State of Alaska
Coastal Impact Assistance Program

APPENDIX B-2

Project Descriptions
Direct to Coastal Political Subdivision Funding

Approved Projects

KENAI PENINSULA BOROUGH	
Tier 1 Projects	
AKCIAP_CPR_KPB_T1-01	Crooked Creek Bank Restoration and Habitat Protection
AKCIAP_CPR_KPB_T1-02	Kasilof Personal use Fisheries Habitat Protection
AKCIAP_CPR_KPB_T1-03	Crooked Creek State Recreational Area River Bank Restoration
AKCIAP_CPR_KPB_T1-04	CIAP Planning and Administration – Kenai Peninsula Borough
AKCIAP_CPR_KPB_T1-05	Beluga Slough Trail Reconstruction
AKCIAP_CPR_KPB_T1-06	Aerial Photography /Satellite Imagery of the Kenai Peninsula Borough
AKCIAP_CPR_KPB_T1-07	Adopt-A-Stream Program
AKCIAP_CPR_KPB_T1-08	Recreation Area Sanitation
AKCIAP_CPR_KPB_T1-09	Flood Plain Development Survey Benchmarks
AKCIAP_CPR_KPB_T1-10	Kenai River Near Bank Turbidity Study
AKCIAP_CPR_KPB_T1-11	Stream Channel and Elevation Modeling in the Seward Bear Creek Flood Service Area (SBCFSA)
AKCIAP_CPR_KPB_T1-12	Kenai Peninsula Borough Habitat Code Review and Revision
AKCIAP_CPR_KPB_T1-13	Seward Weather and Ocean Observing Station
AKCIAP_CPR_KPB_T1-14	Kachemak Drive Bluff Erosion Study
AKCIAP_CPR_KPB_T1-15	River Debris Clean-up
Tier 2 Projects	
AKCIAP_CPR_KPB_T2-01	Feasibility Study for Soldotna Creek Northern Pike Eradication
AKCIAP_CPR_KPB_T2-02	Blueberry Hill Suitability Study for the Purpose of Protecting Flood Prone Alluvial Areas in the Seward Bear Creek Flood Service Area
AKCIAP_CPR_KPB_T2-03	Kenai Peninsula Borough, Public Access to Rivers, Lakes and Coast
AKCIAP_CPR_KPB_T2-04	Survey of Northern Pike in Lakes of the West Fork Moose River Watershed
AKCIAP_CPR_KPB_T2-05	Seldovia Slough Sport Fishing Access Stairway
AKCIAP_CPR_KPB_T2-06	Coastal Protection: Climate Change Impact Plan

Kenai Peninsula Borough

Brief History: Kenai Peninsula Borough includes a number of public lands: Chugach National Forest, Kenai National Wildlife Refuge, Kenai Fjords National Park, and portions of the Lake Clark and Katmai National Parks. Historically the Borough was occupied by Kenaitze Indians (Dena'ina). The City of Kenai was founded as a Russian fur trading post. In the early 1900s, cannery operations and construction of the railroad spurred development in the borough. The Kenai Peninsula was the site of the first major Alaska oil strike in 1957 and has been a center for exploration and production since that time. Natural beauty and recreational activities have led to a growing tourism industry with a well-developed list of attractions including the world famous Kenai River, the Alaska SeaLife Center, the Challenger Learning Center, art galleries, and millions of acres of public forests.

Photo by: Gary Williams

Pronunciation:	(KEY-nigh)
Population (2007):	52,990
Shoreline:	2,536 miles
Coastal Area:	11,202 square miles
Annual Snowfall:	61”
Hours of Daylight Summer:	18 hours, 44 min
Hours of Daylight Winter:	5 hours, 59 min
Regional Native Corporation:	Cook Inlet Regional
Legislative District:	6, 32, 33, 34, 35, C, P, Q, R

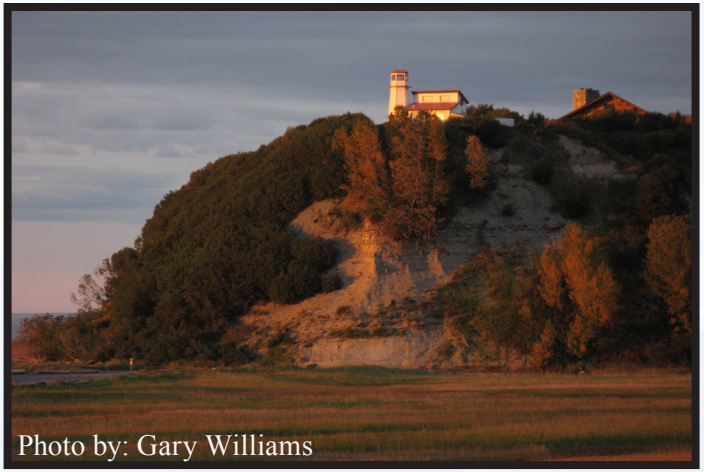
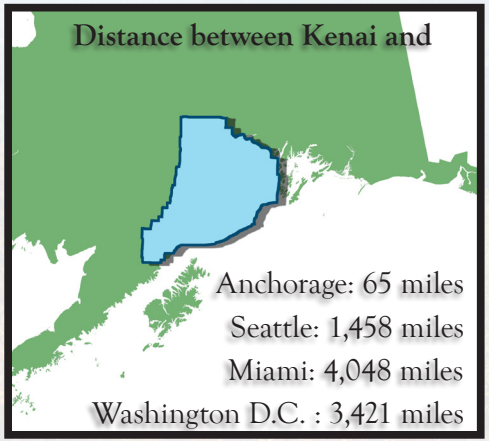
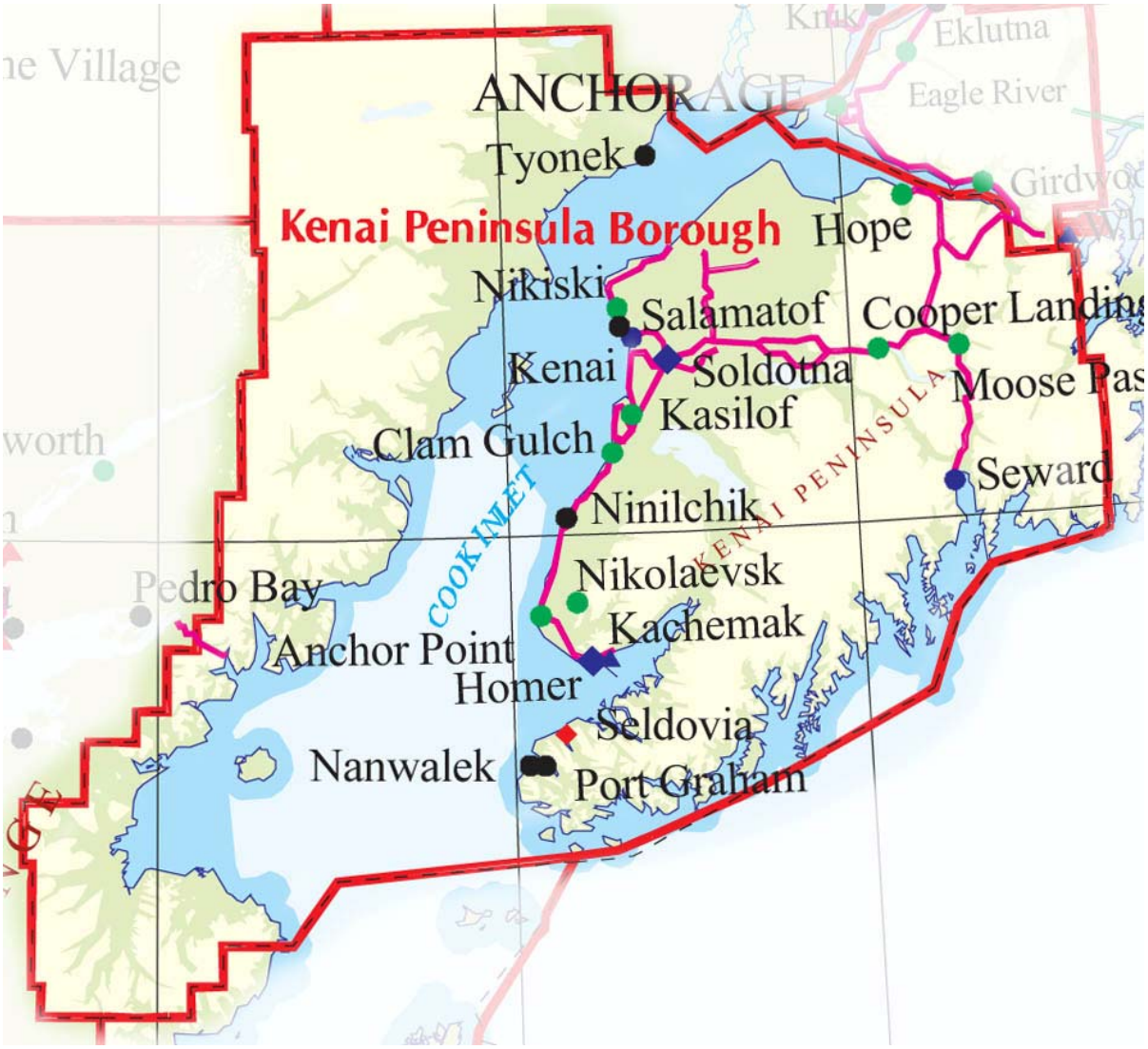


Photo by: Gary Williams


Photo by: Donald E. Gilman River Center



KENAI PENINSULA BOROUGH



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

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.

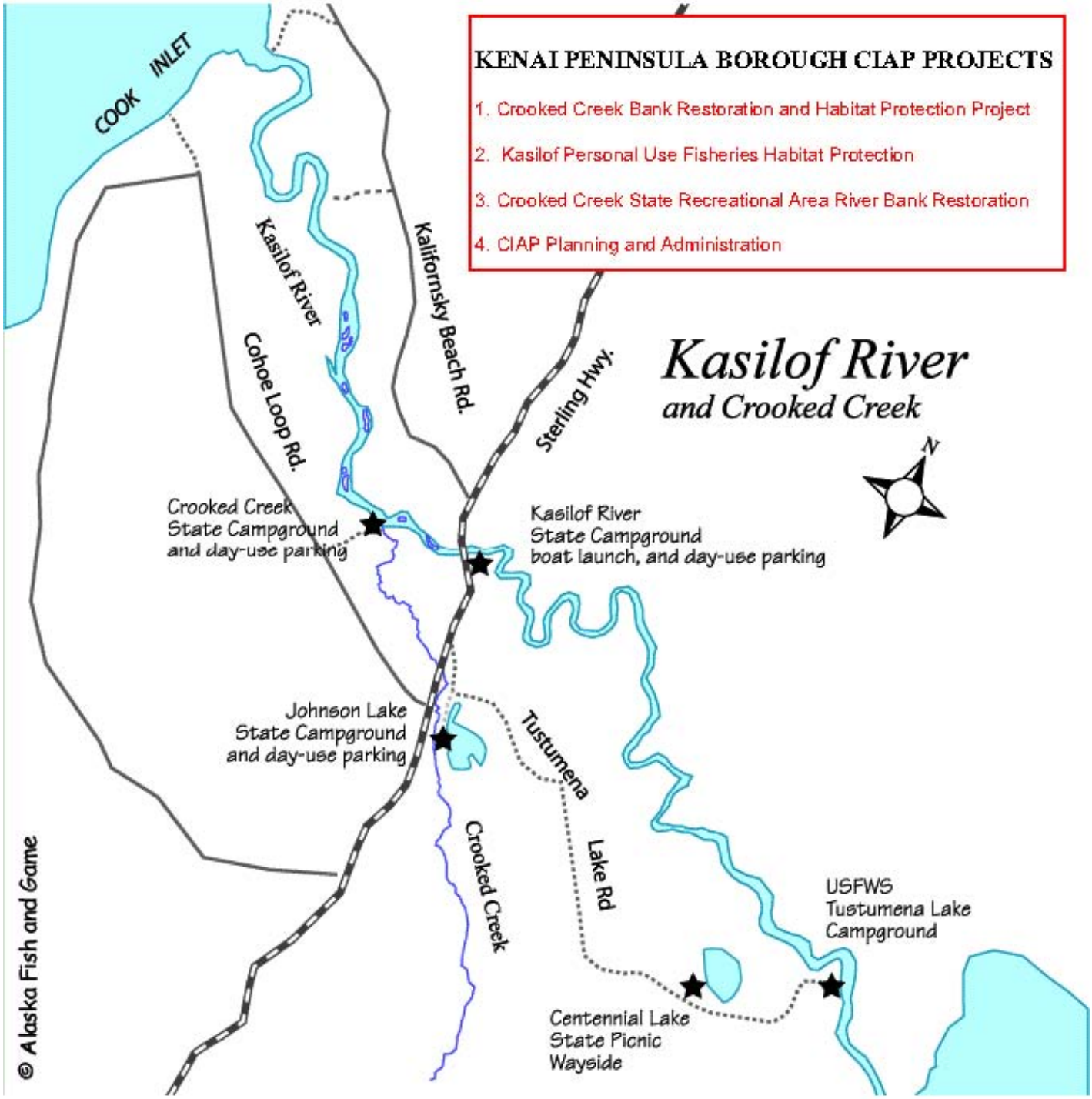
MEASURABLE GOALS AND OBJECTIVES:
Restore and protect the riparian habitat in the project area by placing 80 linear feet of brush layering according to technical standards as described in the Streambank Revegetation and Protection, A Guide for Alaska, 2005 revised edition.

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.


KENAI PENINSULA BOROUGH CIAP PROJECTS
1. Crooked Creek Bank Restoration and Habitat Protection Project
2. Kasilof Personal Use Fisheries Habitat Protection
3. Crooked Creek State Recreational Area River Bank Restoration
4. CIAP Planning and Administration
Kasilof River
and Crooked Creek
N
COOK INLET
Kasilof River
Cohoe Loop Rd.
Kalifornsky Beach Rd.
Sterling Hwy.
Crooked Creek
State Campground
and day-use parking
Kasilof River
State Campground
boat launch, and day-use parking
Johnson Lake
State Campground
and day-use parking
Tustumena
Lake Rd
Crooked Creek
USFWS
Tustumena Lake
Campground
Centennial Lake
State Picnic
Wayside
© Alaska Fish and Game

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

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

Note: This project was approved as part of the 2008 Alaska CIAP Plan. It has been amended to increase the budget and length of area to be restored.

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

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**
287,512	30,000	53,080	152,080	52,352

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
287,512	30,000	53,080	195,745	8,687

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 and rootwad installation where natural erosion is occurring. 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 river bank 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 river bank by installing spruce tree revetment, coir log willow shrub mat and other restorative measures as appropriate.

- Install 55 linear feet of light penetrating walkways and stairways.

- 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 the restored area, as needed, to protect restored areas.

Year 3:

- Restore 200 feet of river bank by installing spruce tree revetment, coir log willow shrub mat and other restorative measures as appropriate.

- Restore 150 feet of river bank by installing rootwads and vegetative mat.

- 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.

- Create or improve 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 4:

- 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.

- Restore 50 feet of river bank by installing spruce tree revetment, coir log willow shrub mat and other restorative measures as appropriate.

- Install 55 linear feet of light penetrating walkways and stairways to the river for 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.

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, including wetlands.

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 PROGRAM

Kenai Peninsula Borough

PROJECT TITLE: CIAP Planning and Administration – Kenai Peninsula Borough

Note: This project was approved as part of the 2008 Alaska CIAP Plan. The budget has been expanded to cover the additional work associated with an increase in allocation to the borough in FY 2009 and FY 2010.

PROJECT CONTACT

Contact Name: Gary Williams
Address: 514 Funny River Road, Soldotna, Alaska 99669
Telephone Number: (907) 714-2216
Fax Number: (907) 260-5992
Email Address: gwilliams@borough.kenai.ak.us

PROJECT LOCATION

Kenai Peninsula Borough

PROJECT DURATION

4-years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
160,169	37,026	38,141	45,269	39,733

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
160,169	6,435	6,355	147,379	0

PROJECT DESCRIPTION

The purpose of this project is to provide planning and administration of the Kenai Peninsula Borough's allocation of CIAP funds. The borough will be responsible for managing its awards (including sub awards to municipalities, and contracts with vendors) to provide services according to the terms of projects approved in the state plan and accepted by DOI, Material Management Service. The borough will prepare and administer its awards and contracts according to the borough's code of ordinances and in compliance with federal procurement. The borough will monitor projects to insure that achievements and milestones are reached according to plan. The borough will provide timely updates to MMS according to terms and conditions of the MMS award.

MEASUREABLE GOALS AND OBJECTIVES

Year 1

- Develop projects and submit detailed project descriptions and budgets to the State of Alaska.
- Revise projects as required to meet the terms and conditions of the State of Alaska.
- Apply to MMS for grants allocation.

Year 2

- Administer CIAP program by tracking projects' progress and budget according to the plan approved by MMS and according to Kenai Peninsula Borough Code of Ordinances.
- Provide timely progress reports to MMS.
- Work with vendors and sub awardees to resolve issues or conflict to insure the objectives and milestones are met.

Year 3

- Administer CIAP program by tracking projects' progress and budget according to the plan approved by MMS and according to Kenai Peninsula Borough Code of Ordinances.
- Provide timely progress reports to MMS.
- Work with vendors and sub awardees to resolve issues or conflict to insure the objectives and milestones are met.

Year 4

- Administer CIAP program by tracking projects' progress and budget according to the plan approved by MMS and according to Kenai Peninsula Borough Code of Ordinances.
- Provide timely progress reports to MMS including final report.
- Work with vendors and sub awardees to resolve issues or conflict to insure the objectives and milestones are met.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project is consistent with authorized use #3, *Planning assistance and the administrative costs of complying with the CIAP.*

The project will cover the costs of planning and administering the CIAP program for the Kenai Peninsula Borough. It will not be used to manage individual CIAP funded projects.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

None anticipated at this time.

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

Kenai Peninsula Borough

PROJECT TITLE: Beluga Slough Trail Reconstruction

PROJECT CONTACT

Contact Name: Gary Williams
Address: 514 Funny River Road, Soldotna, Alaska 99669
Telephone Number: (907) 714-2216
Fax Number: (907) 260-5992
Email Address: gwilliams@borough.kenai.ak.us

PROJECT LOCATION

The trail construction will occur in Beluga Slough, which is located within the coastal zone within the City of Homer, Alaska Lat. 59° 38' 21.63"N, Long. 151° 32' 17.55'W.

PROJECT DURATION

1- year

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$ 65,834	$65,834	0	0	0

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
$65,834	0.00	0.00	$65,834	0.00

PROJECT DESCRIPTION

This project will replace 162 feet of failed trail walkway over wetlands that connect the USFWS Islands and Ocean Center on Sterling Highway with Bishop's Beach. The walkway will be elevated, light penetrating mounted on helical piers with a width of 8' to accommodate the high number of users and to be ADA compliant to accommodate those with physical challenges. The elevation will be no more than 1-foot to accommodate wildlife which transit the area.

The new walkway will be built on a foundation of helical piers which are designed for use in wetlands and other environmentally sensitive areas to protect and enhance the wetland habitat beneath.

The walkway serves approximately 70,000 visitors who annually visit the Alaska Islands and Ocean Visitor Center and local residents.

MEASUREABLE GOALS AND OBJECTIVES
This project will result in the installation of 162 feet of elevated, light penetrating walkway which will accomplish the following goals and objectives:

1) Provide a defined walkway to keep visitors from walking in sensitive habitat.
2) Keep pedestrian traffic from trespassing on adjacent private land.
3) Provide users with an elevated view of the habitat without interfering with wildlife transit.

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 failed section of the walking trail has been removed due to structural failure forcing users to walk through wetland habitat to reach the remaining constructed trail system. With approximately 70,000 annual visitors, the wetlands have begun to show signs of degradation such as trampled vegetation. It is anticipated that continued use without a defined trail would lead to a braided and widened trail system that would cause further degradation to the wetland vegetation and natural drainage patterns. Examples of similar degradation in the absence of established trails can be seen throughout the borough

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS
The project is within the USFWS Alaska Islands and Ocean Center management area. The City of Homer maintains the walkway under a MOU with the center.

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

KENAI PENINSULA BOROUGH

PROJECT TITLE: Aerial Photography /Satellite Imagery of the Kenai Peninsula Borough

PROJECT CONTACT

Contact Name: Bill Holloway
Address: 144 N. Binkley St., Soldotna, Alaska 99669
Telephone Number: (907) 714-2222
Fax Number: (907) 714-2370
Email Address: bholloway@borough.kenai.ak.us

PROJECT LOCATION

Within the coastal zone of the Kenai Peninsula Borough.

PROJECT DURATION

1 – year

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$499,272	$499,272	0	0	0

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
$499,272	0	0	0	$499,272

PROJECT DESCRIPTION

The Kenai Peninsula Borough will contract for the aerial photography of the coastal areas within the Kenai Peninsula Borough. The maps will assist resource planners, managers and policy makers who rely on current mapping data to adequately protect the borough's sensitive coastal areas and important habitats which they are required to do according to borough code. The funds will provide for digital mapping and professional services to achieve a maximum of 1 meter pixel size imagery in selected areas.

MEASUREABLE GOALS AND OBJECTIVES

This project will result in high-resolution satellite imagery and digital maps. Our goal is to acquire satellite image coverage of the Kenai Peninsula Borough coastline up to 1,000 ft. elevation. The imagery will be combined with base map data, elevation models, and other existing data layers to produce maps on paper and be posted on the Kenai Peninsula Borough's Internet map service. Map data will be accessible to everyone via the Web. Paper maps will be made available upon request to the public and other governmental agencies. Raw image data will be available to contributing participants named in the contract for image acquisition. New image data will be a good fit for the recently acquired LIDAR elevation model. New imagery will be useful for other purposes, such as for updating our Emergency Services Map Books.

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.*

The Kenai Peninsula Borough recognizes that numerous factors affect the Borough's sensitive coastal areas and anadromous stream habitats, including bank/bluff erosion, logging, grazing, mining, and wetland fill and drainage. This project will assist all land and habitat managers in their ability to review potential impacts to coastal areas from development and to fulfill their management responsibilities. The Kenai Peninsula Borough is a rapidly developing area with a population increase of approximately 3% per year. It is home to a world famous halibut and salmon fishery that attracts increasing numbers of visitors. This project will assist land and resource managers in making appropriate land use decisions that will result in the protection of coastal areas and other important habitat from negative impacts to natural resources from development.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The U.S. Geological Survey Geospatial Technical Operations Center (NGTOC). The USDA Forest Service, US Fish & Wildlife Service, and the National Park 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.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM

Kenai Peninsula Borough

PROJECT TITLE: Adopt-A-Stream Program

PROJECT CONTACT

Contact Name: Gary Williams
Address: 514 Funny River Road, Soldotna, Alaska 99669
Telephone Number: (907) 714-2216
Fax Number: (907) 260-5992
Email Address: gwilliams@borough.kenai.ak.us

PROJECT LOCATION
Kenai Peninsula Borough Schools

PROJECT DURATION
4-years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
209,272	$75,000	45,000	45,000	44,272

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
209,272	0.00	0.00	$75,000	134,272

PROJECT DESCRIPTION
The Adopt-A-Stream program is a K-12 natural resource education program. Each school class "adopts" a nearby stream that they study, visit and monitor each month for an entire school year. The program depends on grant funds to fund the work of an educator who brings environmental education into the class room and takes the students into the field teaching them about stream stewardship. This project will fund salary and benefits for a 9-month position.

Students also participate in projects including activities such as creek cleanups, stream bank restoration and protection, and public education events. The Adopt-A-Stream program assist in the formation partnerships of scientists, students, teachers and community members who are trained to monitor and protect critical stream habitat as well as educating others about stream stewardship.

Teachers and parent volunteers will gain scientific knowledge that they may pass on throughout their educational careers instilling an ethic of conservation and stewardship of habitat and healthy ecosystems.

Public Outreach Media

This outreach component will fund the hiring of a public relations and marketing firm to conceive and create a :30 - :60 second television and radio public service announcement directed toward stream bank users and the behavior that is appropriate in sensitive riparian areas. The production will be of a quality that it will be liberally aired on TV and radio and may be used in an Adopt-A-Stream classroom setting to introduce the topic. The production can be created on "endless loop" for use in visitor centers, at locations where fishing licenses are sold and a variety of other locations where information is presented in audio-video form.

MEASUREABLE GOALS AND OBJECTIVES

This project will implement the Adopt-A-Stream Program, a K-12 education program in at least 14 classes and will include at least 11,000 contact hours per year.

- Each "class" draws in parents, teachers and interested persons in partnership with the program.
- Each class conducts a stream cleanup activity.

Produce an audio-video production that will be aired on TV and radio in all Alaska markets and a variety of non-broadcast locations. The production will also be used in Adopt-a-Stream education programs.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project is consistent with authorized use #1: *Project and activities for the conservation, protection or restoration of coastal areas, including wetlands.* This project is designed to foster an ethic of habitat conservation and emphasize the importance of careful stewardship of riparian areas through classroom and on-site teaching. The program will conduct stream cleanup activities and other riparian educational activities with students and community members. An informed and educated public with a sense of stewardship is an essential first step to conserving and protecting coastal areas.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

None anticipated at this time.

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

Kenai Peninsula Borough

PROJECT TITLE: Recreation Area Sanitation

PROJECT CONTACT

Contact Name: John Mohorcich
Address: 514 Funny River Road, Soldotna, Alaska 99669
Telephone Number: (907) 714-2562
Fax Number: (907)260-5992
Email Address: jmohorcich@borough.kenai.ak.us

PROJECT LOCATION

Areas within the coastal zone:
Hope Beach, in Cook Inlet
Kenai River Center, along the Kenai River

PROJECT DURATION

2-years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
36,272	$9,450	$9,450	$9,450	$7,922

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
36,272	0.00	0.00	$13,000	23,272

PROJECT DESCRIPTION

Municipal and state-owned coastal waterfront and riverfront properties are managed to support public access and provide for recreational activities. This program is designed to provide for much needed seasonal facilities at two locations to minimize or mitigate significant impacts to coastal habitat from existing uses and activities on which the recreation depends. Locating and servicing public toilets and waste containers are vital to conserve and protect our natural resources from adverse physical impacts as a result of public use.

This project will cover the cost of locating and servicing portable toilet and waste container facilities at the Kenai River Center on the Kenai River for the months of June, July, August and portable toilet and waste containers at the Hope Beach recreation area for the months of June, July, August, and September.

MEASUREABLE GOALS AND OBJECTIVES
At least one toilet and one waste container will be placed at each of the two locations and serviced for the months of June through September.

- These facilities will provide services to 10's of thousands of visitors in sensitive stream riparian and coastal areas.

- Waste will be collected on a schedule consistent with the money appropriated and need.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE
This project is consistent with authorized use #1: *Project and activities for the conservation, protection or restoration of coastal areas, including wetlands.*

This project provides for the collection of waste during periods of high visitor counts in the community of Hope, a seaside community with no public waste disposal system. This effort is an attempt to avoid the habitat damage (litter and random human waste disposal) that has been recorded at other popular ocean side recreation areas such as the mouth of the Kasilof and Kenai Rivers. The Kenai River Center provides one of the most highly utilized recreational fishing access points on the Kenai River. Waste collection at these points is of critical importance in the conservation and protection of coastal environments.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS
None anticipated at this time.

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

KENAI PENINSULA BOROUGH

PROJECT TITLE: Floodplain Development Survey Benchmarks

PROJECT CONTACT

Contact Name: Jane M. Gabler
Address: 514 Funny River Road, Soldotna AK 99669
Telephone Number: (907) 714-2464
Fax Number: (907) 260-5992
Email Address: jgabler@borough.kenai.ak.us

PROJECT LOCATION

Kenai Peninsula Borough: the Kenai River within the Cooper Landing area and at the Anchor River. All areas are within the coastal zone.

PROJECT DURATION

One (1) year

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$ 69,272	$ 69,272	#	#	#

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
$ 69,272	0.00	0.00	$ 69,272	0.00

PROJECT DESCRIPTION

Human intrusion into flood plains has increased the potential for structures to be inappropriately placed and, during floods, to be damaged and allow pollutants to enter habitat important to fish and invertebrates. This project will identify areas in which additional care must be taken in the placement of structures to avoid potential damage to habitat. Vertical control survey benchmarks will be physically placed for each of the identified project areas within the Kenai Peninsula Borough.

MEASUREABLE GOALS AND OBJECTIVES

Survey and place nine permanent physical benchmark stations with detailed location descriptions for flood prone areas along the Anchor River and the portion of the Kenai River within the Cooper Landing area.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE
This project is consistent with authorized use of funds # 1, Project *and activities for the conservation, protection or restoration of coastal areas, including wetlands.*

Important fish habitat is damaged when pollutants from structures enters the environment when homes and businesses are flooded because they have been built in floodplains.

In order to protect important habitat from development it is necessary for planners and habitat managers who are required to issue or deny permits for placement of structures in flood prone areas, to have the tools with which to determine the base flood elevations. The areas proposed for base flood elevation benchmarks are in habitat increasingly being developed with residential and commercial structures.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS
Project may be coordinated with FEMA to ensure compliance with federal floodplain regulations and 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 PROGRAM

KENAI PENINSULA BOROUGH

PROJECT TITLE: Kenai River Near Bank Turbidity Study

PROJECT CONTACT

Contact Name: John Morhorcich
Address: 514 Funny River Road, Soldotna, Alaska 99669
Telephone Number: (907)714 -2462
Fax Number: (907)260-5992
Email Address: jmohorci@borough.kenai.ak.us

PROJECT LOCATION
Throughout identified study reaches of the Kenai River within the coastal zone.

PROJECT DURATION
2-years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
99,272	50,000	49,272	0	0

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
99,272	0.00	0.00	50,000	49,272

PROJECT DESCRIPTION
Persistent wake erosion during peak boating season appears to induce elevated turbidity levels in the near zone bank. This project would supplement a 2-year state effort to set "turbidity loggers" (hydrolabs) in the river. These devices consist of a programmable data logger and a turbidimeter mounted in a stream to collect samples of turbidity over time. The data collected through the loggers can then be compared to the established state water quality standards**.**

MEASUREABLE GOALS AND OBJECTIVES

Complete two years of collection and assembly of turbidity data on the Kenai River. This project will provide data collection for near zone bank areas. This study will provide 5,760 unique turbidity observations during the course of the study period.

State standards on turbidity do exist. In order to establish background levels, two full years of baseline data are needed to determine if we have an increase in turbidity during peak boating season above background levels prior to understanding what actions if any need to be taken.

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.*

Elevated levels of turbidity occur in areas where heavy boat traffic occurs for extended periods of time. The highest levels of turbidity occur near shore, habitat that is important for juvenile salmon. Turbidity interferes with the ability of juvenile salmon to feed.

This project will provide resource managers the required data to ensure necessary mitigating actions are taken to meet state water quality standards for the fishery resource in the Kenai River. These actions will supplement the 2008 management regulations on the Kenai River to reduce hydrocarbon levels.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

This study is in coordination with a program previously funded, in part, by NOAA.

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
KENAI PENINSULA BOROUGH

PROJECT TITLE: Stream Channel and Elevation Modeling in the Seward Bear Creek Flood Service Area (SBCFSA)

PROJECT CONTACT

Contact Name: Daniel Mahalak
Address: Kenai Peninsula Borough- Capital Projects Division
Telephone Number: (907) 714-2505
Fax Number: (907) 262-6090
Email Address: DMahalak@borough.kenai.ak.us

PROJECT LOCATION
Seward Bear Creek Flood Service Area (SBCFSA), Seward, Alaska

PROJECT DURATION
One (1) year

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$99,272	$99,272	0	0	0

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
$99,272	0.00	0.00	$99,272	0

PROJECT DESCRIPTION
The SBCFSA valley floor is an unconsolidated glacial outwash plain. High gradient tributaries in the SBCFSA are prone to Surge-Release flooding, a result of liquefaction of unconsolidated till and outwash materials. This surge potential, and resulting energies, cannot be predicted therefore rendering a one dimensional hydrologic model inaccurate in the long term. Steep boulder, cobble and gravel bedded channels are prone to avulsion. Avulsion is a rapid change of flood routing due to flow of Sediment. In the case of the SBCFSA, there are a number of factors increasing Sediment load availability to the stream, both man induced and also as a result of “natural factors” including climate change and plate tectonics.

This project would acquire tools and data and develop modeling of stream channels, channel migration zones, flood prone infrastructure, natural features and base elevations within certain watershed sections of the Seward Bear Creek Flood Service Area.

This project would communicate risk and landscape evolution (Geomorphology) beyond a simple one dimensional flood model used by FEMAS' National Flood Insurance Program. To accomplish this, channel migration zones within the SBCFSA will be identified. Flood prone infrastructure will be documented and Bed Load Transport will be quantified in relation to Flood Flow. Using the high resolution topographic data, various stages of flood flow will be incorporated into the various high resolution topographic datasets and illustrate channel and flood changes over time to the decision makers and the general public.

MEASUREABLE GOALS AND OBJECTIVES

- 32 square miles of LiDAR derived digital elevation modeling and digital terrain modeling for use and analysis through GIS and modeling software.

- Stream Channel Change Detection Illustrate channel and flood changes over time on 5 streams and 20 miles of channel in the study area.

- Acquisition of a digital photometric system to allow for in-house analysis of stream channels pre and post flood events.

- Analysis of existing paired ortho-photography of stream channels pre-1985, post-1985 and post 1996 flood events.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

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

Acquisition of a photogrammetric system would allow managers to acquire data from historical paired photos allowing accelerated data collection based on past events instead of relying solely on forward data collection efforts. The combination of channel migration zone delineation, risk analysis and communication of that risk to public and decision makers is intended to promote avoidance of development in high hazard areas and reclamation of existing home sites in those high hazard areas. By avoiding development in high risk areas this project will result in an environmental benefit to the coastal area.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

USGS, FEMA

COST SHARING OR MATCHING OF FUNDS

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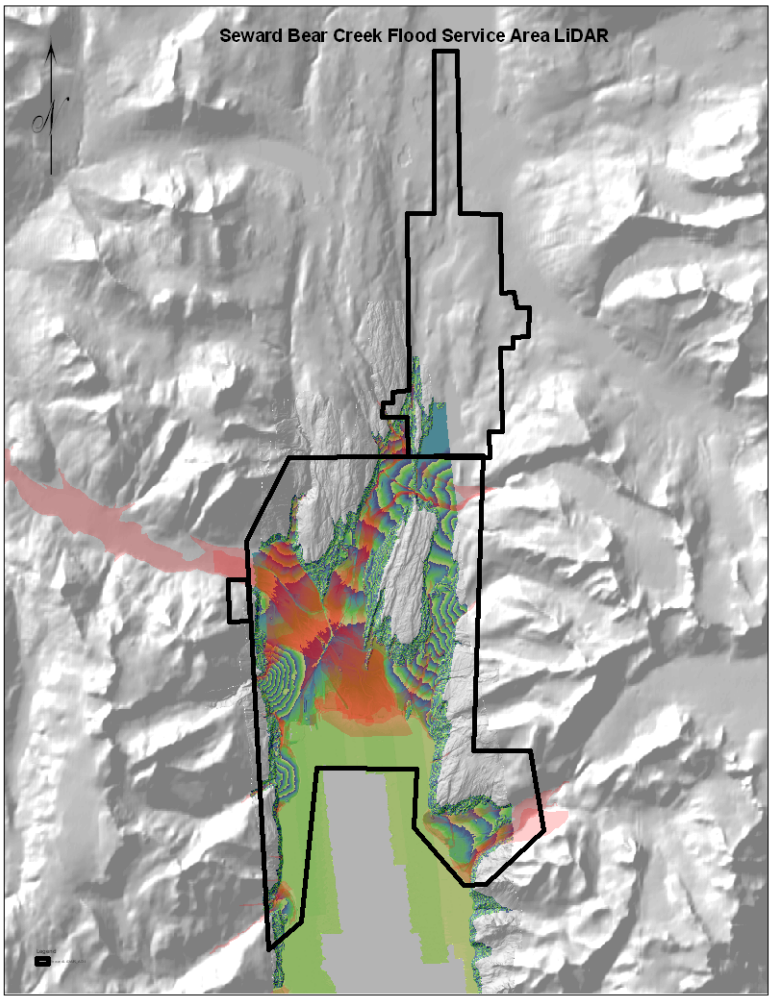
includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.



STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM

KENAI PENINSULA BOROUGH

PROJECT TITLE: Kenai Peninsula Borough Habitat Code Review & Revision

PROJECT CONTACT

Contact Name: John Czarnezki
Address: 514 Funny River Road, Soldotna, AK 99669
Telephone Number: (907) 714-2463
Fax Number: (907) 260-5992
Email Address: Jczarneski@borough.kenai.ak.us

PROJECT LOCATION
Borough wide

PROJECT DURATION
3- years.

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$95,272	$48,000	$24,000	$23,272	0

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
$95,272	0.00	0.00	$48,000	$47,272

PROJECT DESCRIPTION
Growth and development in the Kenai Peninsula Borough remains strong. This is especially true of land along our coasts, rivers and lakes. At the same time, Borough leaders have identified that portions of our code that help direct and manage growth are antiquated, inadequate, and unenforceable.

This project seeks to conduct an independent legal review of three chapters of the Kenai Peninsula Borough code, KPB 21.04 - .28 (subdivisions), 21.06 (floodplains), and 21.24 (administration and penalty). This review would identify strengths of the code, potential shortcomings, areas where the codes conflict with each other, and recommendations to

improve the codes. This project would also involve the identification of methods to manage development along erosive bluffs and other hazardous coastal features. Eighteen months to complete.

Phase II of this project includes the development and implementation of a process to revise Borough code. Well-written and easily understood codes should result in healthier ecosystems. Phase II will take eighteen additional months to complete.

MEASUREABLE GOALS AND OBJECTIVES

Phase I

Evaluate the effectiveness of Kenai Peninsula Borough floodplain, subdivision and enforcement regulations. Determine the scale and amount of development that has occurred within floodplains along unstable coastal bluffs and other environmentally sensitive areas. Determine the role in current ordinances to manage, direct and discourage development within these areas. This task will be aided by the use of GIS historic and recent satellite imagery to evaluate development.

Conduct a legal review of Kenai Peninsula Borough's floodplain, subdivision and enforcement ordinances. Compare and evaluate local codes to standard language and format used in writing municipal and/or state shoreland and land use ordinances. Review the Borough code to determine how other KPB ordinances affect the subdivision, floodplain and enforcement ordinances. Research and identify how other municipalities have regulated coastal development especially as it pertains to unstable bluffs and other potentially hazardous areas.

Phase II

Deliver a final report of the findings of the above reviews and evaluations to key policy makers. Also present a process, with measurable goals, objectives and a timeline that outlines the steps necessary to revise borough codes to address these issues. Engage decision-makers to adopt the process, review the codes and recommend modifications to the Kenai Peninsula Borough Assembly.

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." This project would benefit the entire Kenai Peninsula. The review and revision of Borough codes are necessary to protect dune habitat, estuaries, coastal developments, anadromous streams, and floodplains. Just as important, this project would also recommend revisions to the borough code of ordinances that control how land is subdivided and developed in these sensitive areas.

The proposed project would lay the groundwork for the development of Borough code that would result in the preservation of coastal areas through more efficient management of land use activities along coastal regions, anadromous streams and environmentally sensitive areas.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

This project would coordinate with FEMA to ensure consistency and compliance with federal floodplain regulations and 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 PROGRAM

PROJECT TITLE: Seward Weather and Ocean Observing Station

PROJECT CONTACT

Contact Name: Howard Ferren, Director of Conservation
Address: Alaska SeaLife Center, P.O. Box 1329, Seward, AK 99664-1329
Telephone Number: (907) 224-6396
Fax Number: (907) 224-6360
Email Address: howard_ferren@alaskasealife.org

PROJECT LOCATION

The project will take place at Lowell Point on Resurrection Bay near Seward, Kenai Peninsula, Alaska (see Figure 1).

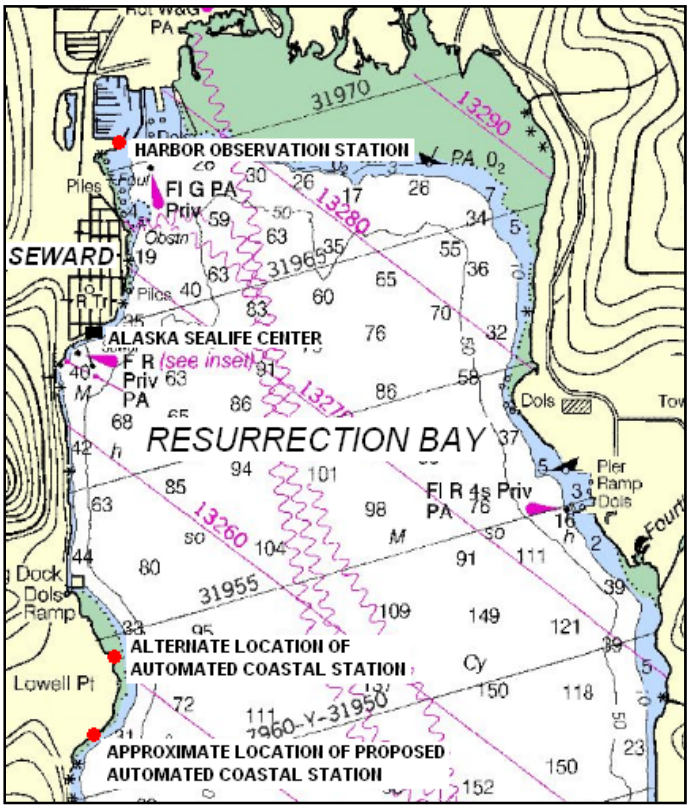


Figure 1. North Resurrection Bay (excerpt from NOAA chart 16682).

PROJECT DURATION

The project will be implemented during a two year period.

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$151,271	$114,000	$37,271	#	#

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
$151,271	0.00	0.00	4,370	146,901

PROJECT DESCRIPTION

Introduction:

Alaska's rural coastal residents are aware that the climate is changing and that their local shoreline habitats are feeling the effects of global warming. The State and Federal governments are aggressively attending to emergency situations, such as the catastrophic erosion at Shishmaref and Kivalina on the Chukchi Sea coast. Many other communities all along the 44,000-mile[1] coast of Alaska have yet to see their buildings fall into the sea, but still have concerns that storm damages, coastal erosion, shoreline retreat, and changing nearshore conditions will upset their way of life and destroy valuable coastal property and habitat. Outer continental shelf development and associated impacts to coasts and communities may exacerbate already serious threats and real conditions imposed by climate change. Objective observations of local coastal processes and their effects on shoreline stability are extremely sparse across the State. Planning mitigation in such a dynamic environment is difficult and risky without site-specific coastal observations and physical data. Prototypes are proposed for a network of rural observations of coastal processes and shoreline change, whose data and reports will dramatically enhance State and Federal efforts to monitor climate change and to predict its future consequences, as well as to plan mitigation for coastal development and impacts. Objective observations during storms and other extreme coastal events are of high value to engineers and others tasked with disaster recovery and prevention of future property damage. Prototypes proposed for a statewide network of coastal observations will be accomplished by two means: (1) automated stations along isolated shoreline reaches and (2) personal observations and manual measurements reported by residents of coastal communities.

Automated Rural Coastal Observation Stations:

The Alaska Ocean Observing System (AOOS) is expanding observations of all kinds along the coastal oceans of the State, including a network of meteorological and oceanographic measurement stations at entrances to harbors. The Alaska Harbor Observation Network is in its prototype development stage, as of this writing. An

[1] Alaska Department of Natural Resources, Alaska Coastal Management Program website: http://dnr.alaska.gov/coastal/acmp/Explore/Tourintro.html

independently powered prototype system installed at the entrance to Seward Harbor is establishing precedents for hardware and software design and operation, as well as for reporting and archiving procedures. Remote shorelines may be monitored in ways inappropriate for locations on harbor breakwaters. Seasonal ground surface freeze-thaw effects and thawing of permafrost weaken soil of coastal bluffs and dune shorelines. These processes are linked to heat exchanges between the soil, air, ground water, and ocean water along the shoreline (Are et al 2008). A station design that includes measurement of additional parameters is proposed for testing at Lowell Point, near Seward, in order to develop a design, a deployment and maintenance procedure, and data telemetry methods applicable in coastal areas of Alaska far from any road access.

Figure 1 shows the location of Lowell Point in relation to the ongoing prototype harbor observation network test at Seward Harbor. Shoreline conditions at the proposed site are shown in Figure 2. Lowell Point lies on an alluvial fan with real erosion concerns and is the site of a previous investigation led by the Dr. Orson Smith regarding shoreline stability (UAA 2007). This site will allow Alaska SeaLife Center personnel regular road access to a natural beach whose characteristics are typical of many sites around the State where coastal erosion is a concern.

Figure 2. Beach conditions near proposed location of automated station prototype test at Lowell Point
(2007 photo of UAA graduate students by Orson Smith).

The proposed network of remote automated stations will be operated as an extension of the Alaska Harbor Observation Network, now in its prototype development stage as part of the Alaska Ocean Observation System (AOOS). Conceptual design of a comprehensive monitoring system at a location near the crest of a bluff is shown in Figure 3. The foremost challenges for a reliable design are the connection of submerged sensors to the data logger, the power budget for the system, and telemetry connection to a distant control and data dissemination system. These challenges will be met in prototype

at Lowell Point with a view toward more remote sites on the Kenai Peninsula and elsewhere along all regions of the Alaskan coast. Solar power in summer is generally sufficient to maintain battery power. Addition of a small wind turbine can recharge batteries in winter at many coastal locations.

Locations of automated stations are anticipated to most often lie within a few miles of a community. In this situation, radio telemetry may be possible to a village building with means for uploading data to an internet server dedicated to the network. Near-real time data dissemination and long-term archiving will follow procedures already in place through AOOS (see http://www.aoos.org/). More remote locations will require satellite, meteor-burst, or other means of long-distance telemetry, with ample backup data storage on site, in case telemetry fails and a site visit upload is necessary. The prototype station will be configured with off-the-shelf components that are rugged, transportable, and affordable to stock for replacements, as needed. Lessons learned from and compatibility with design of Harbor Observation Network stations will be important criteria. Sensor capabilities and data recording protocol will follow existing NOAA or other accepted standards to the maximum extent practical.

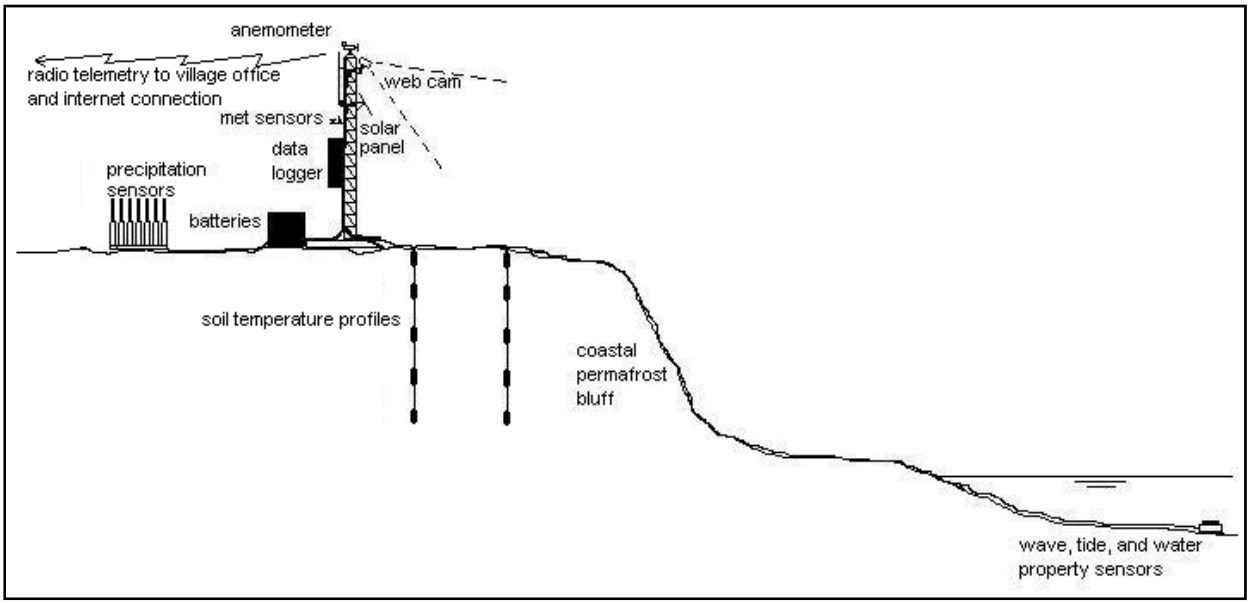


Figure 3. Conceptual design of a remote automated coastal observation station.

Meteorological parameters measured and recorded will include wind speed and direction, air temperature, barometric pressure, solar radiation, and relative humidity. Rainfall and snowfall will also be measured and recorded. One or more ground temperature profiles will be periodically recorded to monitor changes in the active layer below the measurement station. Water level, surface temperature, and conductivity (salinity) will be measured by sensors submerged offshore of the station and connected to the station data logger by a conductor cable. Water level data will be recorded in a manner that allows distinction of astronomical tide, wind-generated wave characteristics, and storm surge. The station will periodically record digital images of the bluff or dunes, adjacent beach, and the nearshore ocean. Efficient and affordable bandgap-based digital temperature

sensors (Hendee 2007) will be applied to measure vertical profiles of ground temperature through the active layer beneath the station. The installation of the system will follow sampling and testing of the surface and subsoil material of the ground surrounding the station location and of beach surface material immediately offshore of the station. Mapping of the local terrain and nearshore bathymetry will be accomplished at the time of installation using equipment transportable by sea or helicopter to a remote Arctic site.

Personal Coastal Observations –Test Equipment and Procedures:
A program of visual observations and one-person manual measurements is proposed to provide regular objective recorded information about coastal processes and changing shoreline conditions. Coastal community residents are to be equipped with a set of observation tools and means to report their observations to a central AOOS database via Internet. The tool kit will include an illustrated manual with instructions for use of each observation device provided. Observers will be equipped to measure wind, wave, long shore current, and ice conditions, beach slope and material characteristics, and relative shoreline retreat. The equipment and procedures will be refined from the Littoral Environment Observation program operated by the Corps of Engineers until about 20 years ago (Schneider 1981, Sherlock and Szuwalski 1987). Funds are being sought for detailed design, equipment purchase and deployment, and assembly of training materials.

Environmental monitoring by volunteer citizens is not a new concept in Alaska. Cook Inlet Keeper has successfully operated the Citizens Environmental Monitoring Program since 1996, involving volunteers who measure habitat and water quality data in the Cook Inlet watershed.

The prototype development of this system of personal observations is proposed to take place at the site of the prototype automated remote station on Lowell Point. Alaska SeaLife Center employees will drive to the site and practice the observations making additional notes on the efficiency of the equipment and procedures as seasonal conditions change. The condition of the automated station will be checked at the same time. This proposed prototype development program will compare automated measurements with concurrent manual measurements and personal observations. The trends of both the manual and automated measurements and their comparison will be reported at the end of the prototype development program.

References

Hendee, Mikal , 2007. *Comparison of Thermistor Sensors to Bandgap-Based Digital Sensors for Ground Temperature Measurements*, seminar presented to School of Engineering, University of Alaska Anchorage,

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Schneider, C., 1981. *The Littoral Environment Observation (LEO) Data Collection Program*, CHETN 81-5, US Army Waterways Experiment Station, Vicksburg

Sherlock, A., and Szuwalski, A., 1987. *A user's guide to the Littoral Environment Observation Retrieval System*, Instructional Report CERC-87-3, US Army Waterways Experiment Station, Vicksburg

UAA, 2007. *Lowell Point Beach Sediment Study, Lowell Point, Alaska*, CE A676 Coastal Engineering (graduate class project report led by Orson Smith), School of Engineering, University of Alaska Anchorage

MEASUREABLE GOALS AND OBJECTIVES

Specific measurable goals of this project are:

Year 1

1. **Design, fabricate and install prototype remote automated coastal data collection station** at Lowell Point and begin to monitor performance of its hardware and data telemetry, based on prototype efforts at Seward Harbor.
2. **Design and implement first stage internet-linked communication protocols** to integrate multiple data collection sites and communications with weather and ocean sensors to assure sensor test, check and reset functions are reliable.
3. **Design and test observers' kit and procedures** with observations at the site of the automated station, comparing measurements to refine equipment and procedures for implementation at other Alaska coastal sites.
4. **Design and test web-based data entry, archiving, and dissemination system** for manual observations.

Year 2

5. **Refine and document design, programming, data telemetry protocols, and operation and maintenance procedures** for prototype remote automated station for the purpose of implementing its installation at other sites.
6. **Refine and document communication integration** of remote automated stations with Alaska Ocean Observing System, NOAA and University of Alaska Marine Information System to assure multiple site functionality and reporting to data centers.
7. **Compile observers' manual.**
8. **Solicit sponsorship of additional remote automated stations and manual observations** elsewhere in Alaska through proposals to agencies and other interests in coastal observations.

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 proposed observation program development is consistent with this authorized use of CIAP resources by providing Alaska coastal residents and resource managers with an improved baseline of coastal conditions with which to make wise decisions toward conservation and protection of natural attributes of the coastal zone. The same information is essential for design of restoration where impacts have already occurred, as well as for impact assessment regarding proposed coastal and offshore developments. The Alaska Coastal Observation Network is designed to directly engage coastal residents in observation and evaluation of coastal trends affecting conservation, protection, and restoration of coastal areas in which they live. The proposed prototype developments at Seward will set the stage for expansion of the Network through cooperative investment of local, State, and Federal resources.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The prototype infrastructure for coastal observing at harbors is funded by the Alaska Ocean Observing System (AOOS) and the National Weather Service. We work closely with those agencies and anticipate expanding collaborations with other entities such as the DOA Corps of Engineers, and coastal communities who will benefit from access to real time and long term data sets for analysis, engineering, development and mitigation addressing coastal development and climate change impacts.

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

KENAI PENINSULA BOROUGH

PROJECT TITLE: Kachemak Drive Bluff Erosion Study

PROJECT CONTACT

Contact Name: Gary Williams
Address: 514 Funny River Rd., Soldotna, Alaska 99669
Telephone Number: (907) 714-2216
Fax Number: (907) 260-5992
Email Address: gwilliams@borough.kenai.ak.us

PROJECT LOCATION
City of Homer, Kachemak Drive.

PROJECT DURATION
1 - year

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
101,272	101,272	0	0	0

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
101,272	0.00	0.00	$101,272	0.00

PROJECT DESCRIPTION
Storm water seepage and flooding on Kachemak Drive has resulted in the clear need for a study to define the hydrology of this area in order to provide recommendations to state and local government regarding land use planning as a means to minimize damage to coastal areas and bluff property along Kachemak Drive.

The peat bluffs along Kachemak Drive are affected by aquifer discharge. The water table, or shallow aquifer, can be less than one foot below land surface on some of the bay-side properties. This project will fund nine surface monitoring wells in the locations illustrated in Figure 1. These investigatory wells will be drilled using the air rotary method to the level of the base of the bluff at each location. These wells will remain in place and may be used later to test bluff mitigation measures homeowners should consider in their efforts to reduce bluff sloughing.

This project is part of a larger study that will produce a detailed model of the hydrology of the area.

MEASUREABLE GOALS AND OBJECTIVES

Direct funding in connection with this project will include the following measurable outcomes:

1. Nine surface water wells drilled at the base of Kachemak Drive bluffs using the air rotary method.
2. Baseline hydrologic data gathered through monthly monitoring of the nine surface water wells that help determine rates of recharge.
3. Scoping report detailing the data collected and including data that discusses the area's wetland, surface and cross-road hydrology.

This project will provide the scoping and groundwork needed to acquire additional funds with which to conduct a comprehensive study of the hydrology of the area.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

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

Kachemak Drive is adjacent to rapidly eroding peat bluffs on the shore of Kachemak Bay. Industrial and residential development including utilities installation in wetlands have altered the hydrology of the area exacerbating erosion. Understanding the hydrogeology of this bluff and risks associated with development in this area is necessary to enable land and resource managers to make decisions regarding future development that will protect this coastal bluff from further negative impacts.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

No duplication of effort is involved in this project. No coordination with federal agencies is anticipated.

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

KENAI PENINSULA BOROUGH

PROJECT TITLE: River Debris Clean-Up

PROJECT CONTACT

Contact Name: John Czarnezki
Address: 514 Funny River Road, Soldotna, AK 99669
Telephone Number: (907) 714-2463
Fax Number: (907) 260-5992
Email Address: jczarnezki@borough.kenai.ak.us

PROJECT LOCATION

Within the coastal zone, borough wide

PROJECT DURATION

1 -year

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$49,272	$49,272			

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
49,272	0	0	$49,272	0

PROJECT DESCRIPTION

This project would benefit the streams, wetlands, floodplains and coasts within the entire Kenai Peninsula Borough. After several flooding events over the past decade, metal debris, bridge and culvert materials, and other miscellaneous materials have ended up in our rivers, floodplains and coasts.

This project seeks to develop a program to remove debris from our rivers, floodplains, wetlands, riparian areas and coasts. Both through natural flooding and from poor past practices, we have numerous types of debris in sensitive habitats. It is the intent of this project to identify the locations of debris, analyze issues regarding removal of the debris

(e.g., permitting, access, equipment necessary, etc.), prioritize debris for removal, and then contract for the removal of the debris.

MEASUREABLE GOALS AND OBJECTIVES

1. Identify and GPS the locations of materials in sensitive habitats.
2. Develop criteria to rank and prioritize the removal order of the debris.
3. Solicit a contract for the timely removal of materials.
4. Obtain permits and landowner permission as necessary.
5. Remove approximately 10 tons of debris.
6. The responsible parties will document results and accomplishments and periodically report those findings to the Mayor, Assembly and the public.

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.*"

Through the removal of foreign materials from rivers, coasts and riparian areas, this project will help to restore these environments to their natural conditions.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

This project would likely require coordination with the US Army Corps of Engineers for permitting in wetlands.

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

KENAI PENINSULA BOROUGH

PROJECT TITLE: Feasibility Study for Soldotna Creek Northern Pike Eradication

PROJECT CONTACTS

The Kenai Peninsula Borough has worked cooperatively with the Alaska Department of Fish and Game in the development of this project. The borough will enter into a contract with ADFG to complete the work.

Contact Name: Robert Massengill
Address: ADF&G, 43961 K-Beach Rd. Suite B, Soldotna, AK 99669
Telephone Number: (907) 262-9368
Fax Number: (907) 262-4709
Email Address: robert.massengill@alaska.gov

Contact Name: Gary Williams
Address: Kenai Peninsula Borough, 514 Funny River Rd., Soldotna, AK 99669
Telephone Number: (907)714-2216
Fax Number: (907) 260-5992
Email Address: gwilliams@borough.kenai.ak.us

PROJECT LOCATION

This project is within the coastal zone. This project will take place within the Soldotna Creek drainage. Soldotna Creek drains the Mackey Lakes area near Soldotna. The main stem of Soldotna Creek is about eleven miles in length and originates at Sevena Lake. The Soldotna Creek drainage contains eight major lakes, many small ponds, wetlands and smaller tributaries. The mouth of Soldotna Creek enters the Kenai River near rivermile 22, just upstream of the Soldotna Bridge, about 7.6 miles in direct distance from Cook Inlet.

PROJECT DURATION

1 – Year. All work will be funded with FY09 CIAP funds.

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$200,000	$200,000	0.00	0.00	0.00

PROJECT DESCRIPTION

Northern pike (*Esox lucius*) do not naturally occur in Southcentral Alaska, and are considered an invasive species here. Their presence in local water bodies is the result of illegal introductions that have occurred over the last several decades. Northern pike are

valuable sport fish where they are native, but they are also top-level predators on fish and other aquatic fauna. When introduced to waters outside of their native range, northern pike can reduce or eliminate native fish populations. In Southcentral Alaska, northern pike are known to prey heavily on rearing salmonids and, in some cases, have been implicated in the decline of local salmon runs (i.e. Alexander Creek in the Matanuska-Susitna Valley). Northern pike prefer relatively shallow, slack to slow moving water, and tend to ambush prey from densely-vegetated areas.

There is currently an illegally-introduced population of northern pike that inhabit Soldotna Creek including seven of the eight major lakes within the drainage. ADF&G has implemented control netting projects in many of these lakes with the most recent efforts occurring in Derks and Sevena Lakes. Though control netting can reduce populations of northern pike, it is not an appropriate tool for eradicating them.

This drainage has already been negatively impacted by the presence of northern pike as most lakes connected to Soldotna Creek are now devoid or greatly depleted of their native fish species due to northern pike predation. In addition, Soldotna Creek provides the most likely pathway for northern pike to pioneer elsewhere in the Kenai River drainage and put at risk world-class salmon and rainbow trout fisheries.

This project would fund the development of engineering plans and associated cost estimates for six control barriers capable of temporarily controlling northern pike and water movement within the Soldotna Creek drainage (Figure 1). The purpose of the barriers would be to isolate the drainage into treatable-sized segments. This would allow ADF&G to systematically treat the entire drainage with rotenone - a common substance used by fishery professionals to eradicate unwanted fish. Execution of the designed project would be a multi-year step-wise approach to eradicate invasive northern pike from the entire drainage. Most barriers would be relatively minor in scope with the exception of the barrier nearest Sevena Lake which serves as the headwaters for Soldotna Creek. Funding for this current proposal would allow engineers to develop plans for this effort and for ADF&G to begin the public scoping process and work with engineers to develop plans.

MEASUREABLE GOALS AND OBJECTIVES

This proposal would require ADF&G to contract to an engineering firm to develop detailed plans for eradicating invasive pike from the Soldotna Creek Drainage.

This project will result in a feasibility study, including engineering schematics and cost estimates for temporary Soldotna Creek control barriers. A feasibility study such as this would provide critical information for adequately planning, securing permits, and obtaining funding for a long-term invasive northern pike eradication project within the drainage.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project would be consistent with authorized use #2, mitigation of damage to fish, wildlife, or natural resources.

Eradicating the invasive northern pike population from this drainage would restore the aquatic habitat for an important part of the Kenai River drainage that was historically known to support substantial rearing coho salmon and resident fish populations such as rainbow trout. It also would eliminate the most likely pathway for invasive northern pike to pioneer elsewhere in the Kenai River drainage and cause further ecological and economic losses.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

This proposal would require ADF&G to coordinate with a local engineering firm to develop detailed plans for eradicating invasive pike from the Soldotna Creek Drainage. Future execution of these plans will require compliance with the National Environmental Policy Act (NEPA) as well as coordination with the United States Fish and Wildlife Service (USF&WS), Kenai National Wildlife Refuge (KNWR) and the U.S. Army Corps of Engineers (USACOE).

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.

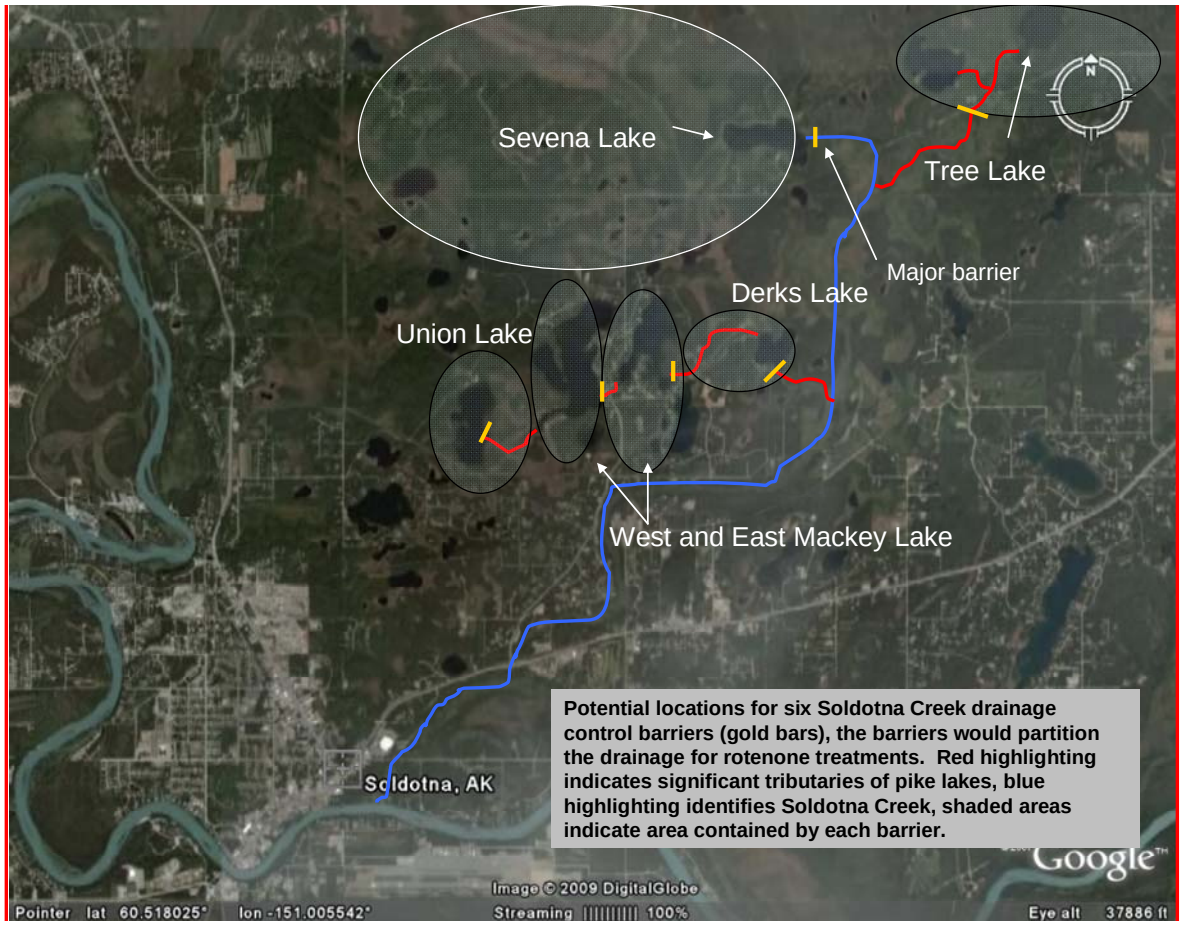

Figure 1. Location of the project area and potential barrier locations

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM
KENAI PENINSULA BOROUGH

PROJECT TITLE: Blueberry Hill Suitability Study for the Purpose of Protecting Flood Prone Alluvial Areas in the Seward Bear Creek Flood Service Area

PROJECT CONTACT

Contact Name: Marcus A. Mueller
Address: Kenai Peninsula Borough- Land Management
Telephone Number: (907) 714-2204
Fax Number: (907) 714-2378
Email Address: MMueller@borough.kenai.ak.us

PROJECT LOCATION

This project is located in the Kenai Peninsula Borough Coastal Zone at Seward, Alaska.

PROJECT DURATION

One (1) year

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$250,000	$250,000	-	-	-

PROJECT DESCRIPTION

Project would provide the preliminary scoping and feasibility study for determining the development potential of a 900-acre upland feature that is considered one of the most likely areas to support relocation of existing human activities occurring in flood prone alluvial and wetland areas around Seward. The study project would pay special attention to the positive impact of removing septic systems from the floodways and floodplains to mitigate damage to salmon habitat. Removal/ relocation of private development from the alluvium would allow for improved watershed management and reclamation of coastal areas. This project would explore the suitability of Blueberry Hill to accept a shift of private development out of the alluvium.

This project would consider potential primary access, secondary routes, community water & sewer systems, and development density in relation to localized topography, soils, bed rock, and natural hazards. Analysis of secondary considerations such as available borrow types and permitting requirements will be included in the project.

MEASUREABLE GOALS AND OBJECTIVES

This project would evaluate possible areas to relocate private development including residential land uses out of the flood prone alluvium and wetlands. The final product will be a discussion of each of the primary considerations critical to understanding watershed management issues unique to the Seward area and the cost-benefit of offering a relocation alternative to those located in flood prone areas. Quantified results will include cost estimates to define for primary infrastructure and maximum development density that will allow for ready cost-benefit analysis.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project would be consistent with authorized use #1: *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*
Coastal areas (deltas) would be enhanced and restored by removing impacts of human activities and preventing future impacts in the floodplains and wetlands. This project would provide a description of possible sites to which homeowners may move. By removing such development, natural resources would be protected and restored.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

This project will be coordinated with the following federal agencies and programs: EPA, NFIP, and USDA NRCS.

COST SHARING OR MATCHING OF FUNDS

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STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM

KENAI PENINSULA BOROUGH

PROJECT TITLE: Kenai Peninsula Borough, Public Access to Rivers, Lakes and Coast

PROJECT CONTACT

Contact Name: John Mohorcich
Address: 514 Funny River Road, Soldotna, Alaska 99669
Telephone Number: (907) 714-2462
Fax Number: (907) 260-5992
Email Address: jmohorcic@borough.kenai.ak.us

PROJECT LOCATION

Within the Kenai Peninsula Borough within and adjacent to public access roads and easements to public waters. The sites to consider are Rapids Avenue, Riverside Drive, Cannery Road, Poachers Cove Rd., Huskey Lane.

PROJECT DURATION

1 - year

ESTIMATED COST

$10,000

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
10,000	10,000	#	#	#

PROJECT DESCRIPTION

Many borough legal rights of ways provide unlimited access to our public waters, (rivers, lakes and the coast) and have caused damage to the resources and in many cases damage to adjacent private properties. This program will identify and evaluate these situations and develop a management plan that includes recommendations for necessary restrictions, proper location, required restoration of the riparian areas and identification of supporting infrastructure such as parking areas, trash receptacles, bathroom facilities and education signs.

MEASUREABLE GOALS AND OBJECTIVES

Develop a KPB public access management plan and adopt policy to implement planning, management, development and maintenance of these public access points.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project is consistent with authorized use #1: *Project and activities for the conservation, protection or restoration of coastal areas.* The areas cited in the Project Location section are heavily used during fishing seasons and are degraded by human traffic leading to erosion of the access and adjacent areas. The management plan will provide a clear direction for future restoration, management and cooperation among responsible agencies.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

USFWS, EPA

COST SHARING OR MATCHING OF FUNDS

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STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM

KENAI PENINSULA BOROUGH

PROJECT TITLE: Survey of Northern Pike in Lakes of the West Fork Moose River Watershed

The Kenai Peninsula Borough has worked cooperatively with the Alaska Department of Fish and Game in the development of this project. The borough will enter into a contract with ADFG to complete the work.

Contact Name: Robert Massengill
Address: ADF&G, 43961 K-Beach Rd. Suite B, Soldotna, AK 99669
Telephone Number: (907) 262-9368
Fax Number: (907) 262-4709
Email Address: robert.massengill@alaska.gov

Contact Name: Gary Williams
Address: Kenai Peninsula Borough, 514 Funny River Rd., Soldotna, AK 99669
Telephone Number: (907)714-2216
Fax Number: (907) 260-5992
Email Address: gwilliams@borough.kenai.ak.us

PROJECT LOCATION
This project will be conducted in the West Fork Moose River watershed, located on the Kenai Peninsula in Southcentral Alaska (Figure 1). Most of the Moose River watershed, and the entire West Fork, are in the Kenai National Wildlife Refuge. The West Fork of the Moose River enters the Moose River main stem about five miles north (direct distance) from its confluence with the Kenai River in Sterling Alaska. This project is located within the coastal zone.

PROJECT DURATION
One (1) year.

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$60,000	$60,000	#	#	#

PROJECT DESCRIPTION
Northern pike are not indigenous to the Kenai Peninsula. Northern pike were first reported in the Moose River in 1986 when a single fish was observed near a fish weir

operated by the USFWS. Since then, sporadic reports from anglers and harvests reported in the State of Alaska Statewide Harvest Survey indicate that northern pike are present in the Moose River watershed and are harvested at a low level by sport anglers. These fish likely came from both illegal introductions and natural migrations of fish illegally introduced into other tributaries of the Kenai River. It is unknown if northern pike have established reproducing population in the Moose River drainage.

The Moose River watershed supports 15 native fish species including rainbow trout, Dolly varden, and 4 species of Pacific salmon. Adult weirs have been operated in the Moose River several times over the years. Typically, two to four thousand adult coho salmon and two to four thousand sockeye salmon were counted migrating upstream to spawn. The Moose River is also a very important rearing area for juvenile coho salmon that come from spawning throughout the Kenai River. Work conducted annually at a smolt weir on the Moose River between 1992 and 1997 shows that typically ~ 40%-20% of the coho smolt in the entire Kenai River watershed spend at least their last winter in the Moose River. The Moose River has numerous lakes with submergent aquatic vegetation that is regarded as ideal spawning habitat for northern pike.

Much of the aquatic habitat found in the Kenai River watershed is similar to northern pike habitat found in much of its' native range. Northern pike have been found in many lakes in the proposed study area including East and West Mackey Lakes, Stormy Lake, Derks Lake and ARC Lake. There is evidence in the Kenai watershed that when pike are introduced into an Alaskan lake where they are not native, the normal chain of events is: the few introduced pike have lots of food and they grow fast; the pike produce lots of offspring; the offspring grow fast and they reproduce; the lake soon contains thousands of small pike; the pike predate on the native fish populations and eventually begin eating each other; after a period of 5 to 10 years the lake contains nothing but 10 to 20 inch pike that anglers don't pursue because they are too small. The biomass of native fish sustained in many of these Alaskan lakes is small. Once pike consume that biomass, native fish production in the lake is essentially lost unless the pike are removed.

This project would fund some of the equipment, supplies and personnel time needed to survey lakes within the West Fork of the Moose River watershed in FY10. The survey would help to detect the presence, distribution and status of northern pike and native fish species in the West Fork Moose River watershed and to identify suitable sites for northern pike control measures.

MEASUREABLE GOALS AND OBJECTIVES

Goals:

1 Determine presence and current distribution of northern pike in West Fork Moose River lakes. At a minimum, lakes surveyed would include Camp Island Lake, Clam Lake, Grebe Lake, Loon Lake, Moosehorn Lake, and Rock Lake.

2 Identify areas in the watershed that would allow efficient control of northern pike and assess the appropriate control measures to do so.

Tasks:

1 Net 6 lakes to detect presence/absence of northern pike.
2 Set tip-ups in 6 lakes through ice to detect presence/absence of northern pike.
3 Identify "open" lakes that may have intermittent outlets.
4 Record catches of other fish species.
5 Make bathymetric maps of all lakes sampled for northern pike to estimate lake area and volume.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project would be consistent with authorized use #2: mitigation of damage to fish, wildlife, or natural resources.

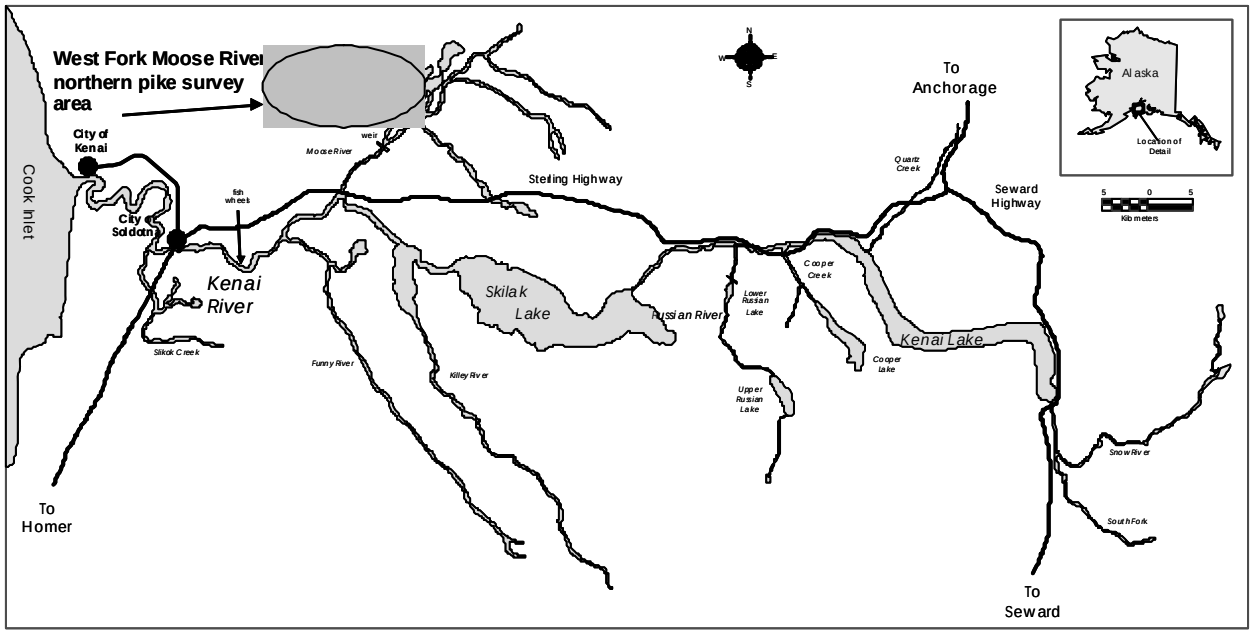
Identifying the presence and distribution of northern pike within the West Fork of the Moose River would allow ADF&G the ability to assess the best control options necessary to protect the Kenai River drainage from further northern pike expansion and help restore the aquatic habitat of the West Fork to a more productive and natural state.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

This project will require coordination with the United States Fish and Wildlife Service (USF&WS) and the Kenai National Wildlife Refuge (KNWR).

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
KENAI PENINSULA BOROUGH

PROJECT TITLE: Seldovia Slough Sport Fishing Access Stairway

PROJECT CONTACT

Contact Name: Gary Williams
Address: 514 Funny River Road, Soldotna, Alaska 99669
Telephone Number: 907-714-2216
Fax Number: 907-260-5992
Email Address: gwilliams@borough.kenai.ak.us

PROJECT LOCATION
Within the City of Seldovia. Attached is a map of the location of the project.

PROJECT DURATION
This project will take approximately 120 days to complete.

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$95,000	$95,000	0	0	0

PROJECT DESCRIPTION
The Seldovia Slough hosts state-stocked king and silver salmon runs, accessible from the Seldovia Bridge. This fishing experience is a significant tourist attraction, and is enjoyed by both visitors and locals alike. The area has experienced significant erosion due to human use.

The solution for us is to put a stairway at the location. Attached is a drawing of what we are proposing at the location. This non-erodible access to the waters edge would allow for the conservation and protection of this coastal area by reducing further erosion of the bank in to the river.

MEASUREABLE GOALS AND OBJECTIVES
1) Build 89 linear feet of steel stairway 5’ wide with galvanized hand rails.
2) Cast 50 cubic yards of concrete into 5’ wide stairs with removable guard rails.
3) Stabilize and control the erosion problem on the banks by the Slough Bridge and mitigate further erosion by planting vegetation.

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 wetland.*

The project will provide an alternate means for accessing the slough. Currently fishermen slip and slide down the banks on the slough to get to the water to land their fish. This causes erosion of the bank each and every time someone goes up or down. Placing stairs for them to use will make it possible for them to get where they need to go without contacting the bank on the way. This will protect not only the bank from erosion but also prevent silt from entering the slough, thereby protecting the coastal area. Overtime, the bank will naturally revegetate and be restored to a more natural state. The benefits to the coastal environment will be ongoing, offering shade for fish, reduced sedimentation and reduced turbidity.

Similar projects have been done on the Kenai and the Kasilof Rivers and have successfully reduced the amount of erosion and associated impacts.

This area is especially impacted due to the number of tourists and locals that congregate on the Slough Bridge to fish for the salmon stocked in the Slough by the Dept. of Fish and Game. Everyone goes down the banks of the slough to land their fish and then goes back up to try again.

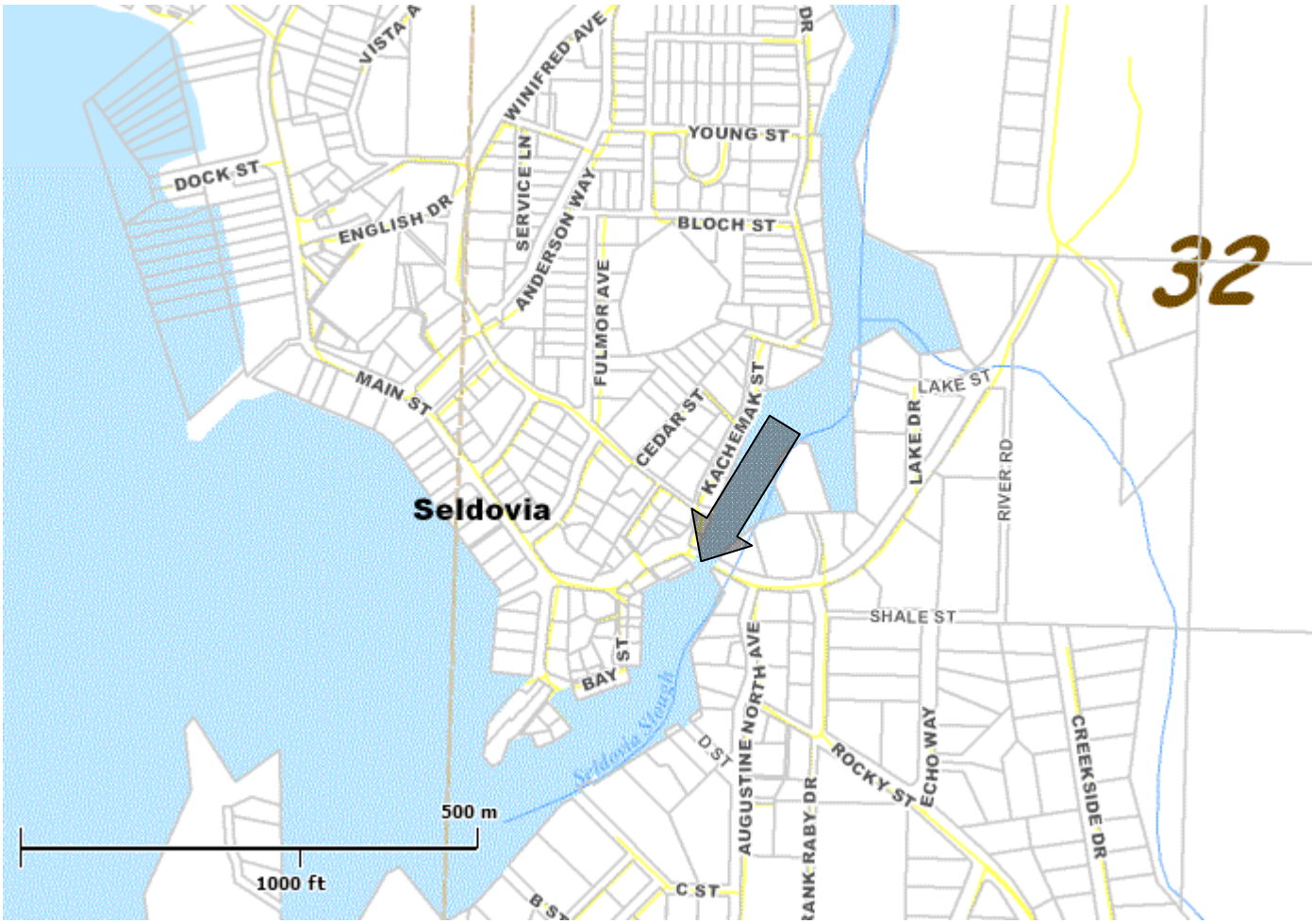
COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

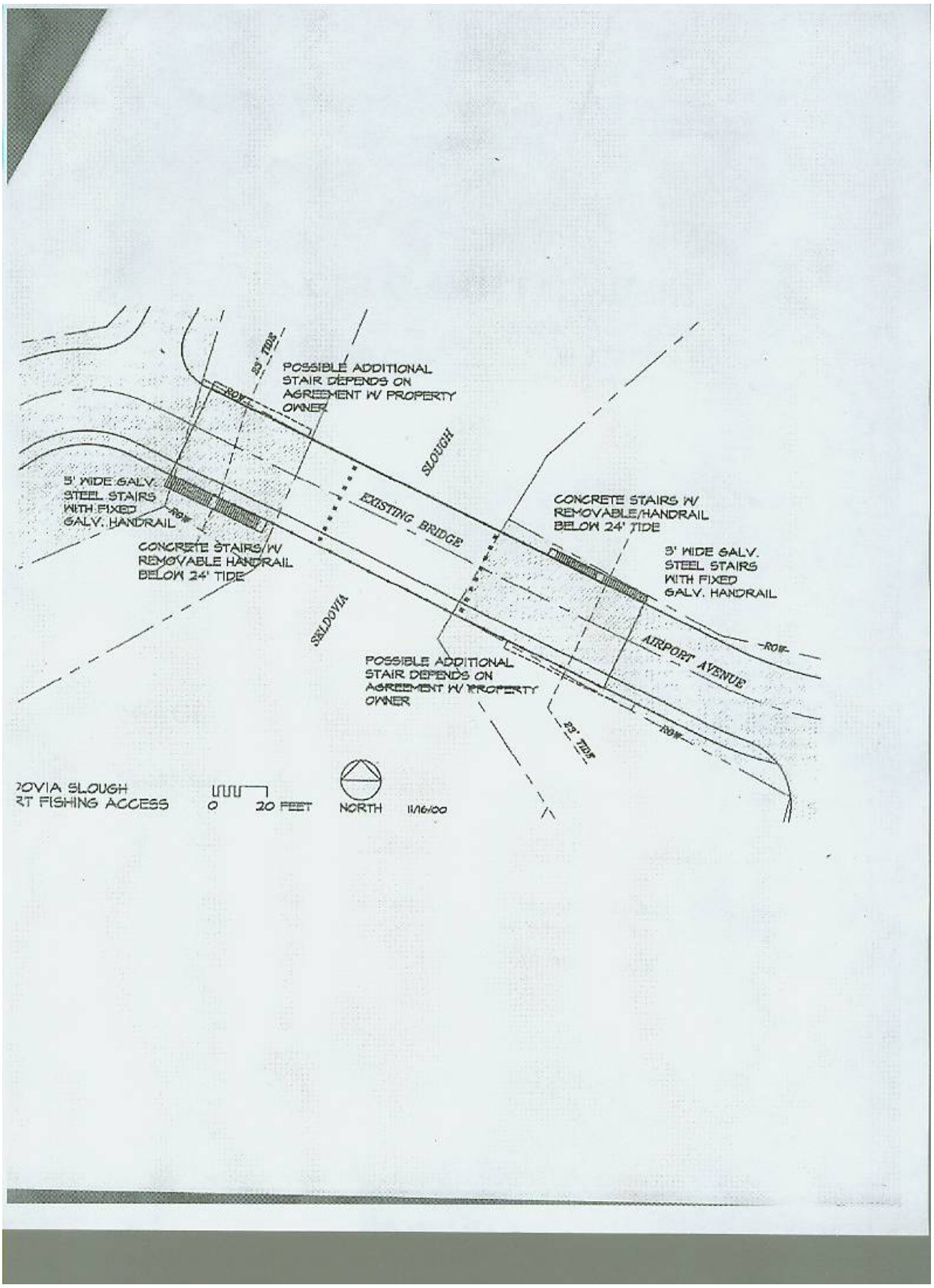
No duplication of effort is involved in this project. No coordination with federal agencies is anticipated.

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.

Proposed Location of the Seldovia Slough Stairway Access




POSSIBLE ADDITIONAL STAIR DEPENDS ON AGREEMENT W/ PROPERTY OWNER
SLOUGH
5' WIDE GALV. STEEL STAIRS WITH FIXED GALV. HANDRAIL
EXISTING BRIDGE
CONCRETE STAIRS W/ REMOVABLE/HANDRAIL BELOW 24' TIDE
CONCRETE STAIRS W/ REMOVABLE HANDRAIL BELOW 24' TIDE
3' WIDE GALV. STEEL STAIRS WITH FIXED GALV. HANDRAIL
SELDOVIA
AIRPORT AVENUE
ROW
POSSIBLE ADDITIONAL STAIR DEPENDS ON AGREEMENT W/ PROPERTY OWNER
0 20 FEET
NORTH
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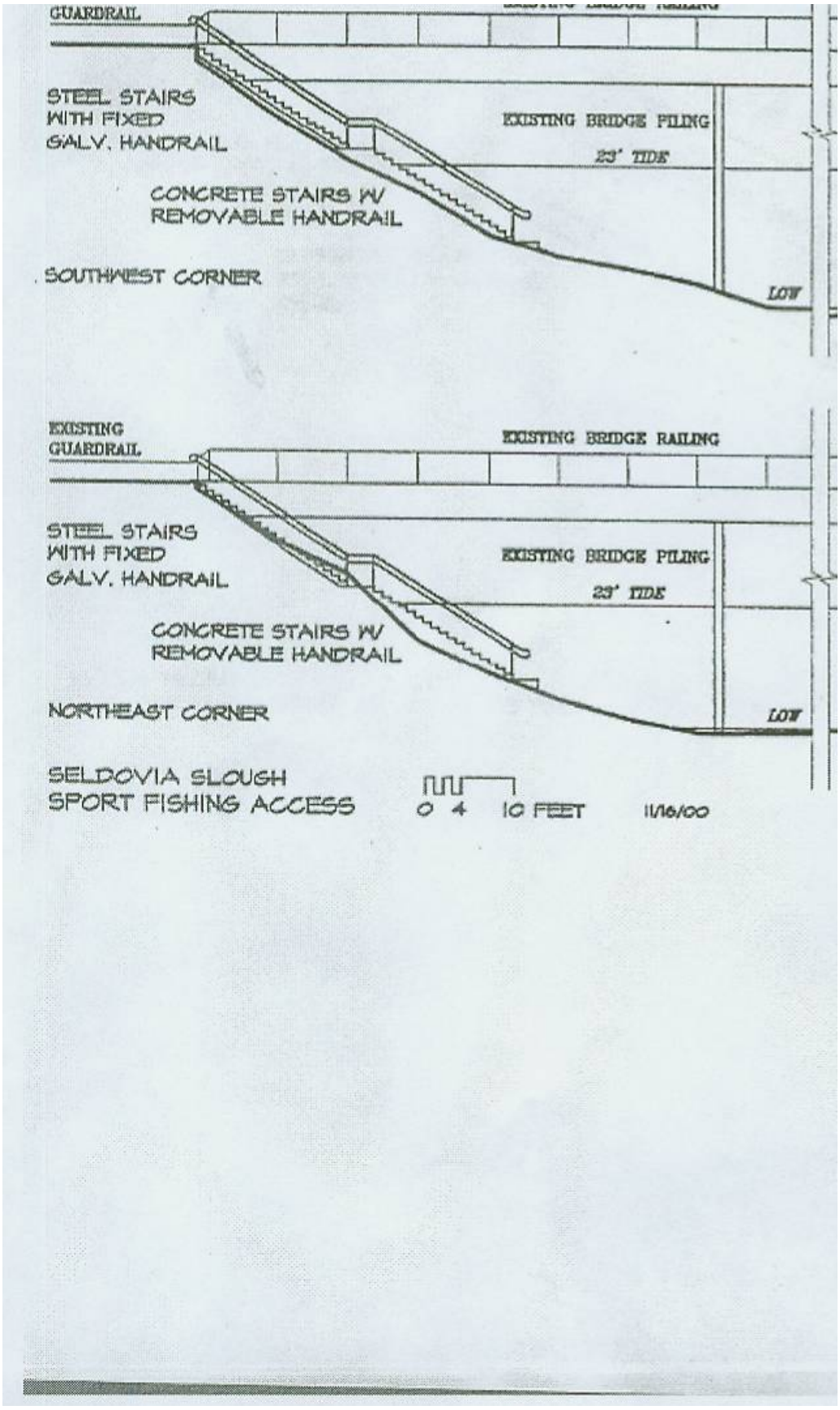
GUARDRAIL
STEEL STAIRS
WITH FIXED
GALV. HANDRAIL
EXISTING BRIDGE PILING
23' TIDE
CONCRETE STAIRS W/
REMOVABLE HANDRAIL
SOUTHWEST CORNER
LOW
EXISTING
GUARDRAIL
EXISTING BRIDGE RAILING
STEEL STAIRS
WITH FIXED
GALV. HANDRAIL
EXISTING BRIDGE PILING
23' TIDE
CONCRETE STAIRS W/
REMOVABLE HANDRAIL
NORTHEAST CORNER
LOW
SELDOVIA SLOUGH
SPORT FISHING ACCESS
0 4 10 FEET
11/16/00

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM

KENAI PENINSULA BOROUGH

PROJECT TITLE: Coastal Protection: Climate Change Impact Plan

PROJECT CONTACT

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PROJECT LOCATION

This project would benefit the entire Kenai Peninsula through the development and implementation of a plan that would seek to effectively manage our energy infrastructure; transportation systems; purchasing and recycling strategies; and land use strategies that support more efficient developments.

PROJECT DURATION

2 - years.

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$50,000	$25,000	$25,000		

PROJECT DESCRIPTION

The Kenai Peninsula Borough has recognized the need to develop a borough-wide understanding of the potential impacts, adaptation to, and opportunities brought by climate change and learn what local actions could be taken and then consider appropriate steps to address these issues. Anticipating climatic variability and change and designing resilience into our approach to protecting the natural environment can lead to appropriate human adaptations in the protection and enhancement of our living space. For example, in some locations it may be necessary to develop flood protection projects against a 50-year flood frequency rather than a 100-year frequency. This project commits to develop a climate change impact plan that will promote public awareness of the benefits of developing and implementing a plan that protects our resources.

MEASUREABLE GOALS AND OBJECTIVES

1. The Kenai Peninsula Borough will work with local government and state and federal agency experts to assess vulnerabilities and opportunities associated with climate change in the borough The assessment will result in a written document

describing the consensus on climate change in the region, coastal area vulnerability, public policy considerations and

2. Based on the assessment, the borough will develop a prioritized list of goals and targets that reduce climate change vulnerabilities and enhance opportunities, including goals based on a borough energy plan that prioritizes cost savings and reduces emissions.

3. Produce a concise plan that describes mitigation actions and policies for adapting to climate change by reducing the negative impacts on coastal habitat and taking advantage of opportunities. The plan will include a description of timing, financial impact, responsible parties, and potential partners.

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."*

In order to protect and conserve coastal areas we must assess our vulnerability to climate change and act accordingly. This assessment and implementation plan will describe the natural resources that are affected by climate change provide an implementation plan for protection of the resources.

61 % of the Kenai Peninsula Borough is covered by sea water. The borough has 2,536 miles of coastline, hundred of miles of productive rivers and stream and 80% of the borough population lives in coastal areas. The coastline and riparian areas throughout the borough are in either a velocity zone or a floodplain. We need to understand how climate change may affect these areas.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS
This project would seek to coordinate with the International Council for Local Environmental Initiatives (ICLEI), as one of more than 700 local governments participating in the Cities for Climate Protection Campaign. The Borough may also seek to participate in the pilot phase of ICLEI's Climate Resilient Communities program, which focuses on adaptation to climate change.

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.