



Grant Proposal Cover Sheet

Submitted to Environmental Protection Agency, Great Lakes National Program Office
January 22, 2010

- 1. Funding Opportunity Title and Number:** Great Lakes Restoration Initiative EPA-R5-GL2010-1
Focus Area: Nearshore Health and Nonpoint Source Pollution
Program: I.C.2.Beach Sanitary Surveys
- 2. Name of Project:** Chequamegon Bay Area Partnership Beach Sanitary Surveys Project
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- 4. Type of Organization:** College or University
- 5. Proposed Funding Request:** \$192,115.50
- 6. Project Description:** The Chequamegon Bay Area Partnership requests funding to provide beach sanitary surveys on eight previously un-surveyed beaches on tribal lands and implement actions to target, reduce, and remove the contamination identified in the watershed. Two beaches in the region have been listed on Wisconsin DNR's Impairment Water's List based on Clean Water Act Section 303(d) due to the presence of *E. coli*. Tribal partners are concerned that contaminants may be present at the eight tribal beaches. Partners will conduct water sampling, surveys, and target contamination sources to implement remediation actions.
- 7. Proposed Location:** The proposed project will be carried out in the Chequamegon Bay area of Lake Superior in northern Wisconsin in the counties of Ashland and Bayfield, Wisconsin. (See Map 1, Attachment 3: Maps of Project Area.) Surveys and water sampling will occur within the cities of Ashland, Wisconsin (54806) and on tribal lands of the Bad River Band of Lake Superior Chippewa Indians, Bayfield, Wisconsin (54814), and Red Cliff Band of Chippewa Indians, Odanah, Wisconsin (54862). The project will involve two watersheds in the Lake Superior Basin: Beartrap-Nemadji Watershed HUC code 0401030 and Bad-Montreal Watershed HUC 04010302.

Chequamegon Bay Area Partnership Grant Proposal Narrative

- 8. Full Project Description:** The Chequamegon Bay Area Partnership (CBAP), through lead applicant, Northland College, requests funding to provide beach sanitary surveys on eight previously un-surveyed tribal swimming beaches in the Lake Superior Basin and implement actions to target, reduce, and remove the contamination identified. Two regional beaches have been listed in the Wisconsin DNR's Impairment Water's List based on Clean Water Act Section 303(d) due to the presence of *E. coli*. Other area beaches have been cited at advisory levels and closed during several summer seasons. Water quality monitoring conducted once per month using Clean Water Action Section 106 funding in tribal communities has shown high levels of *E. coli* in tributaries of the Bad River Watershed. Barriers to comprehensive monitoring for the Red Cliff Reservation have involved delays in water sample shipping to commercial laboratories.

Tribal communities are concerned that contaminants may be present at previously un-surveyed beaches. The CBAP members will provide water sampling and surveys on 8 tribal beaches and expand water sampling in known risk areas to better target contamination sources and implement remediation actions to reduce contamination. Program activities will include: (a) beach sanitary surveys at eight previously un-surveyed tribal swimming beaches on the Red Cliff and Bad River reservations; (b) water quality sampling at the eight tribal swimming beaches with rapid analysis at an state-certified lab at Northland College; (c) water quality sampling at five previously un-sampled lakeshore stormwater outfalls within the city of Ashland to better target contamination sources contributing to known beach impairments and advisories; and (d) aeration of sand at beaches that show elevated *E. coli* pathogen presence to reduce beach closure and advisory status. The CBAP will work cooperatively with the City of Ashland to coordinate an annual spring clean up and weekly sand grooming of the top four inches of beach sand on historically impaired beaches to reduce bacterial density. These activities will occur between April and November 2010 during ice-free months.

The City of Ashland manages three public beaches on the Chequamegon Bay of Lake Superior, all of which have been shown to have nonpoint impairments indicated by elevated *E. coli* counts. Since 2004, state researchers have tested these beaches as a part of a larger State of Wisconsin initiative to inform beach users of potential health risks of swimming at beaches contaminated with fecal matter. Due to frequent elevated bacteria levels, one of the city's beaches (Maslowski Beach) is on the Wisconsin DNR's List of Impaired Waters for Recreational Use based on Clean Water Act Section 303(d). The city's remaining two beaches (Kreher Park and Bayview Beach) have been closed and issued multiple advisories due to elevated *E. coli* levels. Neighboring tribal partners, the Lake Superior bands of Chippewa on the Bad River and Red Cliff reservations have concerns that swimming beaches in those communities may also be impaired. Water sampling that has been done in accordance with the Clean Water Act has found elevated *E. coli* counts in surrounding tributaries, but lack of sufficient resources have left these two communities without the means to identify and quantify levels of impairment.

Strategic Approach: This project will focus on identifying and managing pollution sources leading to beach closures and advisories in the Chequamegon Bay. This will be achieved by increasing the number of beaches assessed using the standardized, EPA-approved sanitary survey tool ([see www.epa.gov/waterscience/beaches/sanitarysurvey/pdf/user-manual.pdf](http://www.epa.gov/waterscience/beaches/sanitarysurvey/pdf/user-manual.pdf)) to identify presence and sources of contamination and document and identify contamination sources on known impaired

beach areas for the development of implementation strategies to remediate pollution. These goals are identified in the Great Lakes Restoration Initiative’s Nonpoint Source Pollution focus area. Since 2004, Northland College has been sampling water for the presence of *E. coli* surrounding specific municipal stormwater outfalls in the City of Ashland. Sampling was expanded in 2009 through a partnership between the college and the city to include “upstream” catch-basins carrying stormwater to the outfalls. In the current proposal, Northland will partner with the City of Ashland to monitor bacterial levels at four untested outfalls that discharge directly into Chequamegon Bay near the three public beaches that have been closed frequently due to *E.coli* levels. The city filters two outfalls prior to discharge into Lake Superior through its City Center BioRetention Cell (map 2) with engineered substrate to filter sediment from a large area of Highway 2 and nearby residential properties. A second outfall, St Claire Stormwater Basin and Swale (map 3), filters stormwater through substrate prior to discharge via a swale near Kreher Park. No bacterial testing of these systems has been done and the CBAP will monitor these outfalls. Two other outfalls receive no treatment before discharge into Lake Superior. The 6th Avenue outfall (map 4) drains a large area of residential, commercial, and downtown property. It is near a wastewater lift station where odors have been reported. The 22nd Avenue outfall (map 5) is closest to Maslowski Beach and drains one or two blocks of Highway 2 and some commercial property. Finally, Bay City Creek will be sampled. It is a tributary running through most of the urban area and flows between Kreher Park and Bayview Beach. No testing has ever been done at the mouth of this stream to determine its potential impacts on those beach areas.

Northland faculty and tribal partners are familiar with reporting requirements to the EPA and current with the American National Standard Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs ANSI/ASQC E4-1994. Northland College’s laboratory has been state-certified for water testing since 2004 when faculty worked in collaboration with the University of Wisconsin-Oshkosh to perform beach testing under a Wisconsin DNR contract.

The following schedule of project activities details the steps to be taken and milestones to be achieved to complete this project in a timely and cost-effective manner.

Project Activity	Date
Develop QAPPs for all sites and submit to EPA for review and approval	April 2010
Conduct bacterial monitoring 1-2x per week and following rain according to procedures outlined in QAPP at 5 lakeshore outfalls in City of Ashland	April-Nov. 2010
Conduct bacterial monitoring 1-2x per week and following rain according to procedures outlined in QAPP at 4 beaches on Red Cliff Reservation	April-Nov. 2010
Conduct bacterial monitoring 1-2x per week and following rain according to procedures outlined in QAPP at 4 beaches on Bad River Reservation	April-Nov. 2010
Analyze water samples at EPA-certified lab at Northland College from all collection sites in accordance with QAPP	April-Nov. 2010
Analyze data, assess beach health, and make recommendations to appropriate tribal health departments of appropriate management measures to address community health and bacterial impairments/sources	April-Nov. 2010
Complete routine On-Site Sanitary Survey forms in accordance with EPA guidelines at 4 beaches on Red Cliff Reservation	April-Nov. 2010
Complete routine On-Site Sanitary Survey forms in accordance with EPA guidelines at 4 beaches on Bad River Reservation	April-Nov. 2010

Complete Annual Sanitary Survey at 4 locations on Red Cliff Reservation	Summer 2010
Complete Annual Sanitary Survey at 4 locations on Bad River Reservation	Summer 2010
Final Progress Report to EPA	January 2011
Present Final Project Report to City of Ashland and Red Cliff and Bad River tribal communities at an Environmental Open House	February 2011

The CBAP has kept cost effectiveness in mind in developing project plans. In working with Northland College’s faculty and at the state-certified lab, the tribal partners reduce expenses and maximize effective response times for water sampling analysis. Similarly, close networks between the college, tribal natural resource teams, and municipal partners enable the group to share trained student fellows who can perform tasks at multiple sites.

Communication Plan: The following list outlines the plan for distributing project results to interested and affected parties.

1. Northland College will write a summary report of the goals and accomplishments of the project and submit it to target audiences by February 28, 2011.
2. The CBAP will produce print media and distribute it to community members through newspapers, electronic bulletin boards, and other outlets on an ongoing basis about the project activities and findings.
3. Northland College will post the summary report on the CBAP Web site/blog.
4. Northland College will send an email to CBAP distribution lists about the report’s availability.
5. Northland College will send a summary report to the Wisconsin DNR Office of Great Lakes, governor, state congressional leaders, federal officials, and Great Lakes Collaboration Team.
6. Dr. Gorman will give a report at the Great Lakes Beach Association Conference in 2011.

This Project as a Model for Others: Collaboration models like the CBAP can be an effective and efficient means of eliminating barriers to achieving beneficial environmental outcomes for Great Lakes restoration initiatives. The work that this partnership is doing in the Lake Superior Basin, sharing resources and networking, can be used as a model in other communities.

Outreach to Community: Chequamegon Bay Area Partnership members have a demonstrated track record of providing effective environmental education and outreach to the regional community for more than 30 years. Northland College’s Sigurd Olson Environmental Institute has provided 35 years of environmental programming, which include community education, environmental conservation, and research through presentations, media broadcasts, and informational materials. Natural resource departments of the Bad River and Red Cliff reservations educate tribal members about the health risks of nonpoint pollution and other potentially negative environmental impacts through public information presentations, including annual Environmental Open House events, media outlets, and informational materials. City of Ashland staff members work closely with civic leaders, businesses, landowners, and county land and water conservation and health departments to inform the community about the risks of nonpoint source pollution through public information channels, media outlets, and informational materials and signage. In partnership, these groups can bring lessons learned from this project to the broader regional community.

9. **Outcomes, Outputs, and Expected Results:** Nonpoint pollution effecting beach health may come from livestock waste or human waste entering tributary systems, and urban sources of nonpoint pollution have not been effectively identified or managed to reduce impacts on Lake Superior waters

and community health. With funding and focused intervention by the members of the Chequamegon Bay Area Partnership, these issues can be effectively and efficiently remedied.

Technical Merits to Our Approach: the following table outlines the CBAP members’ approach towards improved health and safety of swimming beaches in Chequamegon Bay.

CHEQUAMEGON BAY AREA PARTNERSHIP PROJECT PERFORMANCE MEASURES (TABLE 1)			
OUTPUTS	OUTCOMES		
<i>Project Results</i>	<i>Year 1 Environmental Results</i>	<i>Watershed Health Indicators</i>	<i>Economic and Environmental Impacts on Lake Superior</i>
Quality assurance project plans developed, outlining project objectives	Quality data collection to address public health concerns	Increased public enjoyment and safety of nearshore areas	Baseline <i>E.coli</i> levels established as indicators of beach health at 8 tribal swimming beaches
Bacteria monitoring conducted at 8 tribal beaches and 5 urban outfalls	Improved protection of public health at Lake Superior beaches through using analytical data, posting bacterial warnings, and coordinating with tribal and public health departments	Increased public awareness of nonpoint source pollution affecting Lake Superior and associated prevention/remediation strategies	Reduction of bacterial contaminants
On-site surveys completed at 8 previously un-surveyed beaches	Timely communication to beach users, community members, and managing organizations to increase awareness of beach health and inform decision-making about reducing beach contamination		Reduction of beach closures improve tourism economy for City of Ashland
Annual beach surveys completed at 8 previously un-surveyed beaches			
Results of bacteria monitoring and assessment and sanitary surveys communicated to health departments and beach users			
Beach sand groomed and aerated at previously identified impaired locations.	Beach advisories/closures and <i>E.coli</i> density reduced		

The CBAP will quantify the benefits of the Beach Sanitary Surveys Project that address nonpoint pollution in the Chequamegon Bay watershed by assessing beach health through water quality via bacterial testing and by documenting the beach surveys. Trained staff at Northland College and the natural resources departments on the Bad River and Red Cliff reservations will conduct the bacterial sampling. Northland faculty members will oversee the analysis in the college’s state-certified laboratory. Water sampling will occur at targeted beaches and outfalls once or twice per week and following significant rain during the recreational and primarily ice-free season of April through November. Frequency of testing will be site-specific and based upon QAPP and dictated by findings of contaminants. For example, the finding of *E.coli* would dictate more frequent sampling.

Beach surveys will follow EPA protocols outlined in the Great Lakes Regional Collaboration Clean Beaches Initiative and include baseline data collected on site. Water sampling protocol will be according to Wisconsin DNR recommendations. At the start of the collecting season, personnel will be trained in collection and processing of water samples and interpretation of quantitrays. Northland College has a state-certified laboratory for water testing, and refrigerators, incubators, and quantity sealers are monitored regularly to ensure proper functioning. Beach water samples will be collected at the knee-deep level, 6 to 12 inches below the water surface in sterile 100 ml containers. Outfall water will be collected directly from the outfall in sterile 100 ml bottles. Samples will be labeled, iced, and processed in the lab within five hours of sampling. In the laboratory, water samples will be mixed with Colilert media (IDEXX), sealed in quantitrays, and then incubated at 35°C for 24 hours. The trays will then be evaluated for color change and fluorescence that indicate the presence *E. coli* and compared to a standard chart to determine MPN. The MPN is equivalent to bacterial CFU, and these numbers will be recorded in a CBAP database for analysis and inclusion in a final report.

To directly address known bacterial impairments, we propose to purchase a small self-propelled beach cleaner that will work effectively on the narrow beaches along the south shore of Lake Superior. The City of Racine, Wisconsin, successfully conducted research finding that deep grooming without leveling beach sand significantly reduced bacterial density. Results of the Racine program (http://www.glsocities.org/BP_RacineBeaches.htm) in 2003 resulted in a 30 percent reduction in dry weather advisories/closures compared with 2002. Equipment will be selected that can be easily transported to other sites, has a short turning radius, and has interchangeable screen frame sizes. We will use a covered utility trailer and truck with a dump box to transport the unit to multiple community beaches in the region. The beach season will be launched with a community-based volunteer event to clear beaches of larger debris left from winter and spring runoff. Northland will work with the Chamber of Commerce and citizen groups to make this a public education event demonstrating beach health and cleaning practices. The sand groomer will till the top four inches of sand to reduce bacterial density. Maslowski, Kreher, and Bayview beaches in the City of Ashland are targeted for this initial effort, but the portability of this grader device makes it ideal for use at neighboring communities throughout the season. Working collaboratively with the Superior Watershed Partnership and the City of Marquette, Michigan, Northland College will conduct a special event on five beaches in Michigan to demonstrate the benefits of beach grooming and other best management practices for the broader Lake Superior Basin.

Expected results from this project will include: (a) established baseline *E.coli* pathogen levels for eight previously un-surveyed tribal community beaches; (b) eight on-site and annual beach surveys at Chequamegon Bay beaches; (c) improved analysis and investigation of source contamination for three known impaired beaches in the City of Ashland; (d) improved understanding among community members and key stakeholders of the causes of nutrient-related nearshore biological impairments; (e) planning for better beach management decisions; and (f) remediation of *E.coli* on area beaches through improved sand aeration. We also anticipate improved protection of public health, specifically at tribal community beaches that have not been previously assessed/surveyed for risk. This project also demonstrates the efforts of several partner agencies across diverse communities working together to approach beach health and nonpoint source pollution from a holistic watershed approach to beach management. All of these results are tied directly to the goals and purposes of the Great Lakes Restoration Initiative's Action Plan (Draft 2009), which the EPA developed with the assistance of 15 other federal agencies to make restoration of the Great Lakes a national priority. Data and results will be shared with regional partners and through a communal

database. The CBAP members will also post findings on their community Web site: www.cheqbaypartners.wordpress.com. The project has the following evaluation measures.

CHEQUAMEGON BAY AREA PARTNERSHIP EVALUATION MEASURES (TABLE 2)				
Output	Evaluation	Instruments	Measures to Track Progress	Use of Data to Improve Ecosystem
Completion of sanitary beach surveys	Are there unacceptable sources of pathogenic risk to these beaches? Are there unacceptable sources of contaminants or sediments to beach waters?	Follow existing EPA guidance on conducting sanitary beach surveys	Completion of on-site and annual beach surveys at the following 8 previously un-surveyed beaches in Chequamegon Bay: 1) Marina Beach; 2) Chicago Beach; 3) Raspberry Beach; and 4) Eagle Bay Beach on the Red Cliff Reservation and 5) Mouth of Bad River; 6) Madigan Rd; 7) Waverly Rd; and 8) Sand Cut on the Bad River Reservation	Surveys used to identify potential sources of contamination Data and analysis used to inform the public about sources of pollution impacting Lake Superior CBAP works towards holistic watershed approach to beach management
<i>E. coli</i> sampling	Are levels of <i>E. coli</i> indicating a public health issue may be occurring?	Water samples drawn at 8 tribal beaches and 5 city outfalls 1-2x/week during the ice-free months of April-November 2010 Samples analyzed at Northland College Northland faculty report results to CBAP	Collect and analyze 90% of <i>E. coli</i> data for 8 beaches surveyed Collect and analyze 90% of <i>E. coli</i> data for 5 lakeshore outfalls	Data used to improve protection of public health on Lake Superior beaches
Beaches groomed	Is grooming effective as a management tool?	Count/ number of days of <i>E. coli</i> advisories	Reduce advisories by 30% at previously impaired beaches	Data used to support beach management strategies

Cooperative agreements developed as a result of this proposal may include development of a Quality Assurance Project Plan. Northland College and partners are familiar with the QAPP format and are prepared to formalize plans for this project once it has been selected. Other reporting requirements required by the EPA will be incorporated into Northland's operational plans, and managed by the CBAP program manager. Environmental data to be collected for this project has been carefully

evaluated and measures designed to dove-tail with complimentary projects in the Lake Superior Basin so that results can be disseminated to other researchers and professionals.

- 10. Collaboration, Partnerships, and Overarching Plans:** Northland College is a founding member of the Chequamegon Bay Area Partnership (CBAP), a collection of regional state, federal, tribal, county, city, and non-governmental agencies combining efforts to address ecological challenges along the south shore area of Lake Superior. These partners have worked collaboratively to develop this proposal with Northland College's Sigurd Olson Environmental Institute serving as the lead applicant to the EPA for this project proposal. Members within this partnership that we identify as potential sub-awardees include the Bad River Band of Lake Superior Chippewa, the Red Cliff Band of Lake Superior Chippewa, and the City of Ashland. Members of the CBAP have been meeting monthly at Northland's Sigurd Olson Environmental Institute (SOEI) since June 2009 to plan conservation and restoration activities in the Chequamegon Bay watershed. Other members of the CBAP who are not potential sub-awardees of this grant include the Ashland County Department of Land and Water Conservation, Bad River Watershed Association, Bayfield Regional Conservancy, City of Ashland, City of Bayfield, Iron County Department of Land and Water Conservation, Northwoods Cooperative Weed Management Area, U.S. Fish and Wildlife Service, U.S. Geological Service, University of Wisconsin Extension-Basin Education, and Wisconsin DNR. The CBAP membership is diverse and continues to grow.

Northland College will provide overall management and oversight of the grant, hiring a project manager to oversee activities, sub-awards, contracts, and compliance assurance to complete quality and timely project elements. The CBAP members who are potential sub-awardees of a grant have contributed to the planning of this proposal. The CBAP members who will provide on-the-ground leadership of project activities pertaining to each key person's/agency's area of expertise include Leadership staff for this project include: Tracey Ledder, Natural Resources Director, Red Cliff Reservation; Naomi Tillson, Water Resources Specialist, Bad River Reservation; Jason Ritter, Environmental Specialist, Bad River Reservation; Alyssa Core, Environmental Projects Coordinator, City of Ashland Engineering Division; Dr. Wendy Gorman, Professor of Biology, Northland College; and Grant Herman, Director, Sigurd Olson Environmental Institute, Northland College (Attachment 1: Critical People and Curriculum Vitae).

Northland College will be fiscally responsible for the project through its Business Office. Northland's current annual operating budget is \$14,176,061. The SOEI Program Director, Mike Gardner, will be responsible for reporting and compliance to the EPA for this project. Mike will work with CBAP members and all regulatory entities necessary to procure the permits and permissions needed to complete the projects within the timeframe outlined in Section 8 of this proposal. Several of the regulatory entities involved in the projects are represented within the CBAP membership, and Northland College has more than 30 years of productive experience in working with these organizations.

Voluntary Cost- Matching Funds: Voluntary (i.e., non-federal) matching funds for this project are listed on the budget worksheet in Section 12 of this proposal. Some CBAP members have provided have provided a portion of this funding. Voluntary match for this project demonstrates a broad base of support for the implementation and success of this project and the confidence of the collaborative partners and community of this project's relevance to the environmental outcomes for the region. Matching contributions will be documented by the project's program manager working with the team members and documenting compliance and quality assurance in quarterly reports to the EPA. Our

tribal partners who are potential sub-awardees are contributing in-kind equipment rental matches for the beach surveys. They will be contributing boat and trailer rental and camera and GIS equipment use based on an estimated and reasonable rental fee of \$99 per week.

Sub-awards and Contracted Services: Any contracts for goods or commercial services will be made post award in compliance with federal standards. Competitive bidding for goods and services will occur in accordance with the timelines listed in Section 8. Northland College is a 501(c)(3) non-profit institution. Sub-awards made to other partners will be made in compliance with OMB 40CFS 30 and 31 as applicable to each sub-awardee’s status as a non-profit or governmental institution.

Guiding Principles/Overarching Plans: The motivation behind the development of the CBAP was to gather the numerous environmental organizations in the region to work together to restore and protect the unique natural resources of the Lake Superior Basin in northern Wisconsin. The CBAP’s guiding statement is “to improve the ecological, economic, and social fabric of the Chequamegon Bay region of Lake Superior through a collaborative natural resource decision-making and implementation team.” Overarching plans that have guided the development of proposed project activities and to which our project’s outputs and outcomes are tied are listed in the following table.

CHEQUAMEGON BAY AREA PARTNERSHIP GUIDING PRINCIPALS/OVERARCHING PLANS (TABLE 3)	
Guiding Document/Plan	Relevant Principle/Goals/Objectives
Great Lakes Regional Collaboration Strategy (12/2005) www.glrc.us/strategy.html	<u>Coastal Health</u> <i>Goal:</i> by 2020 or sooner, eliminate inputs of untreated or inadequately treated human and industrial waste to Great Lakes basin waters... <i>Goal:</i> achieve a 90-95 % reduction in bacterial, algal, and chemical contamination at all local beaches. Steps to achieve this include: identify indirect pollution sources, educate communities regarding their environmental impact, remediate all potential indirect pollution sources. <i>Goal:</i> at local level, individual contamination events will occur no more than 5% of available days per bathing season, sources of contamination will be identified through standardized sanitary surveys, and remediation measures in place to address these events.
Great Lakes Restoration Initiative Action Plan (Draft 12/2009) www.greatlakesrestoration.us/action/wp-content/uploads/glri_action_plan12032009.pdf	<u>Nearshore Health and Nonpoint Source</u> Goal 2: Manage land use, recreation, and economic activities to ensure that nearshore aquatic, wetland and, upland habitats will sustain the health and function of natural communities.
Integrated Resource Management Plan for the Bad River Reservation (Implemented 2/2001)	Goal: Maintain and improve the health of ecosystems within the reservation while providing resources at a sustainable level of harvest. Goal: Maintain, restore, and enhance native fish communities. Goal: Maintain diverse plant and animal communities through ecosystem management strategies, including threatened and endangered resources.
City of Ashland Comprehensive Plan www.ci.ashland.wi.us/node/407	Objective 1.3: Preserve, protect, restore, and enhance natural resources related to Ashland’s coastal area. Objective 1.4: Ensure safety and quality of city drinking water, groundwater aquifers, and Lake Superior.

<p>Ashland County Land and Water Conservation Plan (Draft 2009)</p>	<p>Goal 1: Protect and enhance the quality of Ashland County’s surface and ground water resources. Objective A: Reduce nonpoint source pollution and environmental risks to water quality in agricultural, rural-residential, and urban situations. Objective B: Identify and reduce point source pollution originating from industrial, urban, and rural settings. Goal 2: Conserve and enhance the soil and terrestrial resources of Ashland County. Objective A: Encourage good stewardship of public and private forest lands, open spaces, and wetlands.</p>
<p>U.S. EPA 2009-2014 Strategic Plan and Update (9/2008) www.epa.gov/ocfo/plan/2006/goal_4.pdf</p>	<p>Sub-Objective 4.3.3: Improve the health of the Great Lakes ecosystem through stemming the invasion of new aquatic species, leading the call to action for improved habitat protection and restoration, and pursuing improved beach health management.</p>
<p>Lake Superior Area Management Plan (2008) www.epa.gov/greatlakes/lamp/lis_2008/index.html</p>	<p>Strategic Outcome 1: Ensure that diverse, healthy, and self-sustaining native plant and animal communities exist. Strategic Outcome 6: Strengthen and broaden partnerships among natural resource management and environmental agencies. Strategic Outcome 8: Coordinate Lake Superior Basin management at government scales and implement at watershed scales. Strategic Outcome 9: Restore air and water quality and conserve soils and water quantity.</p>
<p>Great Lakes Regional Collaboration Clean Beaches Initiative www.gllrc.us/initiatives/beaches/CleanBeachesInitiative.html</p>	<p>Resource documents and guidance for partners on completing beach surveys, sample surveys for partners, and other relevant tools for clean beach initiatives.</p>
<p>EPA Beach Sanitary Survey Guidance www.epa.gov/waterscience/beaches/sanitarysurvey/pdf/survey-annual.pdf</p>	<p>Annual Sanitary Survey forms and EPA guide to be used in this project.</p>
<p>Wisconsin’s Great Lakes Strategy (2009 Update) www.dnr.state.wi.us/org/water/greatlakes/wistrategy/GLStrategy2009_final_wcov.pdf</p>	<p>Wisconsin Strategy: Work with local governments and the Wisconsin Department of Commerce to reduce biological contamination from nonpoint sources of runoff by identifying barriers to county implementation of regulations to protect public health; encouraging innovative approaches to system design to adapt to local conditions; supporting maintenance and expansion of bacteriological monitoring of waters, including tributaries; and supporting Best Management Practices that include riparian, floodplain, and wetland restoration.</p>

Restoration Potential and Identifiable Impairments: Proposed activities offer effective solutions to known impairments through beach surveys, water quality sampling, and citizen education, resulting in improvement to the hydrology of watersheds. (See Great Lakes Regional Collaboration

Strategy, 12/2005.) Proposed activities also target LaMP Strategic Outcome 8: coordinate Lake Superior Basin management at government scales and implement at watershed scales and Strategic Outcome 9: restore air and water quality and conserve soils and water quantity. The CBAP members are also working to support Sub-Goal 1: support, develop, and implement ecologically based integrated watershed management plans within the Lake Superior Basin.

The EPA has called for improved beach health management in the 2009 update of its strategic plan, improved health of the Great Lakes, and activities that reduce the erosive potential of surface water and degradation of wetlands and build capacities to support water quality regulation and standards especially among tribal communities. (See Sub-Objective 4.3.3, U.S. EPA 2009-2014 Strategic Plan and Update, 9/2008.) Our projects address these priorities along the Lake Superior Coastal Plain by providing beach surveys, water sampling and monitoring, and remediation of known impairments in the Chequamegon Bay region with a partnership approach. Proposed activities follow the EPA’s Beach Sanitary Survey Guidance listed in Table 3.

Support for Project Activities: The Chequamegon Bay Area Partnership reflects the shared view that each organization, and citizen, will be more successful in meeting the environmental challenges and priorities of the region working together. The Partnership includes members of local governments, landowners, non-profit advocacy groups, higher education institutions, federal and state regulatory and conservation departments, tribal nations, and individual citizens. The momentum and membership for this Partnership is growing since it began in summer of 2003 as group of agencies working together to restore a section of impaired estuary in Bayfield County. Lake Superior is an important contributor to the regional economy, as the counties of this area are not prosperous, and the residents currently experience the second highest rate of unemployment in the state. Environmental protection of the region is a high-priority concern for local governments, tribal communities, business owners, and residents whose livelihood depends on an active tourist trade and concurrent quality of natural resources. The CBAP members solicited feedback from the area community in October, 2009 through a community forum, hosted by Trout Unlimited and UW-Extension at the Northern Great Lakes Visitor Center in Ashland, Wisconsin. At that forum, feedback was solicited from more than 60 participants. CBAP also hosts a website, <http://cheqbaypartners.wordpress.com> where information can be shared with the area community about events and resources pertaining to the Partnership and the Great Lakes Restoration Initiative.

11. Programmatic Capability and Past Performance: Northland College and its collaborative partner organizations within the Chequamegon Bay Area Partnership have successfully managed and completed multiple federal and state grants and cooperative agreements with superior performance. The following table displays a chronological list of federal- and state-funded grants and cooperative agreements similar in size, and relevance to this project that were awarded to the **Northland College** within the past 3 years:

Year	Title	Grantor
2009-current	Strengthening Institutions: Title III	U.S. Department of Education
1992-current	Lake Superior Bi-National Forum, LaMP Implementation	GLNPO EPA, Region 5 GL97558401-0; GL97558401-0; GL96554101-0; GL 96599501-0; GL 96599501-1
2008-09	Regional Collaborative for Sustainability Education	USEPA

2006-2008	Bay City Creek Estuary Project	Cooperative Agreement No. 30181-6-J164 (U.S. Fish and Wildlife Service Coastal Program-Great Lakes)
2003-2006	Whittlesey Creek National Wildlife Refuge Ecological Restoration	Cooperative Agreement No. 301813J141 (U.S. Fish and Wildlife Service)
2002-2004	Great Lakes Forest Ecosystems Health Indicators	USEPA No. GL-87583001-0

Some of the listed grants/cooperative agreements are active/current and in good standing. Completed agreements met all compliance requirements of the funding institution. Northland College and the Sigurd Olson Environmental Institute have complied with all federal and state reporting requirements in excellent standing, and appropriately managed cooperative agreements through sound management protocols. Documentation of outputs and expected results has been provided to funders through reporting schedules and forms including the QAPP as required by the cooperative agreements.

Northland College's longstanding history in environmental stewardship in the Lake Superior Basin, and its environmental outreach arm of the College, The Sigurd Olson Environmental Institute, lends itself to a role of member and facilitator for the growing group of environmental agencies, tribes, cities, and local governments forming the Chequamegon Bay Area Partnership. Northland College has a long-standing history of partnership with the US EPA. In addition to hosting the U.S. coordination for the Bi-National Forum since 1992, Northland was the first college to participate in the EPA Region 5 Environmental Compliance Audit program in fall 2008. This groundbreaking pilot project identified hazardous chemicals on campus and information discovered will help define handling practices for other campuses. In 2009, Northland successfully hosted the first Midwest Regional Collaborative for Sustainability Education Workshop. This initiative was funded in part with an EPA Environmental Education grant.

The Sigurd Olson Environmental Institute: The Sigurd Olson Environmental Institute, founded in 1972, is home to the collective environmental outreach programs of Northland College. The College and the Institute both challenge students and the broader community members to think critically about the long-term sustainability of Lake Superior by examining the issues of toxins and bioaccumulation, habitat sustainability, and invasive species from environmental, social, and economic perspectives. Participants interact with a variety of experts in field experiences that represent these various perspectives and understand the complexities of a particular issue firsthand. Staff and faculty members also help program participants learn to evaluate skills and transfer them into their home communities to take action concerning critical social and environmental issues. Northland College and the Sigurd Olson Environmental Institute have more than 35 years of experience providing innovative solutions to environmental problems by working in partnership with our students and faculty, community members, businesses, and organizations. Selected community partnership projects include:

Program/Projects	Description
Lake Superior Bi-National Forum	Northland has served as the headquarters for EPA's sponsored U.S. Bi-national forum for 19 consecutive years. This program grew out of the International Joint Commission's recommendation that Lake Superior be a demonstration area where

	no point source discharge of any persistent toxic substance is permitted.
LoonWatch	Since 1978, conducts a broad-based citizen monitoring program at more than 300 lakes annually, with more than 400 surveys collected/tabulated. LoonWatch staff work closely with the Wisconsin DNR loon research program to collect data from these surveys for dissemination to the scientific community.
Restoration and Urban Forestry	Citizens of the Chequamegon Bay community have hired staff to design and plant native gardens at community and business properties. The Institute has also partnered with municipal partners to develop award-winning urban forestry programs – winner, 2006 award from Wisconsin Urban Forestry Council.
Estuary Restoration	Institute staff are currently working with local governments, cities, and landowners, developing estuary restoration and conservation plans in Fish Creek, Bay City Creek, Bear Trap Creek, and along the Brule River – covering over 600 acres.
Great Lakes Forest Ecosystems	With EPA funding support, from 2002-2004, Institute established a network of agencies, individuals, and organizations to determine criteria and indicators necessary and sufficient to measure the health of Great Lakes forests.

12. Budget:

		TOTAL	Non-fed match	EPA Funds
PERSONNEL				
	CBAP Principal Investigator (Dr. Wendy Gorman,) (4 hr/wk @ \$34/hr for 8 months)	\$4,352.00		\$4,352.00
	Northland College CBAP Student Lab Fellow (hourly) (\$9.36/hr x 30 hrs/week April – November (36 wks)	\$10,109.00		\$10,109.00
	Northland College CBAP Student Beach Staff (12) (\$9.36/hr x 100 hrs total ea June – September)	\$11,232.00		\$11,232.00
	CBAP Beach Groomer Operator (hourly) (equipment operation \$20.hr x 600 hours)	\$12,000.00		\$12,000.00
	CBAP Program Manager, Mike Gardner (10% of \$75,000 annual salary for 100% grant)	\$7,500.00		\$7,500.00
	CBAP Coordinator, (5% of \$35,600 annual salary for 100% of grant)	\$1,700.00		\$1,700.00
	CBAP Business Office Administrator (2% of \$49,725 annual salary for 100% of grant)	\$994.50		\$994.50
SUBTOTAL		\$47,887.00		\$47,887.00
Fringe (Disability, Health and Life Insurance)				
	CBAP Principal Investigator 29.7%	\$1,293.00		\$1,293.00
	CBAP Program Manager, Mike Gardner 29.7%	\$2,227.00		\$2,227.00
	CBAP Coordinator 29.7%	\$505.00		\$505.00
	CBAP Business Admin 29.7%	\$295.00		\$295.00
SUBTOTAL		\$4320.00		\$4320.00
Total Personnel Expenses:		\$52,207.00		\$52,207.00
TRAVEL (mileage @ \$0.50/mile)				

	Mileage to worksites:	\$320.00		\$320.00
	For water sampling (10 mi/day x\$.50 x8mos NC staff x 1-2 x per week)			
	Mileage to community beaches/	\$1,000.00		\$1,000.00
	Hauling sand grader equipment to beaches 2,000 miles per summer x \$.50/mile			
SUBTOTAL		\$1,320.00		\$1,320.00
EQUIPMENT (items costing \$5,000 or more per unit of life)				
	Sand Grader/Beach Cleaner	\$46,000.00		\$46,000.00
	Refrigerator for storing media	\$1,000.00		\$1,000.00
	Autoclave for sterilizing quantitrays	\$10,000.00		\$10,000.00
	Sealer for sealing quantitrays	\$4,500.00		\$4,500.00
	Covered Utility Trailer for sand grader	\$12,000.00		\$12,000.00
SUBTOTAL		\$73,500.00		\$73,500.00
SUPPLIES				
	Colilert snap packs (3 boxes of 200)	\$1,560.00		\$1,560.00
	Quantitrays (6 packs of 100)	\$660.00		\$660.00
	Sterile vessels (3 boxes of 100)	\$270.00		\$270.00
	Waders (3 each)	\$90.00		\$90.00
	Viewing cabinet (1 each)	\$200.00		\$200.00
	Temperature probe (3 each)	\$600.00		\$600.00
SUBTOTAL		\$3,380.00		\$3,380.00
CONTRACTUAL (in compliance with competitive procurement standards)				
	Vehicle lease/Truck to pull sand grader (6 month lease)	\$4,800.00		\$4,800.00
SUBTOTAL		\$4,800.00		\$4,800.00
OTHER SUB-AWARDS (in compliance with 40 CFR parts 30 and 31 as applicable)				
Chequamegon Bay Area Partner Sub-awards				
EPA funds will be used to fund partner's project activities listed in this proposal that are provided by partner organizations including:				
	Bad River Band of Lake Superior Chippewa (for water sampling and Beach Surveys)	\$19,536.00	4,435.00	\$15,101.00
	Red Cliff Band of Lake Superior Chippewa (for water sampling and Beach Surveys)	\$19,536.00	4,435.00	\$15,101.00
	City of Ashland (for outfall sampling assistance)	\$603.00		\$603.00
SUBTOTAL		\$39,675.00	\$8,870.00	\$30,805.00
INDIRECT				
	Northland College Indirect Costs (50% of personnel)			

SUBTOTAL		\$26,103.50		\$26,103.50
GRAND TOTAL				
	Total Voluntary Non-Federal Cost-Match	\$200,985.50	\$8,870.00	\$192,115.50

13. ACORN Statement: Northland College and the partner organizations involved in the Chequamegon Bay Area Partnership that may receive sub-awards are not affiliated with the Association of Community Organizations for Reform Now (ACORN) or any of its affiliates, subsidiaries, or allied organizations and are therefore not subject to any prohibition from the EPA to receive federal funds through grants.

14. Attachments:

- Attachment 1: Critical People and Curriculum Vitae
- Attachment 2: Letters of Support
- Attachment 3: Maps of Project Area
- Attachment 4: Scientific Reference Materials