



Grant Proposal Cover Sheet

Submitted to Environmental Protection Agency, Great Lakes National Program Office
January 28, 2010

1. **Funding Opportunity Title and Number:** Great Lakes Restoration Initiative EPA-R5-GL2010-1
Focus Area: Habitat and Wildlife Protection and Restoration
Program: I.D.4. Restoring Great Lakes Habitats

2. **Name of Project:** Chequamegon Bay Area Partnership Habitat Restoration Project

3. **Point of Contact:**
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4. **Type of Organization:** College or University

5. **Proposed Funding Request:** \$251,414.31

6. **Project Description:** The Chequamegon Bay Area Partnership (CBAP), a collaboration of educational staff, tribal agencies, local citizens, natural resource agencies, and local governments, through lead applicant, Northland College, will restore and protect fish and other aquatic organism habitat in tributaries of the Chequamegon Bay watershed of Lake Superior. Projects reduce erosion and sedimentation through proper design and replacement of degraded culverts and will restore connectivity of tributaries to the lake by removing structural impediments to fish and other aquatic organisms. This proposal incorporates planning, design, implementation, and monitoring of fish and aquatic organism passage.

7. **Proposed Location:** The proposed project will be carried out in the Chequamegon Bay area of Lake Superior in northern Wisconsin in of Ashland and Iron Counties, Wisconsin. (See Map 1, Attachment 3: Maps of Project Area.) The project will involve two watersheds in the Lake Superior Basin: Beartrap-Nemadji Watershed HUC code 0401030 and Bad-Montreal Watershed HUC 04010302 and tribal lands of the Bad River Band of Lake Superior Chippewa.

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 reduce erosion and sedimentation and restore connectivity of fish and other aquatic wildlife habitat in upland tributaries located in the Chequamegon Bay watershed of Lake Superior. Approximately one quarter of Lake Superior's U.S. coastal wetlands (Maynard and Wilcox, 1997; Minc and Albert, 2006; WDNR, 1991) and one fifth of its nearshore waters (Edsall and Charlton, 1997) are in the Chequamegon Bay/Apostle Islands region. Chequamegon Bay is one of two areas in the U.S. waters of Lake Superior with self-sustaining populations of the lake sturgeon endemic to the Great Lakes (Auer, 2002) and one of two such areas that continues to support large populations of walleye, that once were abundant in all of the lake's large embayments (Hoff, 2002). Habitat loss, particularly that caused by nonpoint source pollution, is one of the greatest threats to aquatic ecosystems in the Chequamegon Bay area (Ebner, 2007). In addition to sturgeon and walleye, other nearshore fish species impacted by nonpoint source pollution include brook and brown trout, yellow perch, northern pike, and smallmouth bass (Bronte *et al*, 2003; Devine *et al*, 2005).

The Chequamegon Bay and its tributaries provide exceptional spawning beds for many of Lake Superior's migratory (anadromous) fish species. Several of the area's streams are listed by the Wisconsin Department of Natural Resources (WDNR) as Outstanding Resource Waters (ORW) and a majority are designated on the Northern Rivers Initiative for their outstanding ecological, recreational, and cultural values. According to the WDNR, the Chequamegon Bay watershed is home to a myriad of sensitive fish and wildlife species (including the lake sturgeon, coaster brook trout, and piping plover). However, many of these streams have seen substantial degradation, including sedimentation and structural impediments from the cumulative effects of human practices and land uses. Perched road culverts within significant streams that provide critical habitat for "species of greatest conservation need" disrupt the ecological functioning and migratory patterns of anadromous sensitive species (including the coaster brook trout and lake sturgeon) that rely on high-quality clear water streams and connectivity of habitat for seasonal spawning from Lake Superior. CBAP proposes to reduce sedimentation and restore passage to spawning grounds by replacing and/or modifying targeted culverts in both Ashland and Iron Counties, areas where sensitive species are currently located according to WDNR fish biology surveys, and natural habitat has been disrupted by human barriers. Proposed work also includes restoration of riparian buffer along targeted tributaries to reinforce ecological resilience and reduction of erosion that has been identified as a significant contributor to ecological disruptions in the Bad River and Marengo waterways (Ledder, Tracey: Bad River Band of Lake Superior Tribe of Chippewa Indians: Non-Point Source Assessment Report, August, 2006). Finally, the proposed activities include monitoring of nutrients and sediments in significant tributaries flowing into Lake Superior at the Kakagon Sloughs. The Kakagon Sloughs provide the Bad River Reservation with a significant source of wild rice and this area is the largest fully-functioning estuarine system in the upper Great Lakes. Restoration work on culverts and riparian zones upland of the Sloughs will attempt to slow the flow of sediments and nutrients that are collecting in the major tributaries of the Marengo and Bad River sub-watersheds. Monitoring these flows will be an important part of this restoration effort and will assist CBAP members in planning future work in the region.

U.S. EPA 2009-2014 Strategic Plan Objective 4.3.3 recognizes the role of the EPA in "leading the call to action for improved habitat protection and restoration." According to the Wisconsin

Department of Natural Resources, Lake Superior's Coastal Plain is home to a myriad of sensitive species that have the opportunity for better protection in the relatively pristine watersheds of the region. The coaster brook trout, piping plover, lake sturgeon, and freshwater mussels live in these tributaries, or spawn in the shallow waters here. The Chequamegon Bay, hosts the only shallow fishery on the U.S. side of Lake Superior, and offers a unique opportunity to preserve a fragile ecosystem unlike any other in the eight Great Lake states. According to the Nature Conservancy (2002), the watershed that feeds Chequamegon Bay includes nearly one million acres, more than any other single watershed on the southern shore of Lake Superior. More than 57 fish species live in this Bay.

The Kakagon/Bad River Sloughs within the Chequamegon Bay watershed is the only remaining location where wild rice can be found in abundance on Lake Superior. Of all the streams within the Bad River Watershed, the Marengo River and Beartrap Creek are the most impacted by non-point sources of pollution (Ledder, Tracey: Bad River Band of Lake Superior Tribe of Chippewa Indians: Non-Point Source Assessment Report, August, 2006). The Bad River Tribe has determined that Beartrap Creek is only partially supporting its potential due to degradation from bacteria, nutrients, low dissolved oxygen, and sediments. Beartrap Creek is a major tributary entering the Kakagon Sloughs, which supports the wild rice beds. More than 20,000 pounds of rice are harvested annually here by the Native American community, and the tributaries running into the sloughs are of significant importance to the tribal community. One of the EPA's Strategic Targets is to improve water quality in Indian country at not fewer than 50 baseline monitoring stations by 2012. This target is referred to as SP-14. One of the Bad River Tribe's SP-14 sites is located along Beartrap Creek (at County Road A). This site was selected due to the data collected through the Tribes Clean Water Act Section 106 water quality monitoring program that documented nutrient inputs exceeding federal standards. The proposed project will focus on continuation of the nutrient study along Beartrap Creek with the addition of studying sediment loading and impacts in the creek. Data collected through this project can be used to evaluate the success of remediation implemented upstream in the Beartrap by the Land and Water Conservation Departments. Though the Lake Superior Coastal Plain is rich in natural resources, it hosts one of the poorest communities in the state where unemployment rates of 10.2% (US Dept of Labor, June 2009) are at least one percentage point higher than the US average (9.7% for the same month). Most people living and working in the three counties that surround the Chequamegon Bay are employed by the fisheries, tourism industry, or connected with natural resources of the watershed. Everyone depends upon the clean waters of Lake Superior for their livelihood in some form. Small improvements to the ecosystem here will yield big results.

Strategic Approach: This project focuses on reconnecting biologically isolated segments of significant tributaries within the Chequamegon Bay watershed, ensuring target sensitive species with ingress and egress to Lake Superior's warm and cool-water fisheries during critical spawning periods. Changes in land use and drainage patterns increase seeps and slumps of these soils and contributes massive loads of sand downstream where spawning beds are buried and coastal estuaries become clogged (Schultz, 2007; Shy and Wagner, 2007; Fitzpatrick *et al*, 1999).

The Chequamegon Bay area and its surrounding watershed provides habitat for a substantial portion of Lake Superior's warm and coolwater fisheries (Johnson *et al*, 2004; Ebner, 2007). Its tributary streams provide spawning beds for many of the lake's anadromous fish species (Goodyear *et al*, 1982; WDNR, 2002; WDNR and USGS, 2009). Northland College, Ashland County Land and Water Conservation Department, the Iron County Land and Water Conservation Department, and the Bad River Band of Lake Superior Chippewa's Natural Resource team will work collaboratively with other partners in the region including municipalities, townships, and private landowners to: (a)

remove impediments to fish migration (including perched culverts) in targeted tributaries in Ashland and Iron Counties and impediments including debris and invasive plants, (b) reduce sedimentation by implementing riparian buffer zones, adding ecological resilience and reducing erosion to the targeted tributaries, and (c) monitor the health of the significant tributaries that flow into the Kakogan Sloughs, recording the impacts that restoration brings. The Sloughs are a Wisconsin Coastal Wetland Inventory Priority Site; a Priority Conservation Area by the Nature Conservancy; a National Natural Landmark, named by the National Park Service; a Wisconsin Land Legacy Place; and name a Wetland GE< by the Wisconsin Wetland Association. Water monitoring is critical in significant tributaries, like Beartrap Creek, feeding this estuary. A nutrient study on Beartrap Creek was initiated collaboratively by U.S. Geological Service and the Bad River Tribe in the fall, 2007. This study's purpose was to determine the current nutrient loading in the tributary in order to track changes in nutrient loading over time. Drought conditions have existed in the region during the time of this study which is reflected in the outcome. In 1998, the Bad River Tribe started conducting water quality monitoring at selected sites in the Bad River Watershed, including sites along the Beartrap Creek, but did not address sediment loading. Monitoring is critical to establishing baselines, completing necessary evaluation of the success of habitat restoration efforts, and to pursue targeted strategic planning for the future of this significant area.

Methods: Construction survey and design for the proposed culvert replacements will begin in May 2010 and wrap up with construction implementation in July 2011. Implementation will involve existing partnerships between the County Land and Water Conservation Departments and landowners, townships, Iron County Forestry Department, and the Ashland and Iron Counties Highway Departments. In Iron County, proposed projects include removal of (7) failing and perched culverts where fish barriers exist. Four of these culverts will be replaced with clearspan bridges. The bridge design has been completed by the Iron County Forestry Department and permits have been received from the Wisconsin Department of Natural Resources (WDNR). The Land and Water Conservation Department will work with Forestry to implement the projects. Funding is the limiting factor. In addition, 2 culvert projects will be implemented with the Town of Gurney, a longstanding partner with the county LWCD on similar projects. A construction design has been drafted for one of these projects, both will require permitting and funding to proceed. The final fish passage, culvert project in Iron County is in the Town of Saxon and will need a complete construction, which will begin in May 2010. In Ashland County, proposed projects include replacement of 3 to 5 culverts at identified locations in Beartrap Creek. This project will require a complete construction survey and design, which will begin in May 2010, and construction will be implemented in July 2011. The proposed projects will be implemented through coordinated efforts lead by both the Ashland and Iron County Land and Water Conservation Departments with the partners as identified. Standards applied to these culvert designs include specifications that maintain velocities at/or below 2 c.f.s for structures exceeding 20 feet in length at times of peak runoff events. Structures will be installed with 20% of the pipe embedded , properly backfilled and compacted, and have low side-slopes of 1% or less. Priority will be placed on using bottomless, pipe arches or clear-span bridges where practical and economical. The design will incorporate Best Management Practices for adequate depth and flow for “fish friendly” passage, and engineers will follow both Department of Agriculture, Trade, and Consumer Protection standards and Wisconsin U.S. Fish & Wildlife Service guidance.

Water monitoring will entail operating and maintaining the USGS gauging station currently installed on Beartrap Creek at U.S. Highway 2; collecting composite samples with samples obtained by the automatic stream sampler (ISCO) to be analyzed for nutrients (TKN, N-N, TP) and sediments;

calculating the nutrient and sediment loading at this location; comparing the nutrient loading calculated prior to this project (2007-09) to the loading calculated during this project (2010-11) and writing a complete technical report summarizing findings of this study along with recommendations to address issues identified for future restoration.

Northland College staff and CBAP 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
Iron County LWCD collects bids on Culvert Engineering surveys and designs	May, 2010
Submit procedures to be followed during water monitoring study in a QAPP for EPA review/approval	June, 2010
Initiate permits and equipment/supplies acquisition for culverts replacement and modifications in Ashland and Iron Counties	May/June 2010
Remove degraded and perched culverts, Iron County	June, 2010
Replace Culverts with clear span bridges at Weber Lake, Norman Creek, Turntable Creek, and Boomer Creek in Iron County	July 2010
Replace and modify degraded and perched culverts in Beartrap Creek	June-Sept, 2010
Establish water monitoring protocols with USGS and Bad River Tribe natural resources partners at Beartrap Creek stream gauge, below planned culvert work.	June, 2010
Conduct nutrient/sediment study by operating USGS stream gauge and collecting and analyzing water samples for nutrients and sediments in Beartrap Creek, below restoration sites pre and post restoration work.	June 2010 – July, 2011
Replace damaged culverts at Cameron Road, Sullivan Fire Lane and Barr’s Creek Road in Iron County.	July, 2010
Re-establish Riparian Buffer in targeted streambanks in Beartrap creek	June-Sept, 2010
Iron and Ashland County culvert replacement construction completed	fall, 2010
Riparian Buffer project timetable	
Calculate nutrient/sediment loading for Beartrap Creek	May, 2011
Summarize water monitoring research findings, compare pre-restoration data with post restoration data and make recommendations to address to CBAP partners and key stakeholders for future habitat work in region.	May 2011 through July, 2011
Final Progress Report to EPA	January 2011

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. Water Resources team at the Bad River Band of Lake Superior Chippewa will present water quality findings in a report to environmental committees, and at Bad River Environmental Open House event, providing the community with information about restoration and improvement efforts and impacts on the Kakagon Sloughs, a significant area for this community.

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. Since 1982, the Ashland County and Iron County Land and Water Conservation Departments have successfully worked with local governments, state and federal agencies, non-governmental organizations, educational institutions, and local landowners to provide technical assistance and implement conservation practices. Education outreach and collaboration with other resource management entities is identified as one of the four overarching goals of the department's Land and Water Resource Management Plan. The LWCDs will continue to provide a high level of visibility, educational products, and technical assistance to local governments, conservation partners, and the general public concerning ecosystem function of the watershed including habitat and wildlife restoration and protection.

9. **Outcomes, Outputs, and Expected Results:** Perched culverts that pose structural impediments to migratory fish and other aquatic organisms from moving naturally throughout the tributaries of the watershed will be replaced in Ashland and Iron County. This project supports long-range goals of the CBAP group to re-establish optimal watershed health that promotes self-sustaining native fish and wildlife populations, particularly for sensitive species in the region as identified by the Wisconsin Department of Natural Resources (<http://www.dnr.state.wi.us/org/land/er/wwap/plan>) including anadromous fish indigenous to the Chequamegon Bay. Target species include the walleye, coaster brook trout, and lake sturgeon. Other game fish and wildlife will benefit equally from connectivity of tributary systems. This project proposes to connect disjointed areas of natural habitat for these species.

Technical Merits to Our Approach: the Iron and Ashland County Land and Water Conservation Departments will work with municipal and city governments, highway departments, landowners, and the Department of Natural Resources to plan and implement improvements to road culverts that currently impeded fish and organism passage through the watershed. Perched culverts will be removed and replaced with updated structures, capable of withstanding 100 year flood conditions.

Ashland and Iron County Highway Departments will partner on these projects. Structures will include clear span bridges to ensure that fish passage is not prevented by erosion. Design and engineering will be contracted for bid – with care that design of the replacement structures assures adequate depth of flow during typical seasonal flow fluctuations and conditions. The LWCDs will consult with U.S. Fish and Wildlife Service and other guidance regarding recommendations for fish passage criteria and best practices.

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>
<p>Remove/replace degraded culverts in Ashland and Iron Counties/within Chequamegon Bay watershed to restore connectivity to significant tributaries and promote fish passage for anadromous species.</p> <p>Installation of “fish friendly” culverts in significant streams/tributaries.</p> <p>Improve riparian buffer zone along XX miles of streambank in Chequamegon Bay.</p> <p>Monitor water quality factors including nutrient and sediment loads as indicators of habitat function and watershed health</p> <p>Stream data analyzed for future restoration work, and can be incorporated into other reports such as Tribes NPS Assessment Report/Management Plan and update to Lake Area Management Plan for Lake Superior.</p>	<p>Expand or enhance habitat for sensitive species including coaster brook trout and lake sturgeon in Chequamegon Bay watershed.</p> <p>Riparian zone established in targeted tributaries, providing shelter and protection from erosion, evidenced in reduction of sediments into stream.</p> <p>Education of local governments on techniques and importance of BMPs for culvert placement and road construction/interface with habitat goals.</p>	<p>Reduced barriers to migratory habitat for anadromous fish.</p> <p>Increased presence of fish and other aquatic organisms above previously barred culvert.</p> <p>Nutrient and sediments are positively reduced in watershed as result of restoration efforts</p>	<p>Improved resilience of ecosystem functioning along Chequamegon Bay watershed, evidenced by expanded or enhanced populations of sensitive species such as brook trout – inhabitants of targeted tributaries.</p> <p>Conditions for wildlife improved as a result of habitat restoration.</p>

To directly address ecological functioning of the watershed, we propose to improve riparian buffer zones along streambank, at the targeted restoration sites. We propose to replace 5-7 perched culverts in 2010, enabling ingress and egress for fish and aquatic organism passage, and resumption of natural migratory functions. We propose to monitor sediment and nutrients in the Beartrap Creek

tributary pre- and post- restoration period to better understand the impact of project work and habitat responses. Expected results from this project will include: (a) re-establishment of connectivity of fish and aquatic organism habitat; (b) reduction in sedimentation and improved aquatic habitat through restoration of riparian buffer zone along tributaries; and (c) expanded or enhanced populations of species and “species of greatest conservation need.” 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 of this project will be shared with regional partners and through a communal database. The CBAP will also post findings on their community Web site: <http://cheqbaypartners.wordpress.com/>.

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 dovetail 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 collaboration of educational staff, tribal agencies, local citizens, natural resource agencies and local governments, combining efforts to address ecological challenges along the south shore region 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: Ashland County Land and Water Conservation Department, and Iron County Land and Water Conservation Department. 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 Bad River Watershed Association, Bayfield Regional Conservancy, City of Ashland, City of Bayfield, Northwoods Cooperative Weed Management Area, the Bad River Band of Lake Superior Chippewa, the Red Cliff Band of Lake Superior Chippewa, 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, including 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: Mary Jo Gingras, Iron County Land and Water Conservation Department; Tom Fratt, Ashland County Land and Water Conservation Department; Mike Gardner, Sigurd Olson Environmental Institute, Northland College; and Grant Herman, Director, Sigurd Olson Environmental Institute, Northland College. (Attachments: CVs of critical staff).

Northland College will be fiscally responsible for the project through its Business Office. Northland’s 2009 annual operating budget is \$14,176,061. The SOEI Program Director, Mike Gardner, and the CBAP coordinator 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 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. Ashland County LWCD is accounting for \$25,675.00 in non-federal matching funding for the restoration projects in that county area. These funds come from landowner contributions to the project, personnel match from the LWCD, and from equipment and supplies use from the Ashland County Highway Department. The Iron County LWCD is planning to provide \$18,880 in personnel funding towards these project activities. Northland College is providing match in personnel hours.

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>Habitat and Species: Riverine Habitats and Related Riparian Areas:</u> Long term goals: * lakes, streams, rivers, wetlands, and connecting channels are conserved or restored to ensure their connectivity to floodplains. *Intact stream corridors sustain native and migratory fishes, other aquatic biota, and wildlife. *Barrier-free access to cold and warm water tributary spawning and nursery habitats is sufficient to sustain migratory fishes. *Rivers and streams are adequately buffered to reduce sedimentation and nutrient inflow...
Great Lakes Restoration Initiative Action Plan (Draft 12/2009)	<u>Habitat & Wildlife Protection & Restoration</u> Goal 2: Critical management activities (restoring access of migratory fish species at fish passage barriers...) protect and conserve important fish

www.greatlakesrestoration.us/action/wp-content/uploads/glri_action_plan12032009.pdf	and wildlife populations. This project will help restore fish and wildlife habitat within streams through replacement of perched and failing culverts.
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.
Ashland County Land and Water Conservation Plan (Draft 2009) http://www.ashlandcounty.org/planning/plan.htm	Goal #3: Protect and improve aquatic and terrestrial wildlife habitat in Ashland County. o Objective A: Restore or enhance habitat within and adjacent to lakes, rivers, and streams. o Objective B: Restore, conserve, or enhance wetlands for wildlife habitat and watershed health. o Objective C: Identify, classify, and protect sensitive areas. o Objective D: Develop a comprehensive invasive species management and control program. o Objective E: Maintain or enhance habitat connectivity for terrestrial and aquatic wildlife
Iron County Comprehensive Plan http://www.nwrpc.com/nwrpc/communitydev/other/bycounty/ironcounty/Appendix%20A%20-%20Public%20Participation%20Plan.pdf	Goal: Protect, conserve, and encourage the efficient and responsible management of the unique forest, water, land, and other natural resources of Iron County – work to preserve unique natural resources such as lakes, rivers, streams, etc, throughout the county.
Iron County Land and Water Resource Management Plan (attachment)	Goal 2: Develop long-term strategy to protect and preserve the quality of Iron County lakes and streams...activity #3: seek grants and provide technical assistance to restore fish barriers at critical road crossings.”
U.S. EPA 2009-2014 Strategic Plan and Update (9/2008) www.epa.gov/ocfo/plan/2006/goal_4.pdf	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 <u>improved habitat protection and restoration</u> , and pursuing improved beach health management.
Lake Superior Area Management Plan (2008) www.epa.gov/greatlakes/lamp/lis_2008/index.html	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.
Wisconsin Strategy for Wildlife Species of Greatest Conservation Need http://www.dnr.state.wi.us/org/land/er/wwap/plan/	Species of greatest need listings Superior Coastal Plain Management Opportunities listing
Wisconsin's Great Lakes Strategy (2009 Update) www.dnr.state.wi.us/org/water/greatlakes/wistrategy/GLStrategy2009_final_wcov.pdf	<u>Habitat and Species</u> Restore at least eight tributaries in the combined Lake Michigan and Lake Superior area. Criteria for trib. Selection include: contain structural impediments to fish and other wildlife connectivity along waterways; and headwaters for a watershed identified as providing critical habitat for "species of greatest conservation need."

Restoration Potential and Identifiable Impairments: The U.S. Department of the Interior has designated a section of the Chequamegon Bay, the Kakagon Sloughs, home to many threatened and endangered species such as the trumpeter swan, yellow rail, bald eagle, and wood turtle, as a National Natural Landmark. The Chequamegon Bay hosts more than 2,100 miles of streams, 11,000 acres of lakes and flowages, and nearly 40,000 acres of wetlands. The Bay area harbors 137 different plants and animals and 33 natural communities of special concern according to the Wisconsin DNR. The Bayfield Peninsula and Fish Creek in Ashland County are important stop-overs for migratory birds of prey and songbirds. The U.S. Fish & Wildlife Service has designated habitat in the Bay as critical habitat for the piping plover, a federally endangered species. Forests within this watershed are important for breeding populations of new-tropical migrant song birds, such as the black throated warbler as well as several mammals including the black bear, bobcat, fisher, marten and wolves. In addition to the natural values, the watershed provides drinking water to the communities of Ashland, Bayfield, Mellen, and Washburn, and tribal communities of the Red Cliff and Bad River Bands of Lake Superior Chippewa Indians.

The Ashland and Iron County Land and Water Conservation Departments have identified the significant barriers to fish and aquatic organism passage that are targeted for replacement in this proposed project in 2010. These specific barriers were selected for their restoration potential, potential impact on wildlife, accessibility, and willingness of private landowners to participate in remediation project. For these reasons, these projects can be conducted efficiently with maximum positive impact on the ecosystem in one year.

Support for Project Activities: Both the Ashland and Iron County Land and Water Conservation Departments have already established successful partnerships with local governments, landowners, and municipal groups to identify and develop the scope of these restoration projects. The Iron County LWCD will partner with the Town of Gurney, Town of Saxon, Iron County Forestry Department, Iron County Highway Department, Wisconsin Department of Natural Resources, private landowners and the Natural Resource Conservation Service to coordinate and implement the proposed projects. The LWCD has successful and on-going relationships with each of these partners already established, having worked together in the past on previous projects.

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 **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. 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 Program Manager, Mike Gardner	\$3,750.00		\$3,750.00
	(5% of \$75,000 annual salary for 100% grant)			
	CBAP Coordinator,	\$1,700.00	\$1,700.00	
	(5% of \$35,600 annual salary for 100% of grant)			
	CBAP Business Office Administrator	\$994.50	\$994.50	
	(2% of \$49,725 annual salary for 100% of grant)			
SUBTOTAL		\$6,444.50	\$2,694.50	\$3,750.00
Fringe (Disability, Health and Life Insurance)				
	CBAP Program Manager, Mike Gardner 29.7%	\$1,113.75		\$1,113.75
	CBAP Coordinator 29.7%	\$505.00	\$505.00	
	CBAP Business Admin 29.7%	\$295.00	\$295.00	
SUBTOTAL		\$1913.75	\$795.00	\$1,113.75
Total Personnel Expenses:		\$7,358.25	\$3,489.50	\$4,863.75
CONTRACTUAL (in compliance with competitive procurement standards)				
	N/A			
OTHER	SUB-AWARDS			
	Chequamegon Bay Area Partner Sub-awards			
	Iron County Land and Water Conservation	\$148,880.00	\$16,377.00	\$132,503.00
	Ashland County Land and Water Conservation	\$96,900.00	\$22,287.00	\$74,613.00
	Bad River Band of Chippewa	\$20,995.00		\$20,995.00
	U.S. Geological Service (for water monitoring analysis at Bear Trap Creek)	\$16,600.00	\$38,644.00	\$16,600.00
SUBTOTAL		\$283,375.00	\$38,644.00	\$244,711.00
INDIRECT				
	Northland College Indirect Costs (below federally negotiated rate of 50% of personnel costs)	\$1,839.56		\$1,839.56
SUBTOTAL				
GRAND TOTAL		\$292,572.81		\$251,414.31
Total Voluntary Non-Federal Cost-Match			\$42,153.50	

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: Plans and Guidance: Iron County LWCD Plan.

Works Referenced in Project Description:

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- (Devine *et al*, 2005) Devine, Jennifer A., Schram, Stephen T., Hansen, Michael, J. 2005. A food web analysis of the fishery in Chequamegon Bay, Lake Superior. Wisconsin Department of Natural Resources. Fisheries Management Report 150. Madison, WI.
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- (Maynard and Wilcox, 1997) Maynard, Laurie and Wilcox, Douglas. 1997. Coastal wetlands. Background paper: State of the Lakes Ecosystem Conference 1996. U.S. Environmental Protection Agency Publication No. EPA 905-R-97-015b.
- (Minc and Albert, 2006) Minc, Leah D. and Albert, Dennis A. 2006. Great Lakes Coastal Wetlands: Abiotic and Floristic Characterization. A Summary of Reports Prepared for Michigan Natural Features Inventory. <<http://www.epa.gov/greatlakes/ecopage/wetlands/glc/>; accessed NOV 2009>
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