State of Alaska
Coastal Impact Assistance Program

APPENDIX B-2

Project Descriptions
Direct to Coastal Political Subdivision Funding

Northwest Arctic Borough		
Tier 1		
AKCIAP_CPS-NAB-T1-01	Protecting Coastal Areas through Region-wide Waste Management Improvement	362,000
AKCIAP_CPS-NAB-T1-02	Protecting Coastal Areas through Planning and Guidance for Sustainable Tourism	272,000
AKCIAP_CPS-NAB-T1-03	Improving Management Capacity to Protect Coastal Areas	500,000
AKCIAP_CPS-NAB-T1-04	Protection of Coastal Areas from Marine Debris	142,242
AKCIAP_CPS-NAB-T1-05	Administrative Costs	981,045
AKCIAP_CPS-NAB-T1-06	Improving Subsistence Information to Implement Federal Plans	1,845,430
AKCIAP_CPS-NAB-T1-07	Improving Public Involvement for Implementation of Federally Approved Plans	92,000
AKCIAP_CPS-NAB-T1-08	Village-based Environmental Monitoring to Protect Coastal Areas	200,000
AKCIAP_CPS-NAB-T1-09	Energy Conservation (Green Community Initiative)	502,800
AKCIAP_CPS-NAB-T1-10	Environmental Leadership (Green Community Initiative)	383,400
AKCIAP_CPS-NAB-T1-11	Kivalina Erosion Protection	300,000
AKCIAP_CPS-NAB-T1-12	Solar Energy to Protect the Coastal Area from Harmful Known Pollutants	1,747,500
AKCIAP_CPS-NAB-T1-13	Green Initiative to Conserve and Protect Coastal Areas	378,000
	Subtotal	**7,706,417**
Tier 2		
AKCIAP_CPS_NAB_T2-01	Coastal Erosion Protection Geotechnical Studies: Kivalina	300,000
AKCIAP_CPS_NAB_T2-02	North Tent City Subsistence Area Restoration and Conservation	250,000
AKCIAP_CPS_NAB_T2-03	Protect Coastal Areas from Untreated Wastewater Pollutants	738,200
	Subtotal	**1,288,200**

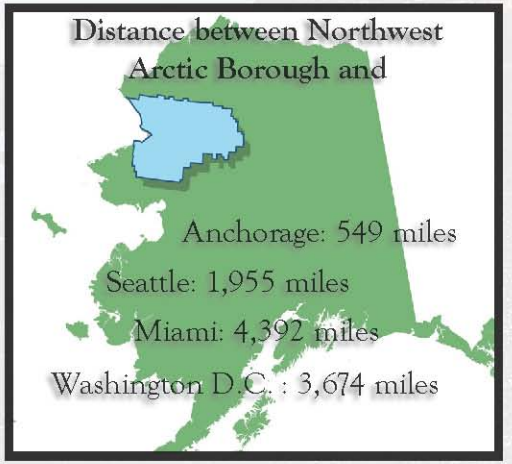
NORTHWEST ARCTIC BOROUGH

Brief History: The Northwest Arctic Borough is the second-largest borough in Alaska, covering approximately 39,000 square miles. This area has been occupied by Iñupiat Eskimos for at least 10,000 years. "Kikiktagruk" was the hub of ancient Arctic trading routes. Salmon has been a commercial product in the borough since 1909, when local Eskimos sold 21,366 pounds of it to a store, which resold it at five cents per pound. All five species of Pacific salmon are present in the region, with chum being the most abundant. Most cities in the borough developed as supply stations for interior gold mining and were settled around schools and churches. The Northwest Arctic Borough's spectacular mountains, scenery, wildlife, and rivers are recognized by the federal designation of 7 protected areas in the borough. Located within the borough, the City of Kotzebue is the hub of Northwest Alaska and is the transfer point between ocean and inland shipping. It does not have a natural harbor, and is ice-free for only 3 months each year. Ninety miles north of Kotzebue, the Red Dog Mine is the world's largest zinc and lead mine.

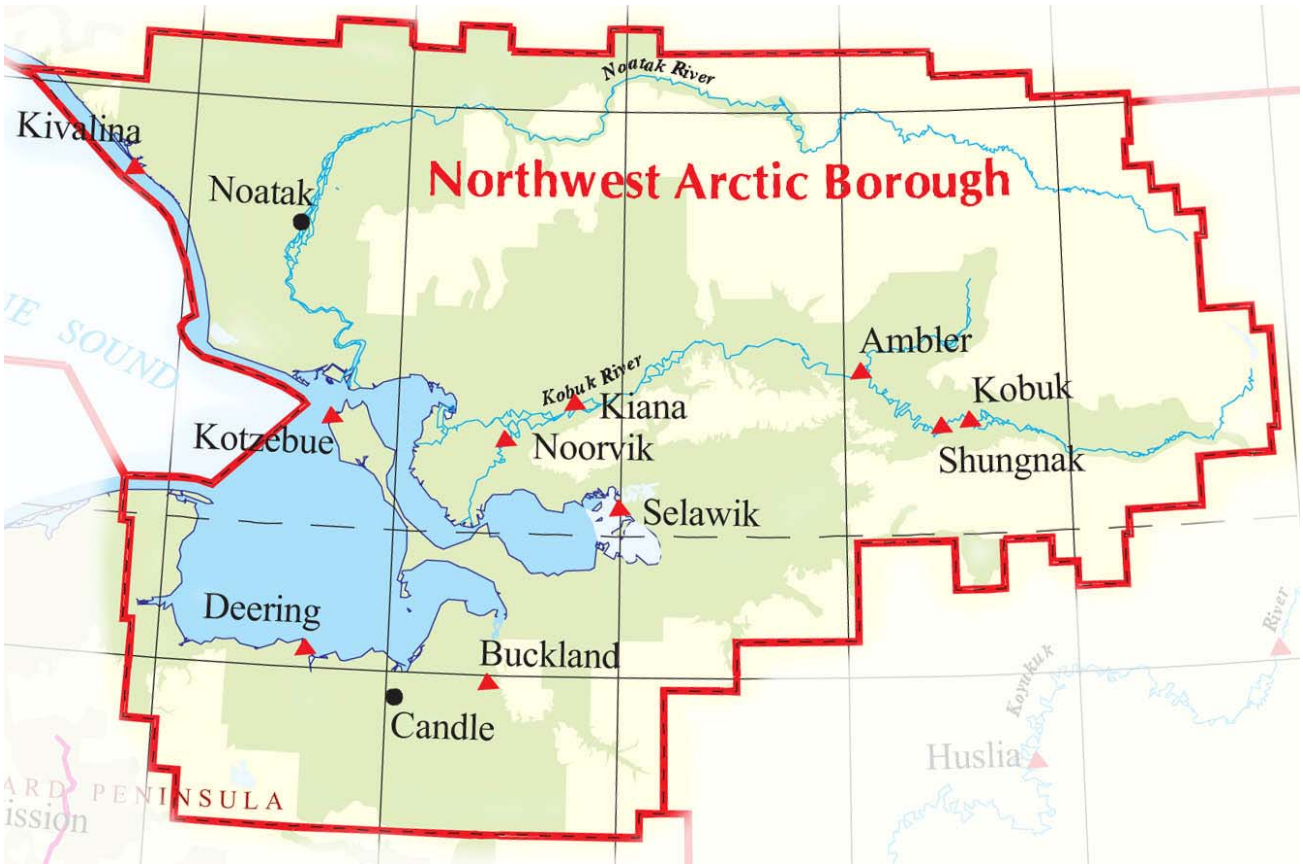
Population (2007):	7,208
Shoreline:	3,156 miles
Coastal Area:	39,000 square miles
Annual Precipitation:	9"
Annual Snowfall:	47"
Hours of Daylight Summer:	24 hours, 0 min
Hours of Daylight Winter:	1 hour, 47 mins
Regional Native Corporation:	NANA Corporation
Legislative District:	3, 4, B


Photo by: Jim Evak


Photo by: Ukallaysaag Tom Okleasik



NORTHWEST ARCTIC BOROUGH



STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: Protecting Coastal Areas through Region-wide Waste Management Improvement (Revised 2009)

Note: This project was approved as part of the 2008 Alaska CIAP Plan. The budget has been increased and the description slightly reworded.

PROJECT CONTACT

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PROJECT LOCATION

NWAB communities

PROJECT DURATION

3 Years

ESTIMATED COST

Spending Estimate ($)			
TOTAL	**Year 1**	**Year 2**	**Year 3**
362,000	119,000	165,000	78,000

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
362,000	0	119,000	165,000	78,000

PROJECT DESCRIPTION

The Borough is committed to protecting fragile northwest arctic region coastal areas from environmental contamination by instituting comprehensive waste stream resource recovery and utilization measures improving upon existing solid waste management common practice. All communities and outlying areas as referred to in this proposal (and all others), are within Borough boundaries and are located within the "coastal area". We will focus on efforts to reduce, reuse and recycle waste in order to prevent or remove

contamination from the environment and thus, protect, conserve and restore the coastal area.

Most villages in the region are overwhelmed by the accumulation and growing amount of trash in their backyard. Planes and barges regularly bring in tons of cargo to every village, and most of it never leaves. Much of it ends up in the village dump, an open, unlined, unmonitored site on the bare land, often near waterways or on wetlands, within a mile or two of town. Access is an issue; most trash is self-hauled by residents, especially by young people, and is indiscriminately dropped en route to the dump or blown around from the dump. Containment is an issue; fencing is inadequate to corral all the waste. Either it is failing, has failed or does not exist. Space is an issue. Most villages want to site a new landfill/dump or expand the current one, which is essentially turning coastal areas into trash dumps or toxic waste sites.

Waste, for example, plastic grocery bags or plastic soft drink "rings", can easily become wind blown and end up across the landscape, harming or even killing many animals, including birds, fish and other subsistence animals that ingest the bags, and other fugitive waste (solid and liquid). Leachate forms from the toxic soup of batteries, paint, cleaners, metals, electronics, fluids, honeybucket (raw human) waste, food and other organic waste, and other household and industrial waste that ends up in the dump. Smoke from open burning or self-combustion of trash/waste in the dump produces PCBs, dioxins, and other toxins. This contamination makes its way into the land, air and waterways throughout the coastal area. This also impacts subsistence resources, a bell weather for the health of the environment. Studies show that villagers visiting their dump have an increased risk of illness. The environmental "illness" of the dump easily spreads throughout the larger coastal area. Waste and other impacts upriver will naturally affect everything downstream, including villages, waterways, land and the coastal area environment and wildlife.

E (electronic)-waste (computers, remote controls, smoke detectors, VCRs, etc.) contain heavy metals. When e-waste is discarded, especially along bodies of water, in wetlands or anywhere it is left exposed to the elements (rain, moisture, snow), the metals leach out into the environment causing aquatic toxicity harmful to the environment. This has been documented in the Archives of Environmental Contamination and Toxicology and studies funded by the National Science Foundation.

To help address these waste management problems, this project will offer assistance in pilot backhaul/recycling efforts spearheaded by Maniilaq Association in 2007 to better manage or remove waste from the region such as electronic (e)-waste, toxic material, scrap metal, and other recyclables. Maniilaq's project will continue into at least 2009. The Borough plans to work with at least five coastal communities in the Borough to build on this pilot project in the following ways:

- meet with several non-profit organizations or villages in the region to develop partnerships to support and implement expanded solid waste backhaul project

- assist villages in the assessment/inventory of e-waste and other hazardous waste in villages
- explore the potential, logistics, and resource needs to expand backhaul and recycling activities
- assist villages in collection and staging of waste for backhaul and recycling
- assist in financial cost of backhaul and recycling efforts

This project will also seek to increase village and Borough awareness of the problem, community buy-in, participation, long-term support and local responsibility in taking care of our own waste, through supporting environmental education, awareness and training. This will include research and soliciting community ideas on creative, alternative ways to not only divert waste from the landfill/dump but also use waste as a resource, then assist with implementation of relevant projects.

Education and marketing products and activities will be based on participants' interests and areas of expertise and might include a combination of the following or other:

- a poster to encourage individuals to "reduce, reuse, or recycle" and keep waste and especially e-waste out of the dump
- public service announcements on local public radio (KOTZ-AM) on waste management and protection of coastal areas
- radio talk show on the project
- a "commercial" ad (DVD, slide show, etc) to highlight individual responsibility (similar to the national "Don't litter" campaign of the 60s).

In addition to source reduction and recycling, the U. S. Environmental Protection Agency (EPA) website lists composting as an effective strategy to reduce solid waste. According to the website, compost can facilitate reforestation, wetlands restoration, and habitat revitalization efforts; remediate soils contaminated by hazardous waste; remove solids, oil, grease, and heavy metals from runoff; reduce or eliminate the need for chemical fertilizers, and provide cost savings of at least 50 percent over conventional soil, water, and air pollution remediation technologies. All these can benefit our coastal area.

Compost methods will be researched toward implementing pilot projects to learn from and determine their viability and potential expansion in the region. A large percentage of our waste can be composted, including paper, food and other organic waste. Diverting this and other waste will extend the life of the current dump and protect valuable habitat and ecosystems in the coastal area from becoming future dump sites. Also, future sites are always further from town and the greater the distance, the greater the incidence of trash and raw human waste spillage en route to the site, and the more fuel emissions produced to reach the dump.

The Borough will seek to work with at least Maniilaq and the EPA Indian General Assistance Program (tribal environmental program) or IGAP staff to conduct a scoping effort to assess the status of waste management within the Borough villages. What is the status of village integrated or solid waste management plans (IWMP or SWMP)? What

challenges do villages face in implementing their IWMP or IGAP work plan? Who are the local stakeholders who want to be involved?

This scoping effort will help determine how best to assist the villages implement activities to improve waste management, without duplicating efforts and ideally, initiate the development of a regional (borough) waste management strategic plan. Also, this project seeks to work with communities to improve local capacity to deal with waste or resource recovery in the most responsible and sustainable way.

MEASRUABLE GOALS AND OBJECTIVES

- Support and build on pilot backhaul and recycling project
    - report of waste assessment/inventory from at least 5 villages
    - identification of equipment, supply, training and other needs to implement effective backhaul and recycling project
    - funding assistance to villages to meet identified needs
    - removal of at least 2,000 lb (1 tons) of e-waste, lead acid batteries, fluorescent lights and other toxic waste from the region

- Development and implementation of an environmental education and marketing campaign to encourage awareness of the problems and community buy-in, participation, long-term support and local responsibility in taking care of our own waste (e.g., recycling, separating waste, reducing disposables, composting, etc.).
    - presentation of these products and efforts in at least five different village venues
    - relevant program presentations on local public radio station

- Improved capacity for more effective waste management
    - identification of training, equipment, supply and facility needs for more effective waste management
    - funding assistance to entities to meet these needs
    - training in waste management, environmental protection and restoration of coastal areas [for example, Alaska Forum on the Environment (AFE), Alaska Tribal Conference on Environmental Management (ATCEM), Brownfields, Bioneers] attended by at least 2 Borough staff along with 2 eligible staff or council members from each of 10 community entities (at least 20 total) which owns and/or operates the solid waste dump/landfill
    - relevant training by effective speakers/presenters brought to region to reach a larger local audience
    - follow up presentations with community leadership, interested residents, and local IGAP staff in at least 3 villages to implement projects or activities learned from training received

- Solid waste scoping report that:
    - assesses village waste management plans: who has them or in what stage of development are they; and status of implementation
    - identifies challenges in implementation of plans or in development of plans

  - with village input, identifies potential ways to address challenges
  - identifies stakeholders in region and outside interested in the development of a regional plan to manage solid waste and provide ongoing assistance

- Hold 3 meetings with Borough staff and regional stakeholders toward development of regional plan

- Annual report that describes progress made towards meeting each measurable goal and objective and next steps

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*. Improved waste management in coastal area communities and outlying areas (within the coastal area) will prevent waste, including potentially toxic contaminants and other pollutants, from becoming or remaining fugitive and negatively impacting the air, land, water, and habitat. Responsible management of solid waste and anti-pollution projects will effectively help protect habitats and the fish, plants and wildlife they support.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The Borough has not formally coordinated with federal resources or programs on this project. However, the Borough has collaborated with the U. S. Environmental Protection Agency (EPA) Indian Environmental General Assistance Program (IGAP) through Maniilaq Association, the regional tribal consortium, on the backhaul pilot project. Village IGAP staff are already working on environmental protection, conservation and restoration projects in the coastal area and the Borough plans to partner more with them.

COST SHARING OR MATCHING OF FUNDS

CIAP funds would not be used for cost sharing or as a match, but it will ideally supplement other funds and in-kind resources already planned or being sought for this project. If CIAP funds are used for cost sharing or matching purposes required by another grant, a letter will be included with the CIAP grant application from the other agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: Protecting Coastal Areas through Planning and Guidance for Sustainable Tourism (Revised 2009)

Note: This project was approved as part of the 2008 Alaska CIAP Plan. This amendment increases the project budget.

PROJECT CONTACT

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PROJECT LOCATION

NWAB communities within the coastal zone

PROJECT DURATION

Three (3) years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
272,000	34,684	63,316	116,000	58,000

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
272,000	0	34,684	63,316	174,000

PROJECT DESCRIPTION

This project will help develop and implement guidelines and strategies for sustainable tourism--to address the anticipated growth in tourism and to help prevent related negative impacts in the coastal area. Sustainable tourism is based on renewable resources such as the natural environment, local culture, and history, and the protection, conservation and restoration of those resources into the future.

Global and local experience and documented research here in Alaska and around the world has shown that unplanned, unmanaged tourism can have major negative impacts on

the environment. Commercial recreation is growing in the Northwest Arctic Borough (Borough) coastal area and with it, both the positive and negative impacts to communities and their environment. Despite the low tourism numbers in our region and the current economic recession, with the expected opening of the new National Park Service visitor center in Kotzebue in 2009/2010, commercial recreation in the form of tourism is expected to increase even more. Current tourism related operations in the region remain intact; several more are planned; and local interest in tourism seems to be growing in recent years. Development and implementation of a plan or other strategy is critical to guide the inevitable development of tourism in order to maximize its benefits and minimize its negative impacts.

The guidelines might later be used toward developing a regional plan to guide and manage tourism so that it is a sustainable activity that will continue to protect and conserve coastal areas, including subsistence resources, indefinitely. Increased use of coastal areas increases trash, sewage, the need for larger capacity fuel, electricity, water, sewage and solid waste systems, all of which have potential negative impacts on the environment, including wetland, ecosystems and habitat. For small, rural communities (average population 600) with a strong subsistence culture that depends on the continued health of the land, the negative impacts of competing land uses (such as tourism or sport hunting) can be overwhelming.

The Borough will discuss the project, potential collaboration, and solicit feedback from the villages through a series of meetings with key businesses and other stakeholders in the Borough that are interested in, or are already involved in, the visitor industry in the region. At a minimum, the following agencies will be involved:

- Western Arctic National Parklands (National Park Service),
- Selawik Wildlife Refuge (U.S. Fish & Wildlife Service),
- Alaska Department of Fish and Game (ADF&G),
- Kotzebue IRA,
- NANA Regional Corporation,
- Maniilaq Association, and the Alaska Technical Center (NWAB School District)

Through meetings and outreach, the strengths, weaknesses, opportunities and threats (SWOT) of tourism in the coastal area will be assessed. The concept of sustainable tourism will be promoted—tourism based on inexhaustible resources such as the natural environment and culture, and protecting, conserving or restoring those resources. Types of sustainable tourism can include eco and cultural tourism (environmental and cultural asset management), volunteer or community service tourism, and others. With broad public input, the Borough will help develop sustainable tourism guidelines, such as determining culturally or environmentally sensitive areas where commercial recreation should not occur; and discussing practices that can prevent or minimize negative effects on subsistence or cultural resources. Through meetings, the Borough will determine if there is support for village-based eco-cultural tourism and if so, how to work with

villages to develop guidelines and implement strategies for responsible management of tourism.

The project will promote the benefit of locally based eco-cultural tourism and related businesses that focus on local culture and clean and healthy ecosystems. Simultaneously, it will increase public awareness of the value in protecting and conserving the coastal area environment, and how to do so in a sustainable manner. Developing these guidelines will also help strengthen local environmental stewardship. For example, preventing fuel leaks saves fuel costs and protects the coastal area from pollution; avoiding use of lead shot and sinkers protects wildlife; and identifying areas that are too sensitive and NOT appropriate for tourism will help protect environmentally sensitive areas from degradation.

The project would include community outreach to identify youth or young people interested in eco-cultural tourism or related business and involve them in the process. Meetings held in Kotzebue and interested villages would encourage broad public participation as tourism and this project would directly impact the lives of all Borough residents.

Implementation of planning guidelines and eco-tourism projects would increase public awareness of and support for the need to ensure and value of ensuring that environmental benefits are maximized and negative impacts minimized in tourism and any development the community is interested in pursuing. Linking protection of the environment to economic and cultural benefit will help ensure the sustainability of environmental and cultural protection efforts.

A number of partnerships would be developed with local public and private land owners, educational and other local entities, such as culture camps in the region, to pursue mutually beneficial projects that would promote environmental education, training, eco-cultural tourism and supporting activities.

MEASURABLE GOALS AND OBJECTIVES

- **Stakeholder community meetings.** At least 4 meetings will be held to discuss the SWOT of tourism in the coastal area, sustainable tourism and guidelines.
- **SWOT assessment report.** Complete report summarizing the strengths, weaknesses, opportunities and threats to implementing a sustainable, eco-cultural tourism strategy, with emphasis on environmental protection.
- **Summary of the village meetings.** Complete report summarizing meetings.
- **Draft guidelines for sustainable, eco-cultural tourism.** For stakeholder and community review and comment.
- **Business inventory.** A list of tourism related business operators in our region and others interested in starting a related business in the Borough.
- **Training held.** Hold at least 3 training sessions, inviting interested community members and those identified in the Business Inventory, to address:
    - sustainable practices critical to minimizing impacts to local communities, cultural resources, and the environment

  - sustainable and responsible business practices: monetary profit should not be at the expense of environmental harm; at the same time, helping ensure business success will help reinforce the value of protecting the environment
  - Inupiat Ilitqusiat and strengthening values, including an ethic of environmental respect and protection that will help ensure the sustainability of resources of subsistence and economic value
- **Eco-tourism projects**. Assist in development of business plan models or templates that potential eco tourism business owners could use for development of sustainable tourism activity.
- **Brochure.** Develop and distribute 500 copies of a brochure for visitors regarding how they can reduce impacts to the environment, subsistence users and residents. The brochure will be available to local businesses, visitor centers, agency offices and commercial recreation businesses.
- **Annual Report.** Report describing progress made towards meeting each measurable goal and objective.
- **Final Report.** Evaluation of the success of the project in meeting the goals and objectives.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project is consistent with Authorized Use #1, projects and activities for the conservation, protection, or restoration of coastal areas, including wetland. The project will result in increased conservation, protection of coastal areas by strengthening local awareness and appreciation of the value of coastal resources. It will emphasize the need to avoid or minimize impacts to the natural coastal environment and resources from commercial recreation activities. The project is expected to encourage caring for the environment through: 1) minimizing conflicts between commercial recreation and other uses; 2) reducing litter on public lands; 3) reducing improper disposal of human waste; 4) reducing impacts from off-road vehicles to wetlands and other sensitive habitat and ecosystems; and 5) avoiding displacement of fish and wildlife, including interference with caribou migration.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The National Park Service and the Selawik National Wildlife Refuge have indicated their interest in working with the Borough on efforts to guide and manage tourism in a sustainable manner, in order to encourage visitor access while protecting and conserving the natural resources and ecosystems in the region. These organizations will be included in the stakeholder meetings associated with this project.

The Borough is developing its CEDS (comprehensive economic development strategy) plan through assistance from the U.S. Department of Commerce, Economic Development Administration. This CIAP proposal would help protect, conserve and restore the environment by supporting sustainable eco-cultural tourism which will be addressed in the CEDS plan.

COST SHARING AND OTHER FUNDING

CIAP funds would not be used for cost sharing or as a match, but it will ideally supplement other funds and in-kind resources being sought for this project. If CIAP funds are used for cost sharing or matching purposes required by another grant, a letter will be included with the CIAP grant application from the other agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: Improving Management Capacity to Protect Coastal Areas

Note: This project was approved as part of the 2008 Alaska CIAP Plan. This amendment increases the budget.

PROJECT CONTACT

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PROJECT LOCATION

NWAB coastal communities. Each community is located within the coastal zone.

PROJECT DURATION

4 Years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
500,000	67,745	129,545	275,000	27,710

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
500,000	0	67,745	129,545	302,710

PROJECT DESCRIPTION

NOTE: This project was approved by MMS, as presented, as part of the June 2008 Alaska CIAP Plan. The only change is an increase in budget due to more accurate cost information. The grant application will provide greater detail on projected expenses.

For the purpose of this grant program, all 11 villages/communities and outlying areas as referred to in this proposal (and all other NWAB CIAP proposals) lay within Borough (Coastal Political Subdivision) boundaries and therefore constitute the "coastal area."

Including the hub town of Kotzebue, none of the 11 communities are connected to each other or any other community by a road system.

Lack of management capacity in basic village system infrastructure, particularly water and sewage systems and electric power generation, leads to a dangerous cycle in many communities resulting in environmental contamination of the coastal area, and public health risks. This project is to improve the financial, administrative and management capacity of Borough villages relevant to their water/sewer (or septage) systems and related infrastructure to protect coastal areas from environmental contamination. Local communities have the greatest potential to reduce such impacts to coastal areas.

Each winter the Borough receives emergency calls from at least a few villages due to frozen or busted pipes, broken pumps or other failures. This can often result in environmental pollution through the uncontrolled release of raw sewage onto the land or into waterways of coastal areas. Until repairs can be made, often not until spring thaw, villages have to return to the use of honey buckets (indoor collection of raw human waste, other black and grey water). This is not only a major public health risk but self-haul to a dumping site usually guarantees cross-contamination, more spillage of raw sewage along the way, and transfer of that same sewage via footwear, 4-wheeler (ATV) tires, or foraging wildlife including birds and waterfowl.

If the water treatment system breaks down, that shuts down the sewer system, as the water system is needed to operate the sewer system. If the power plant breaks down, then there is no heat or electricity to keep the water/sewer pipes flowing, resulting again in frozen or busted pipes or other mechanical failure.

Some reasons for the system breakdowns include high operator turnover (not enough hours or wages); collection rate not high enough to cover operations, maintenance, repair and replacement (OMRR) costs (water/sewer/electric rates might be too low to cover OMRR); operations budget not spent as projected to cover OMRR; water/sewer systems inappropriate for village or outdated and too expensive to operate and maintain; preventive maintenance (PM) not being done; and inadequate or nonexistent manuals to carry out operation and maintenance.

Inadequacy of funds results in a domino effect of problems. Additionally, when the system breaks down, the collection rate drops further as customers are unwilling to pay for a service they are not receiving. Expensive repairs further adds to the cost of the system.

Lack of management capacity leads to missed opportunities for Village Safe Water funding and other funding for necessary plant operator training and utility system improvements. Unwitting mismanagement of current systems and funding jeopardizes current and future funding. High operator turnover means untrained operators and chemical spills or chemicals, such as chlorine, are unintentionally released into the coastal area.

This project will promote successful management of current grants and projects to ensure good standing for future funding. The project would also help build capacity to pursue new grants and projects to further protect and restore the environment and enhance community environmental awareness. This project will seek ways to actively engage the community in being accountable for their community infrastructure.

Where possible, representatives from both tribes and cities will be included in the training as both governments face the same challenges, and together could develop creative solutions. While many city and tribal government staff from rural villages attend a variety of trainings and workshops to better manage programs and projects, there is sporadic follow through once they return home.

Through assessment of administrative and facilities management capacity needs in each village and assisting with meeting those needs through activities such as ensuring villages have functioning basic office equipment and supplies for day-to-day operation, on-site training, mentoring, and periodic follow-up, this project will work to build the capacity of village staff and other residents to improve the management of their water, sewer, solid waste and other related utility systems and projects. These efforts will ultimately and directly help protect and conserve coastal areas, including wetlands, watersheds, and other wildlife habitat.

MEASURABLE GOALS AND OBJECTIVES

- Identify potential partners who also have a vested interest in preventing utility system failures and emergencies, for example, Maniilaq, School District, State Rural Utilities
- Assessment of individual community utility management capacity needs to prioritize which communities to address first.
- Strategic plan that addresses utility management capacity needs for all communities.
- MOA or similar agreement with villages interested in participating in this capacity building program, outlining the responsibilities of the Borough and village.
- A basic, generic preventive maintenance(PM) schedule for each village (to be tailored later to specific village systems)
- Facilities management and maintenance training, including follow up on-site visits to each village to ensure the information from training is understood and implemented effectively.
- Financial assessments to determine true cost of operating utilities (fuel, electricity, water/sewer) in at least 5 villages and ensure villages are charging customers enough to fully cover costs of operating and maintaining systems to prevent failures and environmental hazards.
- List of do's and don'ts to distribute to residents, so they can actively participate in keeping the systems functioning and keep operation costs (and monthly rates) down.
- Public meetings in at least 5 villages to educate residents on the need to raise rates and the need for personal responsibility in paying utility bills and properly using systems to avoid negative impacts on the community, the system, and the environment.
- Report for distribution to all villages, documenting ways to operate utilities more efficiently and keep costs and system failures down.

- Annual report that describes progress made towards meeting each measurable goal and objective.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

The project is consistent with Authorized Use #1, *"Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands."* Improving management capacity of village infrastructure such as water, sewage, and solid waste systems will help prevent a number of negative impacts on the coastal area, and will strengthen the conservation and protection of coastal areas, including wetlands. As discussed above, frozen pipes, failed electric, water and solid waste systems, and lack of training often result in an increase in environmental pollution through the uncontrolled release of raw sewage onto the land (including wetlands) or into waterways of coastal areas. Improving capacity and training within the villages to manage and operate the infrastructure properly will reduce the likelihood of the pollution from raw sewage and will thereby protect coastal areas from such impacts.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The Borough regularly coordinates with state, federal and Native organizations (e.g., EPA circuit rider, Maniilaq Environmental Program, local EPA IGAP programs, Alaska Native Health Consortium) that have similar programs to deal with this issue in the Borough. The Borough will include these agencies in the initial project planning efforts for this project and as needed during the project period to ensure a coordinated effort that prevents wasteful duplication.

COST SHARING OR MATCHING OF FUNDS

CIAP funds are not intended to be used for cost sharing or as a match, but they will ideally supplement other funds and in-kind resources already in place and being sought for this project.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: Protection of Coastal Areas from Marine Debris (Revised 2009)

Note: This project was approved as part of the 2008 Alaska CIAP plan. The project budget has been increased.

PROJECT CONTACT:

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PROJECT LOCATION

Kivalina, Chukchi Coast and other NWAB coastal communities

PROJECT DURATION

3 Years

ESTIMATED COST

Spending Estimate ($)			
TOTAL	**Year 1**	**Year 2**	**Year 3**
142,242	20,000	70,000	52,242

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
142,242	0	20,000	70,000	52,242

PROJECT DESCRIPTION

Lead acid batteries, fugitive metal drums with unknown contents, abandoned machinery, demolition debris, plastic debris, fish nets, line, and any imaginable household and commercial trash (waste, refuse) can and has ended up in our coastal area. The Borough will work with village leaders and environmental managers in Kivalina and at least two (2) other CPS communities in the region to identify the types of marine debris specifically impacting their area and how to deal with the debris. The Borough will work with stakeholders to develop a plan to collect and remove or otherwise deal with the

debris in a responsible manner, and then assist with implementing the plan and ideally prevent future debris. Specific plan activities will be determined as part of the above process and could include collecting and storing of marine debris; proper disposal (which might include backhaul); fencing and other infrastructure to prevent future marine debris; and other remedial and preventive activities.

In Kivalina, for example, the original shoreline stabilization project, consisting of metal wire baskets (gabions) and hi-tech mesh (fabric) liners, has failed and continues to fail. This material has become marine debris harmful to coastal areas. This combination of damaged materials forms a kind of metal mesh that has been shown to trap salmon, other fish and marine life. These materials have been found as far north as Cape Thompson, about 50 miles north of Kivalina. Directly on the Chukchi Sea coast, Kivalina, located on a narrow spit of land, experiences extreme coastal erosion, severe winds and storms. These eat away at the dump site which has only a makeshift fence. Among the usual household and commercial trash, electric transformers, fuel drums, and junk machinery risk entering the coastal marine environment. The Borough will work with village leaders and other residents to discuss how this project might address marine debris in Kivalina and other coastal area communities.

NOAA, USEPA and other entities have recognized and documented the growing and insidious problem of marine debris and its negative impacts on the environment. As part of this project, at least one Borough staff and one village staff will attend related marine debris workshop or training for further guidance and resources to effectively carry out this project and protect coastal areas.

MEASURABLE GOALS AND OBJECTIVES

- Meet with coastal village leaders and environmental managers within the Borough to develop a plan to identify marine debris and sources of marine debris and how to address.
- Development of a plan to address marine debris in Kivalina and at least two (2) other communities.
- Implementation of plan activities to remove or prevent future marine debris in at least two (2) communities in the coastal area.
- Annual report describing progress made towards meeting measurable goals and objectives.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

The project is consistent with Authorized Use #2, *Mitigation of damage to fish, wildlife, or natural resources.* Recent research has proven that debris has serious effects on the marine environment, marine wildlife, the economy and human health and safety. In fact, marine debris has become one of the most widespread pollution problems facing the world's oceans and waterways, and derelict fishing gear, including nets, lines, and buoys, is especially problematic in Alaska. Marine debris can entangle marine mammals and seabirds. Lost fishing gear can entrap fish. Colored plastics mistaken as food clog digestive systems of seabirds and marine mammals, eventually resulting in their death. Kivalina in the Northwest Arctic Borough is highly susceptible to coastal erosion.

Revetments made from gabions and other materials have been used to minimize coastal erosion. Over the years, as revetment projects failed, the damaged gabions, mesh and other materials were not always properly removed. The unique combination of metal wire baskets and hi-tech mesh liners used in the gabions have created a gillnet type situation entrapping salmon and other marine life. Removing the damaged gabions and mesh will mitigate these damaging impacts.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The Borough will coordinate with the Environmental Protection Agency, Indian General Assistance Program managers in the region to determine what kinds of marine debris are affecting waterways and water bodies in the coastal area. As well, the Borough will coordinate with staff from NOAA's marine debris program to determine if there are opportunities to collaborate. Finally, the Borough will work with the village of Kivalina to coordinate the removal of the damaged gabions with the state and federally funded larger project to stabilize the Kivalina shoreline and secure it from further erosion.

COST SHARING OR MATCHING OF FUNDS

CIAP funds are not intended to be used for a match, but will ideally supplement other funds and in-kind resources already in place or being sought for this project. If CIAP funds are used for cost sharing or matching purposes required by another grant, a letter will be included with the CIAP grant application from the other agency (the agency charged with administering the program that includes the cost sharing or matching requirement) indicating that the other agency's program allows the use of Federal funds to meet cost sharing or matching requirements.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: CIAP Administrative Costs – Northwest Arctic Borough

> **Note:** This project was approved as part of the 2008 Alaska CIAP Plan. The project budget has been increased to reflect the additional work associated with managing the larger allocation for FY 2009 and FY 2010.

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PROJECT LOCATION

Northwest Arctic Borough Communities

PROJECT DURATION

4 years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4, 5,-6**
$981,045	54,129	54,129	518,197	354,590

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
$981,045	54,129	54,129	518,197	354,590

PROJECT DESCRIPTION

The purpose of this project is to provide for planning and administration for the borough's CIAP projects. The Northwest Arctic Borough will provide oversight for all of the projects that are funded through this grant program. Since 2007, the early part of the CIAP program, Borough staff has increased by 30% (for a total of 25), straining office space. Buildable land and office space are extremely limited in this rural Alaska hub town on arctic coastal tundra and wetlands, approximately 1 mi. x 1.75 mi. Remodeling

of Borough facility will be necessary to accommodate work space for CIAP staff, especially with the significant increase in CIAP allocation and projects. Specific tasks and expenses in this project might include

- Travel related to CIAP for Northwest Arctic Borough staff
- Research, development and preparation of project narratives to submit for the State of Alaska CIAP plan and amended plans
- Preparation of final grant proposals for submission to the Minerals Management Service on grants.gov
- Financial tracking of grants received by MMS
- Monitoring progress of projects funded by CIAP
- Verification and documentation of completion of projects funded by CIAP
- Remodeling of Borough facility to create CIAP office space
- Recruiting and selection of staff to assist with CIAP administration
- Recruiting and selection of staff and/or contractor(s) to implement CIAP projects
- Completion of reporting on grants.gov and other administrative requirements
- Providing guidance to project leaders and oversight of program implementation

  Note: this project will not cover expenses related to the implementation of specific CIAP projects, other than general guidance and overall tracking.

MEASURABLE GOALS AND OBJECTIVES

- Provide project narratives to the State of Alaska by June 29, 2007 (completed)
- Provide new and revised project narratives to the State of Alaska for 2009 amended plan (completed); and as needed, subsequent amendments/revisions for state plan
- Submit full project proposals on grants.gov for each of the borough's projects included in the approved CIAP plan
- Submit to MMS all the reports required in the grant awards for each CIAP grant made to the borough
- Communication with State of Alaska and MMS staff

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project is consistent with Authorized Use #3, *Planning assistance and the administrative costs of complying with CIAP*. This project will provide administrative support for individual projects funded through the CIAP program.

COST SHARING OR MATCHING OF FUNDS

CIAP funds would not be used for cost sharing or as a match.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: Improving Subsistence Information to Implement Federal Plans (Revised 2009)

> **Note:** This project was approved as part of the 2008 Alaska CIAP plan. This project is an expansion of the originally approved project, with additional deliverables and budget

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PROJECT LOCATION

Coastal communities in the Northwest Arctic Borough

PROJECT DURATION

Four years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	Year 1	Year 2	Year 3	Year 4
$ 1,845,430	$615,005	$598,619	$582,491	$49,315

Funding per Allocation Year of CIAP ($)				
TOTAL	FY 07	FY 08	FY 09	FY 10
$1,845,430	181,215	0	$1,590,898	$73,317

PROJECT DESCRIPTION

During the past few years, the Northwest Arctic Borough has received an increasing number of permit applications for mining exploration, development and other industrial activities. These activities can impact and have impacted coastal subsistence resources and uses in the region. Communities rely on and utilize these subsistence marine (e.g., walrus, beluga, bearded seal, and invertebrates) and land resources to support their way

of life. These living resources are dependent upon a healthy marine and land environment.

Identification of these resources and the collection of information about them, is critical to wise decision making and implementation of land and coastal use plans, including advising the permitting process so as to ensure that any development is sustainable and does not harm the health of the ecosystem or the services a healthy ecosystem provides, such as subsistence resources. While subsistence studies have been done on some of the most important subsistence resources in the region, there are many gaps in the information. There is no single clearinghouse of information summarizing existing data and studies.

The Borough has identified the villages that will participate in the study. The project will involve an inventory, which will be completed by the Borough Planning Department to catalog subsistence studies that have been done, studies that are ongoing, and proposed future studies in the region by a myriad of agencies and organizations. The Borough may contract with a nonprofit organization or consultant to assist in data collection. The project will result in the gathering of new subsistence use data that will help identify the ways subsistence uses may have changed.

Studies will use local traditional knowledge (LTK) as well as western science to find Important Ecological Areas (IEAs—geographically delineated areas which, either by themselves or in a network, have distinguishing characteristics or contribute disproportionately to an ecosystem's health, including its functioning, structure, and/or resilience). IEAs will be identified through analysis of the distribution and interrelatedness of ecological features, such as subsistence use areas, productivity, mammal feeding, breeding and resting areas, etc.

The compilation of existing information and gathering of new data will improve the permitting process to better conserve and protect the environment and to mitigate conflicts between subsistence uses and competing uses of the region. The project will contribute to a more comprehensive body of baseline data that can be used to monitor and address expected and actual impacts to coastal areas before, during, and after development, and also to respond to effects of climate change. It will have broad applicability in resource management and land planning.

The project will also support more effective comment and input during the NEPA process, including development of Environmental Assessments (EA) and Environmental Impact Statements (EIS). These NEPA processes are instrumental in implementing federally approved plans. A youth component of the project will educate middle and high school age students about the need for subsistence use information and the methodologies to obtain it. It will encourage their involvement in the process as village liaisons. Project funding will provide internships for this purpose.

The work to identify IEAs in the Northwest Arctic Borough (Borough) will be carried out over the course of 4 years, and will be conducted in several stages.

Stage 1: The first stage of the project will map and document existing data and studies and determine data gaps.

Stage 2: The second step involves gathering new data on subsistence harvest and subsistence use areas and a LTK review of existing data. This will include gathering information from six of the Borough's coastal villages, with a focus on filling gaps in subsistence harvest, use areas and other data gaps identified in the first phase of the project.

Stage 3: The third stage of the project will identify IEAs by analyzing datasets to determine the spatial distribution and interrelatedness of ecological features. A searchable and customizable electronic database as well as an atlas of maps will be produced.

The Borough Planning Department will consult with the Alaska Department of Fish and Game, Division of Subsistence, and other agencies such as OCEANA, Maniilaq Association, and Kotzebue IRA that complete or fund subsistence studies to understand agency priorities for new data collection.

MEASUREABLE GOALS AND OBJECTIVES

- **Phase 1: Document and Map Existing Data and Studies**
  - **Cooperative Service Agreement or sub-grant:** To carry out the project in compliance with federal regulations and Borough code
  - **Draft Bibliography and Map Database:** A complete literature search and compile a draft annotated bibliography and Geographic Information System (GIS) database of existing ecological and subsistence studies conducted in the Borough's coastal and marine regions. This will include digitizing geographic data from old maps and studies where needed and appropriate. The draft will be circulated among state and federal agencies for identification of additional studies that have been completed.
  - **Final Bibliography and Map Database:** A final bibliography and GIS database after incorporating any missing studies indicated by the agencies.
  - **Agency Meetings:** Complete individual meetings (5) with the Alaska Department of Fish and Game (Division of Subsistence); Bureau of Land Management; National Park Service; U.S. Fish and Wildlife Service, and Maniilaq Association to:
    - Determine data gaps for ecological data and especially subsistence use in the region
    - Determine agency priorities for future studies
    - Understand the type of information that will be most useful for implementing federally-approved plans
  - **Planning Department Input:** The identification of areas of the Borough which have the most pressure from existing uses and areas where new development is likely. In addition, the Planning Department will provide information about what kinds of ecological data and subsistence use information is needed for making permit decisions.

  - **Agency Priorities:** A document that summarizes agency priorities for future ecological and subsistence use studies to fill gaps of knowledge/research.
- **Phase 2: New Data Collection and Local and Traditional Knowledge (LTK) Review**
  - **Scope of Study:** A review of the information from Phase I of the study and determine study priorities. Subsistence use data will be collected from all coastal villages of the Borough. The LTK of local village elders and hunters will be used as an expert review of the mapping information collected in Phase 1. State and federal agencies will be consulted to determine if the CIAP funding can be combined with other funding to undertake Phase 2.
  - **Issue Contract:** A scope of services and potential contract with a nonprofit organization or consultant in compliance with Borough contracting procedures. A service agreement with Alaska Fish & Game is anticipated, to continue ongoing subsistence (harvest) studies in the region. Any partnering entity will work closely with Borough staff, especially in the collection of information from coastal villages.
  - **Study Design:** Development of a study design which addresses the priorities identified by the Borough.
  - **Draft Study Report:** The contractor will collect and analyze data using appropriate protocols.
    - **Interviews:** At least 50 surveys will be completed in the selected village.
    - **Data Analysis: An assessment of data** using standard methodologies and incorporated into the GIS database developed in Phase 1.
    - **Circulation of Draft:** A draft report will be circulated within the Borough and other appropriate parties including the people in the affected villages.
- **Phase 3: Identification of Important Ecological Areas (IEAs) and Development of Customizable and Searchable Map Database**
  - **Draft Identification of IEAs:** An assessment of data gathered in Phases 1 and 2 to identify IEAs—to be circulated to the Borough and other appropriate parties including people in affected villages.
  - **Draft Mapping Database:** A draft searchable, customizable, and documented electronic map database as well as an atlas of maps, which will be distributed to the planning department.
  - **Planning Department Input:** Meetings with the Borough Planning Department to review the draft mapping database and determine ways to make the mapping database more useful and user friendly.
  - **Final Study Report:** A final report on the draft study and draft identification of IEAs—to be distributed to appropriate state and federal agencies, libraries and other interested parties.
  - **Final Mapping Database:** A final database of maps.
- **Meetings:** Public meetings in all 6 coastal villages to review draft study report.
- **Annual Report:** An annual report that describes progress made towards meeting each measurable goal and objective.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

The project is consistent with Authorized Use #4, *Implementation of federally-approved marine, coastal or comprehensive conservation management plans*. This project will support the development of a comprehensive body of baseline ecological, subsistence and related data by which to monitor, measure and address impacts to subsistence resources. The project will be useful in implementing federal conservation plans by land management agencies and in the implementation of the Alaska Coastal Management Program (ACMP). Specifically, the information from the annotated bibliography, subsistence use study, and mapping database will be useful in implementing plans of the Bureau of Land Management, the National Park Service, U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administrations. These agencies routinely consider ecological data and subsistence uses and resources when developing conservation plans and during implementation of these plans.

Two federal laws that require consideration of impacts to the environment, including subsistence, that often apply to implementation of federal conservation plans. First, the National Environmental Policy Act (NEPA) requires that environmental impact statements include full and fair consideration of significant environmental impacts (40 CFR 1502.1). Impacts include cultural, economic and health impacts including subsistence. Second, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) requires completion of an analysis of subsistence uses and need for any federal determination to withdraw, lease or permit the use or occupancy of federal land.

Regarding the ACMP, information from the studies will be used to implement the statewide Subsistence standard at 11 AAC 112.270. This standard only applies to specific subsistence use areas which have been designated by the state under 11 AAC 112.270 or by the coastal district in its coastal management plan under 11 AAC 114.250(h). Whether areas are designated during an ACMP review by the state or in a district coastal management plan, information from this project will be useful in determining what alternative measures are necessary to ensure that project activities are consistent with the subsistence standard that requires activities to avoid or minimize impacts to subsistence uses.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The Borough is always interested in and supportive of activities to help protect subsistence resources and the ecosystems they depend on. The Alaska Department of Fish and Game is very active in multi-agency/entity collaboration to coordinate, conduct and update studies and databases to better manage coastal area resources, especially subsistence resources in the Northwest Arctic Borough. These studies incorporate strong collaboration with local entities and federal and state groups, and most importantly, the local residents. This proposal is to support their continuing work in the Borough. As noted in the project description above, the U.S. Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and the National Oceanic and Atmospheric Administration will be invited to participate in agency meetings and consulted throughout the project.

COST SHARING OR MATCHING OF FUNDS

CIAP funds will not be used for cost sharing or as a match, but they will ideally supplement other funds and in-kind resources being sought for this project. The intent of the second phase of the project is to leverage funds from other sources to complete a project that is part of ongoing work of use to multiple agencies in the implementation of their plans and protection of environmental resources.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: Improving Public Involvement for Implementation of Federally-Approved Plans

Note: This project was approved as part of the 2008 Alaska CIAP Plan. The budget has been increased.

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PROJECT LOCATION

NWAB communities

PROJECT DURATION

Two years

ESTIMATED COST

Spending Estimate ($)			
TOTAL	**Year 1**	**Year 2**	**Year 3**
92,000	46,000	46,000	0

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
92,000	0	46,000	46,000	0

PROJECT DESCRIPTION

The purpose of this project is to develop a model to train community leaders and youths in effective public participation. Specifically, the project will increase the capacity of residents of the Northwest Arctic Borough (Borough) to participate in public review processes that implement federally-approved plans that impact coastal areas. These review processes include state and federal land management plans, state and federal lease sales, and development projects proposed by private applicants. The project will target two groups: 1)those who are currently interested in commenting on plans and project but

need to know the process and improve their skills, and 2) those who would be interested in commenting if they knew the importance of the process, how it impacts their lives, and more about how to prepare and deliver oral and written comments.

The pilot project will take place in a community within the Borough, likely Kotzebue. Community representatives will be invited from Kotzebue, Kivalina, Noatak, Kobuk, Shungnak, Ambler, Buckland, Selawik, Noorvik, and Deering.

The training will focus on the public involvement processes for development and review of agency plans and programs to implement the plans including review of development projects. At a minimum, public involvement opportunities will be discussed for the following plans.

- **Bureau of Land Management:** Kobuk-Seward Peninsula Resource Management Plan, South National Petroleum Reserve-Alaska Integrated Activity Plan.
- **National Park Service:** General Management Plans for Cape Krusenstern National Monument, Bering Land Bridge National Preserve, Noatak National Preserve, and Kobuk Valley National Park.
- **Fish and Wildlife Service:** Selawik National Wildlife Refuge Comprehensive Conservation Plan (completed in 1987; revision scheduled for 2008).
- **Minerals Management Service:** Outer Continental Shelf Oil and Gas Leasing Program 2007-2012.
- **Coastal Zone Management Act:** Alaska Coastal Management Program including the Northwest Arctic Borough Coastal Management Plan.

Public reviews related to plan implementation will also be covered during the training. These reviews include activities proposed by state or federal agencies as wells as project reviews conducted by state or federal agencies to implement federally-approved plans. For example, opportunities to participate in the permit review processes of agencies and during Alaska Coastal Management Program project consistency reviews will be addressed during the training.

The project includes a youth component. One of the three participants invited from each community will be a student. The consultant will be encouraged to provide a summary of the project to a Borough school. Also, participants will be encouraged to share what they have learned with students in their communities.

MEASURABLE GOALS AND OBJECTIVES

The overall goal of the program is to develop the capacity of residents of the Northwest Arctic Borough to participate in processes that implement federal plans. Again, two groups will be targeted: Those who need to improve their public commenting skills and those who would likely take advantage of public comment opportunities if they knew more about the various agency processes. The following goals provide a means to measure progress of the project and overall effectiveness of the program.

- **Contractor Selection:** Borough staff will complete the scope of services for the contract and select a contractor using standard procedures of the Northwest Arctic Borough.
- **Selection of Participants:** The Borough will develop criteria for selection of project participants. Between 20 and 35 people will attend the training. An effort will be made to have three representatives from each community including someone from the local government, tribal government and a youth participant. In addition, the training will be open to Borough staff, Assembly members and the Planning Commission. The final selection of participants will depend on the level of interest expressed by each participant category, the availability of participants to attend the training, and the pre-training questionnaire.
- **Pre-Training Questionnaire:** A pre-training questionnaire will be distributed to training participants to determine their experience in public participation, their interests, training needs, and the willingness of participants in using training to actually submit public comment.
- **Training Manual:** A detailed training manual will be developed to provide background on agency planning and permit review processes for federally-approved plans. This manual will be divided into separate modules for each agency's planning process and permit review processes.
- **Handouts:** Two hand outs will be prepared on preparing effective oral testimony at public hearings and preparing and writing effective comments.
- **Exercises:** Three "hands on" exercises will be developed to provide participants an opportunity to draft written comments on types of projects common to the Borough. If practical, a real project will be used.
- **Presentation:** A PowerPoint presentation for the training to complement information in the training manual.
- **Training:** A two-day training program will be conducted in a Northwest Arctic Borough community. State and federal agency representatives involved in implementing federally-approved plans will be invited to participate in the training.
- **Evaluation:** A two-part evaluation of the program will be conducted. This evaluation will involve a discussion at the end of training and anonymous written evaluations from both participants and presenters. The evaluation will focus on the strengths and weaknesses of the training and how it could be improved in the future.
- **Follow Up:** The Borough Planning Department will schedule and conduct a public meeting in at least two Borough villages. At least two training participants from each of those villages will be involved in preparation for the meetings, and with guidance from the Borough they will assist at least two additional people from each village in the preparation of comments.
- **Annual Report:** Prepare an annual report that describes progress made towards meeting each measurable goal and objective.
- **Final Report:** The consultant will prepare a final report describing the training project and incorporating information from the project evaluation.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project is consistent with Authorized Use # 4*: implementation of a federally-approved marine, coastal or comprehensive conservation management plan.* Participants

will be trained in how to participate effectively in implementation of federal plans including reviews of projects that relate to plan implementation. In addition, the training will address how to participate in the development of the federal plans.

Federal plans that will be addressed in the training include:

- **Bureau of Land Management:** Kobuk-Seward Peninsula Resource Management Plan, South National Petroleum Reserve-Alaska Integrated Activity Plan.
- **National Park Service:** General Management Plans for Cape Krusenstern National Monument, Bering Land Bridge National Preserve, Noatak National Preserve, and Kobuk Valley National Park.
- **Fish and Wildlife Service:** Selawik National Wildlife Refuge Comprehensive Conservation Plan (completed in 1987; revision scheduled for 2008).
- **Minerals Management Service:** Outer Continental Shelf Oil and Gas Leasing Program 2007-2012.
- **Coastal Zone Management Act:** Alaska Coastal Management Program including the Northwest Arctic Borough Coastal Management Plan.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

There are no federal agencies currently providing training to citizens in the Northwest Arctic Borough on how to participate in federal programs. The purpose of this proposal is to encourage more public participation and comment on numerous activities projected for the region by many private, state and federal entities, that will impact the coastal area and the residents who live there. Informal discussions with agency staff show an interest in this project. As the Borough develops the training material, it will coordinate closely with federal agencies to ensure new training material is accurate and to utilize any existing resources. Federal agencies will be invited to participate in the project.

COST SHARING OR MATCHING OF FUNDS

CIAP funds are not expected to be used for cost sharing or as a match. In-kind contributions, however, will be provided by the Borough and other agencies.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: Village-based Environmental Monitoring to Protect Coastal Areas (Revised 2009)

Note: This project was a approved as a Tier 2 project in the 2008 Alaska CIAP plan. With the increased FY09, FY10 allocation, it has been moved to Tier 1 for 2 years of funding. The only change between the approved Tier 2 project and this project is a decrease in the budget and scope of work.

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PROJECT LOCATION

NWAB communities within the coastal zone

PROJECT DURATION

Two (2) years

ESTIMATED COST

Spending Estimate ($)		
TOTAL	**Year 1**	**Year 2**
200,000	100,000	100,000

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
200,000	0	0	100,000	100,000

PROJECT DESCRIPTION

The purpose of this project is to establish a system for monitoring environmental conditions in the Northwest Arctic Borough (Borough). The monitoring program will identify baseline conditions as well as effects on coastal resources and uses from development projects and natural hazards. During the Borough's review of proposed development projects, the information gathered will help the borough evaluate impacts on

coastal areas and develop appropriate stipulations to minimize the impacts. Minimizing environmental impacts help to protect and conserve coastal areas. The project includes a community education component in order to increase local stewardship.

The Borough will hire one part-time employee in each of the 10 outlying villages to monitor local environmental conditions: Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Noatak, Noorvik, Selawik, and Shungnak. All of the villages in the Borough are located within the coastal zone. Once selected, these employees will receive training on how to assess baseline environmental conditions and how to monitor effects of projects and natural hazards on the coastal environment. A contractor will be selected to prepare the training curriculum, conduct the training and develop monitoring forms and a report format.

Monitoring tasks include effects from exploration and development projects (e.g., hard rock mining, gravel mining, and facility construction), solid waste and sewage disposal, commercial recreation and tourism activities (e.g., transporters, hunting, and floating), and natural hazards (e.g., flooding, erosion, and storm surges). The employees will be outfitted with personal beacons and satellite phones for safety considerations. Information from the monitoring will be used to add stipulations to Title 9 borough permits, propose alternative measures to projects undergoing an Alaska Coastal Management Program review, and propose measures to be added to state and federal agency permits.

The project tasks include the following:

- Develop a job description and evaluation criteria for the part-time village employees.
- Hold a meeting in each of the 10 Borough villages to introduce the monitoring program and to encourage community value of environmental stewardship. During these meetings, the Borough will:
    - Enlist community support for and feedback about the program
    - Emphasize consistency with the Inupiaq value of respect for nature
    - Identify residents interested in applying for monitoring positions
- The Borough will conduct interviews in each of the 10 villages and hire monitoring staff according to Borough employment practices.
- Hire a contractor to work with Borough to assist with training the environmental monitoring employees:
- Develop a training curriculum.
- Conduct a one-day training session in Kotzebue.
- Prepare monitoring forms and monthly report format.
- Collect and evaluate the monthly reports from the 10 village monitors.
- Create a toll-free hotline for any resident to call in with tips on unauthorized activity
- Conduct on-site follow up training with individual village monitors as needed.
- Design and implement a youth component of the program that will encourage interest and participation of younger residents in environmental stewardship. This program will include speaking before school classes, and it may include a more formal mentoring program.

- Prepare an annual report summarizing information in the monthly reports.
- Research and pursue funding to ensure the monitoring program continues past the CIAP funding program.
- Conduct annual review of program to assess its effectiveness.
- Annual Report: Prepare an annual report that describes progress made towards meeting each measurable goal and objective.

MEASURABLE GOALS AND OBJECTIVES

The tasks noted above will result in the following measurable outcomes:

- Training curriculum - developed and presented in a one-day training session
- Monitoring forms
- Monthly reports from the village monitors
- Toll-free hotline for any resident to call in with tips on unauthorized activity
- Annual Report that summarizing information in the monthly reports, includes an assessment of the programs effectiveness, and describes progress made towards completing the project tasks and meeting each measurable goal and objective.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This project is consistent with Authorized Use #1, *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands."* This project will directly result in the conservation and protection of coastal areas, including wetlands, by developing information about baseline conditions and effects from development projects and uses of coastal areas. The monthly and annual reports will be used as a basis to develop stipulations and mitigation measures for projects to avoid, minimize or mitigate impacts to coastal areas. As a result of reports and other participation in the program, monitors and other residents will become better environmental stewards, which will increase conservation, protection and restoration of coastal areas. In addition, this program may result in restoration of coastal areas, if the village monitoring employees discover areas that need to be restored.

When significant adverse effects to fish, wildlife and other natural resources are discovered, the Borough will take action to protect the coastal areas from further damage and possibly mitigate the damage that has occurred. For example, if a development project is found to have effects, the Borough will take action through its Title 29 authority or by contacting the appropriate state or federal agencies. As residents and communities become better environmental stewards this will also mitigate damage to fish, wildlife and ecosystems, further protecting coastal areas.

COST SHARING OR MATCHING OF FUNDS

CIAP funds would not be used for cost sharing or as a match, but it will ideally supplement other funds and in-kind resources being sought for this project. If CIAP funds are used for cost sharing or matching purposes required by another grant, a letter will be included with the CIAP grant application from the other 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

Northwest Arctic Borough

PROJECT TITLE: #9a. Energy Conservation (Green Community Initiative)

PROJECT CONTACT

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PROJECT LOCATION

North West Arctic Borough communities, Alaska

PROJECT DURATION

One to two years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	Year 1	Year 2	Year 3	Year 4
$502,800	$295,040	$207,760	#	#

Funding per Allocation Year of CIAP ($)				
TOTAL	FY 07	FY 08	FY 09	FY 10
$502,800	0.00	0.00	$295,040	$207,760

PROJECT DESCRIPTION

People in the Northwest Arctic Borough rely heavily on subsistence land and water resources to supplement a marginal cash economy. Residents are committed to activities that will protect, conserve and restore their environment to improve the quality of land, air and water, from which they harvest subsistence resources. More of our residents need to be made aware of the long-term benefits to the environment through energy conservation.

Carbon dioxide (CO2) emissions and particulate matter from diesel burning power plants spread toxins and acid rain throughout the atmosphere and onto land (including tundra vegetation), water, and wildlife--all subsistence resources, which are part of the natural coastal area food chain. CO2 emissions also directly contribute to more greenhouse gases in the atmosphere and global climate change. This is a critical issue in Alaska where climate change can accelerate coastal erosion and result in potentially negative and largely unknown impacts on coastal area ecosystems, habitat, and wildlife.

Since fuel is so expensive (averaging $7 - $10/gal for diesel and stove oil), communities and individuals purchase thousands of gallons of diesel and other fuel in many small amounts (a few gallons at a time) versus a few bulk (large) amounts. The more often fuel is handled, the more fuel spills occur (delivery by air or barge to the isolated, off-road community; distribution to individual buyers, including the city or tribe; and then to fuel storage containers using crude, unregulated transfer methods). These year round spills, contaminate the natural coastal environment, including land, water, wetlands and subsistence resources. Additionally, diesel-powered electric power plants produce a quantity of used oil, which can often be mishandled and end up in open dumps in numerous corroding, leaking drums. Contents can enter the ground, groundwater, and surface water with long-term, costly negative impacts on the environment and wildlife, and potentially creating Brownfields.

The largest consumer of energy in any village is the water and sewer (w/s) system. Along with the extremely high cost of fuel, operation of the water and sewer systems greatly strains village resources and often results in the inability to adequately maintain these systems, leading to system breakdowns and thousands of gallons of raw sewage spills directly into the environment, contaminating wetlands, surface water and ground water, and negatively impacting wildlife. While human waste alone is unsanitary, it is all the other materials (household and industrial cleaners, solvents and other chemicals) that create a toxic soup that once released into the environment is hard to remove or remediate.

Anything that conserves energy helps protect the environment. Currently, there are few innovative solutions in communities to conserve energy, and reduce the amount of CO2 gas emissions, fuel spills, and other pollution events related to heavy dependence on petroleum fuel. The borough is working to transition from wide-scale handling and burning of diesel and stove oil to modern electronic technology to address this environmental issue. Among the most viable to resolve these issues is energy conservation and public awareness of the problem/ solutions. This project will promote use of technology to help conserve energy in the villages, for example, through a pre-pay utility system or energy use monitors. Pre-pay systems are successfully being used in several Aleutian-Pribilof communities in Alaska. The TED (The Energy Detective) energy use monitoring device was the subject of a successful pilot study in Florida funded by the U.S. Department of Energy (Florida Solar Energy Center, January 2008). Both systems have successfully demonstrated helping people understand their role and responsibility in, and realize energy conservation. This results in direct and indirect benefits to the coastal area.

Prepay Utility System. This system requires prepayment of utilities, especially electricity. It could and often does include water/sewer charges. Low collection rates for water/sewer and electricity charges puts these systems at risk of failure, and resulting environmental and public health risks as noted above. The prepay systems have been used successfully in a number of rural Alaska communities, to raise collection rates to

nearly 100% and lower energy consumption and related environmental pollution and other risks.

TED 1000 Energy Meter. This (or similar) technology in conjunction with outreach to local residents will heighten awareness of the environmental and economic benefits of energy conservation, such as significantly reduced carbon emissions, particulate matter, and fuel spills. The TED 1000 is a compact energy use measuring device with "active feedback" showing real time energy usage and accumulated monthly usage. When installed in a home, the average household lowers energy consumption by 10-20 % just by paying attention to their energy usage. This lowers carbon emissions, the cost of electricity, the handling of and dependency on large amounts of diesel fuel.

Communities will be informed of the opportunity to participate in and benefits of an energy conservation program. The project expects to include a pilot Energy Awareness project for all high-school students in the region (up to 300 students) and install one TED 1000 Energy meter in each student's household. The project will eventually work with all communities in our region, including city and tribal entities, local schools (students and teachers), Maniilaq Association (the regional tribal health consortium), and NANA (the Native regional corporation), all who are interested in energy conservation. The NWAB energy and resource development coordinator will help lead the project.

In Year 1, the TED 1000 Energy Meter project or the prepay utility system will be initiated to demonstrate how much energy individual households can save. This phase concentrates on information and awareness of energy conservation, involving local students, installing meters in up to 300 households, and/or installing the prepay system in about 40 households. Students will also monitor data for a three- and six-month period.

If favorable, in Year 2, the TED project will expand to the rest of approximately 2,060 households in the borough (including Kotzebue). The prepay system is only viable at this time for one village. If all households in the region participate, this project would annually protect the natural coastal area environment from the introduction of almost 3,000 tons of CO2 emissions, fuel spills, raw sewage spills, and other environmental harm.

- Milestone 1: Support from communities to install energy conservation system. Installation of TED energy use meters in up to 300 households, or in another community, prepay system. (Year 1)
- Milestone 2: Data collected after 3-6 months showing lower energy usage, fewer fuel spills. (Year 1)
- Milestone 3: Installation of meters in additional villages. (Year 2)
- Milestone 4: Data collected after 3-6 months showing lower energy usage, fewer fuel spills in additional villages. (Year 2)

MEASUREABLE GOALS AND OBJECTIVES

- Installation of 200 energy use meters or a prepay system for 40 households.

- Reduced energy consumption in households with excessive energy use (energy awareness and conservation increased). Verification of reduced energy consumption will be provided in a report documenting pre and post project energy consumption
- Lower overall production of greenhouse gases in the form of carbon dioxide from the village power plant (through lower electric energy use), up to 20%
  - 36,752,000 Kwh is used in the region per year, on average
  - 10% of that is 3,675,200 Kwh saved, @ 14 Kwh/gal of diesel, that equals 262,514 gal of diesel saved per year
  - 262,514 gal burned @ 22.38lb CO2/gal = 5,875,070 lbs of CO2 (over 2,937 tons)
- Energy usage graphs and report reflecting improved energy conservation in the pilot project
- Energy usage graphs and report reflecting improved energy conservation borough wide.
- Decrease in incidence of fuel spills and raw sewage spills into the environment
- Sharing of all data on the NWAB Web-portal.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

This energy conservation project will directly and indirectly benefit the natural coastal environment and is consistent with CIAP Authorized Use #1, *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands*. Energy conservation will protect the coastal area environment, including wetlands, from harmful CO2 gas emissions, particulate matter, acid rain, potential fuel spills, and hazardous accumulation of used oil.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The project will seek to work with the US EPA Tribal Environmental Programs in our region and ANTHC (Alaska Native Tribal Health Consortium, formerly Indian Health Service) to coordinate and help sustain environmental education and awareness efforts on the benefits of energy conservation on our environment.

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 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 (CIAP) Federal funds to meet cost sharing or matching requirements.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: #10. Environmental Leadership (Green Community Initiative)

PROJECT CONTACT

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PROJECT LOCATION

Communities and surrounding lands within the NWAB coastal zone.

PROJECT DURATION

Three (3) years

ESTIMATED COST

Spending Estimate ($)				
TOTAL	Year 1	Year 2	Year 3	Year 4
$383,400	$186,000	$181,200	$16,200	

Funding per Allocation Year of CIAP ($)				
TOTAL	FY 07	FY 08	FY 09	FY 10
$383,400	0.00	0.00	$186,000	$197,400

PROJECT DESCRIPTION

This project is to strengthen and expand environmental leadership through interactive, creative environmental education mainly aimed at our youth, but also fully engaging adults. Many elders and other adults in the Northwest Arctic have a strong environmental ethic rooted in timeless traditional knowledge, culture, and subsistence values.

Unfortunately, increased mass media (TV, internet) and travel to urban centers have influenced purchasing decisions, values and practice. This ethic has diminished and is not being passed down to succeeding generations, resulting in behavior and thinking that often directly or indirectly harms the natural environment.

"Collective memory generates community identity, and helps develop purpose . . . a sense of mission or destiny (that) may engender empowerment and . . . the capability to

shape the future" (Haycox 2002). This project seeks to galvanize collective memory, solidify community identity, develop purpose, and engender empowerment to create leadership that recognizes their role and responsibility in shaping the future of this rich ancient land with sensitivity to its history and intrinsic natural value.

Northwest Arctic rural Alaska villages are small, isolated largely Alaska Native communities of 100 to 900, without any connecting road systems. These coastal area communities, recreation sites, seasonal subsistence camps and surrounding lands are littered with garbage. "Landfills" are more often, unorganized open dump sites. Household trash sprawls beyond undefined boundaries. Vehicle fluids mix with honeybucket waste (raw human waste from households without piped water/sewer) and other toxic or hazardous waste and seep into the land, groundwater, or wetlands. Animal carcasses inappropriately end up in the dump (they would biodegrade naturally, more efficiently and rapidly if returned to the land from where they came). Dump sites attract foraging wildlife which ingest harmful materials.

Countless plastic grocery bags blow across the land, become shredded, entangled in vegetation and an unsightly part of the landscape. Aluminum cans, plastic bottles, lead acid batteries and other debris end up on riverbanks and coastal beaches (deteriorating plastic has been fatally consumed by birds and waterfowl). Irresponsible use of all-terrain vehicles (ATVs), snowmachines (snowmobiles), and other vehicles can permanently scar fragile arctic terrain, damaging ecosystems and habitat. At Elders Council meetings, youth assemblies and similar meetings, there is repeated concern about the need for more respectful behavior to reduce harm to the coastal area, including important subsistence resources.

Few community programs stress environmental leadership and opportunities to address these and other local environmental issues. Despite spring cleanups throughout the region, like many activities, they are mainly organized by adults for youth. Although some schools teach about caring for the environment, there are no long-term programs that cultivate and nurture environmental leadership and stewardship. Coastal area communities and schools lack ongoing scientifically and culturally relevant programs and activities in which students and residents can participate and look forward to year round.

This project will support such efforts to interactively impart to youth traditional knowledge on respect and appreciation for nature, to create lifestyles and leadership that embrace responsibility in proper waste management and environmental stewardship as a natural part of everyday life. Such activities will help build the capacity, confidence, and pride of youth and other residents to take the lead and advocate for responsible and appropriate development to protect rural Alaska and its unparalleled, unspoiled, life-giving natural environment.

Environmental Media

Rising generations are critical in shaping future impacts on the region's environment. Mass media effectively exhorts the audience to drink Coke, choose the next "American Idol" or buy countless products and services in order to be happier, richer or more

attractive. Mass media can also help create lasting transformation supported by holistic thought, economic sustainability and civic participation. The Borough would like to support multi-media projects created by local youth and other community members to inspire in residents a strong sense of environmental stewardship. Young people in particular are already very literate in media products, especially using modern technology and internet. Media created by local people will pivot youth and other residents towards pro-active participation in addressing local issues resulting from poor environmental management or lack of environmental awareness.

Projects will be driven through a core group trained in media technology and production to design and create an educational campaign to motivate and drive the borough towards becoming an environmentally responsible region.

Environmental Education and Outreach

To further engage young residents, the Borough desires to support hands-on learning opportunities for environmental leadership in the schools. For example, the Borough could support a program such as the Tsunami Bowl, part of the National Ocean Science Bowl (NOSB), an academic competition for high school students headed by the Consortium for Ocean Leadership. Students study marine science and find solutions to environmental challenges along their local coastline. The Tsunami Bowl directly fosters leadership skills as students are required to present publicly at the competition. Culture camps and programs such as Alaska Youth for Environmental Action (AYEA) can empower youth to collaborate with community elders and other leaders to understand and identify local environmental concerns, and then plan and implement projects to address them.

Such programs complement student involvement in coastal environment research projects and local subsistence studies, challenging and engaging students into deeper critical thinking, appreciation of, and connection to the environment. They also encourage students to pursue higher education to address environmental issues and further protect coastal areas on a professional level.

Teachers and other local residents have expressed interest in implementing the above programs and other activities that promote environmental awareness, stewardship and leadership among young people and all residents. This project would strengthen similar efforts by IGAP staff and others in the villages. This project would also seek to partner or collaborate with current local programs such as Girl Scouts, Natural Helpers, Maniilaq Association programs (such as Project Life), local culture camps, safe and respectful hunting programs and others to integrate aspects of and achieve wise environmental leadership. Only projects with active community support, necessary for any project to be sustainable, will be implemented.

MEASUREABLE GOALS AND OBJECTIVES

Phase 1: Strategic plan that will:

- identify youth, adults, and elders ready, willing, and able to partner in this project

- determine which activity(ies) to pursue
- outline how project activities will be implemented

Phase 2: A report that will assess the success of the activities conducted, in terms of the following as applicable:

- number of residents in the Northwest Arctic Borough who have learned and used technology skills to create and distribute media products that promote environmental awareness and responsibility to protect, conserve, or restore the coastal area
- number and type of environmental awareness media created and distributed and/or presented, for example: music video/DVD; radio broadcasts; local websites; books designed and developed locally; other media (posters, flyers, recycled "art", etc.)
- number of environmental conservation activities that involve students to directly or indirectly benefit the natural coastal area
- number of youth/adults participating in statewide environmental programs such as AYEA and NOSB
- evidence of visually cleaner communities and landfills (dump sites in participating villages), “camps,” recreation and subsistence areas
- evidence of more respectful behavior in subsistence related activities
- sustainability of projects/activities beyond CIAP funding

Report will also include lessons learned.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

The environmental leadership project is consistent with CIAP Authorized Use #1, *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands*. Media products created by local residents, especially youth, will inspire "pro-active" participation in local solutions to issues that result from poor environmental awareness and management. Environmental education and outreach programs and activities will be fundamental to a greater understanding and appreciation of factors that affect the natural coastal area environment in order to better protect it. Young people and others who participate in these programs will be poised to be community leaders who better understand the short and long term dynamics and impacts of development and conservation and the need for balance in future decisions that will result in protection and conservation of coastal areas.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The environmental leadership project would ideally collaborate with local federal programs such as the U.S. Fish & Wildlife Service, the National Park Service, and the USEPA tribal environmental program (IGAP—Indian General Assistance Program) which are already promoting environmental conservation, management and education. The Northwest Arctic Borough is the focus of much research on climate change, including projects involving Alaska Native Tribal Health Consortium (ANTHC), a

largely federally funded entity, Yale (University), and NOAA. This environmental leadership project would complement ongoing climate change research projects.

COST SHARING OR MATCHING OF FUNDS

CIAP funds might 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 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

NORTHWEST ARCTIC BOROUGH

PROJECT TITLE: #11. Kivalina Erosion Protection

PROJECT CONTACT

Contact Name: Andrea Elconin
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PROJECT LOCATION

Kivalina, Alaska, in the Northwest Arctic Borough. See attached project layout. Option 6 (counterclockwise, first section at far left) is the subject of this project.

PROJECT DURATION

One (1) year.

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$300,000	$300,000	0	0	0

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
$300,000	0	0	$300,000	0

PROJECT DESCRIPTION

Kivalina has experienced severe erosion in the last decade due to storm surge and strong waves during the fall. The Northwest Arctic Borough constructed an 1,800 lf (linear feet) Hesco basket seawall in 2006 to provide coastal erosion protection to the community and protect public access to the Chukchi Sea, the natural coastal marine environment for this whaling community. The seawall started to fail that fall, during the first fall storm, and continued to fail along most of its length over 2006 and 2007. The Corps of Engineers started construction of a 2,000 lf rock revetment to replace the Hesco seawall in 2008. Four hundred (400) lf of the revetment was constructed in 2008, and 1,200 lf will be constructed in 2009 for a total of 1,600 lf. The last 400 lf is planned for construction in 2010 (year 1) and is the subject of this grant.

The total cost of the 2,000 lf rock revetment is approximately $17,400,000. 1,600 lf of the revetment is being funded by the Corps at an approximate cost of $13,700,000. The subject of this grant is the last 400 lf of revetment, which has a cost of approximately

$3,700,000. The Corps does not have funds to construct this section, but they can accept funds from a state or municipality under the Intergovernmental Cooperation Act (ICA) to construct the revetment section on their behalf. A requirement of the ICA is that the Corps may be the construction contracting agent only if federal funding assistance is involved. The CIAP funds would fulfill that requirement. Funding sources for the last 400 lf revetment section would be as follows:

Northwest Arctic Borough	$3,100,000 (secured)
CIAP	$300,000
Corps of Engineers	$300,000 (secured)

MEASUREABLE GOALS AND OBJECTIVES
Construct a rock revetment to fill gap of 400 linear feet (lf) of coastal erosion protection and protect public access to the coastal marine environment

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 Kivalina Erosion Protection project will prevent erosion on the ocean-side of the village that occurs during fall storms. It will also protect public access to the coast which is important for subsistence whaling activities. It will also provide security to the people of Kivalina. Without the revetment the village risks being forced to disperse due to loss of land during a severe storm and lose access to traditional subsistence resources.

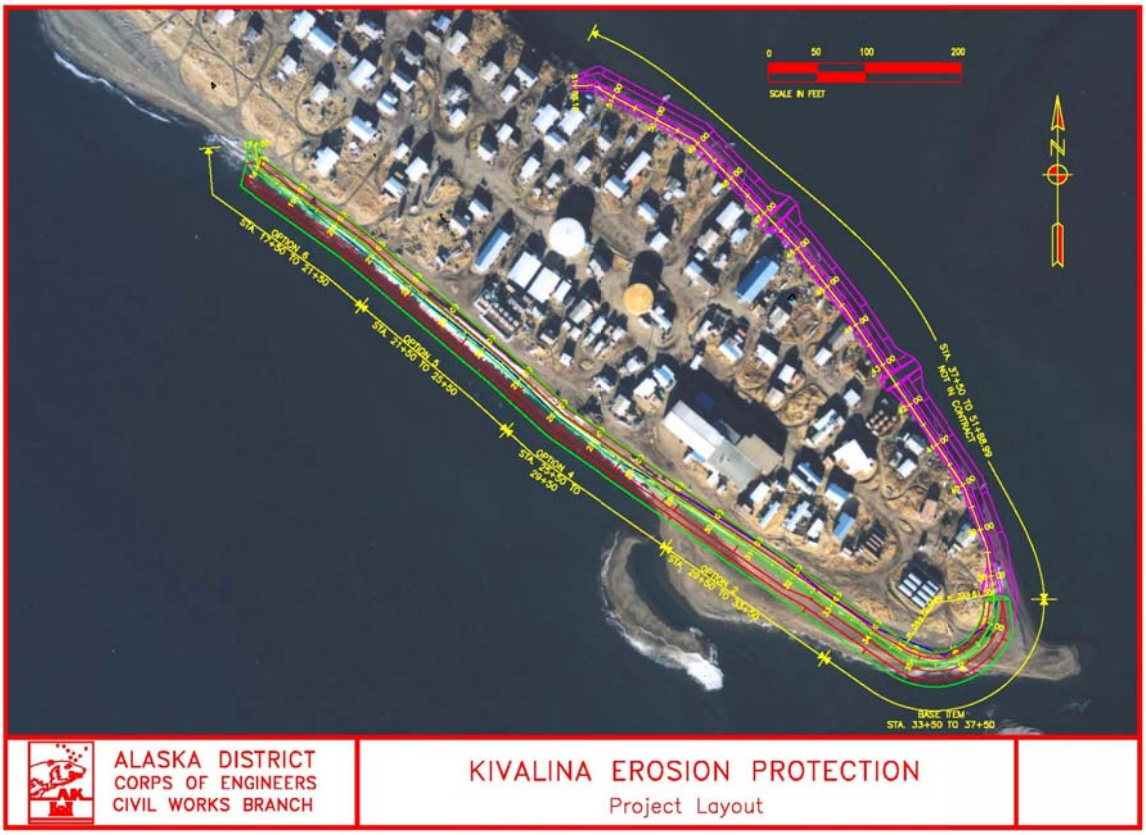
COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS
There has been extensive coordination between the Corps of Engineers, the State of Alaska, Northwest Arctic Borough, City of Kivalina and Native Village of Kivalina. After the first Kivalina seawall failed the Corps of Engineers developed the rock revetment project to replace it. The State appropriated funds to contribute to the project. The Borough, City and Tribe have worked almost every fall to address this serious coastal erosion and have conducted emergency operations to keep people safe until this more permanent structure could be built.

COST SHARING OR MATCHING OF FUNDS
There are three cost sharing agencies for the Kivalina Erosion protection project. The first 1600 lf of rock revetment was funded exclusively by the Corps of Engineers at an approximate cost of $13,700,000. It is proposed that the last 400 lf section be funded as follows:

Northwest Arctic Borough	$3,100,000 (secured)
CIAP	$300,000
Corps of Engineers	$300,000 (secured)

CIAP funds will be used for cost sharing or matching purposes required by the Army Corps of Engineers. A letter will be included with the CIAP grant application from the

Corps, indicating that the Corps' program allows the use of federal funds to meet cost sharing or matching requirements.



STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM

Northwest Arctic Borough, Alaska

PROJECT TITLE: #12. Solar Energy to Protect the Coastal Area from Harmful Known Pollutants

PROJECT CONTACT:

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PROJECT LOCATION:
Northwest Arctic Borough communities

PROJECT DURATION:
Four years

ESTIMATED COST:

Spending Estimate ($)				
TOTAL	Year 1	Year 2	Year 3	Year 4
$1,747,500	172,500	472,500	472,500	630,000

Funding per Allocation Year of CIAP ($)				
TOTAL	FY 07	FY 08	FY 09	FY 10
$1,747,500	0.00	0.00	345,000	1,402,500

PROJECT DESCRIPTION:

As the nation moves toward using more renewable, green energy to help protect and conserve our environment, we would like to do the same within the Northwest Arctic Borough region. This project will install “solar arrays” to maximize the use of an alternative renewable green energy source and minimize environmental impacts of power generation in the coastal area immediately surrounding the villages of the Northwest Arctic Borough. This project will reduce the quantity, incidence, and threat of uncontrolled releases of several known harmful pollutants into the natural coastal area year round and consequently, help mitigate their harmful effects on the environment.

Pollutants include gases and particulate matter from the burning (combustion) of diesel fuel as a result of power generation; pollutants from untreated wastewater; and fuel spills. Our arctic and sub-arctic coastal area environment is even more sensitive and fragile than most in the

Lower 48. It is also that much more difficult to recuperate from environmental damage. We need to pursue whatever means available to maintain the health and integrity of our local natural environment. This green energy project is one of those means.

There is no electric grid in our coastal area, nor any road system that connects our small isolated communities where populations range from under 100 to about 900. Inefficient, diesel-powered electric utility plants run 24/7 in each of the villages in the borough. They release a number of known toxic air pollutants into the environment on a daily basis.

Sulfur dioxide is one of the pollutants released into the air when diesel is burned in our power plants. The largest sources of sulfur dioxide (SO2) emissions in the nation are from fossil fuel combustion at power plants (66%). Likewise, in the Northwest Arctic Borough, 61% of SO2 emissions result from electricity generation (EPA 2005). It is known that sulfur dioxide gas reacts in the atmosphere with water, oxygen and other chemicals, to form sulfuric acid and ultimately acid rain or runoff. The airborne acid chemicals are blown across the coastal area far from their source, land on the ground, including tundra, wetlands, and other vegetation, and are washed into water bodies by rain runoff or snowmelt. Acid chemical is washed out of the atmosphere by rain, snow, mist, or fog as acid rain; flow over and through the ground affecting the biota in its path. Hot exhaust from diesel power plants coming into immediate contact with our colder arctic climate results in condensation and higher frequency in production of acid rain in this coastal area than warmer climates. Frequent winter inversion layers have the same effect.

Acidic conditions in ecosystems, especially aquatic ecosystems, have multiple harmful effects including damage to or killing fish, reducing biodiversity. Acid rain and acidification of surface water and coastal ecosystems are such a concern that US EPA has developed the “Acid Rain Program” specifically to reduce sulfur dioxide emissions, mainly through tighter “restrictions placed on fossil fuel-fired power plants.”

Particulate matter or soot, also produced from burning (combustion) of diesel fuel in community power plants, and is a known pollutant containing a number of chemicals and other components, including sulfur dioxide and nitrogen oxide. It is similarly harmful to the environment through similar pathways.

Fuel spills occur throughout the year in the Northwest Arctic Borough in the transport and handling of hundreds of 1000’s of gallons of diesel fuel, in bulk or smaller amounts. Delivery in the Borough is by air or barge, along coastal shores, across lakes, along rivers, to the isolated, off-road communities. Distribution is to individual buyers and then to fuel storage containers, often using crude, unregulated transfer methods. The more often fuel is handled, the more fuel spills occur. These year-round spills contaminate the natural coastal environment, including wetlands, land, water, and subsistence resources. Additionally, these diesel-powered electric plants produce a quantity of used oil, which is often mishandled and ends up in open dumps in corroding, leaking drums. There have been and will continue to be incidents where spilled fuel enters the ground and groundwater and creates pollutant plumes with long-term, costly negative impacts on the environment and wildlife, including creating Brownfields.

Diesel spills of several hundred gallons to almost 8,000 gallons each have been reported in the last two years (2008-09) in coastal area communities in the Borough, for a total of about 15,000 gallons. While the frequency and quantity of such incidents seem relatively small by national standards, they are very significant by local standards when one considers the huge lack of resources and capacity to adequately address such spills. It does not take much to create an environmental disaster related to fuel spills, human error, or breakdown in facilities. All of which contributed to the above documented spills.

Water/sewer systems are the single largest user of diesel generated power in any of our communities. As systems age and become less efficient, they require even larger amounts of diesel generated power, increasing the related harmful effects noted above. When the energy needs of the water/sewer systems are not met, this seriously disrupts the continuous operation (flow) of the system, resulting in sewage pipes freezing and bursting.

Due to "Arctic" environment, all of our systems require that the water and sewer loops continuously flows using electric pumps and also in some cases additional heating loops using glycol. If a section of the system freezes, due to electric failure, that section (pipe or valve or pump, etc.) bursts. Wastewater or sewage that has not yet frozen behind the section that has burst, naturally, will spill onto the ground or wetland below.

Just since November 2008 through the present, such raw sewage spills in the villages of Kiana (over 4,600,000 gallons), Noorvik (over 139,000 gallons), Noatak (over 376,000 gallons), Ambler, Deering, and Selawik (over 744,000 gallons), have resulted in the uncontrolled release of over 5,947,000 gallons of untreated, raw sewage into the Kobuk, Noatak and Selawik rivers. These annual spills due to system failures are not always documented but the Alaska Native Tribal Health Consortium (ANTHC) and the Alaska Department of Environmental Conservation (ADEC) does have some record of these system failures.

While Kotzebue has backup power to address this system failure, villages do not. This leads to the uncontrolled release of raw human sewage onto the land, including wetlands, and into coastal area waterways and near shore water bodies. Villages return to the use of honey buckets (indoor collection of raw human waste) which are self-hauled and spilled along the way, further spreading raw sewage via footwear or 4-wheeler (ATV) tires in the environment.

Studies have shown that the biochemical oxygen demand from a raw human sewage spill causes severe hypoxia in the system and fish kill. Such incidents cause surfactants in sewage effluent and sludge to be discharged into the environment, including surface waters or wetlands and in the air. They can be treated by modern treatment technology but this does not exist in rural Alaska. The biodegradation of some surfactants has been demonstrated to be toxic to species in marine and freshwater.

Through this project the Borough is working to protect the natural coastal area environment from contamination caused by inefficient and unsustainable systems by transitioning away from diesel power to renewable sources of energy such as solar power. This transition from wide-scale handling and burning of diesel and stove oil to alternate energy technology will

reduce negative impacts of carbon emissions, particulate matter, fuel spills, and failed water/sewer systems on the coastal area natural environment.

Solar arrays have been chosen due to their benign effect on and direct and indirect benefit to the environment, long lifespan and low maintenance. In addition to their effectiveness during the long summer days with up to 24 hours of daylight, from March-May the actual generation of electricity increases by up to 30% due to the reflective properties of the snow-cover.

The solar arrays will be installed on the roof of the water and sewer facility and also on the water tanks and lift stations. They will decrease environmental damage and risks associated with using diesel fuel. According to our ongoing testing of the technology and Kotzebue area average solar output available, solar arrays in one water and sewer plant over the course of a year would stop the burning 693 gallons of diesel, thus preventing 15,509 pounds of harmful emissions from entering and polluting the coastal area environment within the Northwest Arctic Borough. If extended to all 11 villages, approximately 170,603 pounds of carbon emissions from entering the environment as each diesel plant cuts back on gallons of diesel burned.

These amounts are tiny. But we have to start somewhere. Small communities have more potential to succeed in implementing fundamental system changes to achieve sustainable benefit. When Kotzebue Electric Association (KEA), a local co-op, began to implement wind energy in this hub community, it was tiny and unproven. Eventually KEA became a leader in renewable energy with the largest wind farm in the state. It also became the largest wind-diesel power plant in the country. Today KEA wind energy replaces the need for 100,000 gallons of diesel annually and that is expected to increase. This solar power project is just the beginning.

As long as we depend on and use electricity generated by hundreds of 1000's of gallons of diesel fuel, and water/sewer systems that are the largest single user of that power, we are responsible for behavior that knowingly harms the natural environment in our coastal area. There is no question about the huge need for petroleum products such as diesel in today's world and foreseeable future. Countless vehicles, facilities, products, and other uses depend solely on petroleum-based fuel. However, making no effort to transition to known and proven sources of renewable energy, such as solar power, which is more beneficial to the local environment is irrational, short-sighted, and irresponsible on the part of leaders and decision makers. It is clearly in our best interest to develop more stable and environmentally sustainable methods of electricity production. Through this project, we can help prevent the harmful effects of human activity, whether cumulative and long-term or sudden and unexpected, on the natural environment and the coastal area of the Northwest Arctic Borough.

Milestone #1 Installation and testing of the first solar array (Year 1)
Milestone #2 One year of data collection to determine project effectiveness (Year 1)
Milestone #3 Installation of arrays in other villages (Year 2)

MEASURABLE GOALS AND OBJECTIVES:

First year

- In one community install solar arrays on the roof of the water and sewer plant, on the water tanks and lift stations in the village.

- Weekly monitoring of data for 4 weeks, documenting efficiency of installed arrays as demonstrated by lower fuel and kwh usage, in addition to other data
- Reduced volume of diesel fuel being transported to, handled, and burned in the village power plants (naturally, to measure a reduction in volume of diesel (or anything else, e.g., kwh) a baseline measurement of pre-solar array usage will be documented)
    - Thus, reducing hazardous air pollutants and risk of fuel spills and related incidents
- Reduced frequency of uncontrolled releases of untreated wastewater into the environment
- Annual report with results of periodic monitoring including reductions as listed above, and analysis of feasibility of expanding program to 10 other borough communities

Years two through four

- Expand program to 10 communities.
- Annual report with results of periodic monitoring and reduction in harmful known pollutants.

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:

The solar energy project to protect the coastal area from harmful known pollutants is consistent with Authorized Use #1, *Projects and activities for the conservation, protection, or restoration of coastal areas including wetlands*.

Pollutants include gases and particulate matter from the burning (combustion) of diesel fuel as a result of power generation; pollutants from untreated wastewater; and fuel spills. Improving the efficiency of water/sewer infrastructure in our villages avoids uncontrolled, raw sewage spills into the coastal area environment immediately surrounding the villages of the Northwest Arctic Borough. Transitioning to renewable green energy and increasing energy efficiency in water/sewer systems reduces CO2 emissions, acid rain, oil and fuel spills, and toxic wastes from these coastal areas.

Sulfur dioxide is one of the pollutants released into the air when diesel is burned in our power plants. The largest sources of sulfur dioxide (SO2) emissions in the nation are from fossil fuel combustion at power plants (66%). Likewise, in the Northwest Arctic Borough, 61% of SO2 emissions result from electricity generation (EPA 2005). It is known that sulfur dioxide gas reacts in the atmosphere with water, oxygen and other chemicals, to form sulfuric acid and ultimately acid rain or runoff. The airborne acid chemicals are blown across the coastal area far from their source, land on the ground, including tundra, wetlands, and other vegetation, and are washed into water bodies by rain runoff or snowmelt. Acid chemical is washed out of the atmosphere by rain, snow, mist, or fog as acid rain, flow over and through the ground affecting the biota in its path. Hot exhaust from diesel power plants coming into immediate contact with our colder arctic climate results in condensation and higher frequency in production of acid rain in this coastal area than warmer climates. Frequent winter inversion layers have the same effect.

Hydrocarbons, including diesel fuel, are prevalent throughout the coastal area of the Northwest Arctic Borough. In addition to airborne and waterborne pathways, they also enter the natural

environment and coastal areas immediately surrounding the villages of the borough through fuel spills, oil spills and spills of a number of petroleum-based products. Studies in this coastal area have shown that a resident species of shellfish that are filter feeders are well known for accumulating persistent organic hydrocarbons and heavy metals, as are 30 or 40 invertebrate species of biota in our coastal area waters. These pollutants increase the chance of disease, lower immune systems, and affect the ability to reproduce. Through bioaccumulation, the smallest biotic creatures storing pollutants will have significant harmful effects for other species up the food chain, including humans.

Studies have shown that the biochemical oxygen demand from a raw human sewage spill causes severe hypoxia in the system and fish kill. Such incidents cause surfactants in sewage effluent and sludge to be discharged into the environment, including surface waters or wetlands and in the air. They can be treated by modern treatment technology but this does not exist in rural Alaska. The biodegradation of some surfactants has been demonstrated to be toxic to species in marine and freshwater.

Through this project the Borough is working to protect the natural coastal area from contamination caused by inefficient and unsustainable systems by transitioning away from diesel power to renewable sources of energy such as solar power. This transition from wide-scale handling and burning of diesel and stove oil to alternate energy technology will reduce negative impacts of carbon emissions, particulate matter, fuel spills, and failed water/sewer systems on the coastal area natural environment immediately surrounding the villages of the Northwest Arctic Borough.

The coastal area environment immediately surrounding the villages of the Northwest Arctic Borough will be protected and conserved through:

- Fewer incidents of w/s system failures and raw sewage spills into the coastal area through more efficient and environmentally friendly operation of water and sewer infrastructure
- A decrease in the risk and incidence of fuel spills, in the coastal area, and in the release of harmful pollutants into the coastal area through the lowered amount of fuel transported, handled and used in community power plants

Our arctic and sub-arctic coastal area environment is even more sensitive and fragile than most in the Lower 48. It is also that much more difficult to recuperate from environmental damage. We need to pursue whatever means available to maintain the health and integrity of our local natural environment. This project is one of those means.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:
This project would ideally involve and collaborate with other federal and local entities addressing renewable energy, water/sewer, and public and environmental health issues. This could include cities and tribes in our region, the USEPA tribal environmental program (IGAP—Indian General Assistance Program) in our communities, the Alaska Energy Authority, USDOE, ANTHC (Alaska Native Tribal Health Consortium) and USDA.

COST SHARING OR MATCHING OF FUNDS:

CIAP funds will ideally supplement other funds and in-kind resources being sought for this project. 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 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

Northwest Arctic Borough

PROJECT TITLE: #13. Green Initiative to Conserve and Protect Coastal Areas

PROJECT CONTACT

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PROJECT LOCATION

Communities in the Northwest Arctic Borough coastal area.

PROJECT DURATION

Three (3) years

ESTIMATED COST:

Spending Estimate ($)				
TOTAL	Year 1	Year 2	Year 3	Year 4
$378,000	$207,000	$135,000	$36,000	0#

Funding per Allocation Year of CIAP ($)				
TOTAL	FY 07	FY 08	FY 09	FY 10
$378,000	0.00	0.00	$221,400	$156,600

PROJECT DESCRIPTION:

We are reminded on a daily basis that what harms the natural environmental is often directly or indirectly related to our own human activity. Thus, collectively, we have the power to directly conserve, protect or restore our coastal area natural environment and help ensure the future of its rich intrinsic value. Using components from programs such as Project Wild, The Learning Tree, and Adopt-a-Stream, this project will provide environmental education activities and outreach in the classroom, in the community and in the field, to revive, strengthen, and pass on the culture and ethic of environmental stewardship. Rooted in traditional knowledge, practice, and Inupiaq culture, taking care of and respecting the land, including the animals and ecosystems, is critical to its survival and our own. This project will work with communities to identify local environmental priorities, sources of harmful pollution, and behavior and activities which degrade or destroy our coastal area environment. It will create partnerships that implement local solutions through local action to protect our coastal area environment from harmful pollutants and harmful activity.

Rural Alaska villages in the Northwest Arctic are small, isolated communities with largely Alaska Native populations of about 100 to 900. No road system connects any community or the outside world. What enters the village usually ends up in unlined open dump sites. Communities, recreation sites, seasonal subsistence camps and surrounding lands, including wetlands and water bodies within the coastal area are littered with garbage and other waste: household trash, vehicle fluids, and honey bucket waste (raw human waste from households with no water/sewer). Leachate and other toxic or hazardous wastes seep into the land, forming plumes that pollute groundwater, wetlands, waterways and ocean. Animal carcasses end up in the dump, attracting foraging wildlife which ingest harmful materials and spread trash and contaminants farther throughout the coastal area.

Countless plastic grocery bags blow across the land, become shredded, entangled in vegetation and an unsightly part of the landscape. Aluminum cans, plastic bottles, lead acid batteries and other debris end up on riverbanks and coastal beaches (deteriorating plastic has been fatally consumed by birds and waterfowl which mistake it for food). Irresponsible use of all-terrain vehicles (ATVs), snowmachines (snowmobiles), and other vehicles can permanently scar fragile arctic terrain, damaging ecosystems and habitat.

Many elders and others in the Northwest Arctic coastal area decry behavior harmful to the environment, and express repeated concern about the need for more respect for the land. Most people want to do the right thing but annual Spring Clean Ups and dump fees are not enough. This project proposes to support ecologically responsible, community-based local activities as part of an integrated systems approach to environmental education that can be practiced in our daily lives protect, conserve or restore the environment in our daily lives.

Local entities and potential partners include the Northwest Arctic Borough School District, the Kotzebue Electric Association, Chukchi College (a campus of the University of Alaska Fairbanks), city and tribal members, Maniilaq Association (the regional health consortium), NANA Regional Corporation, Alaska Department of Fish & Game, the Northwest Arctic Borough, and other residents.

Environmental education activities will help more young people and the general public reconnect to the land, and understand and appreciate the immeasurable value of our unique coastal area natural environment. The following efforts will actively educate people about and foster more environmental stewardship, helping to ensure the conservation and protection of our coastal area beyond grant funding:

Subsistence and related cultural activities. With each successive generation, influence through media, imported goods and services, and travel outside the region, have diminished the need for, importance of, and value of traditional subsistence activities which historically ensured sustainable harvest and use of the land, including all the living natural resources, to provide food, shelter, clothing and other basic needs for the local people. These educational activities would bring together youth, elders and other adults to combine traditional and modern knowledge and practice to promote wildlife conservation through respectful and responsible hunting and fishing principles and practice, including environmentally responsible operation and maintenance of motorized transport (ATVs, boats, snowmachine/snowmobiles, aircraft, etc.) to access subsistence resources and subsistence camps; environmental stewardship and conservation through respectful and responsible harvest of berries, other native food and

medicinal plants, natural local materials used in artwork and local crafts. True subsistence way of life was the original practice of "Leave No Trace" outdoor activity and environmental protection.

Composting and local organic food. Tons of freight enter the region almost daily, very little of it ever leaves but ends up as waste. This activity will promote small and large-scale composting activities to divert up to 20% or more (including food waste, cardboard, office paper, fish waste, etc.) of our waste from the dump. Instead of rotting in the dump, composting waste prevents greenhouse gases, extends the life of the landfill, and protects coastal area land from becoming the next dump site. Compost also restores a wide range of depleted or contaminated soils, helps create green landscapes, and conserves habitat and biodiversity.

Strong national and state-wide interest in growing local food has prompted more local gardening and discussion on reviving large-scale agriculture activity near wetlands in our coastal area. This CIAP project would promote organic gardening and the use of compost, made from locally available fish waste, chicken waste, seaweed, etc., as a natural fertilizer. It would promote NOT using chemical pesticides, herbicides or fertilizers, for small and large growers. Introduction and accumulation of gardening/agricultural chemicals, especially nitrogen, in our coastal area watershed would have harmful effects on the natural environment and ecosystems. Excess nitrogen entering our water bodies results in excessive reproduction of algae which die, decompose and deplete the waters of oxygen in the process of eutrophication. This also causes increased levels of turbidity, resulting in fish and shellfish kills, other changes in the food chain, and destruction of submerged aquatic vegetation, an important fish and shellfish habitat.

As with subsistence food, more locally grown organic food means less packaging waste, which makes up a large part of our waste stream. Local food compels a deeper understanding and appreciation of the value of our environment and how we must care for it.

Green (biodegradable) disposables, reducing the use of disposables. This project will promote a return to the use of real utensils or biodegradable disposables made from renewable bioplastics (corn, potato starch, bamboo) versus plastic and Styrofoam which degrade in the environment, have been fatally ingested by wildlife. Local people used to bring "potlatch kits," their own plates and eating utensils, to traditional community food gatherings. Numerous community functions and school cafeterias use "disposable" foodservice ware. As with recycling, reducing the amount of these "disposables" extends the life of the dump. According to worldcentric.org website and the American Society for Testing and Materials (ASTM), bioplastic products can be composted and pose no threat to the natural environment.

Coastal cleanup (sea, river, lake) and watershed protection. Coastal clean up efforts in our region remove trash in our ocean, lakes, rivers, and stream that negatively impact wildlife and ecosystems. They raise awareness about the importance of not littering, how we deal with our trash, and the need for more recycling in our communities. This effort would also support watershed protection activities, including public education to prevent reckless use of all-terrain-vehicles (ATVs) which damages migratory fish streams, wetlands, fragile arctic tundra, and other coastal area habitat and ecosystems.

Working together, these project activities will help cultivate an environmental, green community ethic, where people partner to embrace conservation and environmental responsibility for mutual

benefit. Project activities will support and help build community capacity and desire to sustain efforts to protect the wetlands, wildlife, water resources, and habitat in our coastal area as an essential part of daily life and a sustainable future.

The grant application will be amended as needed to reflect actual project activities determined and prioritized based on community interest, needs, and support to sustain activities.

MEASURABLE GOALS AND OBJECTIVES:

Phase 1:

- Informational and exploratory meetings to:
  - introduce the project and galvanize community support
  - help communities understand and identify potential sources of toxic pollution and activities which harm or degrade the environment
  - identify environmental priorities to protect and restore the natural coastal area environment
- Strategic plan that will:
  - identify participating communities and partners (non-profit groups, community organizations, businesses, schools, and state, Tribal and local government agencies, EPA, and others, especially local youth, adults, and elders)
  - identify collaborative activities that prevent or reduce harmful pollution and environmental damage, and address local environmental priorities

Phase 2:

- Implementation of at least 1 identified environmental education activity in each of 11 coastal area communities
- Report on the activities implemented, in terms of the following as applicable:
  - increased number of residents participating in environmental stewardship activities such as composting, recycling, clean up or anti-litter activities
  - improved wildlife conservation reflected by lower incidence of wasteful hunting, fishing, etc., in the coastal area
  - less evidence of litter and irresponsible dumping and toxic pollution in communities, camps, along shorelines, in water bodies and throughout the watershed
  - use of green biodegradable products or less use of disposables, more reusable products
  - collaboration and partnerships with other entities and programs with similar environmental protection goals
- Follow up project status reports

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:

The Green Community Initiative project is consistent with Authorized Use #1, *Projects and activities for the conservation, protection or restoration of coastal areas including wetlands.* This

project is designed to revive and strengthen an ethic of habitat and wildlife conservation and emphasize the importance of environmental stewardship in keeping with the traditional culture of respect for nature, living from the land and taking care of the land. Through classroom and on-site teaching, this program will conduct environmental education activities (listed above) with students and community members to prevent pollution, encourage more environmentally responsible behavior, and increase environmental awareness to protect, conserve and restore the coastal area environment in the Northwest Arctic Borough. Informed local residents and visitors to the region with a sense of stewardship are an essential first step to leaving a smaller environmental footprint and sustaining efforts to conserve and protect this coastal area.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:
The Green Community Initiative project would ideally involve and collaborate with local federal programs already promoting environmental conservation, management and education, such as the U.S. Fish & Wildlife Service, the National Park Service, and the U.S. EPA tribal environmental program (IGAP—Indian General Assistance Program).

COST SHARING OR MATCHING OF FUNDS:
CIAP funds will ideally supplement other funds and in-kind resources being sought for this project. 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 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

NORTHWEST ARCTIC BOROUGH
(Tier 2)

PROJECT TITLE: Coastal Erosion Protection Geotechnical Studies: Kivalina

PROJECT CONTACT

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PROJECT LOCATION
Geotechnical studies would occur in the vicinity of Kivalina, Alaska (see Figure 1).

PROJECT DURATION
This project is anticipated to require two (2) years to complete. The first year would consist of fieldwork and reconnaissance studies, and the second year would incorporate drilling programs as required.

ESTIMATED COST

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$300,000	$200,000	$100,000	0	0

As a tier 2 project it is not known which allocation year of CIAP this project would be funded through if it were to move forward. This information will be provided at the grant application stage.

PROJECT DESCRIPTION
The purpose of the Coastal Erosion Protection Geotechnical Studies at Kivalina is to perform geotechnical studies to evaluate the potential for local material sources suitable for use in erosion protection projects. The communities of Kivalina, Shishmaref, Shaktoolik and Unalakleet (See map) have been identified by the Immediate Action Workgroup (IAW) as in peril due to climate change phenomena. The IAW workgroup was established by the Alaska Governor's Subcabinet on Climate Change as a working group to address known threats to communities caused by coastal erosion, thawing permafrost, flooding, and fires. This project will cover costs specific to Kivalina only.

Currently, capital works projects at each of the 4 communities identified by the IAW to protect the coastline are severely limited in scope due to the extreme high cost of barging

materials, such as rock, to the site for erosion protection. This high cost has meant decreasing the scope of erosion protection projects to meet the budget. At all of these locations additional erosion protection is needed, but funding to provide protection for the entire community is lacking. If local material sources were found that could meet the coastal erosion protection requirements the costs of projects would be substantially reduced, resulting in more coastline able to be protected.

Each of these four locations is in a remote area of Alaska, requiring significant effort for the geotechnical studies. Office studies examining existing geologic information and imagery would be conducted first, with summer field reconnaissance studies to follow. If a site looks promising, additional work may be performed with mobile drilling equipment to "prove it up." A geodatabase would be developed compiling all information collected from this project in GIS formats. A draft and final report would be prepared summarizing the efforts and compiling the results.

MEASUREABLE GOALS AND OBJECTIVES

The objective of this project is to locate and evaluate material sources in the vicinity of Kivalina as addressed in this proposal. If suitable material sources are identified at the location, the information will allow significantly more project coastline to be protected per project, due to the cost savings.

The goal is to develop a geotechnical study that addresses potential local material sources for Kivalina that would provide a baseline for future erosion control design projects. This report would be made available to all agencies working in Alaska, using the IAW workgroup as a conduit to distribute the data. Specific Goals include:

Year 1:

- Reconnaissance Study and GIS product development
- Summer Field Investigation of 4 sites with surface sampling (project budget would cover costs associated with Kivalina site only)

Year 2:

- Drilling Investigation of prospective sites
- Draft and Final report with recommendations and conclusions

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE

The project for Coastal Erosion Protection Geotechnical Study for: Kivalina is consistent with CIAP Authorized Use #1, *Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands.*

Kivalina is one of four Alaskan communities that have been identified by the IAW Workgroup as facing "imminent threats of loss of life, loss of infrastructure, loss of public and private property, or health epidemics as caused by coastal erosion, thawing permafrost, and flooding." Damage to infrastructure could result in increased damage to coastal areas through an increase in marine debris, oil spills, landfill failure, water contamination, etc. Cost savings would result from evaluating local material sites at

Kivalina that may be suitable to provide material required for construction of erosion protection structures. If a local material site is established, costs of projects would be reduced, and more coastlines could be protected at each location and the risk to the environment reduced.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The Alaska Department of Transportation and Public Facilities currently participates in the Immediate Action Workgroup (IAW), a group created by the Alaska Governor's Subcabinet on climate change. This group was established to address known threats to communities caused by coastal erosion, thawing permafrost, flooding, and fires. Participants include the Corp of Engineering, the Alaska Department of Commerce, the Alaska Department of Homeland Security and Emergency Management, the Alaska Department of Natural Resources, as well as community participants. It is anticipated that this project would be coordinated through the IAW.

COST SHARING OR MATCHING OF FUNDS

No additional cost sharing or matching of funds is anticipated.

Figure 1

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PROGRAM

NORTHWEST ARCTIC BOROUGH
(Tier 2 Project)

PROJECT TITLE: North Tent City Subsistence Area Restoration and Conservation

PROJECT CONTACT

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PROJECT LOCATION

The project is located in Kotzebue, Alaska, within Section 3, T.017N., R.018W., Kateel River Meridian; USGS Quad Map Kotzebue D-2; Latitude 66.8991 degree N., Longitude 162.5896 degree W. More specifically the project is located in an area locally known as "North Tent City", near the Alaska Technical Center on Kotzebue Sound, off the Chukchi Sea.

PROJECT DURATION

This project is anticipated to require two (2) years to complete.

ESTIMATED COSTS

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
$250,000	$150,000	$100,000	0	0

As a Tier 2 project it is not known in which allocation year of CIAP this project would be funded if it were to move forward. This information will be provided at the grant application stage.

PROJECT DESCRIPTION

The purpose of this project is to restore and conserve the North Tent City traditional subsistence area in the Kotzebue Sound. This project will provide an improved area dedicated for subsistence uses for the residents of the Northwest Arctic Borough, including Kotzebue and villages throughout the coastal area. North Tent City, along the northern shoreline of Kotzebue, beyond the built area of town, is approximately 1,000 linear feet (LF) in length and approximately 150LF in width, at the confluence of the Noatak and Kobuk rivers, two major river systems of the coastal area. It is utilized as a seasonal subsistence area, to enjoy important and traditional summer and early fall harvesting, hanging and drying meats (seal and whale) and fish, and gathering and putting up other subsistence type foods. This coastal area wetland is one of only three dedicated subsistence use areas within Kotzebue. North Tent City has been used less than the other two sites as it is slightly less accessible from town. All three sites have significant cultural importance in the region.

One of the other two traditional subsistence use areas is South Tent City, beyond the southern end of town. The other area is Shore Avenue, where small boats, drying racks, nets and shacks line the central shoreline of town. However, Shore Avenue has experienced increasingly more significant shoreline erosion over the years. It will finally be upgraded and protected from erosion during the next two years as part of the Alaska Department of Transportation and Public Facilities (DOT&PF) project "Shore Avenue erosion protection and road rehabilitation." The contract for the project was recently awarded to Alaska Interstate Construction. The ADOT project will displace upwards of 20+ boat and many more subsistence users from Shore Avenue due to the nature and type of construction.

North Tent City will then be one of the last two remaining dedicated subsistence use areas in Kotzebue. It will be improved and expanded to accommodate subsistence users displaced by the Shore Avenue erosion protection project. Through removal of derelict infrastructure, other debris, and landscape enhancements, the coastal area environment of this subsistence use area will be restored. Through appropriate infrastructure, this coastal area wetland will also be conserved and protected from vehicle, boat and foot traffic, and litter and other pollution. The project will restore public access to and public recreation benefits of traditional subsistence use areas. Additionally, residents will be very conscientious about environmentally responsible activity as that will directly impact the quality of their subsistence food.

MEASUREABLE GOALS AND OBJECTIVES

The goal of this project is to improve public access to a culturally significant traditional subsistence use area in Kotzebue, while restoring, conserving and protecting the area.

The measurable objectives of the project include:

- Removal of derelict infrastructure, abandoned structures and other debris in the coastal subsistence area
- Rebuilding at least 10 camp sites with new 12x20 buildings
- Providing drying racks and other basic subsistence infrastructure
- Adding some fill material to improve access to the site
- Installing interpretive signage
- Installing security and access fencing

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*. The North Tent City project will protect and improve public access to the coastal subsistence area, while restoring the coastal area through removal of derelict and abandoned structures and other debris. The project will also improve infrastructure to protect the coastal area from vehicle, boat and foot traffic, litter and other pollution.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS

The City of Kotzebue will work with the U.S. Army Corps of Engineers, the State of Alaska, the Northwest Arctic Borough, the Coastal Management Plan, and U.S. EPA to obtain the proper development permits.

COST SHARING OR MATCHING OF FUNDS

The Alaska Technical Center (ATC), based in Kotzebue, AK, currently has construction trades classes and instruction, where students learn construction building and trades. The ATC has agreed to provide the labor to build the new 12x20 structures at no cost, if the materials can be purchased for the project with the use of CIAP grant funds. No additional cost sharing or matching of funds is anticipated.

STATE OF ALASKA
COASTAL IMPACT ASSISTANCE PLAN

NORTHWEST ARCTIC BOROUGH
(Tier 2 Project 3)

PROJECT TITLE: Protect Coastal Areas from Untreated Wastewater Pollutants

PROJECT CONTACT:

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PROJECT LOCATION:
NWAB coastal waterfront and riverfront communities

PROJECT DURATION:
Two (2) years

ESTIMATED COST:

Spending Estimate ($)				
TOTAL	**Year 1**	**Year 2**	**Year 3**	**Year 4**
738,200	369,100	369,100	0	0

Funding per Allocation Year of CIAP ($)				
TOTAL	**FY 07**	**FY 08**	**FY 09**	**FY 10**
738,200	0	0	0	738,200

PROJECT DESCRIPTION:
For the purpose of this grant program, all 11 villages/communities and outlying areas as referred to in this proposal (and all other NWAB CIAP proposals) lay within Borough (Coastal Political Subdivision) boundaries and therefore constitute the "coastal area" zone. Including the hub town of Kotzebue, none of the 11 communities are connected to each other or any other community by a road system.

This project is to protect coastal areas from untreated wastewater pollutants. Each winter the Borough receives emergency calls from villages due to frozen pipes, busted pipes, broken pumps or other failures. This can often result in environmental pollution through the uncontrolled release of raw sewage onto the land, coastal waterfront, or into waterways of the Borough's coastal areas. Until repairs can be made, often not until spring thaw, villages have

to return to the use of honey buckets (indoor collection of raw human waste). Self-haul to a dumping site usually means certain cross-contamination, more spillage of raw sewage along the way, and transfer of that same sewage via footwear, 4-wheeler (ATV) tires, and foraging wildlife including birds and waterfowl.

Communities in the Northwest Arctic Borough have gone through numerous sewage lagoons that have failed. These lagoons continue to overflow annually and raw sewage is brought into town with the rising water. Such incidents cause surfactants in sewage effluent (wastewater) and sludge to be discharged into the coastal area natural environment, including surface waters or on lands and in the air. They can be treated by modern treatment technology but this does not exist in rural Alaska, which relies on simple sewage lagoons. The biodegradation of some surfactants have been demonstrated to be toxic to species in marine and freshwater.

ExtremeSTP™ is a stand alone wastewater management system that eliminates the need for sewage lagoons, which repeatedly fail or are non-existent in many of the villages in the Northwest Arctic Borough coastal area. The systems consistently produce top quality effluent, as evidenced by typically low BOD5 (biochemical oxygen demand at 5 days) and TSS (total suspended solids) levels. Effluent, discharged from the system, is also at or near zero for fecal coliform. The system has a smaller footprint than the current systems.

Lack of an adequate wastewater management system leads to a dangerous cycle in many communities resulting in environmental contamination of the coastal area. Consequently, domestic wastewater discharges are considered one of the most significant threats of the coastal environments worldwide (qtd. in Owili 2003). The purpose of this project is to install sewage treatment plants in several Northwest Arctic Borough villages located on coastal waterfront or riverfront to protect coastal areas from environmental contamination. Local communities have the greatest potential to reduce such impacts to coastal areas.

These ExtremeSTP™ wastewater management systems are specially designed for areas with cold climates, high winds, difficult access (remote, aircraft required areas), and poor soil conditions (permafrost). These wastewater management systems are ideal for villages in our region that have these aforementioned conditions. The wastewater management systems will eliminate the need of sewage lagoons in the Northwest Arctic Borough, which will prevent blackwater pollution of coastal areas. These wastewater management systems have been proven successful by outside companies visiting Northwest Arctic Borough wetlands. The City of Galena is also using these ExtremeSTP™ systems with success. These efforts put forth by the Northwest Arctic Borough will eliminate the need for sewage lagoons and will ultimately and directly help protect and conserve coastal areas, including wetlands, watersheds, and other wildlife habitat from blackwater pollution of coastal area natural environment.

MEASURABLE GOALS AND OBJECTIVES:

- Identify potential partners who also have a vested interest in preventing utility system failures and emergencies, for example, Maniilaq, School District, State Rural Utilities
- 12 ExtremeSTP™ sewage treatment systems installed in households in two NWAB coastal area communities

- Annual report reflecting results of regular monitoring
- Analysis of feasibility of expanding program to 10 other borough communities

PROJECT CONSISTENCY WITH CIAP AUTHORIZED USE:
The project is consistent with Authorized Use #1, *"Projects and activities for the conservation, protection, or restoration of coastal areas, including wetlands."* Improving sewage treatment plants will help prevent a number of negative impacts on the coastal area, and will strengthen the conservation and protection of coastal areas, including wetlands. As described above, frozen pipes and water and wastewater systems have often resulted in an increase in environmental pollution through the uncontrolled release of raw sewage onto the land (including wetlands) or into waterways of coastal areas within the Northwest Arctic Borough. ExtremeSTP™ wastewater management systems will help protect the coastal area immediately surrounding communities in the Northwest Arctic Borough in which these systems are implemented, from pollution through the uncontrolled release of raw sewage into, and related negative effects on, this coastal area natural environment.

COORDINATION WITH FEDERAL RESOURCES OR PROGRAMS:
The Borough regularly coordinates with state, federal and Native organizations (e.g., EPA circuit rider, Maniilaq Environmental Program, local EPA IGAP programs, Alaska Native Health Consortium) that have similar programs to deal with wastewater and pollution issues in the Borough. The Borough will include these agencies in the initial project planning efforts for this project and as needed during the project period to ensure a coordinated effort that prevents wasteful duplication.

COST SHARING OR MATCHING OF FUNDS:
CIAP funds are not intended to be used for cost sharing or as a match, but they will ideally supplement other funds and in-kind resources already in place and being sought for this project. If CIAP funds are used in this manner, a letter will be included with the CIAP grant application from the other 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.