MINNESOTA'S LAKE SUPERIOR COASTAL PROGRAM

SECTION 309 ASSESSMENT AND STRATEGIES FOR 2011 - 2015

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I. Introduction

Section 309 of the Coastal Zone Management Act (CZMA), as amended in 1990 and again in 1996, established a voluntary grants program to encourage states with approved programs to develop program changes in one or more of the following nine coastal resource enhancement areas:

1. Public access;
2. Coastal hazards;
3. Lake Superior resources;
4. Wetlands;
5. Cumulative and secondary impacts;
6. Lake debris;
7. Special Area Management Plans;
8. Energy and government facility siting; and
9. Aquaculture

This Assessment and Strategy summarizes the MLSCP and the proposed priority enhancement areas. The document follows the required National Oceanic & Atmospheric Administration (NOAA) Office of Ocean and Coastal Resources Management (OCRM) formats.

The Assessment includes:

1. 309 enhancement objectives
2. Resource characterization with qualitative and, when possible, quantitative analyses
3. Management characterization
4. Priority needs and information gaps
5. Enhancement area prioritization

Strategy includes:

1. Program change
2. Needs and gaps addressed
3. Benefits to coastal management
4. Likelihood of success
5. Strategy work plan
6. Fiscal and technical needs
7. 5-year budget summary by strategy

This Assessment and Strategies for Coastal Program Enhancements to Minnesota's Lake Superior Coastal Program (MLSCP) is part of the process to develop a five-year strategy to enhance the effectiveness of the overall program. This document summarizes Minnesota's current Coastal Enhancements Program, the proposed priority enhancement areas, and identifies a set of strategies for action. In the development process to collect data and perform assessment, the MLSCP within the Minnesota Department of Natural Resources (DNR) collaborated with its fellow agencies by participating in existing, technical advisory

committees, interagency meetings, and discussions. Much of the data required for the MLSCP to complete this document was acquired by email requests or downloaded from agencies' web sites, such as:

1. Minnesota Board of Water and Soil Resources (BWSR)
2. Minnesota Pollution Control Agency (MPCA)
3. Minnesota Department of Commerce
4. Minnesota Sea Grant
5. North Shore Management Board (NSMB)

After completing the previous Section 309 Assessment and Strategies document, MLSCP established a Section 309 tracking system consisting of news stories, MLSCP pass-through grant requests, public meetings attended, and its NOAA Coastal Management Performance Measures reporting. While still fine tuning the tracking system, we were able track issues that are important to the coastal communities we serve.

Public review of the draft document was made available on the MLSCP website on October 13, 2010. MLSCP also solicited feedback through the Sustainable Twin Ports listserve, and turned to social media via the MLSCP Facebook® page and Twitter®. A draft version of the document was provided to key partners to solicit feedback well in advance of the public review process. Comments are reflected in Appendix I.

II. Summary of Completed Section 309 Efforts

As a networked program, MLSCP works to provide technical and/or financial assistance to coastal communities to help them reach their goals. In the last five years, MLSCP has provided assistance to address six Section 309 enhancement areas: wetlands, coastal hazards, public access, cumulative and secondary impacts, special area management planning, and Great Lakes resources.

Specific accomplishments in these areas include:

Wetlands

- Educated 10 Minnesota DNR conservation officers on global positioning system (GPS) data collection. Officers continue to use the technology in their work as primary enforcer of the state's Wetland Conservation Act (WCA). Since 2006, an estimated 80 WCA violations have been reported in the four coastal counties.

Coastal Hazards

- Provided technical support to the Town of Thomson, which included map production for its foray into the national flood plain insurance program. In 2010, the Town of Thomson enrolled in the national flood plain insurance program.
- Hosted the area's first erosion forum, which highlighted Minnesota's coastal erosion issues. Thirty-three participants listened to speakers and discussed management techniques. Recommendations are being implemented, as practical, in three townships, two municipalities, and on the Grand Portage Indian Reservation with the support of the Minnesota DNR and BWSR.

Public Access

- Created public access geographic information system (GIS) coverage with hotlinks to photos of approximately 269 public access sites within the coastal boundary. Information about the sites has been reported in the state's Coastal Zone Management Act Performance Measurement System (CZMAPMS).

Cumulative and Secondary Impacts

- Completed the 2007 update of the Silver Bay Comprehensive Plan.
- Served as a technical advisor to two Citizen Advisory Groups in the Town of Tofte, which involved GIS map and data development and providing data and data visualization tools for community planning. The Town of Tofte now has a community-based comprehensive plan (2005), Town Center plan (2006), and new zoning district (2006) which concentrates development along Highway 61 and limits additional linear development.
- Provided technical support to the Tofte-Schroeder Sanitary District, which included database development, GIS map and data development, and providing data and data visualization tools to planning staff. In 2006, the District finalized its Sanitary District plan.

- Supplied data and GIS support to Lakewood Township for its work in revising its comprehensive land use plan. The update was completed in 2008.
- Updated GIS zoning layers and maps for Duluth Township. Duluth Township has since increased its minimum lot size within established sensitive areas and in doing so protected approximately 6.3 acres of wetlands and steep slopes.
- Performed GIS analysis of soil suitability for onsite sewage treatment system (OSTS) replacement on Caribou Lake, a shallow 546-acre lake in Grand Lake Township north of Duluth. Findings were incorporated into the Township's plans for a cluster subsurface sewage treatment system (SSTS) along the northern side of the lake.
- Gathered resource data for a priority lake in Cook County's nine year old lakeshore septic compliance inspection program. Data was instrumental in the completion of approximately 133 inspections.
- Updated proposed service area boundaries and produced maps for planning and public meetings for the Town of Silver Creek. The Town is currently (2010) pursing the creation of a new subordinate sanitary sewer district, which will address the 75% failure rate of OSTS's on 155 parcels.
- Provided technical support to the City of Duluth's Unified Development Chapter/Code (UDC) Technical Advisory Committee (TAC), which involved analyzing the City's shoreline buffer zone maps and refining the Natural Resources Overlay District (NRO) for the City. The final UDC was adopted on August 16, 2010 and became effective November 19, 2010.

Special Area Management Planning

- Served on the Technical Advisory Committee (TAC) for the NSMB, which helped to address six priority projects outlined in the North Shore Management Plan Update (2004). As part of those projects, the NSMB has (1) identified five development nodes (Clifton, Knife River, Schroeder, Tofte, and Lutsen) (2) identified 60 viewsheds along the Highway 61 corridor; (3) hosted a wastewater forum to educate 31 government officials and members of the public on wastewater system alternatives, management, rules, and planning; (4) researched innovative Planned Unit Development (PUD) techniques and strategies; (5) defined a process for developing an erosion hazard area map for the North Shore; and (6) assessed GIS needs and data development efforts along the North Shore.

Great Lakes Resources

- Provided technical support to the Harbor Technical Advisory Committee (HTAC) of the Duluth-Superior Metropolitan Interstate Council (MIC), which included GIS analysis of potential sites for the management and reuse of dredged materials. The prioritized list was forwarded to the US Army Corps of Engineers (Corps) for consideration in the planned Dredge Material Management Plan (DMMP) update.

In addition, MLSCP acquired oblique aerial imagery of the shoreline from Fond du Lac Dam on the St. Louis River to Pigeon Point at the US-Canadian Border in 2007. Over 2,800 continual images of the shoreline were captured with each photograph encompassing an estimated 900 feet of horizontal and 600 feet vertical planar

distances of shoreline. Photographs have been used across a number of enhancement areas for such things as: (1) issuing public water permits that limit impacts to sensitive clay slopes, (2) planning and siting the new Two Harbors marina and access improvements at the McQuade Safe Harbor and Horseshoe Bay, and (3) analyzing density levels in Lake County in conjunction with the County's 2008 "Minimum Area for a Planned Unit Development" flexibility request, which was approved by the NSMB that same year.

III. Assessment

Wetlands

Section 309 Enhancement Objective

Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands.

Resource Characterization

1. Extent, status, and trends of wetlands in the coastal zone.

Wetlands type	**Estimated historic extent** (acres)	**Current extent** (acres)	**Trends in acres lost since 2006** (Net acres gained & lost)	**Acres gained through voluntary mechanisms since 2006**	**Acres gained through mitigation since 2006**	**Year and source(s) of Data**
Tidal (Great Lakes) vegetated	Data not available	1,300				National Wetlands Inventory (NWI) 1970
Tidal (Great Lakes) non-vegetated	Data not available	116,208				NWI 1970
Wetlands	1,589,000	2,045,143	-49.97 +36.38			BWSR WCA permit data (2010 draft)[1] Anderson and Craig 1984 NWI 1970

Notes: [1] BWSR WCA permitting data are presented in a draft version. Numbers reported in this area are for the entire coastal counties of Carlton, St. Louis, Lake and Cook extending outside of the MLSCP boundary. The cities of Duluth and Hermantown reported separately.

2. MLSCP has been using Section 306 pass through grants to update wetlands data in it its program area. While far from complete, one needs to understand that mapping wetlands provides an assessment of wetland quantity at that given time. For this assessment, MLSCP used existing NWI because updated wetland data are not available for the entire MLSCP program boundary. As demonstrated in the table above, updating wetlands data is not an effective measure of wetland trends. Newer mapping technologies are more accurate than previous methods used to map existing wetlands.

The BWSR 2001-2003 Wetland Report identified a statewide net loss of 1,367 (average of 456/year) acres over 2001-2003. Wetland numbers are tallied by counting acres impacted through reported exemptions, regulated impacts, and required mitigation. Nine separate categories of activities are exempt from regulation under WCA. These exemptions make it difficult to track net wetland gains and losses. Exempt activities are legal, and local governments are not required to approve or track exemptions. Local governments do not track data on wetlands lost due to exempt activities.

3. The Minnesota DNR Wetlands Status and Trends Program is an ongoing assessment of the gain and loss of wetland acres in Minnesota. Starting in 2006, the program has been involved in imagery acquisition and interpretation on nearly 5,000 permanent sample plots scattered throughout the state using GIS technology. The 2009 "Wetland Status and Trends Monitoring Program Report" addresses the need for better understanding of the status and trends of Minnesota's wetlands. Northeast Minnesota's Laurentian Mixed Forest is estimated to support 36.5% wetland habitat. Emergent wetlands are found to be the most common class statewide.

As part of the Status and Trends Program, wetland condition was also surveyed over a three year period rotating by eco-region. Using wetland invertebrate communities as an indicator, the study found that 43% of all wetland basins were in "good" condition and 40% "fair". Using plant communities as an indicator, 18% of wetland basins were "good" and 22% "fair".

The report finds that data collected by government and nongovernment organizations are inconsistent and incomplete. Efforts at the federal level are not intensive enough to draw detailed conclusions on the status and trends of Minnesota's Wetlands (http://www.dnr.state.mn.us/eco/wetlands/wstm_prog.html).

4. The Minnesota DNR Wetlands Program was initiated with the passage of the state WCA of 1991. In support of the WCA, the Minnesota DNR has established a wetland review and conservation program to:

- Coordinate the review of wetland replacement plans;
- Provide technical assistance to local governments and landowners in developing wetland mitigation; and
- Promote wetland conservation by providing science-based recommendations in the development of state wetland regulations, programs and policies.

In 2006, state and federal agencies developed "A Comprehensive Wetland Assessment, Monitoring, and Mapping Strategy for Minnesota" making recommendations for a scientific based approach to addressing wetland quality and quantity statewide (http://files.dnr.state.mn.us/eco/wetlands/wetland_monitoring.pdf). Minnesota DNR's Wetlands Status and Trends Program has been involved in collecting statewide sample data to monitor wetland trends in Minnesota since 2006. Results from the complete three year survey were expected to be available in January of 2011, but have been delayed, likely for a few months (http://www.dnr.state.mn.us/eco/wetlands/wstm_prog.html).

5. Direct and indirect threats to coastal wetlands, both natural and man-made.

Type of threat	**Severity of impacts** (H,M,L)	**Geographic scope of impacts** (extensive or limited)	**Irreversibility** (H,M,L)
Development/Fill	L	Limited	L
Alteration of hydrology	L	Limited	L
Erosion	M	Limited	M
Pollution	M	Limited	M
Channelization	L	Limited	H
Nuisance or exotic species	L	Limited	M
Freshwater input	N/A	N/A	N/A
Sea level rise/Great Lake level change	L	Limited	L

6. An existing mapped inventory of the indicated habitat types is summarized below.

Habitat type	**CMP has mapped inventory** (Y or N)	**Date completed or substantially updated**
Tidal (Great Lakes) Wetlands	Y	1970 National Wetlands Inventory **MLSCP 306 Funded updates** Cloquet area (Carlton County) 2008 Duluth area (St. Louis County) 2001 from 1997 imagery Poplar River Watershed (Cook County) 2004 from 1998 imagery Grand Marais (Cook County) 2005 from 1998 imagery Beaver River Watershed (Lake County) 2005 from 1998 imagery Two Harbors area (Lake County) 2005 from 1998 imagery City of Hermantown (St. Louis County) 2003
Beach and Dune	Y	2002 City of Duluth, St. Louis County 2009 EPA and MPCA Beaches program
Nearshore	Y	1970 – NWI 2005 – MN DNR County Biological Survey

MLSCP partnered in an effort to acquire leaf-off imagery. This imagery is part of a statewide effort to map wetlands in Minnesota with a goal to complete wetland mapping within the coastal boundary by 2014 using Legislative-Citizen Commission on Minnesota Resources (LCCMR) funds.

7. Coastal habitat restoration and protection efforts:

Contextual measure	**Cumulative acres for 2004-2010**
Number of acres of coastal habitat restored using non-CZM or non-Coastal and Estuarine Land Conservation Program (CELCP) funds	255 – St. Louis River Inter Lake / Duluth Tar Site
Number of acres of coastal habitat protected through acquisition or easement using non-CZM or non-CELCP funds	10,187 – DNR Fisheries Aquatic Management Areas

Notes: MLSCP does not maintain an active inventory of habitat restoration efforts.

Management Characterization

1. Summary of Minnesota's wetland management approaches:

Management categories	**Employed by state/territory** (Y or N)	**Significant changes since last assessment** (Y or N)
Wetland regulatory program implementation, policies, and standards	Y	Y
Wetland protection policies and standards	Y	Y
Wetland assessment methodologies (health, function, extent)	Y	N
Wetland restoration or enhancement programs	Y	Y
Wetland policies related public infrastructure funding	Y	N
Wetland mitigation programs and policies	Y	Y
Wetland creation programs and policies	Y	Y
Wetland acquisition programs	Y	N
Wetland mapping, GIS, and tracking systems	Y	Y
Special Area Management Plans	Y	N
Wetland research and monitoring	Y	Y
Wetland education and outreach	Y	N

2. Minnesota's wetland regulations were updated in 2007 and 2009. Some of the changes affecting the coastal area require wetland replacement plans of 2.25:1 or 2.5:1 wetland replacement, and water quality treatment areas (e.g. rain gardens, infiltration areas and ponds) are now eligible if they meet criteria. The updates to the state wetland regulations were not CZM driven.

As mentioned earlier, in 2006, state and federal agencies developed "A Comprehensive Wetland Assessment, Monitoring, and Mapping Strategy for Minnesota" that is being implemented, as a non-CZM driven effort. MLSCP used funding to collaborate with a recent effort to acquire high resolution leaf-off imagery to aid in wetland mapping and monitoring.

3. Habitat restoration plans by coastal habitats:

Habitat type	**CMP has a restoration plan** (Y or N)	**Date completed or substantially updated**
Tidal (Great Lake) Wetlands	N	
Beach and Dune	N	
Nearshore	N	
Other (please specify)	N	

Priority Needs and Information Gaps

Gap or need description	**Select type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority (H, M, L)**
Current Wetland Inventory	Data	H
Permit Tracking and Reporting	Data / Capacity	H
MLSCP Staffing	Capacity	H
Centralized Database on Habitat Restoration Projects	Data/Capacity	M - H

Enhancement Area Prioritization

1. The wetland enhancement area has been assigned a medium priority.

MLSCP plans to continue using Section 306 funds and local partnerships to update wetland maps within the MLSCP boundary. Current hydrologic data is needed to allow agencies within the coastal boundary to analyze spatial relationships and potential impact to designated trout waters, and natural and human resource values. Quality data will allow users to identify wetlands at greatest risk and enhance local wetland and watershed management initiatives. The best picture of current wetland inventory can ultimately be obtained from a combination of data analysis and the application of experience and knowledge at the local level. BWSR is the primary agency facilitating the development of comprehensive wetland protection and management plans for LGUs, but their ability to meet the many demands of this task exceeds their available resources.

BWSR is currently evaluating its permit tracking system and process of reporting. LGUs with permitting authority will be required to report on WCA permitting activity directly to BWSR.

BWSR has created the Northeast Minnesota Potential Wetland Mitigation Finder a web based mapping system that helps users locate potential wetland mitigation sites within the affected watersheds (http://www.bwsr.state.mn.us/wetlands/wca/NE_mitigation.html). MLSCP anticipates that changes to the BWSR WCA permit tracking system will improve access to data related to WCA permitted wetland loss or gain and provide a better means for timely access to this information. However, we do not expect this update to fill in the whole complicated picture of changes in wetlands within the MLSCP boundary.

Staffing has been identified as a high level of priority in this enhancement area due to the complexity of management structure and number of involved potential coordinating partners, as well as the technical nature of assistance typically requested in this area.

Minnesota's Lake Superior coast is often regarded as relatively pristine and not in need of habitat restoration projects. For this reason, smaller scale restorations often go unnoticed. Multiple agencies could be working within the MLSCP boundary on restoration projects. However, there is not a centralized database tracking these efforts. As a networked program, MLSCP is usually only informed of restoration and enhancement efforts if a project seeks our grant funding, or requires a Federal Consistency review or a Public Waters permit from the Minnesota DNR.

2. MLSCP will be developing a strategy for this enhancement area to support comprehensive wetland protection and management planning.

The Minnesota DNR is in the process of updating the NWI maps statewide and plan to have updated maps for the Lake Superior area by 2014. Once these data become available, to be useful they will require analysis and application to the decision making process within specific areas of the coastal zone. Wetland mapping and management planning needs exceed Minnesota's projected funding. However, MSLCP is open to collaborating with statewide efforts using Section 306 funding. We are also proposing a Section 309 strategy to collaborate with BWSR to facilitate the update or creation of comprehensive wetland protection and management plans at the LGU level. These important efforts provide the technical support and expertise necessary to enable the LGUs to establish a context and understanding of the wetlands status in their communities allowing them to more successfully assume their responsibilities for implementing WCA.

BWSR is interested in improving its wetland permitting reporting system and database for tracking wetland permitting. The system will include cities and towns which were not required to report under the previous reporting system. MLSCP is currently investigating opportunities to support the database development through our Section 306 grant funding.

Coastal Hazards

Section 309 Enhancement Objective

Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise and Great Lakes level change.

Resource Characterization

1. Level of risk in the coastal zone from the following coastal hazards:

Type of hazard	**General level of risk** (H,M,L)	**Geographic Scope of Risk (Coast-wide, Sub-region)**
Flooding	L	Episodic events in Grand Marais, Duluth, Hermantown
Coastal storms, including associated storm surge	M	Coast-wide
Geological hazards (e.g., tsunamis, earthquakes)	N/A	N/A
Shoreline erosion (including bluff and dune erosion)	H	Coast-wide
Sea level rise and other climate change impacts	L	Coast-wide
Great Lake level change and other climate change impacts	M	Coast-wide
Land subsidence	L	Coast-wide
Rip currents	M	Great Lakes

2. The last shoreline erosion study was completed in 1989. Local decision makers lack confidence in the data accuracy, and perform site visits to make decisions on permits based on visual surveys. Minnesota's coastline is made of steep slopes with clay soils and bedrock. This combination can contribute to flash floods in tributary streams damaging roads, bridges and even whole hillsides. Shallow soils and prominent bedrock features heavily influence streams with surface water creating conditions of very high peak flows and very low base flow conditions which can lead to significant stream bank erosion. Lacustrine red clay soils in Carlton, St. Louis and Lake Counties are prone to erosion and slumping, and are a major source of sediment to the lake. Minnesota Point, a large bay-mouth bar in Duluth, is subject to dune erosion and flooding during high lake levels. Episodic erosion of low-lying also occurs on cobble beaches along the coast.

3. MLSCP has collected oblique imagery of the coast in 2002 and 2007. The imagery has been used to document and draw attention to clay bank erosion, bluff line setbacks and land use changes to name a few. The NSMB is currently studying land use changes by comparing the contrast between 2002 and 2007. The imagery has been used to study and update density requirements in the Lake County zoning ordinance.

In 2006, Minnesota Sea Grant surveyed local beach users about their knowledge and awareness of rip currents. The survey found that while nearly 80% of frequent beach goers had heard about rip currents and could describe how to escape them, only 37% of frequent users knew what a rip current looks like from shore (http://www.seagrant.umn.edu/newsletter/2007/08/frequent_beachgoers_aware_of_rip_currents.html).

In 2008, the Duluth National Weather Service began issuing daily Lake Superior surf zone forecasts for Twin Ports' beaches. Risks for swimmers are rated low, medium or high based on wind direction, speed and wave height (http://www.crh.noaa.gov/dlh/?n=marine).

Minnesota Sea Grant hosted the 2009 Great Lakes Rip Current Conference covering rip current mechanics, physics, outreach, monitoring, data collection and forecasting. MLSCP staff continues to serve on the workgroup formed from the 2009 Great Lakes Rip Current Conference. In 2010, the workgroup developed a flag system for public safety, a volunteer monitoring system and safety workshops. Warning flags and technical support were provided using Section 306 funding under outreach and education.

4. With financial assistance from MLSCP, the NSMB is currently working a project that compares 2005 oblique shoreline photography with 2007 oblique shoreline photography. The project will also look at land use patterns and changes to land use. Data created in this project will be used in the update to the NSMP.

FEMA flood plain mapping and flood insurance updates and mapping efforts are just beginning the update process in the coastal area. The Town of Thomson recently enrolled in the flood insurance program.

5. Number of communities in the coastal zone that have a mapped inventory of areas affected by the following coastal hazards.

Type of hazard	**Number of communities that have a mapped inventory**	**Date completed or substantially updated**
Flooding	8	FEMA Flood plain data. St. Louis County Town of Canosia 1992, Town of Duluth 1992,Town of Lakewood 1992, City of Hermantown 1981, Town of Midway 1992, Town of Rice Lake 1992, City of Proctor 1989, City of Duluth 1992 http://www.fema.gov/cis/MN.pdf
Storm surge	0	
Geological hazards (including Earthquakes, tsunamis)	0	
Shoreline erosion (including bluff and dune erosion)	13	1989 for Cook, Lake and St. Louis Counties
Sea level rise	0	
Great lake level fluctuation	0	
Land subsidence	0	

Management Characterization

1. Approaches employed by the state:

Management categories	**Employed by state/territory** (Y or N)	**Significant changes since last assessment** (Y or N)
Building setbacks/ restrictions	Y	N
Methodologies for determining setbacks	Y	N
Repair/rebuilding restrictions	Y	N
Restriction of hard shoreline protection structures	N	N
Promotion of alternative shoreline stabilization methodologies	Y	N
Renovation of shoreline protection structures	Y	N
Beach/dune protection (other than setbacks)	Y	N
Permit compliance	Y	N
Sediment management plans	Y	N

Management categories	**Employed by state/territory** (Y or N)	**Significant changes since last assessment** (Y or N)
Repetitive flood loss policies, (e.g., relocation, buyouts)	Y	N
Local hazards mitigation planning	Y	N
Local post-disaster redevelopment plans	Y	N
Real estate sales disclosure requirements	N	N
Restrictions on publicly funded infrastructure	Y	N
Climate change planning and adaptation strategies	N	N
Special Area Management Plans	Y	N
Hazards research and monitoring	Y	N
Hazards education and outreach	Y	N
Other (please specify)		

2. Significant changes are pending with the update of the state's shoreland rules (Minnesota Rules 6120.2500-3900). In 2007 Minnesota legislature initiated the current statewide Shoreland Rulemaking Project which is currently in progress.

Counties will be required to manage shoreland of public water basins ten acres or larger. Cities without shoreland ordinances that annex county shoreland must adopt a compliant shoreland ordinance for their management within one year on annexation. Ordinance flexibility will be expanded to allow public values driven collaborative track for local governments that have incorporated natural resource, open space and recreational goals into their comprehensive plans along with a natural resource priority map for their jurisdiction.

The Shoreland Rules Update is not a CZM driven process. When adopted, counties and cities in Minnesota's coastal zone will be required to update ordinances that influence coastal hazard management categories. The adoption of the State's updated shoreland rules will also be addressed through SAMPs.

On August 11, 2010, Governor Tim Pawlenty returned the draft shoreland conservation rules to the DNR for further engagement and discussion, especially with the 2011 Legislature. The Governor's letter noted that many of the draft rule provisions can be implemented by local units of government in the absence of formal rulemaking by the DNR, and he encouraged the DNR and all local units of government to work together in areas where additional regulations will achieve desired goals. The election of a new governor in 2011 is certain to influence this process.

When implemented, the updated shoreland standards will address coastal hazards related to erosion by providing special protection through increased shoreline setbacks, bluff setbacks, prevent alterations to topography, altering bluff vegetation, provisions for shoreland revegetation, stormwater standards, larger lot sizes and maintaining natural shorelines.

3. Numerically based setback or buffers to direct development away from hazardous areas.

Contextual measure	Number of communities
Number of communities in the coastal zone required by state law or policy to implement setbacks, buffers, or other land use policies to direct develop away from hazardous areas.	27 - Carlton, Cook, Lake and St. Louis Counties
Number of communities in the coastal zone that have setback, buffer, or other land use policies to direct develop away from hazardous areas that are more stringent than state mandated standards or that have policies where no state standards exist.	27 - Carlton, Cook, Lake and St. Louis Counties

Priority Needs and Information Gaps

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
Erosion hazard location	Data	H
Elevation data (LiDAR)	Data	M
Erosion rate	Data	H
Oblique coastline imagery	Data	H
Erosion policy	Policy	H
MLSCP Boundary Change	Regulatory/Policy	H
Erosion outreach and education	Outreach & education	M
Climate change	Data	H
Climate change	Outreach and education	H
MLSCP Staffing	Capacity	M
Contractor Training	Erosion hazard minimization training	M

Enhancement Area Prioritization

1. The coastal hazards enhancement area has been assigned a high priority.

Minnesota's coastal communities need better coastline data to implement local ordinances. The last erosion study was completed in 1989. Recent development pressure has challenged building setback requirements and the 1989 data. Minnesota needs to establish recession rates and replace the 1989 data to help developers and local communities make decisions that will avoid future issues related to coastal hazards.

Most of Minnesota's coastal communities do not have flood plain maps or data available. Where the data does exist, it is out of date, inaccurate, and inaccessible for most. Northeast Minnesota is scheduled to acquire LiDAR data in spring 2011. The arrival of this data will open the door for future floodplain mapping for Minnesota's coastal zone.

Collection of oblique coastline imagery in the spring of 2012 will provide a valuable tool for coastal managers. Oblique imagery collected in 2002 and 2007 have uses in identifying coastal hazards, assisting in permitting activity, wetland enforcement, and public access improvement projects. Managers will be able to identify new erosion problems quickly by comparing the past images.

One identified need is an update to the MLSCP boundary. In phase 1, the Nemadji River watershed is suggested as one area for possible inclusion. This area is particularly subject to clay bank erosion and currently efforts to address this cannot be funded by MLSCP. The majority of work to address problems to date in this watershed has focused on private landowners. An addition of the Nemadji River watershed has the potential to allow for improving erosion hazards through addressing high-sediment yields within the watershed via MLSCP grant funding and technical assistance. Changes to the MLSCP boundary are further addressed under the Cumulative and Secondary Impacts section.

Erosion policies and outreach and education programs are in place at the county level. In the past, MLSCP used Section 306 funding to partner with outreach and education projects at the county level. As erosion policies are updated, LGUs will need to update outreach and education materials.

The North Shore Management Plan defines areas where shoreline recession exceeds one foot per year as an erosion hazard area. Erosion rates need to be reestablished to help manage areas prone to coastal Hazards related to tributary and Lake Superior shoreline erosion. This could be accomplished by establishing benchmarks and monitoring on a yearly basis. Addition data and resources could be used to support coastal erosion monitoring; 2012 coastal oblique photography, shoreline LiDAR data and high resolution aerial photography.

Need for MLSCP staffing capacity in this area is expected to increase as developments currently underway such as implementation of shoreland rules, potential changes in our boundary and the availability of more resources and initiatives related to climate change in the Lake Superior basin become more fully developed.

Climate data gap analyses are needed for the MLSCP program area. Ideally, climate data would be centralized or indexed to help coastal managers access key data related to climate change. There's an emerging need for outreach and education on availability, proper application and interpretation of climate data. Once climate change data are accessible, coastal managers will be able to develop outreach and education materials that are current and relevant to Minnesota's Lake Superior coast which differs significantly from other coastal areas in climate change response.

2. MLSCP will not be developing strategies for this enhancement area.

The biggest needs for coastal communities are quality coastal hazard data to update the NSMP and support existing ordinances. MLSCP will coordinate with program partners to address data needs through its Section 306 pass-through grant programs.

Erosion policy can be addressed by adopting Minnesota's Shoreland Conservation Rules at the local level. MLSCP plans to facilitate erosion policy updates through its pass-through grant program. This will allow LGUs the flexibility of adopting policy changes on their schedule. Outreach and education material updates will likely happen through MLSCP's Section 306 pass-through grant program.

Climate change data and outreach and education needs will be addressed through MLSCP's Section 306 grant programs and staff technical assistance.

Public Access

Section 309 Enhancement Objective

Attain increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value

Resource Characterization

1. Threats and conflicts to creating and maintaining public access in the coastal zone:

Type of threat or conflict causing loss of access	**Degree of threat** (H,M,L)	**Describe trends or provide other statistics to characterize the threat and impact on access**	**Type(s) of access affected**
Private residential development (including conversion of public facilities to private)	M	Sale of city, county and state public land. State land exchanges with private landowners.	Beach, hiking, hunting, berry picking
Non-water dependent commercial/industrial uses of the waterfront (existing or conversion)	M	Resort/Commercial developments	Trail, beach, hiking, bicycling, swimming, surfing
Erosion	M	Rising number of projects designed to reduce the impact of lateral access to resources along the coast and tributaries feeding into Lake Superior	Hiking, beach, scenic views
Sea level rise/ Great Lake level change	M	Lower water levels affecting marinas and boat access	Boating
Natural disasters	L	Wildfire, flooding, tornado, severe storms	Camping, hiking, boating,
National security	L	Unaware of loss of access	
Encroachment on public land	L	Posting public land as no trespassing	Hunting, hiking
Sale of municipal park land	M	City of Duluth sold Park Point land. The city has considered selling other city owned property	Beach

2. Emerging public access issues include the poor economic climate. It has forced state, county and municipal governments to consider selling public land. A recent sale of public park land on Duluth's Park Point has raised concern for preservation of public land in the city. Some people view the abundance of public land in Minnesota as a tax burden on LGUs.

3. Perception of adequate public access by user groups:

Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	
Number of people surveyed that responded that public access to the coast for recreation is adequate or better.	
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	
What was the geographic coverage of the survey?	
In what year was the survey conducted?	

The MLSCP survey meant to report the percent of the public that feels they have adequate access to the coast for recreation purposes has not been completed. A summary of recent similar surveys that capture public perception by user group can be found in Appendix II. MLSCP has endeavored to coordinate with parallel efforts to prevent survey fatigue and duplication. Progress toward a coordinated survey is continued in Number 4.

4. In 2008 Minnesota passed the Clean Water, Land and Legacy Act, setting aside 14.25% of funds generated from a 3/8% increase in sales tax. The Legislature requested the development of a Park and Trail Legacy Plan to provide strategies to address needs for state and regional parks and trails. The Center for Changing Landscapes (CCL) at the University of Minnesota is creating a context for planning and funding decisions for natural resource-based parks and trails in the State of Minnesota for the next 25 years. As part of the project, CCL is compiling an inventory of all natural resource based parks and trails in Minnesota. The study will also analyze park and trail user studies to identify resource issues. MLSCP has shared its public access inventory with CCL to be included in the process. MLSCP is also working to include MLSCP survey needs into this process. MLSCP believes this will reduce a potential duplication of effort while collaborating on a higher profile statewide effort. Online resources for this project are below:

- http://ccl.design.umn.edu/mnpat.html
- http://patl.intergov.mn.gov
- http://www.citizing.org/projects/parkslegacy

In the Northeast Recreation Profile, the CCL compiled multiple recreation based surveys to summarize average frequency of conflict among trail users. Results show that accessibility is almost never an issue (i.e., scoring a 0.46 with 0=Never and 1=Sometimes). Problems found affecting accessibility included shortages of campsites, environmental damage from recreation activity, and noise pollution. Accessibility by user group is broken down by user groups. Results can be found in Appendix II.

5. Public access availability:

Types of public access	**Current number(s)**	**Changes since last assessment (+/-)**	**Cite data source**
Number of acres in the coastal zone that are available for public (report both the total number of acres in the coastal zone and acres available for public access)	MLSCP boundary is 741,916 acres, 343,840 acres are available for public use.	Was not included in the last assessment	2008 GAP Stewardship
Miles of shoreline available for public access (report both the total miles of shoreline and miles available for public access)	209 Miles of Lake Superior shoreline. 141 private 61 miles public 7 miles public islands	Was not part of the previous assessment	2007 MLSCP Public Access Inventory
Number of State/County/Local parks and number of acres	State - 14, 44,283 acres County- 1, 400 acres Local – 74, including more than 11,000 acres	State: No changes, difference in acres from previous A&S due to a query error. County: not counted in previous assessment Local: acres not counted in previous assessment	State Park Administrative Boundary 2010 MLSCP Public Access Data 2001 Lake County Demonstration Forest City of Duluth Draft Recreation Plan 2010
Number of public beach/shoreline access sites	15	0	2010 MLSCP Public Access Data
Number of recreational boat (power or non-power) access sites	Motorized – 24 Non-motorized - 10	Motorized +1	2010 MLSCP Public Access Data
Number of designated scenic vistas or overlook points	29	0	2010 MLSCP Public Access Data
Number of State or locally designated perpendicular rights-of-way (i.e. street ends, easements)	41	Not counted in previous assessment	MN DNR Ownership Data. (adm_fshacqpy3)

Types of public access	Current number(s)	Changes since last assessment (+/-)	Cite data source
Number of fishing access points (i.e. piers, jetties)	6	+1	2010 MLSCP Public Access Data
Number and miles of coastal trails/boardwalks	1,300.2 miles	+48	City of Duluth 2010 SHTA 2010 GGTA 2010 MN DNR 2010
Number of dune walkovers	4	0	2010 MLSCP Public Access Data
Percent of access sites that are ADA compliant access	Unknown		
Percent and total miles of public beaches with water quality monitoring and public closure notice programs	53%, 58.39 mi	0	MPCA and EPA beach monitoring data 2006-2009
Average number of beach mile days closed due to water quality concerns	245	+177	MPCA and EPA beach monitoring data 2006-2009

Management Characterization

1. Public access approaches employed by the state:

Management categories	**Employed by state/territory** (Y or N)	**Significant changes since last assessment** (Y or N)
Statutory, regulatory, or legal system changes that affect public access	Y	N
Acquisition programs or policies	Y	N
Comprehensive access management planning (including GIS data or database)	Y	Y
Operation and maintenance programs	Y	N
Alternative funding sources or techniques	Y	Y
Beach water quality monitoring and pollution source identification and remediation	Y	Y
Public access within waterfront redevelopment programs	Y	N
Public access education and outreach	Y	N

2. As mentioned earlier, Minnesota is currently working on a statewide Park and Trail Legacy Plan. This planning process is not CZM driven. However, MLSCP will continue to provide input and data into the planning process, and use the process to address public access contextual measures. The Park and Trail Legacy Plan will also provide additional funding for public access projects statewide.

Beach water quality monitoring was unstaffed for most of the summer of 2010. MPCA has continued support for monitoring efforts. The lack of data collection for the summer will leave a data gap for 2010. While not a CZM driven effort, MLSCP is a partner in www.mnbeaches.org, which delivers beach advisories to the public.

3. The Minnesota DNR maintains a web site providing information on Outdoor Activities and Places: http://www.dnr.state.mn.us/index.html. From the website, visitors can access online maps (Recreation Compass), buy permits and licenses, access trail reports, search for fishing lakes and fish consumption advisories by lake (Lake Finder).

The DNR also maintains a Public Recreation Information Map series highlighting public lands and recreation opportunities. The maps are updated every three years, and available to the public for a fee. The state also provides free public boat access, snowmobile, ATV, boating, Lake Superior Water Trail, and state park maps. The maps are available at area DNR offices and many are available online.

Priority Needs and Information Gaps

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
ADA compliant access	Data	M
MLSCP Staffing	Capacity	L

Enhancement Area Prioritization

1. The public access enhancement area has been assigned a medium priority.

Minnesota is currently working on developing a statewide Park and Trail Legacy Plan. MLSCP is currently working to provide input into the planning process to ensure that coastal resources are part of the planning process. When complete, MLSCP will use Section 306 funds from its pass through grant program to help state, county and local governments implement the plan.

MLSCP staffing capacity is a lower priority in this area based on its comparative workload in relation to other enhancement areas.

2. MLSCP will not be developing a strategy for this priority area.

Public access can be best addressed through coordination with other entities engaged in the process to identify needs, collect relevant data and support related projects through our Section 306 grant program. Additional funding for ADA compliance is a component of the Clean Water Legacy Act with potential to have a positive impact related to coastal access.

Marine Debris

Section 309 Enhancement Objective

Reducing marine debris entering the Nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris

Resource Characterization

1. Significance of Great Lakes debris and its impact on the coastal zone:

Source of marine debris	**Extent of source** (H,M,L)	**Type of impact** (aesthetic, resource damage, user conflicts, other)	**Significant changes since last assessment** (Y or N)
Land Based – Beach/Shore Litter	L	Aesthetic	N
Land Based – Dumping	M	Financial burden for LGU	Y
Land Based – Storm Drains and Runoff	M	Resource damage	?
Land Based – Fishing Related (e.g. fishing line, gear)	L	Resource damage	N
Ocean Based – Fishing (Derelict Fishing Gear)	NA	Not Applicable	N
Ocean Based – Derelict Vessels	L		N
Ocean Based – Vessel Based (cruise ship, cargo ship, general vessel)	H	Resource damage, user conflicts	Y
Hurricane/Storm	H	Aesthetic, resource damage,	N

2. Lake County has reported a rise in land-based appliance dumping. This could be a result of expensive appliance disposal fees and a recent statewide appliance clunker program.

A current practice in the shipping industry is to wash excess dry cargo residue of the ship deck into Lake Superior. MPCA is currently working on revising requirements for disposing of residue.

3. Great Lakes beach cleanup data are available however MLSCP has not applied the results of cleanup activity to a coastal management task. As a networked program that mainly works as a

financial partner in projects along the coast, most practical application of the data is initiated by program partners.

Management Characterization

1. Marine debris approaches:

Management categories	**Employed by state/territory** (Y or N)	**Employed by local governments** (Y, N, Uncertain)	**Significant changes since last assessment** (Y or N)
Recycling requirements	N	N	N
Littering reduction programs	Y	Y	N
Wasteful packaging reduction programs	Y	Y	N
Fishing gear management programs	Y	U	N
Marine debris concerns in harbor, port, marine, & waste management plans	Y	Y	N
Post-storm related debris programs or policies	N	N	N
Derelict vessel removal programs or policies	Y	Uncertain	N
Research and monitoring	Y	Y	N
Marine debris education & outreach	N	N	N
Adopt a Highway Program	Y	Y	N
Adopt a River Program	Y	Y	N

2. There were no significant changes since the last assessment.

Priority Needs and Information Gaps

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
MLSCP Staffing	Capacity	L
River and Lake Cleanup	Communication and Outreach	M
Statewide Recycling Requirements	Policy and Outreach	M

Enhancement Area Prioritization

1. The marine debris enhancement area has been assigned a low priority.

The framework is in place to address issues related to marine debris at the state, county and municipal levels. A recent beach cleanup effort was coordinated by the Minnesota-Superior chapter of Surfrider. Harbors Friends sponsors frequent beach cleanup events in Grand Marais. The Great Lakes Aquarium sponsors the annual Minnesota Beach Sweep partnered with the Ocean Conservancy for the International Coastal Clean-up.

In general, staff capacity to adequately address all enhancement areas fully is insufficient, but in the need in relation to Marine Debris is comparatively low when compared with other enhancement areas.

2. MLSCP does not plan on developing a strategy for this enhancement area. Effective management, outreach/education and voluntary tools were found to be in place at this time to ensure protection keeps pace with future development.

Cumulative and Secondary Impacts

Section 309 Enhancement Objective

Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources.

Resource Characterization

1. Areas in the coastal zone where rapid growth or changes in land use require improved management of cumulative and secondary impacts (CSI) since the last assessment:

Geographic area	**Type of growth or change in land use**	**Rate of growth or change in land use** (% change, average acres converted, H,M,L)	**Types of CSI**
Entire coastline	Forested to residential and resort/commercial	H	Development in fragile clay soils. Forest fragmentation. Increased impervious surfaces. Development on steep slopes. Ridgeline development. Shoreline development.
North Shore marinas, small craft harbors and protected accesses	McQuade Safe Harbor Protected Access (built in 2008)	11% increase in harbor acreage	Increased nonpoint source pollution from additional impervious surfaces and marina operations

2. Sensitive resources in the coastal zone:

Sensitive resources	**CSI threats description**	**Level of threat** (H,M,L)
Soils	Erosion	H
Trout Streams	Turbidity, temperature and sedimentation. Loss of spawning beds. (degraded water quality)	H
Lake Superior	Coastal erosion, sedimentation and loss of spawning beds. (degraded water quality)	H
Lake Superior Beaches	Bacterial contamination resulting in closures	M
Undeveloped Open Spaces	Development issues increasing impervious surfaces, septic systems, and forest fragmentation	M
Threatened, Endangered, and Special Concern Species	Habitat quality and loss; human-caused impacts	H

Management Characterization

1. CSI approaches:

Management Categories	**Employed by state/territory** (Y or N)	**Significant changes since last assessment** (Y or N)
Regulations	Y	N
Policies	Y	N
Guidance	Y	Y
Management Plans	Y	N
Research, assessment, monitoring	Y	Y
Mapping	Y	Y
Education and Outreach	Y	Y

2. Minnesota is currently working to update its shoreland standards. When adopted, LGUs will be required to incorporate the new standards into their local ordinances. This is a statewide process and not driven by CZM. With the completion of the updated shoreland rules, the NSMB and LGUs will be required to incorporate them into their ordinances. Governor Pawlenty returned the draft shoreland rules in August of 2010. In his letter, Pawlenty noted that many of the provisions can be implemented by local units of government in the absence of a formal rule.

The MPCA updated rules governing subsurface sewage treatment systems (SSTS) in 2008. In 2010, the MPCA proposed amendments to the rules to address legislative changes, clarify rules, and identify new concerns.

St. Louis County is currently working on MLSCP pass-through grant projects using Section 306 funding to create a shoreland owners guide, wetland guide, and videos hosted on YouTube all aimed at helping landowners with issues related to development. MLSCP has also continued its support for lakesuperiorstreams.org website which provides access to data from monitored streams and information about other projects along Minnesota's coast.

Since the previous assessment, many new mapping projects have been completed, started or are planned to take place in the near future. Almost 100% of the MLSCP program area has updated parcel data. In the spring of 2009, Minnesota DNR acquired leaf-off imagery of coastal counties. The imagery will be used to update the NWI. This project was not driven by CZM, but MLSCP did use Section 309 funding to help fund the project. The DNR Division of Ecological and Water Resources is working on updating its protected waters inventory (PWI). Section 306 funding has been used for wind resource and bird migration corridor mapping. Wetland mapping was updated for the Cloquet and Carlton area by the Natural Resources Research Institute (NRRI) as a Section 306 pass-through grant project. Light Detection and Ranging (LiDAR) data for the coastal communities are expected to be acquired in the spring of 2012.

The Natural Resources Conservation Service (NRCS) completed soils mapping for Carlton and St. Louis counties, and similar efforts are in progress in Lake and Cook counties. (http://soildatamart.nrcs.usda.gov).

In 2009, Minnesota reorganized the Land Management Information Council (LMIC) into the Minnesota Geospatial Information Office (MNGEO) (www.mngeo.state.mn.us). MNGEO's mission is to improve services statewide through coordinated, affordable, reliable and effective use of GIS.

Regionally, data and resources are being made available online to communities in the NSMB boundary. The NSMB board and the Arrowhead Regional Development Commission (ARDC) through the North Shore GIS Collaborative worked with communities to create a GIS needs assessment, and inventory. Information and data are assembled at www.ardcgis.org.

Following the update to the NSMP, nine of ten member LGUs have updated their comprehensive plans to incorporate goals outlined in the NSMP. MLSCP staff have provided technical support and provided grants though Sections 306 and 309.

Monitoring of lynx movements via radio-telemetry began in 2003. Extensive additional monitoring has taken place during the period from 2005-2009 contributing to a better understanding of the species within Minnesota (http://www.nrri.umn.edu/lynx/publications/Moen_NRRI_TR_2009_40.pdf). In early 2009, the designation of critical habitat for lynx was revised to include over 8,000 square miles in Minnesota (http://www.fws.gov/mountain-prairie/pressrel/09-10.html). Over half of the critical habitat designated in Minnesota lies within the Lake Superior watershed.

Priority Needs and Information Gaps

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
LiDAR	Data	M
Shoreland Rules Update	Policy	H
Local Ordinance Update	Policy	M
Acquisition Funding for Coastal and Estuarine Lands	Policy and Capacity	H
Clean Marina Certification Program	Capacity and or Training	H
CELCP Project Area Information	Communication & Outreach	H
Coastal Data Organization and Centralized Storage	Communication and Outreach / Data	H
Boundary Expansion Examination	Regulatory/Policy	H
Standardized Pollution Prevention Practices	Policy	H
MLSCP Staffing	Capacity	H

Minnesota has been historically funding the acquisition of lands considered important for their ecological, conservation, recreational, historical and aesthetic value with Section 306A funding. Current property values often exceed available funding. In addition, several LGUs report not having adequate funding alternatives for such lands and are consequently supportive of CELCP planning efforts.

Marina owners/operators throughout the state have expressed interest in developing a comprehensive Clean Marina program that will "create an engaged and informed marina industry that works to establish the best management practices to protect the natural resource environment through a cooperative and positive partnership with all regulatory agencies who oversee that natural resource". MLSCP and representatives from the DNR and MPCA are working closely with the Clean Marina Task Force to assure the program meets the state's regulatory framework, including the marina management measures required under the Coastal Nonpoint Program.

Through its CELCP planning efforts, Minnesota is gathering a tremendous amount of information about "project areas". MLSCP strongly believes this information should be widely available and packaged in a user-friendly manner.

Communities updating plans that address cumulative and secondary impacts often spend valuable human and financial resources on data discovery. A number of larger, centralized and slightly intimidating storage locations exist, but area-specific data is still scattered. Generally, potential users are not aware of its location and possible applications.

The current MLSCP boundary is being suggested for examination due to its current limiting effect on our ability to support management of coastal resources. In light of fragmented political

boundaries and the exclusion of areas known to have a significant contributing effect on the resources our program is meant to address, we feel this is a high priority area for consideration. Potential inclusion of the Nemadji River watershed could be important in light of the effect on St. Louis River Area of Concern and Lake Superior water quality due to its high contribution of sediments to the system. Political entities currently fragmented by the MLSCP boundary make it difficult for LGUs to determine the appropriateness of seeking our assistance for potential projects and limit the relevant projects we can support. Once these initial issues are addressed, we feel it is worthwhile to evaluate the possibility of including the Lake Superior watershed as a whole in the boundary. Better alignment with the divisions created by natural systems could have a potentially significant impact on reduction of cumulative and secondary impacts in the coastal area. Integration of program efforts on a watershed basis is in alignment with the approach being taken by our parent DNR Division of Ecological and Water Resources.

Minnesota has been in the process of detailing and describing standardized stormwater pollution prevention practices in urban areas (e.g., "Stormwater Best Management Practices Manual" and "Minnesota's Stormwater Manual") for the last 10 years. Most recently, the MPCA began developing performance standards, design standards and other tools to enable the implementation of low impact development techniques and started issuing industrial and evaluating practices for industrial facilities. Work in these areas is ongoing.

CSI is a wide ranging topic area that affects the coastal community in myriad ways and crosses over to influence other enhancement areas as well. Many of the important projects in which MLSCP is currently engaged or proposes to work on fall into this category. Uncertain or unavailable funding for the nonpoint source pollution portion of MLSCP has also resulted in work being re-allocated to this enhancement area to address these imperative issues. Several of the outlined strategies fall into this enhancement area and involve time-consuming efforts in the areas of public engagement and policy development. Should the boundary examination strategy result in a decision to increase the program boundary, MLSCP workload will accordingly increase as well.

Enhancement Area Prioritization

1. The cumulative and secondary impacts enhancement area has been assigned a high priority.

Local land use decision and policy-makers are faced with the challenges of managing growth along the coast and preserving their resource base. A network of coordination across agency and LGUs in addressing cumulative and secondary impacts from development is in place, but more financial, legal and technical resources are needed.

2. MLSCP is developing four strategies to address priority needs related to CSI.

- *CELCP Adoption and Implementation:* When fully adopted and implemented, Minnesota's CELCP will provide state and local governments with another tool for protecting important coastal and estuarine areas under threat by conversion and enhance their abilities to make informed decisions that affect these critical areas.

- *Clean Marina Program Adoption and Implementation in North Shore Marinas:* MLSCP is currently working on developing a Clean Marina Program with a number of partners and intends to devote resources over the next few years towards formal program adoption and implementation in two state-owned coastal marinas. These two "clean" marinas will be on the front lines of the state's efforts to prevent and reduce marine pollution as serve as examples for the rest of the state.

- *Boundary Change Examination:* We are proposing a strategy to address the boundary examination in two phases with careful attention to public involvement in the process. If the results of the process lead to further expansion of our boundary we will have the ability to contribute to projects reducing cumulative and secondary impacts in a larger relevant geographic area. Boundary expansion also has the potential possibility of contributing positively to all the enhancement areas by enabling us to allocate work and fund projects on a basis more consistent with ecosystem function and needs of the public and resource managers. NOAA's 312 review of MLSCP recognized the potential benefits of boundary expansion and recommended that we pursue the topic.

- *Strengthen Support for Development of Local Wetland Protection and Management Plans:* This strategy, as described under the "Wetlands" enhancement section, also has potential to impact CSI priority areas, including local ordinance updates and data centralization. The process of incorporating data into local wetland planning through analysis to gain historical perspective and identify priority areas for protection and mitigation is valuable in informing the process of local ordinance updates aimed at reducing environmental degradation associated with development.

Special Area Management Planning

Section 309 Enhancement Objective

Preparing and implementing special area management plans for important coastal areas

> The Coastal Zone Management Act (CZMA) defines a Special Area Management Plan (SAMP) as "a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone. In addition, SAMPs provide for increased specificity in protecting natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence, sea level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision making."

Resource Characterization

1. Geographic areas in the coastal zone subject to use conflicts that can be addressed through special area management plans (SAMP):

Geographic Area	**Major conflicts**	**Is this an emerging or a long-standing conflict?**
St. Louis River AOC	Loss and Degradation of Habitat	Long Standing
Minnesota's North Shore of Lake Superior	Shoreland Management	Long Standing
Duluth Port	Land Use Planning	Long Standing
Lake Superior Basin	Water Management	Long Standing

Management Characterization

1. SAMPs within the coastal zone:

SAMP title	**Status** (new, revised, or in progress)	**Date approved or revised**
North Shore Management Plan	Update Planned	2004
St. Louis Remedial Action Plan	Implementing Plan	1992
Duluth Port Land Use Plan	Implementing Plan	2005
Lake Superior Basin Plan	No Update Planned	2004

2. The NSMB was created in 1987 to develop a plan that results in a uniform set of shore land zoning regulations on Minnesota's Lake Superior coastline. The NSMB is organized through a joint powers agreement between the coastal counties, cities and towns. NSMB, with the ARDC serving as its staff, released an updated North Shore Management Plan in June 2005 funded in part, by CZMA 306 funds. MLSCP provided technical support to the NSMB by providing technical support through the NSMB TAC. The NSMB TAC provided technical guidance on issues ranging from regional priority projects to data needs. MLSCP provided Section 306 and 309 funding to help address regional priority projects which included North Shore node definition, North Shore waste water assessment, viewshed identification, innovative planned unit development research, an erosion hazard area planning definition process, and the North Shore GIS assessment. All six of the regional priority projects will provide the building blocks for an updated NSMP.

The St. Louis River Alliance's, formally the St. Louis River Citizens Action Committee (CAC), mission is to improve the St. Louis River. The Alliance is a key partner in the St. Louis River System Remedial Action Plan (RAP) which was published by the MPCA and the Wisconsin Department of Natural Resources (WDNR). The RAP has identified environmental problems. To address those problems, it has developed 43 recommendations, which are in various stages of implementation.

The Alliance has also developed the Lower St. Louis River Habitat Plan (http://www.stlouisriver.org) which serves as a guide for additional plans addressing resource issue areas in the lower St. Louis River.

The Metropolitan Interstate Council (MIC), with input from the Harbor Technical Advisory Committee (HTAC), implements the Duluth Port Land Use Plan (http://www.dsmic.org).

The Lake Superior Basin Plan documents water management activities for Minnesota's Lake Superior Basin for a five-year period. The Basin Plan was built from local plans and is intended to enhance implementation of locally identified goals, objectives and strategies. Local units of government can use the Plan to obtain technical assistance and grants; state and federal agencies may use the Basin Plan in allocating staffing and financial resources to the Lake Superior Basin.

Priority Needs and Information Gaps

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
Updated State Shoreline Statutes	Regulatory	H
Funding to continue SAMP programs	Capacity	H
MLSCP Staffing	Capacity	M

Enhancement Area Prioritization

1. The special area management planning enhancement area has been identified as a high priority.

Minnesota is waiting for final approval of its draft shoreland standards. When approved, the NSMB and LGUs will be required to incorporate these changes into their ordinances.
The NSMB is working to improve the capacity of local planning and zoning departments through education and innovation. Through MLSCP funded projects (i.e., North Shore node definition, North Shore waste water assessment, viewshed identification, innovative planned unit development research, erosion hazard area planning definition process, oblique imagery comparison, the North Shore GIS assessment and North Shore GIS collaborative), the NSMB is in the position to engage their local governments in land use planning and zoning updates with the best information, and tools in hand. MLSCP has provided Section 306 and 309 funding in support of the NSMP while also provide staff technical support through the NSMB TAC.

Existing SAMPs in within the MLSCP boundary lack the funding needed to update and implement existing plans. MLSCP recognizes the need to support SAMP efforts through Section 306 and/or 309 funding.

MLSCP staffing capacity could allow for further work related to areas that may warrant SAMPs. For example, in the 2006-2010 309 Assessment and Strategy document, a strategy for pursuing the concept of a marine protected area along the North Shore of Lake Superior was included. Due to a reprogramming of program strategies, this project has been put on hold, but has potential to contribute to the protection in particular of Lake Superior shipwreck cultural resources. Additional effort is needed to facilitate such a project and develop partner support. The recent focus on Coastal and Marine Spatial Planning discussed under the Great Lakes resources enhancement area may also lead to an additional interest in the development of SAMPs.

2. MLSCP will not be developing a strategy to address this enhancement area.

A number of area SAMPs are in need of updating. MLSCP recognizes SAMPs within its program boundary as key components in setting work and funding priorities and intends to continue to support these efforts through our Section 306 and/or 309 pass-through grants.

For example, MLSCP could support updating the NSMP to incorporate Minnesota's updated shoreland rules along with the NSMB's six regional priorities. Updating the NSMP will provide a framework for local communities in their shoreland ordinance revisions.

Great Lakes Resources

Section 309 Enhancement Objective

Planning for the use of Great Lakes resources

Resource Characterization

1. Great Lakes resources:

Resource or use	**Threat or use conflict**	**Degree of threat** (H,M,L)	**Anticipated threat or use conflict**
Habitat	Land Use changes	H	Land use changes are creating human and wildlife conflicts.
Species	Aquatic and terrestrial invasive species	H	Loss of habitat for terrestrial and aquatic species affects commercial and recreational fisheries.
Water Quality	Nonpoint source pollution, contaminated sediment, land use changes, vessel pollution	H	Increased number of streams on the impaired list for TMDL.
Shoreline Erosion	Increased impervious surfaces, episodic rain events, land use changes	H	Increased number of shoreline restoration projects.
Ports and Harbors	Dredge material disposal Lower lake levels	H	Conflict with fish industry over disposal sites, lack of dredge material disposal sites. Lower lake levels could increase dredging projects.
Tourism and Recreation	Overuse	H	Park facility expansion, user conflict, site degradation.

2. New exotic species like Asian carp have added to existing concerns over existing invasive species (e.g., zebra mussels, ruffe, spiny tailed water flea, sea lamprey). This combined with recent evidence of viral hemorrhagic septicemia (VHS) in Lake Superior, has increased Minnesota's outreach and education efforts to slow the spread of invasive species and disease.

MPCA is working to resolve proper handling of dry cargo residue disposal. Concerns have been raised over the timing, placement and methods of removing residue from cargo ships in the Duluth harbor and canal. Issues considered include risk to fisheries and habitat, sediment toxicity and accumulation, water column impacts and public perception.

Management Characterization

1. Resource management approaches:

Management categories	**Employed by state/territory** (Y or N)	**Significant changes since last assessment** (Y or N)
Comprehensive ocean/Great Lakes management plan or system of Marine Protected Areas	N	N
Regional comprehensive ocean/Great Lakes management program	N	N
Regional sediment or dredge material management plan	Y	Y
Intra-governmental coordination mechanisms for Ocean/Great Lakes management	Y	Y
Single-purpose statutes related to ocean/Great Lakes resources	Y	N
Comprehensive ocean/Great Lakes management statute	N	N
Ocean/Great Lakes resource mapping or information system	Y	N
Ocean habitat research, assessment, or monitoring programs	Y	N
Public education and outreach efforts	Y	Y
Other (please specify)		

2. As a networked program, many issues related to Lake Superior resources are not CZM driven. MLSCP staff work directly with partner agencies addressing resource issues in an effort to manage gaps and needs.

Minnesota Sea Grant and MPCA have increased efforts in outreach and education related to invasive species, dry cargo residue disposal, and ballast water exchange issues. MPCA manages the Vessel Discharge (Ballast Water) Program and issues ballast water general permits. A list of vessels with permit coverage is available on the MPCA website: www.pca.state.mn.us.

Mechanisms for intra-governmental coordination for Great Lakes management are going to be significantly affected by Executive Order 13547 signed by President Obama on July 19, 2010, which established a national policy for the stewardship of the ocean, coasts, and the Great Lakes. Strategic plans with a focus on governance and coordination are currently being developed by the National Ocean Council (NOC) created under the Executive Order and have the potential to significantly influence the way entities engaged in Great Lakes Resource issues are organized and poised to deliver their services. It will be important for MLSCP to stay engaged in the process and look for opportunities to be involved.

Priority Needs and Information Gaps

Gap or need Description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H, M, L)
Port and harbor mapping	Data	M
Dredge material disposal sites	Capacity	M
Research on long term effects of dry cargo residue disposal	Data	H
Regulation of dry cargo residue disposal	Policy	H
Ballast water exchange	Policy	M
Wind resources	Data	H
Clearer understanding of effects of Executive Order 13547 on MLSCP	Regulatory, policy, training, communication	H
MLSCP staffing	Capacity	H

Enhancement Area Prioritization

1. The Great Lakes resources enhancement area has been assigned a medium priority.

In the area of Great Lakes resources, MLSCP relies on the existing policies of networked partners. In 2007, the Duluth-Superior MIC and the HTAC Dredging Subcommittee published the Erie Pier Management Plan. The Erie Pier Management Plan focuses on transitioning from a confined disposal site to a beneficial processing and reuse site. The HTAC and MIC administer the Duluth-Superior Harbor Dredged Material Management Plan. The MIC is also host to the Harbor Work Program, Duluth Port Land Use Plan (2005), and harbor related research. The Dredged Material Management plan was updated in 2008 to consider potential sites in the harbor for management and reuse of dredged materials with a prioritized list. More information can be found online at http://www.dsmic.org.

Effects from years of sweeping dry cargo residue disposal impacting the lake bottom, and material swept overboard washing up on Duluth, Minnesota and Superior, Wisconsin beaches are unknown. Regulation of dry cargo residue has been reviewed and commented on by MPCA and MLSCP. Despite what are considered accepted practices under current rules, coal debris has been observed washing up on Park Point in Duluth by MPCA staff. MPCA has offered what could be considered a list of BMPs that could be used to reduce the amount of material lost while loading ships.

Wind resource development has mainly occurred in smaller wind generators serving single family homes along Minnesota's Lake Superior coast. Using Section 306 funding, MLSCP has funded a wind resource study that examines the potential for larger wind energy generation. The study found a number of ideal locations for wind turbines that currently do not meet infrastructure needs. MLSCP has also funded bird migration corridor and bat habitat studies to aid in wind energy planning. However, Minnesota currently lacks data related to the potential for off-shore wind farms.

Wind resource data will be important in future marine spatial planning activities. Minnesota's wind resource data will need to be assembled in a central data repository to be made available to coastal managers and the public. MLSCP will work with program partners in delivering available data through the existing Coastal GIS site and work towards inclusion into a coastal atlas. As these activities do not directly result in a program change, MLSCP will look to using Section 306 funding in the delivery of wind resource data.

A major focus of the Final Recommendations of the Interagency Ocean Policy Force, which were adopted as part of the National Policy for the Stewardship of the Ocean, our Coasts and the Great Lakes, is the application of Marine Spatial Planning (MSP) to address conservation, economics, user conflict and sustainable use of the oceans, coasts and Great Lakes. Many aspects of MSP are already incorporated in a myriad of management strategies currently underway in the area, but there will be a renewed interest in redefining and applying this process in a more coordinated manner. As previously stated, it will be very important for MLSCP to remain engaged in the process as the new National Policy is being developed and applied in the Great Lakes region. We see our role as helping to define management schemas presently in place and in informing the process to best serve the Great Lakes coastal communities in Minnesota. As indicated in a study conducted by MRG for NOAA's Coastal Services Center aimed at analyzing stakeholder views in relation to MSP, there is a strong interest in incorporating these efforts into existing frameworks and it is typically at the state level where MSP efforts are currently being driven (http://www.csc.noaa.gov/publications/MSP_Stakeholder_Analysis.pdf). Oftentimes, it is a single issue that forms the basis for current MSP efforts, such as energy facility siting or ecosystem management for the benefit of a particular species of concern. MLSCP believes that it is likely that the scope of MSP will increase under the National Policy to take a more comprehensive view of Great Lakes resources building on the long history of regional management approaches in our area. Key points of the stakeholder analysis included identification of the need for a better definition of MSP and support from federal partners in providing training and information resources to states to equip them to best respond to these emerging management developments.

Staffing capacity will be necessary to allow for the level of engagement required to ensure that MLSCP maintains and strengthens its strong role in Great Lakes coastal management in Minnesota.

2. MLSCP will not develop a strategy for this enhancement area.

Great Lakes Resources are managed by MLSCP program partners and will be significantly influenced by the "National Policy for the Stewardship of the Ocean, our Coasts and the Great Lakes". Available funding under Section 309 does not allow for proposing a strategy that can fully address these issues. Until there is more certainty about the management direction and potential future ways in which we may contribute, we will continue to collaborate where needed using appropriately allocated Section 306 funds and will actively pursue opportunities for engagement and enhancing our skills and knowledge in this area through training and resources that may be offered at the federal level.

Energy & Government Facility Siting

Section 309 Enhancement Objectives

Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be of greater than local significance

Resource Characterization

1. Types of energy facilities:

Type of Energy Facility	**Exists in CZ** (# or Y/N)	**Proposed in CZ** (# or Y/N)	**Interest in CZ** (# or Y/N)	**Significant changes since last assessment** (Y or N)
Oil and gas facilities	N	N	N	N
Pipelines	Y	N	N	N
Electric transmission cables	Y	N	Y	N
LNG	Y	N	Y	N
Wind	N	N	Y	N
Wave	N	N	N	N
Tidal	N	N	N	N
Current (ocean, lake, river)	Y	N	N	N
OTEC	N	N	N	N
Solar	N	N	Y	N
Biofuel	N	Y	Y	Y

2. The Minnesota coastal zone is made up of small communities supported by utility cooperatives serving a largely rural population. In the last five years, most interest in alternative energy solutions have been smaller single home based projects. Interest has grown from smaller home based systems to businesses, schools, and local energy cooperatives.

MSLCP has helped provide Section 306 funding on wind energy facility siting, bat and bird migration corridors. These projects are largely driven by a coastal community's desire to have the data in place for future energy proposals.

In Silver Bay, Section 306 funding is being applied to an eco-industrial park complex which seeks to use a variety of energy alternatives including; wind, solar, and biofuel from wood chips and biodiesel manufactured from green algae.

3. Minnesota's Office of Energy Security tracks in-state capacity, use and demand for natural gas and electricity generation. The 2001 Energy Planning Report cites an energy surplus in 2001 swinging downward to an energy deficit in 2010. Minnesota's larger utility companies acquire energy from outstate sources which made these number hard to predict.

Minnesota has no source of natural gas. Natural gas is delivered from sources in Kansas, Oklahoma, and Alberta Canada. Natural gas is distributed via pipeline. Natural gas use in Minnesota is based on the number of heating days, and severity of winter. In 2001-2002, 63% of Minnesota homes were heated with natural gas (http://www.state.mn.us/mn/externalDocs/Commerce/Energy_Planning_Report_121602022402_2002PlanningRpt.pdf).

4. In 2008, Governor Pawlenty issued an energy incentive and created the Governor's Clean Energy Technology Collaborative. An 18 member group created a Clean Energy Technology Roadmap. This document identifies alternative energy options and identifies issues, research needs, milestones, and sets a timeline to meet the goals identified for each option (http://www.state.mn.us/mn/externalDocs/Commerce/Clean_Energy_Technology_Roadmap_021010103656_CleanEnergyTechnologyRoadmap.pdf).

Rural Energy Development Initiative (REDI) funds are available through The Arrowhead Regional Planning Commission (ARDC) (http://www.arrowheadplanning.org/Default.asp?PageID=569). REDI is a revolving loan fund for community-based wind energy projects.

A Federal option is H.R. 1105: Omnibus Appropriations Act, 2009, which appropriates $72.47 billion for the Department of Energy including energy efficiency and renewable energy projects through guaranteed loans.

5. There have not been any significant changes in the types or numbers of facilities sited in the coastal zone since the previous assessment.

Management Characterization

1. Enforceable policies specifically related to energy facilities are overseen by the Minnesota Public Utilities Commission (PUC).

Public Utility Commissions in Minnesota have authority to site new wind energy facilities. The state level siting approval process supersedes the local approval process. Wind developments fewer than five megawatts is reserved for local jurisdictions, and does not require PUC approval.

Requirements set on closed loop energy systems related to biomass power address distance from fuel to the plant, carbon dioxide emissions must be equal to or less than the amount of carbon dioxide absorbed during the fuel's growing cycle. Municipal waste to energy plants are required to prepare annual fuel plans, wood procurement plan every five years, and follow BMPs for sustainably managed woody biomass.

2. Management categories:

Management categories	**Employed by state/territory** (Y or N)	**Significant changes since last assessment** (Y or N)
Statutes or regulations	Y	Y
Policies	Y	Y
Program guidance	Y	Y
Comprehensive siting plan (including SAMPs)	Y	N
Mapping or GIS	Y	Y
Research, assessment or monitoring	Y	Y
Education and outreach	Y	Y
Other (please specify)		

3. Changes to statutes or regulation, policies, program guidance, and sitting plans are not CZM driven. Effective July 1, 2005, Article 3 of the energy bill S.F.1368 transferred power plant and wind turbine siting, transmission line and pipeline routing authority from the Minnesota Environmental Quality Board (EQB) to the PUC. This law transferred energy facility permitting staff from the EQB to the Minnesota Department of Commerce.

On May 19, 2009, Governor Pawlenty signed Minnesota Law 2009, Chapter 110, which is the Omnibus Energy Policy Bill from the 2009 legislative session. Chapter 110 was the combination of Senate File 550, authored by then Senator Yvonne Prettner Solon, and House File 863, authored by Representative Bill Hilty.

Using pass-through Section 306 grants, MLSCP has partnered with the University of Minnesota Duluth (UMD) and Hawk Ridge in research and mapping projects aimed at reducing the impact of wind turbines as they relate to bird flyways and bat habitat. Data collected in these projects are being used in outreach and education efforts by Hawk Ridge and UMD and are intended to be used to inform facility siting efforts.

REDI is a statewide wind energy project sponsored by the state of Minnesota and the Center for Rural Policy Development. REDI seeks to maximize rural economic development by building renewable energy capacity, expertise, and leadership throughout the state. REDI will provide organization and technical assistance to rural entities seeking to develop wind energy project for the purpose of selling energy to an electric utility.

Priority Needs and Information Gaps

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
Bird Migration Data	Data	M
Elevation Data (LiDAR)	Data	M
Updated local ordinances	Regulatory and Policy	M
Alternative energy education	Communication and outreach	M

Enhancement Area Prioritization

1. The energy and government facility siting enhancement area has been assigned a medium priority.

The MLSCP has found that Energy and Government Facility siting policy and regulation are well covered by state agencies. The MLSCP believes it can best address siting needs by providing technical and financial assistance to its program partners and LGUs for better planning. This means investing limited Section 309 funds into local plans and ordinances, and supporting data acquisition with Section 306 funding through the pass-through grant program.

2. MLSCP will not be developing a strategy for this enhancement area.

MLSCP believes the pieces are in place in energy and government facility siting and sees its partner role as one that can be addressed with pass-through grants in the Section 306 program.

Aquaculture

Section 309 Enhancement Objective

Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable States to formulate, administer, and implement strategic plans for marine aquaculture

Resource Characterization

1. Minnesota DNR supports fish hatcheries in the coastal area at French River, Devils Track Lake, and a walleye rearing pond on Turtle Lake in Cook County. Three private permitted aquaculture ponds exist in MLSCP's portion of St. Louis County. Future expansion of Minnesota's hatcheries within the Lake Superior coastal area (either public or commercial) is unlikely at this time. Recent efforts to cuts costs and privatize certain state hatchery operations have targeted certain state operations for closure.

Two types of aquaculture operations that might be possible on Lake Superior are shore-based facilities with pumped water supplies or net pen operations. Lake Superior's soft, cold water limits the carrying capacity and profitability of rearing units. Extreme winter conditions, ice cover, and moving ice along Minnesota's unprotected coastline limits net pen potential and threatens the infrastructure of potential shore-based operations.

The City of Silver Bay is planning to include an aquaculture operation as part of its eco-industrial park. Initial plans would include the use of Lake Superior water to raise fish with the waste used to make fertilizer and green algae for biodiesel to be used onsite.

Private and public aquaculture facilities currently operating in Minnesota's coastal zone:

Type of existing aquaculture facility	**Describe recent trends**	**Describe associated impacts or use conflicts**
MN DNR French River Cold Water Fish Hatchery		
MN DNR Duluth Area Cool Water Hatchery		
MN DNR Devil Track Fish Hatchery		
MN DNR Walleye Rearing Pond	Accelerated walleye stocking has increased the need for fish-rearing basins.	Introduced fathead minnow for feeding, potential to create a recreational fishing site if public access is available
Three licensed aquaculture ponds		Possible degradation of wetland function.

Management Characterization

1. In addition to internal aquaculture to raise game fish, the Minnesota DNR issues licenses to practice aquaculture on public waters. Waters used for aquaculture are typically impoundments, dikes, ponds, tanks, shallow lakes, and natural or restored wetlands. Activity in these areas maintain stocking programs for game fish utilizing state and privately reared fish while protecting existing natural aquatic habitats and wildlife dependent on them. Baitfish production for and sustainable commercial aquaculture activities are also considered.

Minnesota is a member of the Great Lakes Fisheries Commission. The GLFC is the forum where member states resolve issues, address resource problems, and set resource management frameworks through consensus. The GLFC is also home to the Environmental Assessment Tool for Aquaculture in the Great Lakes Basin (http://www.glfc.org).

Aquaculture approaches employed by the state:

Management categories	**Employed by state/territory** (Y or N)	**Significant changes since last assessment** (Y or N)
Aquaculture regulations	Yes	Yes
Aquaculture policies	Yes	Yes
Aquaculture program guidance	Yes	Yes
Research, assessment, monitoring	Yes	Yes
Mapping	Yes	Yes
Aquaculture education & outreach	Yes	No

2. In 2006, state statutes were updated to insure licensing and enforcement programs were self sustaining. BMPs were developed for aquaculture to ensure long term sustainability of aquaculture activity.

In 2007, statutes were amended to exclude new license for aquaculture activities in a natural water body that has been restored or subject to a protective easement or other interest in land that was at least partially paid for with state or federal money. Before a new a new license can be issued for a natural water body, the applicant is required to notify all property owners with direct access to that water body.

In 2008 Session Law, Chapter 368, Sections 2, 81, mandated that the DNR develop BMPs for aquaculture in Minnesota to ensure the long-term sustainability of both aquaculture and wetland function within the state. In 2010 *Best Management Practices for Aquiculture in Minnesota* was published by Deborah Brister University of Minnesota and Kyle Zimmer University of St. Thomas.

In Minnesota, changes to aquaculture regulations and policies are not CZM driven, or closely monitored for effectiveness by the MLSCP. Education and outreach efforts are being handled by Minnesota Sea Grant (http://www.seagrant.umn.edu/aquaculture).

Since the MLSCP's last Section 309 Assessment, the Minnesota DNR has mapped walleye rearing pond and aquaculture operation locations. Development of aquaculture related data are not driven by CZM funding.

Priority Needs and Information Gaps

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
Transfer of Aquatic Nuisance Species (ANS)	Training	M
Transfer of Aquatic Nuisance Species (ANS)	Communication & Outreach	M
Wetland impact	Regulatory	M
MLSCP Staffing	Capacity	L

Enhancement Area Prioritization

1. The aquaculture enhancement area has been assigned a low priority

The MLSCP believes that aquaculture activities are efficiently permitted and regulated within the state of Minnesota. Pressure to increase operations mainly exists outside of the MLSCP program boundary. The areas of main concern lie in wetland protection and the transfer of ANS. Both these areas are covered by existing permitting, outreach and education, and best management activities.

Staffing capacity for this area is a lower priority need based on the primary pressure to increase operations being beyond our boundaries and the existing mechanisms in place to address the potential impacts within our area.

2. MLSCP will not be developing a strategy to address this enhancement area.

With seven aquaculture operations, the current level of aquaculture management within Minnesota's coastal zone is minimal. Four of the sites are run by the Minnesota DNR, with the other three being small baitfish operations. The MLSCP recognizes that future opportunities exist to collaborate with Minnesota Sea Grant. MLSCP would likely use Section 306 funding through its pass-through grant program to address future aquaculture efforts if the opportunity presents itself.

IV. Strategies

Coastal and Estuarine Land Conservation Program (CELCP) Adoption and Implementation

I. Issue Areas

The proposed strategy or implementation activities will support the cumulative and secondary impacts enhancement area.

II. Program Change Description

A. The proposed strategy will result in, or implement, the following types of program changes:

- New or revised coastal land acquisition, management and restoration programs.

B. In February 2007, the *Final Conservation Template for the North Shore Conservation Region* outlined a series of goals, strategies, and opportunities related to regional conservation. Among them:

- Identify and protect high priority natural areas;
- Complete North Shore natural resource inventory and identify stressors to ecological function;
- Use the full spectrum of protective tools to ensure critical areas are conserved;
- Identify restoration targets and acquire rights necessary to restore ecological functions; and
- [Acquire] CELCP funding for land acquisition.

The state of Minnesota recently began a CELCP planning effort. As part of that planning effort, the state needs to, among other things:

- Describe and map the geographic extent of coastal and estuarine areas for the purpose of CELCP;
- Describe the types of lands or values to be protected through the program and assess the need for conservation through acquisition;
- Identify "project areas" that represent the state's priority areas for conservation; and
- Outline the process for implementing the CELCP.

These and other required elements will be outlined in the state's draft CELCP plan targeted for completion in December 2011 through a program changed added in June 2010 to our 2005-2010 Assessment and Strategies. This strategy proposes to build upon that work to pursue finalization of the draft CELCP plan. In addition, MLSCP will incorporate the identified "project areas" into its Program. Given their correlation, the Program will simultaneously complete a holistic

review and update to the list of areas designated as Areas of Particular Concern (APC) and specifically identify and describe Areas for Preservation and Restoration (APR) in a manner similar to Ohio. Updated APC and APR lists and descriptions will be submitted to NOAA as a program change.

To ensure that local governmental units, state agencies, and private entities have access to these critical pieces of information, MLSCP is proposing to launch an outreach campaign. As part of the campaign, the MLSPC plans to create such things as:

- A Minnesota CELCP fact sheet;
- An expanded web-portal featuring the resource data and models used in the CELCP planning process;
- An interactive web-based map that highlights CELCP "project areas" as well as APC and APR; and
- Media pieces showcasing the "project areas".

III. Needs and Gaps Addressed

This strategy addresses the high priority needs identified under Cumulative and Secondary Impacts related to "Acquisition Funding for Coastal and Estuarine Lands" and outreach on "CELCP Project Area Information". It is the best way to accomplish these goals because the strategy builds on efforts currently underway for draft plan development and pursues their finalization and implementation. The strategy is the result of a Program Suggestion from NOAA which recognized its value to address needs and gaps and stated "the MLSCP should continue to explore the issue and educate its stakeholders and partners about the positive aspects of, and ability to us, a CELCP plan for targeted acquisition."

IV. Benefits to Coastal Management

Currently, information about conservation areas is spread out between organizations (e.g., The Nature Conservatory and Minnesota DNR) and included in multiple plans and reports (e.g., "A Fifty-Year Vision of Conservation for Minnesota's Future", "Minnesota Statewide Conservation and Preservation Plan" and "Conservation Blueprint for the Great Lakes"). By consolidating, simplifying, and adapting the information for the potential users, MLSCP will be providing the details local units of government need to not only act on this opportunity, but make informed decisions for coastal land protection, acquisition, and development. According to the *Final Recommendations of the Interagency Ocean Policy Task Force* (http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf) decision-support tools like those being proposed are essential in order to "build knowledge of ocean, coastal, and Great Lakes ecosystems and processes and ensure that management and policies are based on sound science."

As the plan will address national criteria for projects and project areas as they relate to CELCP, projects will protect important coastal and estuarine areas under threat by conversion from their natural or recreational state to other uses; give priority to lands which can be effectively managed and protected and that have significant ecological value; and advance the goals,

objectives or implementation of the MLSCP.

An updated list of ABC will help to channel management efforts towards areas of need, while providing flexibility in the prioritization and allocation of Section 306/306A funds. Formal APR designation will give specific sites an additional level of protection, beyond that afforded through APC.

V. Likelihood of Success

Support for CELCP implementation and any program related elements is strong. Representatives from Minnesota Land Trust, Minnesota Environmental Partnership (MEP), The Nature Conservancy (TNC), The Conservation Fund, Minnesota DNR, and others are committed to achieving the goals outlined in the *Final Conservation Template for the North Shore Conservation Region* and doing so in a coordinated manner. Accordingly, MLSCP will test the proposed products with this group and others identified as having a high likelihood of using them. While the support of many organizational partners is strong, the Program also needs to remain sensitive to local concerns about land ownership and continue to demonstrate the value of a CELCP program to local communities. Access to information such as the outreach materials described will assist with this effort. To build additional support, MLSCP will give a minimum of three presentations to local units of government looking to incorporate the CELCP, its "project areas" and/or resource data into their updated comprehensive and/or county water plans.

Outreach efforts like these have been successful in other areas of the United States and with other programs. Oregon and Washington both maintain websites (http://www.coastalatlas.net/; http://www.ecy.wa.gov/programs/sea/sma/atlas_home.html) that provide direct access to interactive maps, online geospatial analysis tools, various planning and natural resource data sets and simple introductory information on coastal settings. Oregon's site alone routinely has over 200,000 hits a month from over 2,500 unique visitors.

VI. Strategy Work Plan

Total Years: 2

Total Budget: $65,000

Final Outcome(s) and Products: See "Outcomes" below

Year: 2

Description of activities: (1) Work with NOAA to finalize draft CELCP plan (2) In consultation with other state agencies and interested groups, delineate and describe APCs and APRs within the coastal zone and submit related Program change information to NOAA for review and approval (3) Complete all necessary public education (e.g., public notices), as required for submitting program changes

Outcome(s): (1) A fully approved CELCP plan for the State of Minnesota (2) Program change submittal for APC and APR lists and descriptions

Budget: $35,000

Year: 3

Description of activities: (1) Develop, test and deliver outreach materials

Outcome(s): (1) Minnesota CELCP fact sheet (2) An expanded Minnesota Coastal Atlas [under development] featuring the resource data and models used in the CELCP planning process (3) An interactive web-based map that highlights the CELCP "project areas" as well as APC and APR (4) One – three media ready pieces showcasing the "project areas" (5) A minimum of three presentations to local units of government

Budget: $30,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: The budget allocated will be sufficient. Additional funding from the state legislature will not be required. Project partners, which will likely include Minnesota Land Trust, MEP, TNC and The Conservation Fund, will provide in-kind technical assistance with the review of Year 3 products, as appropriate.

B. Technical Needs: MLSCP will likely need to draw on the technical expertise of NOAA in reaching a final approved CELCP plan and in submitting program change information. Between MLSCP and its parent organization, the Minnesota DNR, the state has the technical knowledge to develop print and web-based outreach materials. However, representatives from Minnesota Land Trust and TNC will be asked to review and test products as appropriate. NRRI, the creator of Minnesota's Coastal Atlas, and the outside consultants employed during the CELCP planning process will continue to serve as resources to the Program as we pursue final adoption and development of outreach materials.

Clean Marina Program Adoption and Implementation in North Shore Marinas

I. Issue Areas

The proposed strategy or implementation activities will support the cumulative and secondary impacts enhancement area.

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type of program change:

- New or revised guidelines, procedures and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government and other agencies that will result in meaningful improvements in coastal resource management.

B. This strategy relates to a program change approved in June of 2010 for inclusion in the previous Assessment and Strategies Document for 2005-2010 as a new goal to develop a Clean Marina Program for Minnesota.

Along Minnesota's Lake Superior coast, locally referred to as the North Shore, there are currently eight marinas and an additional six small craft harbors and protected accesses. The marinas vary in size from 12 to over 117 slips and offer a variety of services including fueling, sewage pump-out, winter storage, and boat repair.

In 2009, a small group of marina owners/operators from around the state began to develop a Clean Marina Program for Minnesota. Like many other coastal Clean Marina initiatives throughout the United States, the goal of the program is to encourage informed decision-making, reduce boating-related pollution, and make boaters aware of environmental laws, rules, and regulations. The *Minnesota Clean Marina Guidebook*, currently under development with funding and support from MLSCP, will serve as a comprehensive guide to marina and boatyard best management practices (BMPs) and reference federal and state laws and regulations. Marinas will be encouraged to seek Minnesota Clean Marina certification, which will require implementing and maintaining multiple BMPs outlined in the guidebook. Starting in 2011, marina operators currently involved in the Clean Marina Initiative will begin aligning their operations with the BMPs outlined in the draft guidebook. They will be asked to identify obstacles and offer alternatives that will make the final guidebook and the Program the best it can be. In late 2011/early 2012, certification standards and the associated guidebook will be finalized. The state intends to adopt the Clean Marina Program in 2012.

To facilitate early program implementation on the Lake Superior coast, MLSCP is proposing a strategy to complete a needs assessment of the eight North Shore marinas to determine what they will require in order to successfully obtain Clean Marina certification. With that information, MLSCP and its partners will be able to design and create effective products and services that

address the group's unique needs and "wants" and put them on the fast-track to certification. As certified marinas, they will be on the front lines of the state's efforts to prevent and reduce marine pollution and serve as examples for the rest of the state.

III. Needs and Gaps Addressed

This strategy addresses the identified high priority needs for "Clean Marina Certification Program" and "Standardized Pollution Prevention Practices". This method of implementation is the most appropriate means to address these priority needs because the North Shore is an obvious place to begin Clean Marina Program implementation and the marinas are excellent candidates for early program adoption. Conversations about the development of such a program were underway in the area as early as 2008; three of the eight North Shore marinas participated in those talks. In 2008, the Minnesota DNR, Division of Parks and Trails proposed a Clean Marina Program similar to the one being developed with the intent of piloting it at the state owned/operated facilities in the North Shore Harbor System.

IV. Benefits to Coastal Management

Marinas, like those along the North Shore, have the potential to generate pollutants that can have a cumulative effect on water quality and aquatic life. Pollutants originating from activities like hull maintenance, fueling, and sewage pump-out can be deposited directly into the water or carried in by storm-water runoff. Therefore, to ensure the best possible water quality in a marina basin, it is important that marina owners/operators take steps to minimize the direct and in some cases secondary impacts of their operations; "clean" marinas do in fact have a positive impact on coastal water quality. A large increase in the total area in the coastal program boundary allocated to marina operations since the last assessment indicates that this is an area in which proactive management techniques have the potential to have a significant influence on water quality.

V. Likelihood of Success

Likelihood of success for this strategy is high. The Clean Marina Task Force has been regularly meeting and is working toward the scheduled goal of 2011 production of the guidebook that will be used as the basis for the implementation of this strategy. Personnel from the DNR Division of Parks and Trails as well as one other North Shore marina serve on the Minnesota Clean Marina Task Force. Their participation and active involvement in the task force demonstrates their commitment, support and enthusiasm for the program.

The pursuit of the cooperative agreement for adoption of the Clean Marina Standards in the state owned facilities on the North Shore is intended to build future support for achieving and implementing the program by demonstrating success in selected locations that will serve as a model for other locations. Past interest by the Division of Parks and Trails in developing similar standards is an indication of their willingness to become an early adopter. The MLSCP also

intends to support future participation by other North Shore marinas through offering the opportunity for funding of related education and outreach activities through our Section 306 pass-through grant program and by supporting training on the Clean Marina Program and steps to adoption through the Coastal Nonpoint program based on available funding.

VI. Strategy Work Plan

Total Years: 2

Total Budget: $30,000

Final Outcomes and Products: See "Outcomes" below

Year: 1

Description of Activities: (1) Conduct a needs assessment following NOAA Coastal Services Center's 12 step process (http://www.csc.noaa.gov/needs/12_steps.html) (2) Continue to work with the Minnesota Clean Marina Task Force as it develops certification standards and implements the program. We anticipate that both of these activities will be carried out by staff.

Outcomes: A "*Needs Assessment Report for North Shore Marinas"*

Budget: $15,000

Year: 2

Description of Activities: (1) Working with the Minnesota DNR Parks and Trails Division, the Minnesota Clean Marina Task Force and others, develop a plan to address the needs identified in the assessment at the Silver Bay and Knife River marinas (2) Pursue a cooperative arrangement with the Minnesota DNR Parks and Trails Division on use of established Clean Marina standards and practices for certification at the Silver Bay and Knife River marinas, the state owned facilities in the program boundary (3) Submit program change information to NOAA

Outcomes: (1) A plan detailing what tools, services, and/or trainings are needed at the Silver Bay and Knife River marinas in order to achieve Clean Marina certification and a strategy for obtaining them (2) A cooperative arrangement between Minnesota DNR Ecological and Water Resources Division, MLSCP's parent division, and the Parks and Trails Division (3) Program change submittal for Minnesota's Clean Marina Program

Budget: $15,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: Section 309 funding as indicated in the budget will be sufficient to address the strategy. Further implementation efforts will be supported by Section 306 and 310 funds, as available.

B. Technical Needs: None

Boundary Change Examination

I. Issue Areas

A program change involving a boundary expansion would have the potential to impact many important issues of concern to MLSCP. In particular, the development of this strategy addresses the Coastal Hazards and CSI enhancement areas.

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type of program change:

- A change to coastal zone boundaries

B. Issues related to the effectiveness of program activities in supporting work in the coastal area have led to the consideration of a change to the MLSCP program boundary. This strategy was previously approved in our 2005-2010 Assessments & Strategies Document, but was removed from focus during that period due to an amendment that introduced other more pressing strategies for attention during 2010 and 2011. In order to address this topic within the means of available through Section 309 funds, MLSCP is proposing to undertake this strategy in two phases. Phase 1 would initially focus on some selectively identified sectors for review and potential inclusion or exclusion from the coastal program boundary. We have identified the following areas for consideration:

- Nemadji River area, an important tributary watershed
- A group of townships that currently have their political boundaries bisected by the existing program boundary. These include, for example, Canosia, Rice Lake Township, and Grant Township.

In Phase 2, we would expand review to consider whether additional areas, perhaps the Lake Superior watershed as a whole, should be included in the program boundary. This evaluation is being suggested in light of the recent combination of with Ecological Services to form the Division of Ecological and Water Resources, whose focus of work will be based on a watershed approach.

During each phase, scientific and socio-political data to support or discourage inclusion of the areas based on their impacts on coastal resources and communities would need to be assembled. Maps and other documentation illustrating and explaining boundary change alternatives will be needed to support the boundary assessment. Local community engagement to assess the potential change will require public meetings and/or workshops to evaluate the advantages and issues of bringing additional areas into the designated coastal area.

III. Needs and Gaps Addressed

This strategy addresses an identified need for "Boundary Change Evaluation" under both the Coastal Hazard and Cumulative and Secondary Impacts enhancement areas. This strategy also has the potential to address needs and gaps in many of the enhancement areas as potential inclusion of additional area to the coastal boundary will allow for inclusion in program support to address these issues by more local community partners through grant and technical support

IV. Benefits to Coastal Management

Re-examination of the MLSCP's boundary was a recommendation in NOAA's 312 review of Minnesota's coastal program. Inclusion of additional contributing watersheds, particularly parts of the Nemadji River watershed could enhance and improve the overall impact of management strategies and programs affecting the coastal area by allowing the use of Coastal Program funds for projects that impact the water quality of the St. Louis River and Lake Superior. For example, the Nemadji River watershed is subject to clay bank erosion, and activities undertaken to address this, if it were within the boundary, would relate to the identified high risk areas of erosion under Coastal Hazards and water quality under Ocean/Great Lakes Resources. It could also enable program efforts to be better integrated on a watershed basis. The inclusion of excepted areas within currently affected local units of government could help insure there is uniform and unbiased land use planning and management within these communities and reduce administrative challenges caused by dividing a local community with the program boundary. This will help specifically to address the high level priority assigned to not only boundary expansion itself, but to standardized pollution prevention practices, shoreland rules updates, local ordinance updates and data organization under the Cumulative and Secondary Impacts enhancement area.

V. Likelihood of Success

The likelihood of success is extremely high due to the overall benefits accrued to the local units of government that participate in CZM efforts. A no change option will be included in the evaluation. A process that results in a recommendation of no change may be considered a successful outcome in either phase. Assuming a change is recommended in Phase 1, information gained from inclusion of additional contributing watershed areas could inform the decision making process in Phase 2 in light of demonstrating pros/cons of this type of change.

VI. Strategy Work Plan

Total Years: 4 (Year 1 and 2 and Year 4 and 5)

Total Budget: $115,000

Final Outcomes and Products: See "Outcomes" below

Year: 1

Description of Activities: (1) Identify the scientific and socio-political pros/cons as they relate to coastal management of inclusion of areas surrounding the Nemadji River and the identified townships in the coastal boundary and initiate a public process to assess the need to change the coastal program boundary. This assessment will identify potentially feasible options (including a no-change option) and benefits and drawbacks to changing the inland boundary in select areas. (2) Following initial assessment and scoping, develop and implement a public input consultation process to evaluate all identified alternatives.

Outcomes: (1) Documents evaluating the inclusion/exclusion of identified areas of interest in the program boundary. (2) Summary of public input related to boundary changes.

Year 2:

Description of Activities: (1) Select an alternative for action based on public input and agency review and pursue NOAA review of the suggested changes to the boundary using program change guidance provided by NOAA's OCRM (2) Update program products to reflect any boundary changes.

Outcomes: (1) Submission of a program change to NOAA reflecting suggested changes to the MLSCP boundary (2) Updated program products reflecting the boundary change, updated maps and web materials to reflect program change

Budget: $65,000

Year: 4

Description of Activities: (1) Identify the scientific and socio-political pros/cons as they relate to coastal management of inclusion of additional areas, including the consideration of the Lake Superior watershed as a whole, within the program boundary. This assessment will identify potentially feasible options (including a no-change option) and benefits and drawbacks to changing the boundary.

Outcomes: (1) Documents evaluating the inclusion/exclusion of identified areas of interest in the program boundary.

Year: 5

Description of Activities: (1) Following initial assessment and scoping, develop and implement a public input consultation process to evaluate all identified alternatives. (2) Select an alternative for action based on public input and agency review and pursue NOAA review of the suggested changes to the boundary using program change guidance provided by NOAA's OCRM. (3) Update program products to reflect boundary changes.

Outcomes: (1) Summary of public input related to boundary changes (2) Submission of a program change to NOAA reflecting suggested changes to the MLSCP boundary (3) Updated program products reflecting the boundary change, updated maps and web materials to reflect program change

Budget: $50,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: The identified budget would be supplemented by contributed expertise by many of the MLSCP program partners, such as the DNR, in assembling pertinent resources for review. The budget identified for phase 2 of the strategy is slightly less than the first phase because, although the area to be examined is different and in fact larger, the development of the types of tools, process and methods of evaluation of for both scientific and socio-political factors will need to be determined in the first phase. Information gathered during the initial phase of development in relation to what works and what does not will be leveraged toward a more efficient implementation of phase 2 of the process. The addition of socio-political evaluation to the process will enhance the thoroughness of the examination overall in both phases, and also contributes to an increased budget for the implementation of the strategy.

B. Technical Needs: Hydrologists will need to contribute expertise to the project in terms of a scientific evaluation of the effects of inclusion of identified areas. Effective socio-political analysis will require the contributions of partners beyond MLSCP which may include the academic community or perhaps the resources available through the NOAA Coastal Services Center. The Coastal Services Center Social Science section may also be able to provide useful input and information into the process of engaging stakeholders in the process of boundary expansion review.

Strengthen Support for Development of Local Wetland Protection and Management Plans

I. Issue Areas

The proposed strategy will support the Wetlands and CSI Enhancement Areas.

II. Program Change Description

A. The proposed strategy will result in, or implement, the following types of program changes:

- New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding.

B. Amendments to the Minnesota WCA in 1996 (Laws 1996, Chapter 462) provided local control, regionalization and flexibility by allowing local units of government to individually develop a comprehensive wetland protection and management plan with modifications to certain provisions of the state rule. To accomplish this, the amendment provides for integration of wetland protection measures with the local water planning process and local zoning ordinances. Further amendment in 2000 (Laws 2000, Chapter 382) included a provision to allow DNR to waive its permit jurisdiction to local units of government for projects affecting "public water wetlands." The primary emphasis has been to allow local units of government to administer wetland protection programs (e.g. mitigation, permitting, replacement and banking.) A strong state participation and oversight in the development, implementation and enforcement of local government comprehensive wetland protection and management plans is an additional feature of WCA intended to ensure that the law is consistently and fairly administered. The Minnesota Board of Soil and Water Resources (BSWR) is the entity that provides the primary oversight and technical assistance necessary to the local units of government to enable them to develop strategies to protect, restore and enhance wetlands within their jurisdiction. Although not a comprehensive consideration of all of the requirements of the Minnesota WCA, BWSR has identified the following as the most common LGU duties associated with administration of WCA: wetland delineation and determinations, wetland exemption/no-loss applications, wetland replacement plan applications, coordination of Technical Evaluation Panel (TEP) meetings, proper submission of application and decision notices to TEP, enforcement of wetland monitoring requirements, and working with DNR and SWCD partners to identify and enforce WCA violations. Due to limited resources, comprehensive wetland protection and management plan support to LGUs is being stalled or constrained. It is the intent of this strategy to expedite and improve the process resulting in high quality new or updated wetland protection and management plans being adopted in the coastal area, ultimately resulting in a program change through new or revised administrative decisions affecting the management of coastal wetlands.

III. Needs and Gaps Addressed

This strategy will address the identified gaps of "Current Wetland Inventory" and "Permit Tracking and Reporting" under the Wetland Enhancement area as well as the identified gap of "Local Ordinance Updates" under CSI. Current wetland inventory will be strengthened by the consolidation of data sources related to a specific geographic area and analysis of that data to support the plan development. Permit tracking and reporting will be improved by local communities gaining more knowledge about the wetland activities occurring in their area, and by strengthening their understanding of requirements through the development of a relationship with BSWR during the planning process. CSI will be affected through the creation of plans and related ordinances targeting the reduction of impacts on wetland coastal resources.

IV. Benefits to Coastal Management

A greater number of completed/updated wetland protection and management plans contributes to protection, enhancement and restoration of wetland resources within the Lake Superior Basin of Northeastern Minnesota. The need for the type of initiatives addressed with comprehensive wetland management plans has been identified in numerous planning efforts currently meant to guide natural resource management directions in the coastal area including:

Lake Superior Basin Plan

Chapter 3.2 Recommendations

#1 Acknowledge and support LGU role
#2 Maintenance and protection of high quality watersheds
#9 Protect cold water habitats
#13.2 Support community based wetland protection
#19.2 Establish wetland mitigation banks….that serve to maintain watershed integrity

Lake Superior LaMP (Lakewide Area Management Plan) 2006

IV. p. 197 Most significant issues:

- Accessible and up to date data bases containing comprehensive information related to terrestrial and aquatic ecosystems…and habitat in the basin.
- Descriptive information about historic and current habitat conditions and important habitat sites in the basin.
- Engage governments at all levels in resource management and resource use by promoting and facilitating intergovernmental and interagency partnerships
- Determine protection levels for important habitat areas.
- Achieve no net loss of the productive capacity of habitat supporting Lake Superior plants and animals

In addition to these regional level plans, local units of government have begun to identify the importance of this effort in their overall strategies for success. For example, Priority Concern #2 listed in the current Cook County Water Management Plan is Wetland Management:

> "There is a need to consider a Comprehensive Wetland Management and Protection Plan with at least two specific items of focus: conservation of significant wetlands on private property and development of a local wetland bank program."

Supporting BWSR financially and with technical assistance from coastal program staff in their efforts to contribute to comprehensive wetland protection and management planning will foster activities meant to realize goals outlined in previous planning efforts, consolidate knowledge about the status and condition of community wetland resources in the coastal area, and identify strategies to best protect those resources including improving the effectiveness of wetland permitting and mitigation. In particular, the need to develop strategies in relation to wetland banking is important to meeting the no net loss requirement for wetlands by identifying appropriate methods and locations for mitigating wetland loss. In the future, the information gained through the development of the local level comprehensive wetland management and protection plans can be used to support a longer-term goal of developing a wetland restoration and preservation plan for the Lake Superior basin in Minnesota. Also, the identification of high priority wetlands through this planning process will inform MLSCP in efforts to evaluate potential areas for future addition as APCs within the coastal area.

V. Likelihood of Success

The likelihood of success of this strategy is high. There is support from the natural resource planning community, local units of government, BWSR and DNR for accomplishing this strategy for the benefit of coastal wetland protection overall. Resources available for the successful evaluation of wetland resources continues to increase as additional imagery is obtained and studies are completed. For example, the NWI data is currently being updated and is scheduled to be available for the Lake Superior area in 2014, thus providing an important tool for evaluating priority areas for protection. This strategy focuses the majority of its budget on years 3 through 5 when these data are scheduled to be available to further support the strategy.

VI. Strategy Work Plan

Total Years: 4

Total Budget: $137,000

Final Outcome(s) and Products: See "Outcomes" below

> *Year*: *1*
> *Description of activities:* (1) Work with BWSR to support comprehensive wetland protection and management plan development currently underway.
>
> *Outcome:* Completion/update of one comprehensive wetland protection and management plan.
>
> *Budget:* $27,000

Year 3-5:

Description of activities: (1) Provide technical and financial assistance to BWSR to support development of comprehensive wetland protection and management plans in the coastal program boundary. (2) Assemble and review data layers for the purpose of identifying high priority wetlands for protection. (3) Develop relationships with local units of government to partner in the development of comprehensive wetland protection and management plans. (4) Provide technical support and guidance to local units of government committed to the process. (5) Update or create comprehensive wetland protection and management plans, as needed. (6) Locally adopt new or revised plans.

Outcome(s): (1) At least three new or updated comprehensive wetland protection and management plans will be developed and locally adopted within the MLSCP boundary.

Budget: $110,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: The fiscal needs associated with developing comprehensive wetland protection and management plans throughout the coastal area exceed the budget identified here, but this strategy as written can contribute significantly to the resources required for select plans. The budget identified here will be supplemented through BWSR operating budgets. MLSCP plans to also continue to fund appropriate related efforts through our Section 306 pass-through grant program.

B. Technical Needs: Comprehensive wetland and protection planning is a technical matter that requires the expertise of a variety of professionals from MLSCP, BWSR, SWCDs, and the Division of Ecological and Water Resource Division and outside contractors. This strategy draws on strong existing local relationships and provides resources for these professionals to complete their technical work.

5-Year Budget Summary by Strategy

The following budget table summarizes MLSCP's Section 309 expenses by strategy for each year.

Strategy Title	**Year 1 Funding**	**Year 2 Funding**	**Year 3 Funding**	**Year 4 Funding**	**Year 5 Funding**	**Total Funding**
CELCP Adoption and Implementation		$35,000	$30,000			$65,000
Clean Marina Program Adoption and Implementation in North Shore Marinas	$15,000	$15,000				$30,000
Boundary Change Examination	$40,000	$25,000		$15,000	$35,000	$115,000
Strengthen Support for Development of Local Wetland Protection and Management Plans	$27,000		$45,000	$30,000	$35,000	$137,000
[Assessment & Strategy Development for 2016-2021]				$30,000	$5,000	$35,000
Total Funding	$82,000	$75,000	$75,000	$75,000	$75,000	$382,000

Appendix I: Public Comment

Wetlands

From: Norris, Doug J (DNR)
Sent: Friday, October 22, 2010 9:50 AM
To: Little, Clinton J (DNR)
Subject:

Clint,
I took a quick look at the Wetlands chapter of the draft CZMA Section 309 Assessment and Strategies Report. Although you mention the Comprehensive Wetland Assessment, Monitoring, and Mapping Strategy, I might suggest that you refer more directly to our ongoing Wetland Status and Trends Monitoring Program (http://www.dnr.state.mn.us/eco/wetlands/wstm_prog.html), which can provide data on wetland gain and loss within the Lake Superior Coastal Zone, or whatever area you specify. Also, regarding wetland mapping, you might want to relay that we (DNR) are in the process of updating the National Wetlands Inventory maps statewide and plan to have updated maps for the Lake Superior area by 2014, assuming we continue to receive funding from the LCCMR. If you have questions or want to discuss further, contact me or Steve Kloiber, Wetlands Monitoring Program Coordinator (651-259-5164).

Doug Norris
Wetlands Program Coordinator
Division of Ecological and Water Resources
Minnesota Dept. Natural Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155
651-259-5125
Doug.Norris@state.mn.us

Comment was noted, we referenced the Wetland Status and Trends Monitoring Program in the Wetlands section of the Assessment. Numbers from the **Status and Trends of Wetlands in Minnesota: Wetland Quantity Baseline** document were also included in the Assessment. This program is based on sample plots and is unable to offer a complete picture of wetland gain and loss in the coastal zone.

Coastal Hazards

From: Jesse Schomberg
Sent: Friday, October 29, 2010 1:51 PM
To: Little, Clinton J (DNR); Little, Clinton J (DNR)
Subject: Sec. 309

Hey Clint;
Saw the request for comments via Twitter;
I plan to look over more closely, but noticed that no mention of Rip Currents occur. At least 29 people died this summer on the great lakes in rip current-related events, and Amber is a part of our active Twin Ports Rip Current workgroup (and you guys paid for the first set of flags for the beach this summer!)
Seems like a logical component under the hazards area.

Jesse

--
Jesse Schomberg
Program Leader and Coastal Communities Extension Educator
Minnesota Sea Grant College Program
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jschombe@d.umn.edu www.lakesuperiorstreams.org

Comment was noted and we updated the Coastal Hazards portion to reflect the City of Duluth and Sea Grant's efforts in Rip Current outreach and education.

Boundary Expansion / Evaluation

From: Brad Matlack
Sent: Monday, November 15, 2010 10:03 AM
To: Little, Clinton J (DNR); Little, Clinton J (DNR)

Subject: comments on draft 309 assessment and strategies

Clint,

I just reviewed the notice of the draft 309 Assessment and Strategies document. I see that the deadline for comment was last Friday. I have been out of the office for much of the last 4 weeks and therefore did not get to this until this morning so I will still provide a few comments.

1. The Carlton SWCD has long advocated a change in the boundary for the 309 program to include the Nemadji River Watershed. With ongoing TMDL efforts, a special GLRI project through NRCS for implementation on private lands, this expansion would help the SWCD assist public landholders in this high-sediment yield watershed that directly impacts the coastal zone.

If you have any questions please let me know.

Brad Matlack
Carlton SWCD Manager
218-384-3891

Comment noted. Reexamining the MLSCP boundary has been recommended in two prior NOAA 312 evaluations, and it has been added as a strategy.

Appendix II: Summary of Existing Public Access Survey Results by User Group

From "Boating on the Minnesota Portion of Lake Superior Summer 2002" Minnesota May 2003 Department of Natural Resources Boating Safety Program, and Trails and Waterways Division:

Boater Survey 2000	
Public Access Quality	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	1050
Number of people surveyed that responded that public access coast for recreation is adequate or better.	85%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Field Survey
What was the geographic coverage of the survey?	Registered Boaters on Lake Superior
In what year was the survey conducted?	2002

Kayaker Owner Survey 2000	
Camping	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	710
Number of people surveyed that responded that public access for recreation is adequate or better.	61%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail, Field Survey
What was the geographic coverage of the survey?	Registered Kayak Owners within the State of Minnesota
In what year was the survey conducted?	2000

Kayaker Owner Survey 2000	
Day Use by Kayakers	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	710
Number of people surveyed that responded that public access to recreation is adequate or better.	69%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail, Field Survey
What was the geographic coverage of the survey?	Registered Kayak Owners within the State of Minnesota
In what year was the survey conducted?	2000

From “Minnesota’s Network of Parks & Trails an Inventory of Recreation Experience Opportunities in Minnesota Northeast Region Profile:
May 2010 The Center for Changing Landscapes, College of Design Department of Forest Resources College of Food, Agricultural and Natural Resource Sciences University of Minnesota

Profile of 2008 Recreation Trail Users	
All Terrain Vehicle Users	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	318
Number of people surveyed that responded that public access to recreation is adequate or better.	44.4%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail
What was the geographic coverage of the survey?	State of Minnesota
In what year was the survey conducted?	2008

Profile of 2008 Recreation Trail Users	
Biking	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	189
Number of people surveyed that responded that public access to recreation is adequate or better.	22.4%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail
What was the geographic coverage of the survey?	State of Minnesota
In what year was the survey conducted?	2008

Profile of 2008 Recreation Trail Users	
Cross Country Skiing	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	521
Number of people surveyed that responded that public access to recreation is adequate or better.	11.4%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail
What was the geographic coverage of the survey?	State of Minnesota
In what year was the survey conducted?	2008

Profile of 2008 Recreation Trail Users	
Horseback Riding	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	458
Number of people surveyed that responded that public access to recreation is adequate or better.	32.5%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail
What was the geographic coverage of the survey?	State of Minnesota
In what year was the survey conducted?	2008

Profile of 2008 Recreation Trail Users	
Off Highway Motorcycle	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	314
Number of people surveyed that responded that public access to recreation is adequate or better.	40%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail
What was the geographic coverage of the survey?	State of Minnesota
In what year was the survey conducted?	2008

Profile of 2008 Recreation Trail Users	
Off Road Vehicle	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	382
Number of people surveyed that responded that public access to recreation is adequate or better.	32.9%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail
What was the geographic coverage of the survey?	State of Minnesota
In what year was the survey conducted?	2008

Profile of 2008 Recreation Trail Users	
Snowmobile	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	318
Number of people surveyed that responded that public access to recreation is adequate or better.	36.4%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail
What was the geographic coverage of the survey?	State of Minnesota
In what year was the survey conducted?	2008

Profile of 2008 Recreation Trail Users	
Walking/Hiking	
Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	318
Number of people surveyed that responded that public access to recreation is adequate or better.	34.3%
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mail
What was the geographic coverage of the survey?	State of Minnesota
In what year was the survey conducted?	2008