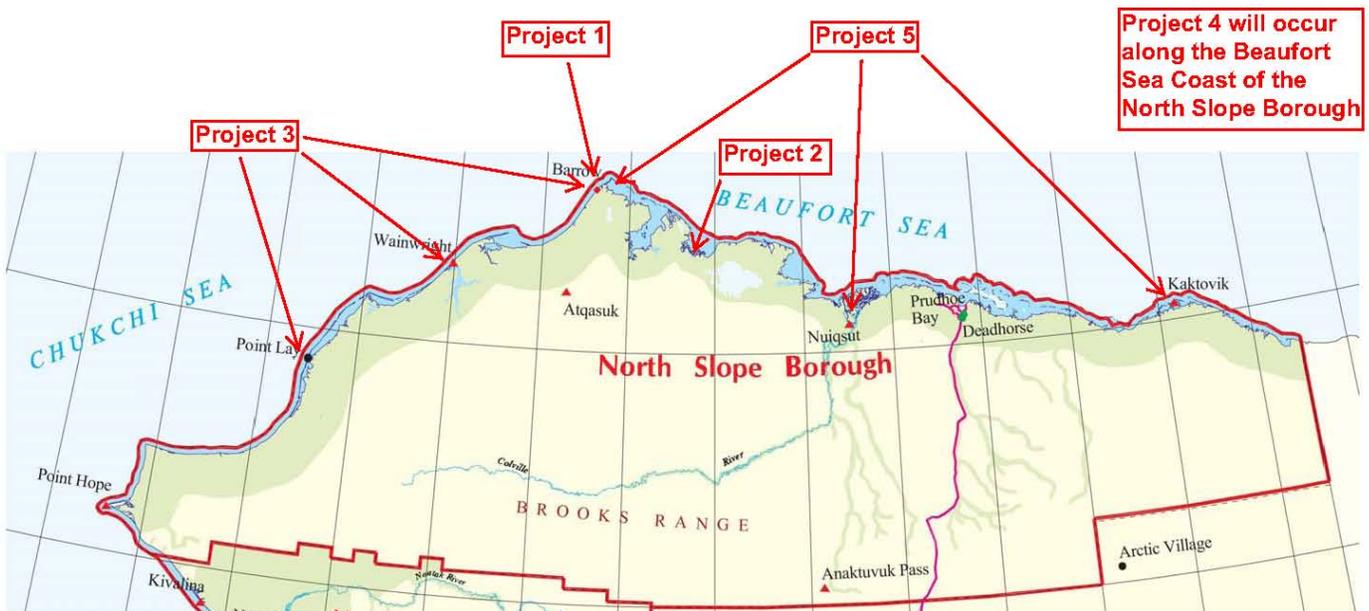
# Matanuska-Susitna Borough, Project 2



# NORTH SLOPE BOROUGH

## TIER 1 CIAP PROJECTS

1. Restoration and Rehabilitation of Coastal Areas Through the Installation of Hardened Trail
2. Assessment of the Biotic and Abiotic Factors Influencing the Ikpikpuk River Delta, which is Needed for Predicting Changes and Developing Plans to Conserve and Protect the Delta
3. Assessment of the Health and Biology of Arctic Marine Mammals for the Development and Evaluation of Mitigation Measures to Reduce Impacts from a Changing Arctic Environment
4. Assessment of the Vulnerability of Archaeological and Cultural Sites to Coastal Erosion and the Development of Plans to Protect the Sites
5. Implementation and Enhancement of Permitting Activities of the North Slope Borough



**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**NORTH SLOPE BOROUGH**

**PROJECT TITLE: Restoration and Rehabilitation of Coastal Areas  
Through the Installation of Hardened Trail**

**PROJECT CONTACT:**

Robert Suydam  
North Slope Borough, Department of Wildlife Management, Box 69, Barrow, AK  
99723  
Telephone Number: (907) 852-0350  
Fax Number: (907) 852-0351  
Email Address: Robert.Suydam@north-slope.org

**PROJECT LOCATION:**

Coastal areas near Barrow, Alaska, within the North Slope Borough

**PROJECT DURATION:**

1 year

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>	
<b>TOTAL</b>	<b>Year 1</b>
90,000	90,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
90,000	90,000	0	0	0

**PROJECT DESCRIPTION:**

Much of the habitat on the North Slope of Alaska is in near pristine condition because human densities are very low and most human activities occur during the winter when snow provides some protection to vegetation and landforms. Closer to villages and oil fields however, habitat has been eliminated or altered by human activities. Habitat has been eliminated by construction of roads or buildings. Habitat has been altered in many ways. Access to hunting or camping areas near villages traditionally occurs by rivers or other waterways. With the increase of availability of all-terrain vehicles (ATVs), such as four-wheelers, people are traveling more across the tundra and creating rutted trails that impact vegetation, hydrology, permafrost, and wildlife. Other habitat alterations near villages include disturbance to wildlife because of human presence on the tundra. We

propose to restore and rehabilitate habitat and reduce disturbance to wildlife near Barrow through the installation of hardened trails for ATV use.

Installation of hardened trail was initiated on the North Slope of Alaska through funds the North Slope Borough received from the U.S. Fish and Wildlife Service. One of the main goals of that pilot project was to assess the efficacy of using hardened trail in areas with extensive permafrost. We were concerned that installing hardened trail would exacerbate permafrost thawing leading to further alteration of hydrology and creating a greater problem than already existed. That pilot project showed that hardened trail did not increase thawing of the permafrost but did allow tundra vegetation to recover. We fully expect that additional trail will yield similar results. People will drive ATVs on the hardened trail because it was easier than riding on the tundra.

The hardened trail we propose to construct consists of panels or mats of hardened plastic that are fastened together. The trail will consist of two types of matting: Geoblock, which is relatively rigid and durable material, and the more flexible Solgrid, which will allow for expansion and contraction of the trail due to heating and cooling. A layer of polynet, a fine meshed material, will be placed under the Solgrid for additional support. The matting has numerous holes and openings that allow vegetation to grow through it. The trail will be approximately 1.5 m wide in drier areas and 3 m wide in the wettest areas. The wider trail in wet areas allows for additional protection to the tundra and a bit more floatation for ATVs.

Hardened trail may reduce the amount of human disturbance to nesting birds. ATV trails in the vicinity of Barrow are consistently used but are quite wide and becoming wider annually. As tundra trails become more disturbed, wetter, and more rutted people look for easier places to travel. Therefore, the trails become even wider. As trails become wider, more nesting areas are disturbed and habitat altered. Hardening trails will cause ATVs to use a much narrower area because a hardened trail is easier to travel on than the tundra. Operators of ATVs will want to use the easiest route and a hardened trail will provide one. The area of disturbance will be dramatically reduced. Reducing disturbance to threatened Steller's and Spectacled eiders is a benefit of this project.

We propose to use CIAP funds to install additional hardened trail in the coastal areas near Barrow to further restore and rehabilitate areas that have been disturbed by ATVs.

**MEASURABLE GOALS AND OBJECTIVES:**

We will install a minimum of 3,000 feet of hardened trail in the coastal zone in the vicinity of Barrow. This will add to the approximately 2,700 feet of trail that has already been installed.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project would address CIAP Authorized Use #1, "*projects and activities for the conservation, protection, or restoration of coastal areas, including wetland,*" because it will restore wetland habitat in coastal areas of Barrow and will reduce further impacts from ATV use. As noted above, hardening trails will cause ATVs to use a much narrower

area because a hardened trail is easier to travel on than the tundra. This will facilitate the restoration of wetland areas previously degraded by ATV use as the wetlands return to a natural state.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Our proposed project is a continuation of a project started several years ago through funding from the U.S. Fish and Wildlife Service (FWS). We will coordinate with the FWS and the Alaska Department of Fish and Game who have wildlife studies in the general vicinity of the proposed hardened trail extension. Additionally, we will seek opportunities for collaboration and funding from other Federal and State agencies, such as the U.S. National Park Service, which has an extensive trail development program, and Alaska Department of Transportation, which might be interested in our project.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds will not be used for cost sharing or matching purposes. We do hope to pursue other sources of funding to enhance this project.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**NORTH SLOPE BOROUGH**

**PROJECT TITLE: Assessment of the Biotic and Abiotic Factors Influencing the Ikpikpuk River Delta, Which is Needed for Predicting Changes and Developing Plans to Conserve and Protect the Delta**

**PROJECT CONTACT:**

Contact Name: Brian Person/Robert Suydam  
 Address: North Slope Borough, Department of Wildlife Management, Box 69,  
 Barrow, AK 99723  
 Telephone Number: (907) 852-0350  
 Fax Number: (907) 852-0351  
 Email Address: Brian.Person@north-slope.org/Robert.Suydam@north-slope.org

**PROJECT LOCATION:**

This study will occur in the Ikpikpuk River delta and surrounding areas. The Ikpikpuk River flows into Smith Bay, which is located in the central Beaufort Sea coast of northern Alaska.

**PROJECT DURATION:**

2 Years

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>			
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
275,000	65,000	105,000	105,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
275,000	0	65,000	105,000	105,000

**PROJECT DESCRIPTION:**

We propose to use CIAP funds to continue to monitor snow geese in the Ikpikpuk River Delta and better understand the interactions among erosion, flooding, river channel migration, and grazing by snow goose. Results from this work will be especially important for predicting future impacts to the delta. Information from this project will also be important for wildlife management and oil and gas activities. The results will be useful for locating oil and gas infrastructure, if needed, in areas that will have little impact on geese and are least vulnerable to erosion.

Warming of the Arctic is dramatically altering coastal areas of northern Alaska. Erosion has increased dramatically because permafrost is warming, sea ice is diminishing, and sea level is rising. Diminishing sea ice reduces protection that sea ice provided to the coast. Waves are larger because of the greater fetch with less sea ice. Longer ice-free periods increase the chances of storms being able to dramatically erode or inundate coastal areas. Low lying areas are especially vulnerable.

Increased oil and gas interest in marine areas also increases the risk to coastal areas. With greater activity, there is a greater chance of an oil spill. Coastal areas, especially low-lying areas, are vulnerable to oil pollution in the event of a spill.

River deltas on the North Slope of Alaska are just such low-lying areas. They are vulnerable because of their low elevation, but they are also vulnerable because many bird species choose to nest in deltas. Deltas provide some protection to nesting birds from terrestrial predators while still offering good foraging opportunities. River deltas are perhaps one of the most dynamic land features on the North Slope of Alaska because they are subject to near-shore and riverine forces.

Many coastal areas of the Beaufort Sea coast are eroding rapidly. For example, the Bureau of Land Management has been responding to legacy wells in the Smith Bay region because rates of erosion have exceeded predictions at the time those wells were developed. These wells are eroding into the ocean. Contaminants from the old well sites could easily contaminate nearby river deltas, such as the Ikpikpuk River delta. Recently oil and gas leases were sold in the Smith Bay-Ikpikpuk River Delta area, along the coast of the Beaufort Sea. Some exploration for oil and gas is scheduled for this area during the winter season of 2007-2008.

The Ikpikpuk River Delta is particularly sensitive to shoreline erosion and flooding and is a biologically important area. In particular, there is a colony of Lesser Snow Geese that nest in the Ikpikpuk Delta. This colony has increased from ~50 nesting pairs in 1997 to ~2500 nesting pairs in 2006. In addition to being vulnerable to erosion and flooding, the colony itself poses a risk to tundra vegetation. Snow geese populations in Canada have grown dramatically and overgrazed tundra habitats. Vegetation is at risk because snow geese often feed on below ground plant tissues. This feeding behavior has resulted in the removal of vast areas of vegetation throughout regions of the Canadian arctic. We have seen evidence of this same situation beginning to occur within the Ikpikpuk River Delta. One consequence of removing plants from coastal systems is that the rates and direction of river channel migration and permafrost loss are unpredictable without baseline information.

### **MEASURABLE GOALS AND OBJECTIVES:**

The project will document the interaction of erosion, channel migration and grazing of snow geese. Results for this project will be presented in a series of annual technical reports. The information in reports will be submitted to peer-review journals for

consideration for publication so that the information will be available to a wide audience and more easily accessible in the future.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project would fall under *CIAP Authorized Use 1, projects and activities for the conservation, protection, or restoration of coastal areas, including wetland*, because it will provide information about the biotic and abiotic factors influencing the coastal area of the Ikpikpak River Delta. This information is needed to manage development projects, including oil and gas exploration, in such a way as to conserve and protect a unique environment.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

We will maintain regular communication with the U.S. Fish and Wildlife Service (FWS), the Bureau of Land Management, and the Alaska Department of Fish and Game. The FWS conducts annual surveys for nesting waterfowl across the North Slope of Alaska but those surveys do not provide adequate information for species that have clumped distribution or intensively use restricted habitats. We will continue to seek sources of funding from other Federal programs to enhance this project.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal or non-governmental (i.e. National Fish and Wildlife Foundation) agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**NORTH SLOPE BOROUGH**

**PROJECT TITLE:** Assessment of the Health and Biology of Arctic Marine Mammals for the Development and Evaluation of Mitigation Measures to Reduce Impacts from a Changing Arctic Environment

**PROJECT CONTACT:**

Contact Name: Robert Suydam/Cheryl Rosa  
 Address: North Slope Borough, Department of Wildlife Management, Box 69,  
 Barrow, AK 99723  
 Telephone Number: (907) 852-0350  
 Fax Number: (907) 852-0351  
 Email Address: Robert.Suydam@north-slope.org/Cheryl.Rosa@north-slope.org

**PROJECT LOCATION:**

Coastal areas of the Beaufort and Chukchi seas, within the North Slope Borough

**PROJECT DURATION:**

4 Years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
560,792	146,448	171,448	121,448	121,448

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
560,792	146,448	171,448	121,448	121,448

**PROJECT DESCRIPTION:**

The Beaufort and Chukchi seas are important for marine mammals, marine birds, numerous fish species, and subsistence hunters of northern Alaska. The seas and coastal areas are used for migration, breeding, calving or nesting, and foraging, among other uses. Climate change is dramatically altering the environment through reduction in sea ice extent and thickness, changing water temperatures, weather conditions, and new species are moving into the area. It is likely that the environment is changing in numerous other ways that are currently unknown or unmeasured. Concurrent with a rapidly changing environment, human activities are also changing. Reduction in sea ice may lead to increased shipping, commercial fishing and tourism. Less ice and the high

price of oil have contributed to a marked increase in oil and gas activities in the oceans and offshore. The changing environment and increased human activities have already impacted marine mammals that are integral to the subsistence communities of the North Slope Borough. Impacts will likely continue as changes continue. Remarkably little information is available documenting current or predicting future effects of these changes.

In order to mitigate immediate impacts and develop long-term predictions and management plans for marine mammals, information is needed to assess how these animals are being impacted. The North Slope Borough proposes to collect information about the health and biology of marine mammals, in particular bowhead and beluga whales, walrus or seals, and polar bears. We also propose to evaluate and develop mitigation measures to reduce impacts to marine mammals from the changing Arctic environment and human activities.

A project on health assessment will be implemented for the better understanding of physiological stress, body condition and reproductive health of marine mammals. We will assay stress hormones to establish benchmark values and evaluate whether marine mammals have been exposed to stressors in the recent past, such as from oil and gas activities. We will also assay reproductive hormones to better understand reproductive condition that will be useful for interpreting results from assays of stress hormones and body condition. We will assess body condition by quantifying amount and types of lipids in fat of marine mammals. The quantity and types is a good indication of the quality and quantity of prey species. We will evaluate hormone levels relative to other biological data, such as age, body condition, contaminant levels, etc. Determining age of marine mammals is often problematic. Various techniques for determining the age of marine mammals have been implemented. We will assess the chemical composition in the eye lens and growth layer groups of teeth of subsistence harvested animals to estimate age. Understanding population levels of marine mammals is also important for understanding broader scale effects from the changing environment. We will assess the bowhead whale population size using a mark recapture approach from recently taken aerial photographs.

The marine mammal work we propose represents a continuation and refinement of studies started by the North Slope Borough approximately 30 years ago. The program will continue as a productive partnership among agencies and organizations, including Inupiat hunters and other leaders. It will also provide an efficient, sustainable and cost effective means by which to monitor marine mammals over the long-term. The information on physiological stress, age and population levels or trends from our proposed studies will be compared with past sampling efforts and analyses. The current data will also be available for assessing future changes in stress levels, reproductive condition and body condition.

A greater understanding of stress levels, reproductive status and body condition, impacts and how they might relate to climate change and industrial activities will allow for an enhanced predictive capability for planning for the future. Additionally, the information may be useful for the development of appropriate mitigation measures to reduce impacts

from industrial activities in the Beaufort and Chukchi seas. The North Slope Borough has been working the Alaska Eskimo Whaling Commission, other subsistence hunters and consultants to develop mitigation measures for reducing impacts from industrial activities in the coastal and offshore areas of northern Alaska. Providing recommendations for the timing and scale of activity has been used in the past to mitigate impacts, especially to subsistence hunting. We propose to continue collaborative efforts with stakeholders to evaluate, develop and implement practical, efficient, and appropriate mitigation measures to protect subsistence activities and reduce impacts to the health of marine mammals.

CIAP funds would be used for personnel, contractual, travel and supplies for health assessment and age determination of selected subsistence harvested marine mammals and contractual costs for the assessment, development and refining of mitigation measures to reduce impacts from industrial activities, especially oil and gas activities, in the Beaufort and Chukchi seas to marine mammals and the subsistence harvest of marine mammals.

**MEASURABLE GOALS AND OBJECTIVES:**

This project will produce at least three annual technical reports on health or biology of marine mammals. The information in the reports will be submitted to peer-review journals for consideration for publication so that the information is available to a wide audience and easily accessible in the future.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project would address CIAP Authorized Use #2, “*mitigation of damage to fish, wildlife or natural resources*”, because it will (1) provide benchmark data needed to assess impacts from offshore oil and gas activities and climate change, and (2) assist with predictions of impacts and the development of mitigation measures to reduce impacts, especially from offshore oil and gas activities in a changing arctic environment.

The borough will provide our information to the Alaska Eskimo Whaling Commission for their development of conflict avoidance agreements with industry. The data we collect will be useful for understanding impacts to marine mammals from industrial activities and thus the development of mitigation measures, such as potential limitations in timing or the level of activities when marine mammals might be present or involved in a critical life function. We will also make the data and analyses available to Federal and State agencies for their use in evaluating and mitigating impacts.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Our proposed project on marine mammals represents a continuation and refinement of efforts started by the North Slope Borough more than 30 years ago. We will continue to work with Federal and State agencies and marine mammal co-management organizations in support of these studies. Specifically, we will coordinate with the National Marine Fisheries Service and the Minerals Management Service to ensure communication and collaboration, as much as possible, with other on-going marine mammal studies. We hope to receive additional funds from some of these organizations to enhance the program that we have proposed here.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds may be used for cost sharing or matching purposes required by another grant. If they are used in this manner, a letter will be included with the CIAP grant application from the other Federal or non-governmental (i.e. National Fish and Wildlife Foundation) agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**NORTH SLOPE BOROUGH**

**PROJECT TITLE:** Assessment of the Vulnerability of Archaeological and Cultural Sites to Coastal Erosion and the Development of Plans to Protect the Sites

**PROJECT CONTACT:**

Paul McNeil  
 North Slope Borough, Planning and Community Services, Department/GIS Division,  
 Box 69, Barrow, AK 99723  
 Telephone Number: (907) 852-0333  
 Fax Number: (907) 852-0322  
 Email Address: Paul.McNeil@north-slope.org

**PROJECT LOCATION:**

Coastal areas of the North Slope Borough

**PROJECT DURATION:**

2 Years

**ESTIMATED COST:**

Spending Estimate (\$)		
TOTAL	Year 1	Year 2
100,000	50,000	50,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
100,000	0	0	50,000	50,000

**PROJECT DESCRIPTION:**

Increasing warming of the Arctic has led to decreased ice thickness and extent and a greater period of time the ocean is ice-free. Decreased sea ice extent leads to increased coastal erosion. Warming of the Arctic has also caused substantial changes to permafrost. In some locations, the active layer of the permafrost is getting deeper and permafrost is warming. These factors contribute to increased erosion. Coastal areas of the North Slope Borough are vulnerable to erosion. Many cultural and archaeological sites are located in coastal areas, thus, are at risk of being eroded into the ocean. We proposed to use CIAP funds to identify the cultural and archaeological sites that are at greatest risk so that the North Slope Borough can develop plans to protect these coastal sites.

The North Slope Borough Planning and Community Services Department\Geographical Information System Division (NSB\GIS) and the North Slope Borough Inupiat Heritage Language Commission (IHLC) jointly maintain a cultural-traditional use database, the TLUI database. NSB\GIS also maintains a comprehensive database of archaeological sites located within the North Slope Borough that was compiled by Dr. Edwin Hall in the mid-1990's. These unique sources of information can be used to identify coastal locations of high cultural and archaeological value. For example, a quarter-mile buffer of the North Slope Borough coastline intersected with the Ed Hall data creates another dataset of 318 known archaeological sites located very close or on the coast. Within this subset of data, Dr. Hall identifies 30 locations that he characterizes as of 'extreme known importance'. This reduced dataset can be further defined based on a number of other criteria. Many important archaeological and cultural sites are located in close proximity to the coast and the location and relative importance of these sites can be determined using a GIS with existing, in-house NSB/GIS and IHLC data.

The proposed project would acquire from the USGS Earth Resources Observation and Science (EROS) Center high-resolution satellite imagery and/or aerial photography of important archaeological/cultural coastal sites identified by NSBGIS. This raster data would be used in a time series analysis to determine the rate of coastline erosion and the inferred threat due to coastal erosion to important cultural and archaeological resources at various locations on the Chukchi Sea and Beaufort Sea coastlines. The proposed project would provide important information that could be used to locate, conserve and protect archaeological and cultural resources.

**MEASURABLE GOALS AND OBJECTIVES:**

Draft a technical report of the results of the proposed project that can be used as the foundation for the development of a plan to protect vulnerable sites and to designate areas under the Alaska Coastal Management Program (ACMP). The report will include:

- 1) Identification of important archaeological and cultural sites located near the North Slope Borough's coast;
- 2) Determination of the most cost-effective image or raster format to be used in the analysis of the rates of coastal erosion at North Slope locations;
- 3) Estimation, with aerial photos and/or satellite imagery, of the rate of coastal erosion or accretion at specific sites; and
- 4) Quantification and assessment of the risk of coastal erosion to important archaeological and cultural sites.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is eligible under CIAP Authorized Use #4, *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan.*

This project will help state and local planners implement the Alaska Coastal Management Program (ACMP), a federally approved program. Projects in the coastal zone that require state or federal authorizations, as well as federal activities, must be found consistent with the state standards and local district enforceable policies. The database will provide information needed for the implementation of the natural hazard standards of the ACMP.

The ACMP requires the district or Alaska Department of Natural Resources to designate natural hazard areas in order to apply the natural hazard standard at 11 AAC 112. 210.

*11 AAC 112.210. Natural hazard areas.*

*(b) Areas likely to be affected by the occurrence of a natural hazard may be designated as natural hazard areas by a state agency or, under 11 AAC 114.250(b), by a district.*

*(c) Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.*

This project will identify areas that have been affected by erosion. The time series analysis will determine the rate of coastline erosion and provide the evidence needed to designate a natural hazard area.

This project would also offer information on the location of cultural resources. The ACMP regulations require the coastal district to designate areas importance for the study, understanding, or illustration of national, state, or local history or prehistory. As well, the ACMP standards at 11 AAC 320 require the state to make similar designations.

*11AAC 112.320. Historic, prehistoric, and archeological resources.*

*(a) The department will designate areas of the coastal zone that are important to the study, understanding, or illustration of national, state, or local history or prehistory, including natural processes.*

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

Coordination will occur with Federal and State agencies that have land management authority. Data will be shared with those other agencies. It does not appear that there are funds available from other sources for this type of work but we will continue to look for other funding opportunities to expand this program.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds will not be used for cost sharing or matching purposes.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**NORTH SLOPE BOROUGH**

**PROJECT TITLE: Implementation and Enhancement of Permitting Activities of the North Slope Borough**

**PROJECT CONTACT:**

Contact Name: Gordon Brower  
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 Email Address: Gordon.Brower@north-slope.org

**PROJECT LOCATION:**

Coastal communities of the North Slope Borough

**PROJECT DURATION:**

2 Years

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>		
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>
80,000	40,000	40,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
80,000	40,000	40,000	0	0

**PROJECT DESCRIPTION:**

Climate change is dramatically altering the environment through reduction in sea ice extent and thickness, changing water temperatures, weather conditions, and new species are moving into the area. It is likely that the environment is changing in numerous other ways that are currently unknown or unmeasured. Concurrent with a rapidly changing environment, human activities are also changing. Reduction in sea ice may lead to increased shipping, commercial fishing and tourism. Less ice and the high price of oil have contributed to a marked increase in oil and gas activities in the oceans, coastal areas, and onshore. The changing environment and increased human activities have already impacted coastal resources that are integral to the subsistence communities of the North Slope Borough. Impacts will likely continue as changes continue. Remarkably

little information is available documenting current or predicting future effects of these impacts.

We propose to use CIAP funds to hold community meetings to gather information, including traditional ecological knowledge, from residents of coastal villages to document concerns and impacts. Because scientific information for coastal areas of the North Slope Borough is generally lacking, gathering traditional knowledge and observations for hunters in North Slope communities is essential. This information will provide valuable insights into environmental changes, habitats that are limited, ecologically valuable or vulnerable, impacts from anthropogenic activities, and solutions for mitigating impacts. The North Slope Borough, especially the Planning Department, will use the information gathered at community meetings to enhance our ability to effectively permit coastal activities while ensuring protection of coastal areas. One approach for using the newly acquired information will be for the development of permit stipulations for mitigation of impacts from oil and gas activities or designation of subsistence areas, important habitat, archeological areas, etc.

The Alaska Coastal Zone Management Program and Title 19 provide the North Slope Borough its authority to permit coastal activities. These two tools allow the NSB to regulate oil and gas activities in northern Alaska, including in coastal areas. Information from the community meetings will be used to refine and improve the North Slope Borough's permitting responsibilities and authorities. The Planning Department will bring at least two prominent members from each of the coastal communities of the North Slope to a workshop in Barrow. A community meeting will also be held in Nuiqsut, the North Slope community that has been exposed to the most oil and gas activity in marine areas compared to any other North Slope community.

**MEASURABLE GOALS AND OBJECTIVES:**

Hold community meetings in Barrow with residents from each of the North Slope Borough's coastal communities and in Nuiqsut. Written summaries of each meeting will be produced.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is eligible under CIAP Authorized Use #4, *Implementation of a federally-approved marine, coastal or comprehensive conservation management plan.*

This project will help state and local planners implement the Alaska Coastal Management Program (ACMP), a federally approved program. Projects in the coastal zone that require state or federal authorizations, or are a federal activity, must be found consistent with the state standards and local district enforceable policies. The North Slope Borough, as the local coastal district, participates in the ACMP consistency review process. The information gathered from community members will help local planners as well as state and federal agencies better understand and document the changing conditions to wildlife and habitat in the coastal area due to climate change and development and will assist resource managers in making decisions to minimize impacts of future development. The information will be valuable in the implementation of many of the ACMP standards. Information gathered specific to erosion, sea level rise, impacts to the permafrost,

flooding, and other natural hazards will provide the evidence needed to implement the ACMP state Natural Hazard standard at 11 AAC 112.210.

**11 AAC 112.210. Natural hazard areas.**

*(b) Areas likely to be affected by the occurrence of a natural hazard may be designated as natural hazard areas by a state agency or, under 11 AAC 114.250(b), by a district.*

*(c) Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.*

The information gathered will assist local planners in commenting on future oil development proposals and effectively implement the ACMP Energy Facilities standard at 11 AAC 112.230

**11 AAC 112.230. Energy facilities.**

*(a) The siting and approval of major energy facilities by districts and state agencies must be based, to the extent practicable, on the following standards:*

*(1) site facilities so as to minimize adverse environmental and social effects while satisfying industrial requirements;*

*(2) site facilities so as to be compatible with existing and subsequent adjacent uses and projected community needs;*

*(4) consider the concurrent use of facilities for public or economic reasons;*

*(8) select harbors and shipping routes with least exposure to reefs, shoals, drift ice, and other obstructions;*

*(11) site facilities so as to minimize the probability, along shipping routes, of spills or other forms of contamination that would affect fishing grounds, spawning grounds, and other biologically productive or vulnerable habitats, including marine mammal rookeries and hauling out grounds and waterfowl nesting areas;*

*(12) site facilities so that design and construction of those facilities and support infrastructures in coastal areas will allow for the free passage and movement of fish and wildlife with due consideration for historic migratory patterns;*

*(13) site facilities so that areas of particular scenic, recreational, environmental, or cultural value, identified in district plans, will be protected;*

*(14) site facilities in areas of least biological productivity, diversity, and vulnerability and where effluents and spills can be controlled or contained;*

*(15) site facilities where winds and air currents disperse airborne emissions that cannot be captured before escape into the atmosphere;*

*(16) site facilities so that associated vessel operations or activities will not result in overcrowded harbors or interfere with fishing operations and equipment.*

Information on wildlife transit will assist in the implementation of the ACMP Utility Routes and Facilities standard at 11 AAC 112.240 and the Transportation Routes and Facilities standard at 11 AAC 112.280

***11 AAC 112.240. Utility routes and facilities.***

*(a) Utility routes and facilities must be sited inland from beaches and shorelines unless*

- (1) the route or facility is water-dependent or water related; or*
- (2) no practicable inland alternative exists to meet the public need for the route or facility.*

*(b) Utility routes and facilities along the coast must avoid, minimize, or mitigate*

- (1) alterations in surface and ground water drainage patterns;*
- (2) disruption in known or reasonably foreseeable wildlife transit;*
- (3) blockage of existing or traditional access.*

***11 AAC 112.280. Transportation routes and facilities.***

*Transportation routes and facilities must avoid, minimize, or mitigate*

- (1) alterations in surface and ground water drainage patterns;*
- (2) disruption in known or reasonably foreseeable wildlife transit; and*
- (3) blockage of existing or traditional access.*

The ACMP Subsistence standard at 11 AAC 112.270 requires that the district or state designate subsistence use areas in order for the standard to apply. Local usage of the area must be demonstrated to make the designation. As changes in location of subsistence resources occur due to climate change, the project will provide information on local usage that could support subsistence use area designations.

***11 AAC 112.270. Subsistence.***

*(a) A project within a subsistence use area designated by the department or under 11 AAC 114.250(g) must avoid or minimize impacts to subsistence uses of coastal resources.*

*(b) For a project within a subsistence use area designated under 11 AAC 114.250(g), the applicant shall submit an analysis or evaluation of reasonably foreseeable adverse impacts of the project on subsistence use as part of*

- (1) a consistency review packet submitted under 11 AAC 110.215; and*
- (2) a consistency evaluation under 15 C.F.R. 930.39, 15 C.F.R. 930.58, or 15 C.F.R. 930.76.*

*(d) Except in nonsubsistence areas identified under AS 16.05.258, the department may, after consultation with the appropriate district, federally recognized Indian tribes, Native corporations, and other appropriate persons or groups, designate areas in which a subsistence use is an important use of coastal resources as demonstrated by local usage.*

The ACMP Habitats standard at 11 AAC 112.300 provides direction on how to manage 8 different habitats. It is likely that the information gathered will aid in the implementation

of the Habitats standard. The applicable section of the standard will vary depending on the location of proposed development.

***11 AAC 112.300 Habitats.***

- (1) offshore areas must be managed to avoid, minimize, or mitigate significant adverse impacts to competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;*
- (2) estuaries must be managed to avoid, minimize, or mitigate significant adverse impacts to*
  - (A) adequate water flow and natural water circulation patterns; and*
  - (B) competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;*
- (3) wetlands must be managed to avoid, minimize, or mitigate significant adverse impacts to water flow and natural drainage patterns;*
- (4) tideflats must be managed to avoid, minimize, or mitigate significant adverse impacts to*
  - (A) water flow and natural drainage patterns; and*
  - (B) competing uses such as commercial, recreational, or subsistence uses, to the extent that those uses are determined to be in competition with the proposed use;*
- (5) rocky islands and sea cliffs must be managed to*
  - (A) avoid, minimize, or mitigate significant adverse impacts to habitat used by coastal species; and*
  - (B) avoid the introduction of competing or destructive species and predators;*
- (6) barrier islands and lagoons must be managed to avoid, minimize, or mitigate significant adverse impacts*
  - (A) to flows of sediments and water;*
  - (B) from the alteration or redirection of wave energy or marine currents that would lead to the filling in of lagoons or the erosion of barrier islands; and*
  - (C) from activities that would decrease the use of barrier islands by coastal species, including polar bears and nesting birds;*
- (7) exposed high-energy coasts must be managed to avoid, minimize, or mitigate significant adverse impacts*
  - (A) to the mix and transport of sediments; and*
  - (B) from redirection of transport processes and wave energy;*
- (8) rivers, streams, and lakes must be managed to avoid, minimize, or mitigate significant adverse impacts to*
  - (A) natural water flow;*
  - (B) active floodplains; and*
  - (C) natural vegetation within riparian management areas; and*

Information gathered specific to the location of cultural resources will provide evidence to designate areas important to the study, understanding, or illustration of national, state, or local history or prehistory, including natural processes and to implement the ACMP standard at 11 AAC 112.320.

***11 AAC 112.320. Historic, prehistoric, and archeological resources.***

*(a) The department will designate areas of the coastal zone that are important to the study, understanding, or illustration of national, state, or local history or prehistory, including natural processes.*

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

We will coordinate and communicate with other agencies as we use the collected information in implementing ACMP standards. No alternative funding has been available from other Federal programs.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds will not be used for cost sharing or matching purposes.

# NORTHWEST ARCTIC BOROUGH

## TIER 1 CIAP PROJECTS

1. Protecting Coastal Areas through Region-wide Waste Management Improvement
2. Protecting Coastal Areas through Planning and Guidance for Sustainable Tourism
3. Improving Management Capacity to Protect Coastal Areas
4. Protection of Coastal Areas from Marine Debris
5. Administrative Costs
6. Improving Subsistence Information to Implement Federal Plans
7. Improving Public Involvement for Implementation of Federally Approved Plans

## TIER 2 CIAP PROJECTS

1. Village-based Environmental Monitoring to Protect Coastal Areas



**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**NORTHWEST ARCTIC BOROUGH**

**PROJECT TITLE: Protecting Coastal Areas Through Region-wide Waste Management Improvement**

**PROJECT CONTACT**

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**PROJECT LOCATION**

NWAB communities

**PROJECT DURATION:**

3 Years

**ESTIMATED COST:**

<b>Spending Estimate (\$)</b>			
<b>TOTAL</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
181,000	44,500	77,500	59,000

<b>Funding per Allocation Year of CIAP (\$)</b>				
<b>TOTAL</b>	<b>FY 07</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>
181,000	0	44,500	77,500	59,000

**PROJECT DESCRIPTION:**

The Borough is pursuing a regional, integrated, system approach to manage waste and enhance efforts by individual communities in the coastal area. All communities and outlying areas as referred to in this proposal (and all others), are within Borough boundaries and therefore constitute the "coastal area" for the purpose of this grant program. We will focus on efforts to reduce, reuse and recycle waste in order to prevent or remove contamination from the environment and thus, protect, conserve and restore the coastal area.

Most villages in the region are overwhelmed by the accumulation of trash. Solid waste in every village continues to grow. Planes and barges bring in tons of cargo to every village, but rarely does any of it ever leave. Much of it ends up in the village dump, an open, unlined, unmonitored site on the bare land, often near waterways or on wetlands, within a mile or two of town. Access is an issue; most trash is self-hauled by residents. Containment is an issue. Fencing is inadequate to corral all the waste. Either it is failing, has failed or does not exist. Space is an issue. Most villages want to site a new landfill/dump or expand the current one, which is essentially turning coastal areas into trash dumps or toxic waste sites.

Waste, for example, plastic grocery bags or plastic soft drink "rings", can easily become wind blown and end up across the landscape, harming or even killing many animals, including birds, fish and other subsistence animals that ingest the bags, and other fugitive waste (solid and liquid). Leachate forms from the toxic soup of batteries, paint, cleaners, metals, electronics, fluids, honeybucket (raw human) waste, and other household and industrial waste that ends up in the dump. Trash is indiscriminately dropped en route to the dump or blown around from the dump. Smoke from open burning or self-combustion of trash/waste in the dump produces PCBs, dioxins, and other toxins. All this contamination makes its way into the land, air and waterways throughout the coastal area. This also impacts subsistence resources, a bell weather for the health of the environment. Studies show that villagers visiting their dump have an increased risk of illness. The environmental "illness" of the dump easily spreads throughout the larger coastal area. Waste and other impacts upriver will naturally affect everything downstream, including villages, waterways, land and the coastal area environment and wildlife.

This waste management project will offer support and assistance to build on a pilot backhaul/recycling project spearheaded by Maniilaq Association in 2007 to remove waste from the region such as electronic (e)-waste, toxic material, scrap metal, and other recyclables. Maniilaq's project will continue into at least 2009. The Borough plans to work with at least five coastal communities in the Borough to build on this pilot backhaul project in the following ways:

- meet with several non-profit organizations or villages in the region to develop partnerships to support and implement expanded solid waste backhaul project
- assist villages in the assessment/inventory of e-waste and other hazardous waste in villages
- explore the potential, logistics, and resource needs to expand backhaul and recycling activities
- assist villages in collection and staging of waste for backhaul and recycling
- assist in financial cost of backhaul and recycling efforts

Through supporting environmental education, awareness and training, this project will also seek to increase village and Borough awareness of the problem, community buy-in, participation, long-term support and local responsibility in taking care of our own waste. This will include research and soliciting community ideas on creative, alternative ways to not only divert waste from the landfill/dump but also use waste as a resource.

Composting, for example, has already been identified and we hope to research and implement a pilot project to learn from it and determine its viability and potential expansion in the region. A large percentage of our waste can be composted. Diverting this and other waste will extend the life of the current dump and protect more land in the coastal area from becoming future dumps. Also, future sites are always further away from town and the greater the distance between the two, the greater the incidence of spillage of trash and raw human waste en route to the site.

The Borough will conduct a scoping effort to assess the status of waste management within the Borough villages, identify those villages that need waste management plans, identify the challenges villages face to plan implementation and identify stakeholders. The Borough will use the information from the scoping effort to initiate the development of a regional waste management strategic plan.

The Borough will also begin to implement activities to improve waste management, village by village or on a region-wide basis depending on the goals and objectives developed in the plan.

### **MEASRUABLE GOALS AND OBJECTIVES**

- Support and build on pilot backhaul and recycling project
  - Compile waste assessment/inventory from at least 5 villages into a single report
  - Identify equipment, supply, training and other needs, and assist in meeting those needs
  - Remove at least 10,000 lb (5 tons) of e-waste, lead acid batteries, fluorescent lights and other toxic waste from the region
  - Identify and support ways to effectively improve the program
- Develop and implement an environmental education and marketing campaign to encourage awareness of the problems and community buy-in, participation, long-term support and local responsibility in taking care of our own waste (e.g., recycling, separating waste, reducing disposables, composting, etc.). The borough will tailor the education and marketing products based on participants' interests and areas of expertise. Products could include a combination of the following or similar products:
  - a poster to encourage individuals to "reduce, reuse, or recycle" and keep waste and especially e-waste out of the dump
  - public service announcements on local public radio (KOTZ-AM) on waste management and protection of coastal areas
  - host radio talk show on the project
  - a "commercial" ad (DVD, slide show, etc) to highlight individual responsibility (similar to the national "Don't litter" campaign of the 60s).These products will be presented in at least five different villages in public meetings and in school presentations to discuss residents' role, responsibility and benefit from improved waste management.
- Improve capacity for more effective waste management

- Identify training, equipment, supply and facility needs for more effective waste management
  - Assist with funding to meet these needs
  - At least 2 Borough staff and 1 project staff (1) will attend at least 3 trainings in waste management, environmental protection and restoration of coastal areas (for example, AFE, ATCEM, Brownfields, Bioneers)
  - Identify potential speakers/presenters to reach a larger community audience and bring to the region to do training and presentation
  - Follow up the trainings with at least 4 village presentations
  - Follow up presentations with community leadership, interested residents, and local IGAP staff in at least 3 villages to pursue projects or activities to implement from training received
- Develop solid waste scoping report that:
    - Assesses village waste management plans: who has them or in what stage of development are they; and status of implementation
    - Identifies challenges in implementation of plans or in development of plans
    - With village input, identifies potential ways to address challenges
    - Identifies stakeholders in region and outside interested in the development of a regional plan to manage solid waste and provide ongoing assistance
  - Hold 3 meetings with Borough staff and stakeholders toward development of regional plan
  - Annual Report: Prepare an annual report that describes progress made towards meeting each measurable goal and objective

### **PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

The project is consistent with **authorized use 1**. Improving management capacity of those in charge of waste management, the local dump and everything that enters it and unintentionally leaves it, will help prevent negative impacts on the environment and human health.

For example, e (electronic)-wastes (computers, remote controls, smoke detectors, VCRs, etc.) contain heavy metals. When e-waste is discarded, especially along bodies of water, in wetlands or anywhere it is left exposed to the elements (rain, moisture, snow), the metals leach out into the environment causing aquatic toxicity harmful to the environment. This has been documented in the Archives of Environmental Contamination and Toxicology and studies funded by the National Science Foundation.

Additionally, with climate change and tundra melting, heavy metals that have been sequestered will be released and be more bioavailable. Smoke from burning trash can release dioxins and PCBs into the environment.

Improved management in projects to reduce, reuse and recycle waste in the communities (in the coastal area) and outlying areas (within the coastal area) will conserve, protect and

restore coastal areas, including wetlands by helping prevent that waste from becoming or remaining fugitive and potentially toxic contaminants in the air, land and water (habitat). To avoid more repetition, please see the first paragraph of this proposal if more explicit information is needed.

Effectively pursuing and managing solid waste and anti-pollution projects will mitigate damage to and help protect habitats and the fish, plants and wildlife they support.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Borough has not formally coordinated with federal resources or programs on this project. However, the Borough has collaborated with the Environmental Protection Agency (EPA) Indian Environmental General Assistance Program (IGAP) through Manilaaq Association, the regional tribal consortium, on the backhaul pilot project. Village IGAP staff are already working on environmental protection, conservation and restoration projects in the coastal area and the Borough plans to partner more with them.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds would not be used for cost sharing or as a match, but it will ideally supplement other funds and in-kind resources already planned or being sought for this project.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

**PROJECT TITLE:** Protecting Coastal Areas Through Planning and Guidance for Sustainable Tourism

**PROJECT CONTACT:**

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**PROJECT LOCATION:**

NWAB communities within the coastal zone

**PROJECT DURATION:**

3 Years

**ESTIMATED COST:**

Spending Estimate (\$)			
TOTAL	Year 1	Year 2	Year 3
136,000	40,000	55,000	41,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
136,000	0	40,000	55,000	41,000

**PROJECT DESCRIPTION:**

Commercial recreation is growing in the Northwest Arctic Borough (Borough) coastal area and with it, both the positive and negative impacts to communities and their environment. Global and local experience and research has shown that unplanned, unmanaged tourism can have major negative impacts on the environment. With the expected opening of the new National Park Service visitor center in Kotzebue in 2009, commercial recreation in the form of tourism is expected to increase even more. A solid plan to guide the inevitable development of tourism will help maximize the benefits and minimize the negative impacts. Toward that goal, this project will develop guidelines and strategies to begin to address the anticipated growth in tourism and to help prevent negative impacts in the coastal area.

The guidelines might later be used toward developing a long-term regional plan to guide and manage tourism so that it is a sustainable activity that continues to protect and conserve coastal areas. Increased use of coastal areas increases trash, sewage, the need for larger capacity systems for fuel, electricity, water, sewage and solid waste, all of which have potential negative impacts on the coastal area environment. For small, rural communities (average population 600) with a strong subsistence culture that depends on the continued health of the land, the negative impacts of competing land uses (such as tourism) can be overwhelming.

The Borough will discuss the project, potential collaboration, and solicit feedback from the villages through a series of meetings with key businesses and other stakeholders in the Borough that are interested in, or are already involved in, the visitor industry in the region. At a minimum, the following agencies will be involved:

- Western Arctic National Parklands (National Park Service),
- Selawik Wildlife Refuge (U.S. Fish & Wildlife Service),
- Alaska Department of Fish and Game (ADF&G),
- Kotzebue IRA,
- NANA Regional Corporation,
- Maniilaq Association, and the Alaska Technical Center (NWAB School District)

At the meetings that Borough will assess the strengths, weaknesses, opportunities and threats (SWOT) of tourism in the coastal area and will introduce the concept of sustainable, eco-cultural tourism (environmental and cultural asset management). With broad public input, the Borough will develop guidelines for sustainable, eco-cultural tourism. This will include determining culturally or environmentally sensitive areas where commercial recreation should not occur and discussing practices that can avoid or minimize subsistence or cultural impacts. Through meetings, the Borough will determine if there is support for village-based eco-cultural tourism and will develop strategies to implement management guidelines.

The project will promote the benefit of locally based eco-cultural tourism and related businesses that focus on local culture and clean and healthy ecosystems. Simultaneously, it will increase public awareness of the value in protecting and conserving the coastal area environment, and how to do so in a sustainable manner. Developing these guidelines will also help strengthen local environmental stewardship. For example, preventing fuel leaks saves fuel costs and protects the coastal area from pollution; avoiding use of lead shot and sinkers protects wildlife; and identifying areas that are too sensitive and NOT appropriate for tourism will help protect environmentally sensitive areas from degradation.

The project would include community outreach to identify youth or young people interested in eco-cultural tourism or related business and involve them in the process.

Though held in Kotzebue, meetings would also encourage broad public participation as tourism and this project would directly impact the lives of all Borough residents.

This project will increase public awareness of and support for the need to ensure and value of ensuring that environmental benefits are maximized and negative impacts minimized in tourism and any development the community is interested in pursuing. Linking protection of the environment to economic and cultural benefit will help ensure the sustainability of the former.

A number of partnerships would be developed with local public and private land owners, educational and other local entities to pursue mutually beneficial projects that would promote environmental education, training, eco-cultural tourism and supporting activities.

### **MEASURABLE GOALS AND OBJECTIVES:**

The Borough will conduct at least four stakeholder and community meetings to discuss strengths, weaknesses, opportunities and threats (SWOT) of tourism in the coastal area; to develop guidelines for sustainable, eco-cultural tourism; and to develop a strategy to implement the guidelines. The following outcomes will be generated from the meetings:

- **SWOT assessment:** Complete report summarizing the strengths, weaknesses, opportunities and threats to implementing a sustainable, eco-cultural tourism strategy, with emphasis on environmental protection.
- **Summary of the village meetings:** Complete report summarizing meetings. The Borough will use this summary and guidelines to create the tourism brochure described below.
- **DRAFT guidelines for sustainable, eco-cultural tourism:** Compile and create for public review and informal adoption.

Additional measurable project outcomes include:

- **Business Inventory:** Compile a list of tourism related businesses and those interested in starting one in the Borough.
- **Training:** Hold at least three training sessions, inviting interested community members and those identified in Business Inventory, to address:
  - sustainable practices critical to minimizing impacts to local communities, cultural resources, and the environment
  - strengthening an ethic of environmental respect and protection that will help ensure the sustainability of subsistence and economic resources
- **Mentoring:** Provide counseling and mentoring for at least three nascent and existing small businesses in developing eco-cultural tourism.
- **Brochure:** Develop and distribute 500 copies of a brochure for visitors regarding how they can reduce impacts to the environment, subsistence users and residents. The brochure will be available to local businesses, visitor centers, agency offices and commercial recreation businesses.
- **Annual Report:** Prepare an annual report that describes progress made towards meeting each measurable goal and objective.

- **Final Report:** Complete a final report evaluating the success of the project in meeting the goals and objectives. In addition, the final report will include strategies for promoting sustainable eco-cultural tourism in the Borough.

### **PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with Authorized Use #1, *projects and activities for the conservation, protection, or restoration of coastal areas, including wetland*. The project will result in increased conservation, protection of coastal areas by strengthening local awareness and appreciation of the value of coastal resources. It will emphasize the need to avoid or minimize impacts to coastal uses and resources from commercial recreation activities. For example, the project is expected to conserve and protect coastal areas by: 1) minimizing conflicts between commercial recreation and other uses; 2) reducing litter on public lands; 3) reducing improper disposal of human waste; 4) reducing impacts from off-road vehicles to wetlands and other sensitive environments; 5) reducing displacement of fish and wildlife, including interference with caribou migration.

### **COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The National Park Service and the Selawik National Wildlife Refuge have indicated their interest in working with the Borough on efforts to guide and manage tourism in a sustainable manner, in order to encourage visitor access while protecting and conserving the natural resources and ecosystems in the region. These organizations will be included in the stakeholder meetings associated with this project.

The Borough is developing its CEDS (comprehensive economic development strategy) plan through assistance from the U.S. Department of Commerce, Economic Development Administration. This CIAP proposal would help protect, conserve and restore the environment by supporting sustainable eco-cultural tourism which will be addressed in the CEDS plan.

### **COST SHARING AND OTHER FUNDING:**

CIAP funds would not be used as a match, but are expected to supplement other funds and in-kind resources being sought for this project.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

**PROJECT TITLE:** Improving Management Capacity to Protect Coastal Areas

**PROJECT CONTACT:**

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**PROJECT LOCATION:**

NWAB coastal communities

**PROJECT DURATION:**

4 Years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
200,000	50,000	50,000	50,000	50,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
200,000	0	80,000	60,000	60,000

**PROJECT DESCRIPTION:**

For the purpose of this grant program, all villages/communities and outlying areas as referred to in this proposal (and all other NWAB CIAP proposals) lay within Borough (Coastal Political Subdivision) boundaries and therefore constitute the "coastal area."

Lack of management capacity in basic village system infrastructure, particularly water and sewage systems and electric power generation, leads to a dangerous cycle in many communities resulting in environmental contamination of the coastal area, and public health risks. This project is to improve the financial, administrative and management capacity of Borough villages relevant to their water/sewer (or septage) systems and related infrastructure to protect coastal areas from environmental contamination. Local communities have the greatest potential to reduce such impacts to coastal areas.

Each winter the Borough receives emergency calls from at least a few villages due to frozen pipes, busted pipes, broken pumps or other failures. This can often result in environmental pollution through the uncontrolled release of raw sewage onto the land or into waterways of coastal areas. Until repairs can be made, or until spring thaw, villages have to return to the use of honey buckets (indoor collection of raw human waste), which is not only a major public health risk but self-haul to a dumping site usually means more spillage of raw sewage along the way, and transfer of that same sewage via footwear or 4-wheeler (ATV) tires.

If the water treatment system breaks down, that shuts down the sewer system, as the water system is needed to operate the sewer system. If the power plant breaks down, then there is no heat or electricity to keep the water/sewer pipes flowing, resulting again in frozen or busted pipes or other mechanical failure.

Some reasons for the system breakdowns include high operator turnover (not enough hours or wages); collection rate not high enough to cover operations, maintenance, repair and replacement (OMRR) costs (water/sewer/electric rates might be too low to cover OMRR); operations budget not spent as projected to cover OMRR; water/sewer systems inappropriate for village or outdated and too expensive to operate and maintain; preventive maintenance (PM) not being done; and inadequate or nonexistent manuals to carry out operation and maintenance.

Inadequacy of funds results in a domino effect of problems. Additionally, when the system breaks down, the collection rate drops further as customers are unwilling to pay for a service they are not receiving. Expensive repairs further adds to the cost of the system.

Lack of management capacity leads to missed opportunities for Village Safe Water funding and other funding for necessary plant operator training and utility system improvements. Unwitting mismanagement of current systems and funding jeopardizes current and future funding. High operator turnover means untrained operators and chemical spills or chemicals, such as chlorine, are unintentionally released into the coastal area.

This project will promote successful management of current grants and projects to ensure good standing for future funding. The project would also help build capacity to pursue new grants and projects to further protect and restore the environment and enhance community environmental awareness. This project will seek ways to actively engage the community in being accountable for their community infrastructure.

Where possible, representatives from both tribes and cities will be included in the training as both governments face the same challenges, and together could develop creative solutions. While many city and tribal government staff from rural villages attend a variety of trainings and workshops to better manage programs and projects, there is sporadic follow through once they return home.

Through assessment of management capacity needs in each village and assisting with meeting those needs through activities such as ensuring villages have functioning basic office equipment and supplies for day-to-day operation, and on-site training, mentoring, and periodic follow-up, this project will support village staff to improve the management of water, sewer, solid waste and other related utility systems and projects, which will protect and conserve coastal areas. This includes wetlands, watersheds, and other wildlife habitat.

### **MEASURABLE GOALS AND OBJECTIVES:**

- Identify potential partners who also have a vested interest in preventing utility system failures and emergencies, for example, Maniilaq, School District, State Rural Utilities
- Assessment of individual community utility management capacity needs to prioritize which communities to address first.
- Strategic plan that addresses utility management capacity needs for all communities.
- MOA or similar necessary agreements with villages interested in participating in this capacity building program, outlining the Borough's and village's responsibilities.
- A basic, generic preventive maintenance (PM) schedule for each village (to be tailored later to specific village systems)
- Facilities management and maintenance training, including follow up on-site visits to each village to ensure the information from training is understood and implemented effectively.
- Financial assessments to determine true cost of operating utilities (fuel, electricity, water/sewer) in at least 5 villages and ensure villages are charging customers enough to fully cover costs of operating and maintaining systems to prevent failures and environmental hazards.
- List of do's and don'ts to distribute to residents, so they can actively participate in keeping the systems functioning and keep operation costs (and monthly rates) down.
- Public meetings in at least 5 villages to educate residents on the need to raise rates and the need for personal responsibility in paying utility bills and properly using systems to avoid negative impacts on the community, the system, and the environment.
- Report for distribution to all villages, documenting ways to operate utilities more efficiently and keep costs and system failures down.
- Annual report that describes progress made towards meeting each measurable goal and objective.

### **PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

The project is consistent with Authorized Use #1, *“Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.”* Improving management capacity of village infrastructure such as water, sewage, and solid waste systems will help prevent a number of negative impacts on the coastal area, and will strengthen the conservation and protection of coastal areas, including wetlands. As discussed above, frozen pipes, failed electric, water and solid waste systems, and lack of training often result in an increase in environmental pollution through the uncontrolled

release of raw sewage onto the land (including wetlands) or into waterways of coastal areas. Improving capacity and training within the villages to manage and operate the infrastructure properly will reduce the likelihood of the pollution from raw sewage and will thereby protect coastal areas from such impacts.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Borough regularly coordinates with state, federal and Native organizations (e.g., EPA circuit rider, Maniilaq Environmental Program, local EPA IGAP programs, Alaska Native Health Consortium) that have similar programs to deal with this issue in the Borough. The Borough will include these agencies in the initial project planning efforts for this project and as needed during the project period to ensure a coordinated effort that prevents wasteful duplication.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds are not intended to be used for cost sharing or as a match, but they will ideally supplement other funds and in-kind resources already in place and being sought for this project.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

**PROJECT TITLE:** Protection of Coastal Areas from Marine Debris

**PROJECT CONTACT:**

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**PROJECT LOCATION:**

Kivalina, Chukchi Coast and other NWAB coastal communities

**PROJECT DURATION:**

3 Years

**ESTIMATED COST:**

Spending Estimate (\$)			
TOTAL	Year 1	Year 2	Year 3
125,000	50,000	45,000	30,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
125,000	0	50,000	45,000	30,000

**PROJECT DESCRIPTION:**

The original shoreline stabilization project in Kivalina, consisting of metal wire baskets (gabions) and hi-tech mesh (fabric) liners, has failed and continues to fail. This material has become marine debris harmful to coastal areas. This combination of damaged materials forms a kind of metal mesh that has been shown to trap salmon and other fish. These materials have been found as far north as Cape Thompson, about 50 miles north of Kivalina. The project will include activities to address existing marine debris and prevent further marine debris.

The project will dismantle damaged metal wire baskets (gabions) and torn hi-tech mesh liners from the original failed shoreline revetment project, before they become marine

debris. Fugitive revetment materials that have already been washed away in subsequent storms and have already become marine debris will also be collected through this project.

The Borough will meet with village leaders and environmental managers of other coastal communities in the region to identify what other types of marine debris are impacting the coastal areas. The Borough will help develop a plan to collect and remove the debris from the coastal areas.

As part of this project, at least one Borough staff will attend related marine debris workshop or training for further guidance and resources to effectively carry out this project and protect coastal areas.

**MEASURABLE GOALS AND OBJECTIVES:**

- Meet with Kivalina village leaders and environmental manager and develop plan to dismantle and remove damaged metal gabions and mesh fabric from failed seawall.
- Remove damaged gabions from the coast in Kivalina as outlined in the plan.
- Collect and safely secure fugitive revetment materials that have ended up in other coastal communities or other coastal areas (areas on the coast) as outlined in the plan.
- Meet with other coastal village leaders and environmental managers within the Borough to develop a plan to identify and address other marine debris.
- Annual Report describing progress made towards meeting each measurable goal and objective.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

The project is consistent with Authorized Use 2 *Mitigation of damage to fish, wildlife, or natural resources*. Recent research has proven that debris has serious effects on the marine environment, marine wildlife, the economy and human health and safety. In fact, marine debris has become one of the most widespread pollution problems facing the world's oceans and waterways, and derelict fishing gear, including nets, lines, and buoys, is especially problematic in Alaska. Marine debris can entangle marine mammals and seabirds. Lost fishing gear can entrap fish. Colored plastics mistaken as food clog digestion tracks of seabirds and marine mammals. Kivalina in the Northwest Arctic Borough is highly susceptible to coastal erosion. Revetments made from gabions and other materials have been used to minimize coastal erosion. Over the years, as revetment projects failed, the damaged gabions, mesh and other materials were not always properly removed. The unique combination of metal wire baskets and hi-tech mesh liners used in the gabions have created a gillnet type situation entrapping salmon and other marine life. Removing the damaged gabions and mesh will mitigate these damaging impacts.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Borough will coordinate with the Environmental Protection Agency, Indian General Assistance Program managers in the region to determine what kinds of marine debris are affecting waterways and water bodies in the coastal area. As well, the Borough will coordinate with staff from NOAA's marine debris program to determine if there are opportunities to collaborate. Finally, the Borough will work with the village of Kivalina

to coordinate the removal of the damaged gabions with the state and federally funded larger project to stabilize the Kivalina shoreline and secure it from further erosion.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds are not intended to be used for a match, but will ideally supplement other funds and in-kind resources already in place or being sought for this project.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

**PROJECT TITLE:** Administrative Costs

**PROJECT CONTACT**

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**PROJECT LOCATION**

Northwest Arctic Borough Communities

**PROJECT DURATION:**

4 years

**ESTIMATED COST:**

Spending Estimate (\$)				
TOTAL	Year 1	Year 2	Year 3	Year 4
178,376	17,000	55,000	60,000	46,376

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
178,376	17,000	55,000	60,000	46,376

**PROJECT DESCRIPTION:**

The purpose of this project is to provide for planning and administration for the borough's CIAP projects. The Northwest Arctic Borough will provide oversight for all of the projects that are funded through this grant program. Specific tasks and expenses included in this project include:

- Travel related to CIAP for the Northwest Arctic Borough employee
- Preparation of grant summaries for the State of Alaska CIAP plan.
- Preparation of final grant proposals for submission to the Minerals Management Service on grants.gov.
- Recruiting and selection of staff and/or contractor(s) to implement CIAP projects

- Completion of reporting on grants.gov and other administrative requirements
- Providing guidance to project leaders and oversight of project implementation

**MEASURABLE GOALS AND OBJECTIVES:**

- Provide annual project summaries to the State of Alaska by June 29, 2007 (completed)
- Submit full project proposals on grants.gov
- Establish a coordination system among project leaders for project implementation and completion
- Set up a reporting system to get information from project leaders
- Ensure submittal of timely narrative and financial reports on grants.gov and through ASAP system
- Communication with State of Alaska and MMS staff
- Submit annual amendments/revisions for state plan

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with authorized use 3, *“Planning assistance and the administrative costs of complying with CIAP.”* This project will provide administrative support for individual projects funded through the CIAP program.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds would not be used for cost sharing or as a match.

STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

**PROJECT TITLE:** Improving Subsistence Information to Implement Federal Plans

**PROJECT CONTACT:**

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**PROJECT LOCATION:**

NWAB communities

**PROJECT DURATION:**

Two years

**ESTIMATED COST:**

Spending Estimate (\$)		
TOTAL	Year 1	Year 2
75,000	25,000	50,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
75,000	0	25,000	50,000	0

**PROJECT DESCRIPTION:**

Borough communities rely on subsistence hunting, fishing, and gathering for nutrition and to support their way of life. They utilize a variety of resources, including salmon and other fish; large land mammals (caribou, moose, bears, sheep); small game and furbearers; birds; and wild plants. This project will improve information about subsistence use to improve the implementation of federally-approved plans.

Subsistence data is critical to wise decision making in implementation of land use plans including permitting of projects in areas used for subsistence to protect that environment (habitat). The first phase of the project will document existing data and studies and

determine data gaps. There is no single document or inventory that serves as a clearinghouse of information summarizing existing data and studies.

The second phase of the project will involve gathering of new data for an area within the Northwest Arctic Borough (Borough) that is receiving or likely will receive new development pressures in the near future. The information from both phases of the project will be used in implementing federally-approved plans by strengthening the ability to assess potential impacts on the environment and to important subsistence resources in the coastal area.

During the past few years, the Northwest Arctic Borough has received an increasing number of permit applications for mining exploration and development and other activities which can impact and have impacted coastal resources and uses in the region including subsistence resources and uses. For example, the potential expansion of the Red Dog Mine has created the need for updated comprehensive information about subsistence harvests and uses in communities.

Exploration, drilling and extraction of oil, gas and mineral resources in offshore areas in the region are expected to increase. In addition to project-related effects, there is a growing concern about how climate change is affecting habitats and the distribution of fish and wildlife. The project will result in the gathering of new subsistence use data which will provide information about how subsistence uses have changed.

While some subsistence studies have been done on some of the most important species in the region, there are many gaps in the information. There is very little data on some villages and species, and very little follow up data on both. An inventory will be done to catalog subsistence studies that have been done, ongoing studies, and proposed studies in the region by a myriad of agencies and organizations.

The compilation of existing information and gathering of new data improve the permitting process to better conserve and protect the environment and to mitigate conflicts between subsistence uses and competing uses of the region. The project will contribute to a more comprehensive body of baseline data that can be used to monitor and address expected and actual impacts to coastal areas before, during and after development, and also to respond to effects of climate change. It will have broad applicability in resource management and land planning.

The project will also support more effective comment and input during the NEPA process, including development of Environmental Analyses (EA) and Environmental Impact Statements (EIS). These NEPA processes are instrumental in implementing federally-approved plans. A youth component of the project will educate middle and high school age students about the need for subsistence use information and the methodologies to obtain it. It will encourage their involvement in the process.

The Borough will consult with the Alaska Department of Fish and Game, Division of Subsistence, and other agencies that complete or fund subsistence studies to understand

agency priorities for new data collection. This information will be used when selecting a study area for the data-gathering component of the project.

**MEASURABLE GOALS AND OBJECTIVES:**

- **Phase 1: Compilation of Existing Information**
  - **Issue Contract:** The Borough will prepare a scope of services and issue a contract in compliance with its standard procedures.
  - **Draft Bibliography:** The contractor will complete a literature search and compile a draft annotated bibliography of existing subsistence studies conducted in the Borough. The draft will be circulated among state and federal agencies for identification of additional studies that have been completed.
  - **Final Bibliography:** The contractor will prepare a final bibliography after incorporating any missing studies indicated by the agencies.
  - **Agency Meetings:** The contractor will complete 5 individual meetings with the Alaska Department of Fish and Game, Division of Subsistence; Bureau of Land Management; National Park Service; U.S. Fish and Wildlife Service, and Maniilaq Association to:
    - Determine data gaps for subsistence use in the region
    - Determine agency priorities for future studies
    - Understand the type of information that will be most useful for implementing federally-approved plans
  - **Planning Department Input:** The contractor will meet with the Borough Planning Department to determine which areas of the Borough have the most pressure from existing uses and areas where new development is likely. In addition, the Planning Department will provide information about what kinds of subsistence use information is needed for making permit decisions.
  - **Agency Priorities:** The contractor will prepare a document that summarizes agency priorities for future subsistence use studies to fill gaps of knowledge/research.
- **Phase 2: New Data Collection**
  - **Selection of Study Area:** The Borough will review the information from Phase I of the study and determine study area priorities, both geographic areas and types of subsistence use information needed. State and federal agencies will be consulted to determine if the CIAP funding can be combined with other funding to address a priority area. A final area will be selected to determine the subsistence use activities of the residents of a single coastal village.
  - **Issue Contract:** The Borough will complete a scope of services and issue a contract according in compliance with Borough contracting procedures. The contractor may either be a state or federal agency or a private contractor who specializes in subsistence research.
  - **Study Design:** The contractor will work with the Borough to develop the final study design which addresses the priorities identified by the Borough.
  - **Draft Report:** The contractor will collect and analyze data using appropriate protocols.
    - **Interviews:** At least 50 surveys will be completed in the selected village.
    - **Data Analysis:** The data will be analyzed using standard methodologies.

- **Circulation of Draft:** A draft report will be circulated to the Borough and other appropriate parties including the people in the affected village.
- **Final Report:** The contractor will review comments on the draft report and complete a final report. The final report will be distributed to appropriate state and federal agencies, libraries and other interested parties.
- **Meetings:** Contractor holds public meetings in 3 villages to review draft report.
- **Annual Report:** Prepare an annual report that describes progress made towards meeting each measurable goal and objective.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

The project is consistent with Authorized Use #4, *implementation of federally-approved marine, coastal or comprehensive conservation management plans*. This project will support the development of a comprehensive body of baseline subsistence and related data by which to monitor, measure and address impacts to subsistence resources. The project will be useful in implementing federal conservation plans by land management agencies and in the implementation of the Alaska Coastal Management Program (ACMP). Specifically, the information from the annotated bibliography and study will be useful in implementing plans of the Bureau of Land Management, the National Park Service and the U.S. Fish and Wildlife Service. These agencies routinely consider subsistence uses and resources when developing conservation plans and during implementation of these plans.

Two federal laws that require consideration of impacts to subsistence often apply to implementation of federal conservation plans. First, the National Environmental Policy Act (NEPA) requires that environmental impact statements include full and fair consideration of significant environmental impacts (40 CFR 1502.1). Impacts include cultural, economic and health impacts including subsistence. Second, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) requires completion of an analysis of subsistence uses and need for any federal determination to withdraw, lease or permit the use or occupancy of federal land.

Regarding the ACMP, information from the studies will be used to implement the statewide Subsistence standard at 11 AAC 112.270. This standard only applies to specific subsistence use areas which have been designated by the state under 11 AAC 112.270 or by the coastal district in its coastal management plan under 11 AAC 114.250(h). Whether areas are designated during an ACMP review by the state or in a district coastal management plan, information from this project will be useful in determining what alternative measures are necessary to ensure that project activities are consistent with the subsistence standard that requires activities to avoid or minimize impacts to subsistence uses.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

The Borough is always interested in and supportive of activities to help protect subsistence resources and the ecosystems they depend on. The Alaska Department of Fish and Game is very active in multi-agency/entity collaboration to coordinate, conduct and update studies and databases to better manage coastal area resources, especially

subsistence resources in the Northwest Arctic Borough. These studies incorporate strong collaboration with local entities and federal and state groups, and most importantly, the local residents. This proposal is to support their continuing work in the Borough. As noted in the project description above, the U.S. Bureau of Land Management, National Park Service, and the U.S. Fish and Wildlife Service will be invited to participate in agency meetings and consulted throughout the project.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds will not be used for cost sharing or as a match, but they will ideally supplement other funds and in-kind resources being sought for this project. The intent of the second phase of the project is to leverage funds from other sources to complete a project that is part of ongoing work of use to multiple agencies in the implementation of their plans and protection of environmental resources.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**NORTHWEST ARCTIC BOROUGH**

**PROJECT TITLE: Improving Public Involvement for Implementation of Federally-Approved Plans**

**PROJECT CONTACT**

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**PROJECT LOCATION:**

NWAB communities

**PROJECT DURATION:**

Two years

**ESTIMATED COST:**

Spending Estimate (\$)		
TOTAL	Year 1	Year 2
46,000	20,000	26,000

Funding per Allocation Year of CIAP (\$)				
TOTAL	FY 07	FY 08	FY 09	FY 10
46,000	0	20,000	26,000	0

**PROJECT DESCRIPTION:**

The purpose of this project is to develop a model to train community leaders and youths in effective public participation. Specifically, the project will increase the capacity of residents of the Northwest Arctic Borough (Borough) to participate in public review processes that implement federally-approved plans that impact coastal areas. These review processes include state and federal land management plans, state and federal lease sales, and development projects proposed by private applicants. The project will target two groups: 1) those who are currently interested in commenting on plans and project but need to know the process and improve their skills, and 2) those who would be interested in commenting if they knew the importance of the process, how it impacts their lives, and more about how to prepare and deliver oral and written comments.

The pilot project will take place in a community within the Borough, likely Kotzebue. Community representatives will be invited from Kotzebue, Kivalina, Noatak, Kobuk, Shungnak, Ambler, Buckland, Selawik, Noorvik, and Deering.

The training will focus on the public involvement processes for development and review of agency plans and programs to implement the plans including review of development projects. At a minimum, public involvement opportunities will be discussed for the following plans.

- **Bureau of Land Management:** Kobuk-Seward Peninsula Resource Management Plan, South National Petroleum Reserve-Alaska Integrated Activity Plan.
- **National Park Service:** General Management Plans for Cape Krusenstern National Monument, Bering Land Bridge National Preserve, Noatak National Preserve, and Kobuk Valley National Park.
- **Fish and Wildlife Service:** Selawik National Wildlife Refuge Comprehensive Conservation Plan (completed in 1987; revision scheduled for 2008).
- **Minerals Management Service:** Outer Continental Shelf Oil and Gas Leasing Program 2007-2012.
- **Coastal Zone Management Act:** Alaska Coastal Management Program including the Northwest Arctic Borough Coastal Management Plan.

Public reviews related to plan implementation will also be covered during the training. These reviews include activities proposed by state or federal agencies as well as project reviews conducted by state or federal agencies to implement federally-approved plans. For example, opportunities to participate in the permit review processes of agencies and during Alaska Coastal Management Program project consistency reviews will be addressed during the training.

The project includes a youth component. One of the three participants invited from each community will be a student. The consultant will be encouraged to provide a summary of the project to a Borough school. Also, participants will be encouraged to share what they have learned with students in their communities.

### **MEASURABLE GOALS AND OBJECTIVES:**

The overall goal of the program is to develop the capacity of residents of the Northwest Arctic Borough to participate in processes that implement federal plans. Again, two groups will be targeted: Those who need to improve their public commenting skills and those who would likely take advantage of public comment opportunities if they knew more about the various agency processes. The following goals provide a means to measure progress of the project and overall effectiveness of the program.

- **Contractor Selection:** Borough staff will complete the scope of services for the contract and select a contractor using standard procedures of the Northwest Arctic Borough.
- **Selection of Participants:** The Borough will develop criteria for selection of project participants. Between 20 and 35 people will attend the training. An effort will be

made to have three representatives from each community including someone from the local government, tribal government and a youth participant. In addition, the training will be open to Borough staff, Assembly members and the Planning Commission. The final selection of participants will depend on the level of interest expressed by each participant category, the availability of participants to attend the training, and the pre-training questionnaire.

- **Pre-Training Questionnaire:** A pre-training questionnaire will be distributed to training participants to determine their experience in public participation, their interests, training needs, and the willingness of participants in using training to actually submit public comment.
- **Training Manual:** A detailed training manual will be developed to provide background on agency planning and permit review processes for federally-approved plans. This manual will be divided into separate modules for each agency's planning process and permit review processes.
- **Handouts:** Two hand outs will be prepared on preparing effective oral testimony at public hearings and preparing and writing effective comments.
- **Exercises:** Three "hands on" exercises will be developed to provide participants an opportunity to draft written comments on types of projects common to the Borough. If practical, a real project will be used.
- **Presentation:** A PowerPoint presentation for the training to complement information in the training manual.
- **Training:** A two-day training program will be conducted in a Northwest Arctic Borough community. State and federal agency representatives involved in implementing federally-approved plans will be invited to participate in the training.
- **Evaluation:** A two-part evaluation of the program will be conducted. This evaluation will involve a discussion at the end of training and anonymous written evaluations from both participants and presenters. The evaluation will focus on the strengths and weaknesses of the training and how it could be improved in the future.
- **Follow Up:** The Borough Planning Department will schedule and conduct a public meeting in at least two Borough villages. At least two training participants from each of those villages will be involved in preparation for the meetings, and with guidance from the Borough they will assist at least two additional people from each village in the preparation of comments.
- **Annual Report:** Prepare an annual report that describes progress made towards meeting each measurable goal and objective.
- **Final Report:** The consultant will prepare a final report describing the training project and incorporating information from the project evaluation.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with Authorized Use # 4: *implementation of a federally-approved marine, coastal or comprehensive conservation management plan*. Participants will be trained in how to participate effectively in implementation of federal plans including reviews of projects that relate to plan implementation. In addition, the training will address how to participate in the development of the federal plans.

Federal plans that will be addressed in the training include:

- **Bureau of Land Management:** Kobuk-Seward Peninsula Resource Management Plan, South National Petroleum Reserve-Alaska Integrated Activity Plan.
- **National Park Service:** General Management Plans for Cape Krusenstern National Monument, Bering Land Bridge National Preserve, Noatak National Preserve, and Kobuk Valley National Park.
- **Fish and Wildlife Service:** Selawik National Wildlife Refuge Comprehensive Conservation Plan (completed in 1987; revision scheduled for 2008).
- **Minerals Management Service:** Outer Continental Shelf Oil and Gas Leasing Program 2007-2012.
- **Coastal Zone Management Act:** Alaska Coastal Management Program including the Northwest Arctic Borough Coastal Management Plan.

**COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:**

There are no federal agencies currently providing training to citizens in the Northwest Arctic Borough on how to participate in federal programs. The purpose of this proposal is to encourage more public participation and comment on numerous activities projected for the region by many private, state and federal entities, that will impact the coastal area and the residents who live there. Informal discussions with agency staff show an interest in this project. As the Borough develops the training material, it will coordinate closely with federal agencies to ensure new training material is accurate and to utilize any existing resources. Federal agencies will be invited to participate in the project.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds are not expected to be used for cost sharing or as a match. In-kind contributions, however, will be provided by the Borough and other agencies.

**STATE OF ALASKA  
COASTAL IMPACT ASSISTANCE PLAN**

**NORTHWEST ARCTIC BOROUGH**

**PROJECT TITLE:** Village-based Environmental Monitoring to Protect Coastal Areas

**PROJECT CONTACT**

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**PROJECT LOCATION:**

NWAB communities within the coastal zone

**PROJECT DURATION:**

Five years

**ESTIMATED COST:**

Spending Estimate (\$)					
TOTAL	Year 1	Year 2	Year 3	Year 4	Year 5
426,500	8,500	104,500	104,500	104,500	104,500

As a Tier 2 project, this project will only be funded if a Tier 1 project is canceled or deferred. Funding per allocation year will depend on availability of funding.

**PROJECT DESCRIPTION:**

The purpose of this project is to establish a system for monitoring environmental conditions in the Northwest Arctic Borough (Borough). The monitoring program will identify baseline conditions as well as effects on coastal resources and uses from development projects and natural hazards. During the Borough’s review of proposed development projects, the information gathered will help the borough evaluate impacts on coastal areas and develop appropriate stipulations to minimize the impacts. Minimizing environmental impacts help to protect and conserve coastal areas. The project includes a large community education component in order to increase local stewardship.

The Borough will hire one part-time employee in each of the 10 outlying villages to monitor local environmental conditions: Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Noatak, Noorvik, Selawik, and Shungnak. All of the villages in the Borough are

located within the coastal zone. Once selected, these employees will receive training on how to assess baseline environmental conditions and how to monitor effects of projects and natural hazards on the coastal environment. A contractor will be selected to prepare the training curriculum, conduct the training and develop monitoring forms and a report format.

Monitoring tasks include effects from exploration and development projects (e.g., hard rock mining, gravel mining, and facility construction), solid waste and sewage disposal, commercial recreation and tourism activities (e.g., transporters, hunting, and floating), and natural hazards (e.g., flooding, erosion, and storm surges). The employees will be outfitted with personal beacons and satellite phones for safety considerations. Information from the monitoring will be used to add stipulations to Title 9 borough permits, propose alternative measures to projects undergoing an Alaska Coastal Management Program review, and propose measures to be added to state and federal agency permits.

The project tasks include the following:

- Develop a job description and evaluation criteria for the part-time village employees.
- Hold a meeting in each of the 10 Borough villages to introduce the monitoring program and to encourage community value of environmental stewardship. During these meetings, the Borough will:
  - Enlist community support for and feedback about the program
  - Emphasize consistency with the Inupiaq value of respect for nature
  - Identify residents interested in applying for monitoring positions
- The Borough will conduct interviews in each of the 10 villages and hire monitoring staff according to Borough employment practices.
- Hire a contractor to work with Borough to assist with training the environmental monitoring employees:
- Develop a training curriculum.
- Conduct a one-day training session in Kotzebue.
- Prepare monitoring forms and monthly report format.
- Collect and evaluate the monthly reports from the 10 village monitors.
- Create a toll-free hotline for any resident to call in with tips on unauthorized activity
- Conduct on-site follow up training with individual village monitors as needed.
- Design and implement a youth component of the program that will encourage interest and participation of younger residents in environmental stewardship. This program will include speaking before school classes, and it may include a more formal mentoring program.
- Prepare an annual report summarizing information in the monthly reports.
- Research and pursue funding to ensure the monitoring program continues past the CIAP funding program.
- Conduct annual review of program to assess its effectiveness.
- Annual Report: Prepare an annual report that describes progress made towards meeting each measurable goal and objective.

**MEASURABLE GOALS AND OBJECTIVES:**

The tasks noted above will result in the following measurable outcomes:

- Training curriculum - developed and presented in a one-day training session
- Monitoring forms
- Monthly reports from the 10 village monitors
- Toll-free hotline for any resident to call in with tips on unauthorized activity
- Annual Report that summarizing information in the monthly reports, includes an assessment of the programs effectiveness, and describes progress made towards completing the project tasks and meeting each measurable goal and objective.

**PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:**

This project is consistent with Authorized Use #1, *“projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.”* This project will directly result in the conservation and protection of coastal areas, including wetlands, by developing information about baseline conditions and effects from development projects and uses of coastal areas. The monthly and annual reports will be used as a basis to develop stipulations and mitigation measures for projects to avoid, minimize or mitigate impacts to coastal areas. As a result of reports and other participation in the program, monitors and other residents will become better environmental stewards, which will increase conservation, protection and restoration of coastal areas. In addition, this program may result in restoration of coastal areas, if the village monitoring employees discover areas that need to be restored.

When significant adverse effects to fish, wildlife and other natural resources are discovered, the Borough will take action to protect the coastal areas from further damage and possibly mitigate the damage that has occurred. For example, if a development project is found to have effects, the Borough will take action through its Title 29 authority or by contacting the appropriate state or federal agencies. As residents and communities become better environmental stewards this will also mitigate damage to fish, wildlife and ecosystems, further protecting coastal areas.

**COST SHARING OR MATCHING OF FUNDS:**

CIAP funds would not be used for cost sharing or as a match, but it will ideally supplement other funds and in-kind resources being sought for this project.