Indiana Lake Michigan Coastal Program

Coastal Zone Management Section 309
Enhancement Grant Program

Assessment and Multi-Year Strategy
2011 – 2015

July 2010

Indiana Department of Natural Resources
Indiana Lake Michigan Coastal Program

INDIANA
LAKE MICHIGAN
COASTAL PROGRAM

Table of Contents

I. Introduction

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

- ✓ Wetlands
- ✓ Public access
- ✓ Coastal hazards
- ✓ Cumulative and secondary impacts
- ✓ Energy and government facility siting
- ✓ Lake debris
- ✓ Lake resources
- ✓ Special Area Management Plans
- ✓ Aquaculture

Under this program the Secretary of Commerce is authorized to make awards to states and territories to develop and submit for federal approval program changes that support attainment of the objectives of one or more of the enhancement areas. The Office of Ocean and Coastal Resource Management (OCRM) provides guidance to states and territories for developing or updating previous Assessment and Strategy documents. The OCRM guidance provides a recommended format to address each enhancement area in the document. The most recent guidance was issued on July 29, 2009. Generally the format consists of a characterization of the issue, a series of questions concerning the status of the issue and changes related to the issue that have occurred since the last Assessment (or in this case Program Approval), a concluding statement that identifies any program "gaps", and the priority level (high/medium/low) assigned to the enhancement area by the coastal program. If applicable, a section may include a multi-year Strategy that addresses selected "gaps." New to the 309 process this year is the option of identifying Projects of Special Merit (PSMs). Starting in 2012, NOAA shall make a portion of the Section 309 funds available for PSMs.

As Stated in the NOAA Guidance - The intent of the PSM competition is to offer CMPs the opportunity to develop innovative projects that further approved enhancement area strategies and focus on national coastal priorities. Regional projects can be submitted as PSM, but must support an approved enhancement area strategy for each program involved. PSM will be awarded competitively; therefore, these projects may not by themselves accomplish a program change nor should they be dependent on long-term levels of funding to succeed. PSM should not exceed an 18-month time frame.

Available funding may vary depending on the total Section 309 funds available. OCRM will annually establish a maximum amount to be allocated for PSM. It is estimated that approximately 10-20 PSM will be selected annually. Funds not allocated for PSM will be returned to the weighted formula allocation. CMPs will be able to submit two projects up to $200,000 each for PSM funding. The projects must focus on the following enhancement areas of national importance:

- Wetlands
- Hazards
- Cumulative and Secondary Impacts

- Ocean and Great Lakes Resources (including planning for offshore energy uses)[1]

Participation in Federal Coastal Program -
The Coastal Zone Management Program is a national initiative that focuses on balancing the economic prosperity and environmental health of the nation's coasts. Thirty-four of the 35 coastal states and territories participate in the federal program. Illinois is the only state that has not yet participated of the eligible states. The National Oceanic and Atmospheric Administration (NOAA) administers federal funding for the Coastal Zone Management Program.

Participation in the Coastal Zone Management Program makes it possible for the Lake Michigan Coastal Program to support activities that achieve the following goals in the coastal region:

- Protect and restore significant natural resources;
- Prevent the loss of life and property in coastal hazard areas;
- Improve public access for recreational purposes;
- Protect and restore important historic and cultural resources;
- Improve government coordination and policy and decision making;
- Prevent, reduce, or remediate nonpoint source pollution that affects coastal waters;
- Revitalize urban waterfronts and ports; and
- Provide for priority water dependent uses.

The Indiana Lake Michigan Coastal Program (LMCP) received Federal Approval in August 2002.

The Purpose of the Indiana Lake Michigan Coastal Program is to enhance the State's role in planning for and managing natural and cultural resources in the coastal region and to support partnerships between federal, state and local agencies and organizations. The Indiana Lake Michigan Coastal Program relies upon existing laws and programs as the basis for achieving its purpose.

The Indiana Lake Michigan Coastal Program (LMCP) is a "networked" program made up of several Indiana natural resource protection programs. The lead agency for implementing the program is the Indiana Department of Natural Resources (DNR). Since the program was approved in 2002, the Division of Soil Conservation had responsibility for providing administrative support to the coastal program staff and coordinating the networked state agency partners. In 2005 the LMCP staff and program coordination responsibilities moved to the DNR Division of Nature Preserves.

Based on Existing Policies and Laws

The Lake Michigan Coastal Program was developed on the strength of Indiana's existing policies and laws that address land and water uses and resource protection. The program document serves as a comprehensive reference that identifies entities that carry out existing programs, policies,

[1] Source: Final Coastal Zone Management Act Section 309 Program Guidance July 2009, NOAA OCRM

and laws to manage coastal resources. The program document also serves as a reference for the identification of partnership and coordination opportunities. Through an extensive public process, 10 issue-areas were identified. Indiana's existing policies and laws were detailed for each of these areas.

- Procedural Framework
- Coastal Hazards
- Water Quality
- Water Quantity
- Natural Areas, Fisheries, Wildlife, and Native and Exotic Species
- Recreation, Access, and Cultural Resources
- Economic Development
- Pollution Prevention, Recycling, Reuse, and Waste Management
- Air Quality
- Property Rights

Coastal Advisory Board

The Coastal Advisory Board (CAB) serves as a stakeholder advisory group. The first meeting of the CAB was April 29, 2003. The 22 member CAB consists of representatives from northwest Indiana and is representative of the broad range of interests and experience in the coastal region. The CAB provides input on Coastal Program issues – 309 Priorities, Coastal Grant Priorities, and Coastal and Estuarine Land Conservation Program (CELCP) issues. In addition, the CAB members chair various LMCP Committees – Grants, Outreach and Education, CELCP, and Technical Assistance Planning (TAP). The board meets every two months and can be convened for special meetings at the call of the Chair or a majority of members.

Coastal Program Area

The Coastal Program Area defines the lands and waters eligible for financial and technical assistance through the Lake Michigan Coastal Program. Based on public participation and comment, the proposed program boundary was established to approximate the region's watershed. The watershed encompasses the majority of the area that drains into Indiana's portion of Lake Michigan through its rivers, streams, ditches, wetlands, lakes, and groundwater. A watershed approach provides a comprehensive approach to planning for and managing natural resources that focuses on producing environmental results while incorporating the communities that depend on those natural resources. A watershed approach can also leverage financial and other resources, improve coordination among intergovernmental jurisdictions, and reduce duplication of efforts and conflicting actions. The boundary follows the 45-mile shoreline and the approximately 54 miles along an east-west trajectory across the Valparaiso Moraine.

Included within the boundary are lands subject to lake flooding and erosion, estuaries and wetlands, ecologically significant areas formed by glacial Lake Michigan, coastal recreation areas, and areas of cultural and historic significance to the region.

Coastal Program Network

There are numerous state and local entities that are responsible for managing resources in the coastal region. The role of these entities remains unchanged. The Lake Michigan Coastal Program sets forth a framework, based on existing policies, laws, and programs, that links existing agencies and laws into a comprehensive system.

Indiana Lake Michigan Coastal Grants Program

The Coastal Grants Program makes funding available through an annual competitive grants process. The LMCP makes approximately 80% of its cooperative award from NOAA available for the grant program. The Coastal Grant program is guided by public input each year. Approximately 25 members of the public attended the first annual public priorities meeting July 13, 2005 meeting, with many providing input to the LMCP and the Coastal Advisory Board regarding priorities for the upcoming 2006 funding cycle.

Section 309 Assessment and Strategy Development

The Indiana 309 planning process was implemented in phases. During the first phase LMCP staff met with State Agency staff and developed a preliminary assessment. Input gathered from the Agency staff meetings shaped the general ranking of the nine issue areas and the associated goals and actions.

The second phase included public input and participation. Public participation is an important element of the Indiana Coastal Program and was a high priority for development of the 309 Assessment and Strategy. Public input for the development of this document was provided through meetings with the Coastal Advisory Board (CAB) and the general public.

Coastal Advisory Board Input:

Two meetings were held to obtain input from the CAB. The first meeting was on February 17, 2010 for the purpose of introducing the CAB to Section 309 and to request their participation in the process of developing the Assessment and Strategy document. Briefing materials explaining Section 309 were prepared in advance and distributed at the meeting. The second meeting with the CAB was held on April 21, 2010 to discuss the nine 309 Enhancement Areas and seek input on information/program gaps in each area. The CAB members received advance materials prior to the meeting that detailed the purpose of 309 and contained a worksheet to generate thoughts regarding Issue Gaps and Priorities. An overview presentation highlighted the 9 issue areas and types of Strategies meeting the Program Change requirement. The input process utilized rotating flip charts and sticky dote voting to identify High, Medium, and Low Priority projects in each of the 9 issue areas. Some of the items raised as priority needs were outside the bounds of eligible 309 Strategies due to either the nature or scope of the issue. LMCP Program staff used the results of the process as the starting point for Gap Identification and Priority Level assignment. Program Staff met and discussed the Gaps identified internally as well as with other Agency Staff. These discussions resulted in the formulation of the Gaps and Priority Strategies included in this document.

Public Input Session: April 21, 2010 – Participant List

Name	*Affiliation*
Becky Fox	Indiana Dunes Tourism
Holly Futrell	Citizen
John Voelz	Town of Beverly Shores
Elizabeth McCloskey	USFWS
Bob McCormick	IL IN Sea Grant
Dave Pilz	Citizen
Dawn Komasinski	Save the Dunes
Bob Daum	Indiana Dunes National Lakeshore
John Pugh	City of Michigan City
Dana Liss	Hobart Chamber of Commerce
Danielle Barnett	Indiana Department of Environmental Management
Kathy Brown	NW IN Regional Development Authority
Joe Exl	Northwestern Indiana Regional Planning Commission
Steve West	Indiana Department of Environmental Management
Mark Price	Illiana Hummer Club/ DNR Trail Advisory Board
Ken Barlo	
Katie Kintzele	Center for Humans and Nature
John Ervin	DNR – Division of Nature Preserves
Jenny Orsburn	DNR-LMCP
Mike Molnar	DNR-LMCP
Sergio Mendoza	DNR - LMCP

Public Review and Comment:
The Section 309 Assessment and Strategy Document shall be posted for Public Review and Comment for a period of 30 days. The document will be posted to the program website in PDF format, email notification sent to distribution lists, and comments received electronically via email. Comments shall be compiled and addressed in the final document.

II. Summary of Completed Section 309 Efforts

The LMCP completed the last 309 Assessment in July 2005. The document was developed cooperatively with Jeff Benoit, J.R. Benoit Consulting, leading the efforts. During the past 5 years the LMCP and state partners revised several of the Strategies to more fully meet stated needs. Project modifications were included in the annual plan of work submitted to NOAA. The last year of funding for projects developed under the last Assessment is 2010. As such, some of these projects are either yet to occur or are still in process. Regardless of timing, an overview of all projects is presented on the following pages.

Coastal Hazards – *Hazard Ordinance Assessment and Model Ordinance Development*

With direction from the Lake Michigan Coastal Program Coastal Advisory Board Planning Committee and local municipal discussions, the state developed three hazard mitigation model ordinances that will be used to protect natural and manmade features of Indiana's coastal features. The three model ordinances created cover the six reaches of the Indiana Lake Michigan Shoreline. They include industrialized shoreline, private riparian shoreline, and natural public shoreline that stretch along the three counties within the coastal program area. The Planning Committee, which was established early in 2009 is a 9 member board comprised of three division which include:

- 3 Coastal Advisory Board Members
- 3 Partner Members that include: Metropolitan Planning Organization, Regional Development Authority, and Indiana/Illinois Sea Grant.
- 3 Planners, one from each of the three counties in that the program operates

The shoreline hazard model ordinance is designed so that a specific ordinance(s) can be incorporated into existing municipal policies or adopted in its entirety as an overly zone sometimes identified as a Beach Overlay Zone or Shoreline Protection Overlay Zone. One community along the Indiana Lake Shore has such an ordinance established. The Town of Porter adopted a Beach Overlay Zone in December of 2009. In working with the individual shoreline communities many have some shoreline hazards protection ordinance with respect to setback, encroachment, impacts of fill and vegetation removal. However, to truly incorporate model hazards ordinance into the three forms of shorelines existing along the six reaches of Indiana, one must first recognize the seven hazards that have a significant impact on the Indiana coastal zone and the type of ordinances that mitigate coastal hazards are:

- Flooding - Wet land protection
- Subsidence - Best management practices
- Sea level rise - Structure regulations
- Coastal erosion - Native vegetation planting,
- Tornadoes - Vegetation removal
- Windstorms - Vegetation secession
- Storm surges - Setback requirements

<u>Programmatic Change:</u>

To recommend appropriate model hazard ordinances into shoreline communities based on individual municipal policies and work with partner Planning Committee members to move hazard awareness forward. It is the intent to have these discussion alongside community commission members, elected officials and the public.

Cumulative and Secondary Impacts – *iTOSS – Indiana's network for Tracking of Onsite Sewage Systems*

The Indiana State Department of Health, in partnership with the Indiana Department of Natural Resources, developed a web based tracking tool for onsite sewage systems (septic systems) for the use of the county health departments in the Lake Michigan watershed. This innovative tracking tool, called iTOSS (Indiana's network for Tracking of Onsite Sewage Systems), is based on the EPA TWIST data system developed by the EPA headquarters Office of Wastewater Management. Using TWIST as a starting point, Indiana streamlined and customized the input screens and altered the flow of data to more closely follow standard practices used in the state and was created in a web-based system that can help the Great Lake states along with other states in the US to manage onsite sewage systems.

iTOSS has the following capabilities:

- Centralized database and user interface containing parcel, facility, soil evaluation, onsite system, permit, and permit violation information.
- Complaint data that can be associated with a specific parcel.
- Custom interfaces for consistent data entry of all types of data.
- Attachments of images and documents allow supportive data.
- Administrator interfaces that allow management of users and security.
- Reports available in PDF format, with county specific headers.
- The infrastructure was designed to support additional functionality and modules to be incorporated—such as GIS capabilities.
- Assists the Agency with internal and external data requests.
- Time and money saved due to centralized data and easy web access.

When properly planned, designed, installed, operated and maintained septic systems can effectively treat contaminants such as nutrients and pathogens. However, septic systems do fail for a variety of reasons. Common limitations that contribute to failure include poor soil conditions, inadequate maintenance, and illicit connections. When septic systems fail hydraulically (surface breakouts) or hydrogeologically (inadequate soil filtration) there can be adverse effects to surface waters down gradient.

In the National Management Measures to Control Nonpoint Source Pollution from Urban Areas (6217g Guidelines), the USEPA notes that system inventories are critical elements of an effective on-site system management program. The iTOSS tracks essential information such as system location, type, maintenance schedule, and potentially affected water resources that are critical for short-term and long-term planning.

Having accurate septic system information can be critical when developing TMDL's for E. coli, preparing watershed management plans, or trying to protect Great Lakes beaches. Spatial information allows for refined data mining, modeling and analysis to identify critical areas and management actions to protect water quality. Contact information from iTOSS could also be filtered using spatial data to target education and outreach efforts on proper system operation and maintenance.

The Lake Michigan Shoreline TMDL for E. coli Bacteria (Indiana) noted that site-specific information on the location of areas with high septic system vulnerability was not available for the Lake Michigan watershed (TetraTech, 2004). Therefore, estimates of the loads of *E. coli* from these sources had to be based on the following assumptions:

1. Number of persons served by septic systems potentially discharging directly to Lake Michigan was defined as those living in houses within 500 feet of the shoreline. The number of houses on septic systems was derived from the 1990 and 2000 US Census data and an analysis performed using a geographic information system.
2. An average daily discharge of 70 gallons/person/day.
3. Septic effluent *E. coli* concentration of 1,000,000 (1.0E+06) counts/100 mL .
4. Average septic failure rate of 5 to 10 percent (based on literature values [USEPA, 2002], discussions with local county health agencies, and best professional judgment)

These assumptions indicate a need for more concise and accurate data for TMDL development and associated restoration plans (watershed management plans) and strategies. Regardless, residential septic systems were identified as a contributing source to the impairment. According to the TMDL report the most significant sources of *E. coli* to the shoreline were tributary loadings. Reductions of loads from controllable sources require a variety of best management practices (BMPs), including the development and implementation of system inventories. Many efforts in the watershed are already underway and future activities should build on this foundation. According to the TMDL report the activities that should receive the highest priority are the following:

- Implementation of tributary TMDLs to achieve water quality standards, including efforts to reduce *E. coli* loads associated with septic systems.
- Continue efforts to reduce loads from septic systems through public education and maintenance/replacement programs.

The ISDH is a state government agency that provides public health services for about 6.5 million customers in 92 counties in Indiana. In addition to these core services, the ISDH handles environmental health matters involving onsite wastewater system permitting, and drinking and recreational water quality tracking. The ISDH is assisted by the county health departments in carrying out these services.

The Coastal Zone Act Reauthorization Amendments of 1990 require that states with approved coastal management programs develop a coastal nonpoint pollution control program to address water quality impairment of coastal waters. Indiana's coastal program is administered through

the IDNR Lake Michigan Coastal Program. To assist states in the development of their programs, the EPA issued "*Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*". State coastal nonpoint programs must be in conformity with this guidance, which includes management measures for both new and existing septic systems.

iTOSS is a collaborative effort to achieve healthy and sustainable septic systems. iTOSS was established with the following purposes:

- To achieve wastewater resource goals and objectives through tracking septic systems and related parcels and facilities.
- To ensure soil evaluations will be performed on each site.
- To enable permits and permit violations and complaints to be easily monitored and resolved in a timely manner.
- To enable BMP related to septic system practices based on consistent data availability – such as clean water, conservation, and ecological function through innovative and sustainable practices.
- To improve water quality in the Lake Michigan Watersheds to support a healthy regional economy and improve quality of life.
- To test and then implement innovative approaches and practices that will achieve improvements in septic system resources in a cost-effective way.
- To build partnerships and enhance collaborative decision-making and joint project implementation, engaging government, business, environmental, and other stakeholder organizations to obtain broad participation is consistent onsite sewage management to get the greatest benefit.
- Through collaborative action, to share watershed related data with other agencies and organizations.

iTOSS Related Projects

The ISDH and IDNR LMCP initiated a planning and design effort to create septic system BMPs and data tracking to engage the counties and septic system owners in the process. The ISDH and IDNR are the ideal stakeholder collaboration because its goals include improving data tracking and data sharing in order to maintain the environment throughout the Lake Michigan watershed. The iTOSS project is the initial result of this effort. They have begun collaborations with other Great Lakes states such as Pennsylvania, and have reached outside the region to states such as New Jersey. They have begun discussing BMPs and the sharing of the iTOSS technology where appropriate.

iTOSS intends to further its data sharing with other state agencies by sharing shapefiles containing septic system GIS related data and other reports as necessary.

<u>Programmatic Change:</u>
The programmatic change associated with this project is incomplete as of this time. The Best Management Practices will be adopted by the ISDH and DNR. These practices will be written into future watershed management plans. In addition, the LMCP Technical Assistance Planning

(TAP) Program will use the BMPs as a source of information for potential local ordinance inclusion.

Public Access – *Inventory Update and Needs Assessment*

The 2005-2010 Strategy developed for Public Access included two items:

1) The state will develop a comprehensive inventory of existing public access sites within the Indiana coastal area and incorporate the new information into the State Comprehensive Outdoor Recreation Plan (SCORP) database;
2) the state will conduct an assessment of coastal user needs and perceptions in order to better understand how to best provide future public access opportunities in the coastal area.

Information provided through this project will be used by state agencies during future planning activities that consider the type and location of new public access opportunities, as well as helping set priorities for the improvement of existing facilities and/or opportunities. This activity will provide additional detail to the LMCP by providing improved information DNR Division of Outdoor Recreation and is considered a "routine program changes."

The LMCP, DNR Division of Outdoor Recreation, and Division of Fish and Wildlife jointly developed a scope of work for both Phase 1 and Phase 2 of this project. The Division of Outdoor Recreation maintains the SCORP database and the Division of Fish and Wildlife maintains a list of Public Access sites for fishing and recreation.

Phase 1 – Inventory Update

This Eppley Institute for Parks and Public Lands at Indiana University won the bid for this project. The project in and final reported delivered on October 1, 2008.

Project Deliverables:

1. An updated point file containing the locations of public access recreation sites within the Lake Michigan coastal area of Indiana.
2. A polygon file containing parcel data of the public access recreation facilities in the Lake Michigan coastal area, where such information is available.
3. The updated IDNR Facilities Inventory database with updated Water and Owner/Manager tables.
4. A separate table including coastal area public access recreation sites.
5. An Excel spreadsheet including the facilities data for the coastal area. This spreadsheet includes an extra column indicating the information sources for each site.
6. Trails PDFs: Trail and trail segment worksheets for newly identified trails as well as trail notes to consider for existing trails and trail segments.

The Eppley Institute for Parks and Public Lands conducted a Public Access Needs Assessment for the Indiana Department of Natural Resources, Lake Michigan Coastal Program to assess levels of service and deficiencies in current public recreation land in the Northern Indiana Coastal Region. This two-phase project consisted of a Coastal Inventory and a Needs Assessment.

Phase I: Coastal Inventory

Phase I of this project was a comprehensive inventory of existing public access recreation sites and trails within the Indiana Lake Michigan Coastal Area. The inventory was conducted in 2008 with funding made available through the Lake Michigan Coastal Program (LMCP) and a federal grant from the National Oceanic and Atmospheric Administration's Coastal Zone Management Program. As part of the deliverables for this project, the Statewide Comprehensive Outdoor Recreation Plan (SCORP) database was updated with information for 712 sites, of which 141 new sites were identified. In addition, approximately 50 miles of trail, or 32 new trails, were also identified. The final corresponding GIS files include 681 sites and 277 parcels.

The Eppley Institute met with 45 agency and organization directors and managers, conducted over 140 site visits, reviewed Master Plans, brochures and conducted web searches. The final Coastal Area Facilities table in the Access database is comprised of 712 new or updated public access recreation sites. Thirty-two new trails were identified, resulting in an addition of almost 50 miles of trails.

Phase II: Needs Assessment

The purpose of the Public Access Needs Assessment was to better understand coastal user needs and perceptions and to what level current public access recreation facilities in the coastal area are serving the public. The project was initiated on 15 June 2009 and reached completion 31 December 2009. The overall goal of this project is to improve the information available to the state regarding public access in the coastal area, specifically by better understanding how to best provide future public access opportunities in the coastal area. This goal is achieved through the following 6 objectives:

1. Assess current levels of service in the coastal area through inventory analysis
2. Assess coastal user needs and perceptions through focus group work and research
3. Evaluate level of service standards through research and benchmarking
4. Develop service standards
5. Identify gaps in service
6. Identify new public access areas and sites

The research and analysis phase included: review of local and county parks and recreation master plans, federal, state, and regional planning and policy documents, a benchmarking study, condition assessments, and map development. The public engagement phase included individual stakeholder meetings, focus group meetings, and a public meeting. The service standards and gaps phase included the development of level of service (LOS) standards, a gap analysis, and a priority index.

The Condition Assessment analysis showed an above average overall public land quality among a selection of public access passive recreation sites, opportunities remain for improvement.

The Benchmarking Analysis provides insight on the current state of the region in terms of four similar Great Lakes regions. One of the main differences found between the Indiana coastal region and the benchmark communities is the lack of a thriving, economically stable main city as a solid foundation for the surrounding region. The Coastal Indiana region's comparable city, Gary, is not financially stable and is experiencing a population decline. Another notable

difference is the presence of significant acreage of federally managed lands, Indiana Dunes National Lakeshore.

According to the benchmarking study, the Northwest Indiana Coastal Area is:

- Below average in the miles of multi-use walking and biking trails
- Below average in the number of public access launch points for personal watercraft
- Above average in miles of public beaches
- The only region where beach fees are charged for residents
- Far above average in fishing access points
- Above the median in total park acres (Duluth has such a large number of acres for its population size that it skews the average)

While there are many public beaches available, access to them is often limited by a lack of parking and beach access points. Beach access in the benchmark communities is, for the most part, supported by state or municipal protection and easily accessible points near densely populated areas.

Also lacking in the Coastal Indiana region when compared to the benchmarks is public access to boating opportunities. The number of large, well placed public marinas directly on Lake Michigan is substantially lower than that of the benchmarks.

Public Engagement

The results of the stakeholder interviews and the focus groups are similar in many ways and provide many ideas for the improvement of public access in the region. The main ideas are as follows:

- Connectivity between trails and existing natural areas
- Ongoing management of restored natural areas
- Increase public awareness and access through communication and signage
- Implementation of the Marquette Plan
- Regional cooperation
- Increased funding

<u>Programmatic Change:</u>

Newly developed standards for public access in the Indiana Coastal area are outlined below. These standards are recommendations and have not been adopted into statute or administrative code. Future updates to the State Comprehensive Outdoor Recreation Plan and associated Regional Plans shall reference these standards.

Facility Type	Access Requirement
Park Acreage	50 acres per 1,000 residents
Hard Surface Multi-Purpose Trails	2 miles per 10,000 residents
Public Access Launch Points for Personal Watercraft	0.45 per 10,000 residents
Public Fishing Access Points	1.14 per 10,000 residents
Natural Surface Hiking Trails	3.0 per 10,000 residents

Great Lakes Resources – *Underwater Archaeology Management Plan*
The 2005-2010 Strategy for this issue area stated: "the state will conduct an inventory of significant underwater archaeological resources and develop a management plan for the enjoyment and protection of those resources. This project will provide additional detail to the ILMCP by providing better information and interpretation of state authorities for the management of coastal resources."

This project received funding in 2009. The Interagency workteam is still developing the scope of work for this project. Staff time was re-tasked due to state budget cuts in 2009, thus the planning process has taken much longer than anticipated. In addition, the scope of work may be revised slightly from that originally planned due to better understanding of costs and desired outcomes.

The draft scope of work now includes two components –

1) Site management plan development – National Register Site
2) Site Assessments
    a. Site evaluations for known sites – up to 20 sites
        i. Electronic – side scan/multi beam sonar, magnetometer, etc.
        ii. Visual inspection and site mapping
    b. Site evaluations for suspected sites – up to 10 sites
        i. Electronic – side scan/multi beam sonar, magnetometer, etc.
        ii. Visual inspection and site mapping

The timeline for this project anticipates a Request for Proposal release on or about August 1, 2010. Phase 1 of this project is to be complete by September 1, 2011.

<u>Programmatic Change:</u>
This initiative if not yet complete – as such there are no programmatic changes to report as of this time.

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
Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Please indicate the extent, status, and trends of wetlands in the coastal zone using the following table:

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	See below	Data not available	Data not available	Data not available	Data not available	NA
Tidal (Great Lakes) non-vegetated	See below	Data not available	Data not available	Data not available	Data not available	NA
Non-tidal/ freshwater	See below	35,798	Data not available	1,314	See below	2006, Indiana University 2006-2010 WRP and WHIP – ISDA Source
Other (please specify)						

2. If information is not available to fill in the above table, provide a qualitative description of information requested, including wetlands status and trends, based on the best available information.

Important wetland types within this region include bogs and globally rare and threatened dune and swale complexes, in addition to wet prairies, forested wetlands, and marshes. It is generally accepted however, that wetland loss is continuing in the region largely from agricultural activities, commercial and residential development, water pollution, and invasive species.

Indiana lacks current quantitative data for most wetlands resources in the state. The most recent information, from a 1991 DNR study based on data collected in the early 1980's, indicated that there were approximately 813,000 acres of wetland habitat statewide. Historical wetlands estimates based on NRCS hydric soils determinations in the three county region place one-time wetlands acreage at approximately **360,000 acres**. Inventories conducted in1986 placed the acreage of wetlands at approximately 63,000 acres for the 3 county region, or about 82.5 percent loss of previous wetlands acreages. Indiana ranks 4th among the 50 states in proportion of wetland acreage lost. The coastal area is one region of the state where more current data exists for the extent of wetland acreage. The IDEM Wetlands Section Staff state that the number of acres gained through mitigation is at least as great as the number of acres permitted for fill. However, data regarding acreage permitted is not available.

In 2002 the Northwest Indiana Advance Identification of Wetlands Study (commonly referred to as the ADID project) was completed. The ADID project evaluated the value and function of wetlands greater than 5 acres in Porter, Lake and La Porte Counties and generated GIS data that is now part of the Indiana Geological Survey's Lake Rim web site. The baseline maps used were from the 1980's National Wetlands Inventory and sites were field checked for accuracy. The ADID project does not present any trends data.

In 2005 the DNR Lake Michigan Coastal Program contracted with Indiana University to conduct the first phase of the State Coastal and Estuarine Land Conservation Plan (CELCP). As part of this work, the IU updated the National Wetlands Inventory data for Northwest Indiana. Their study found that some of the data from the previous NWI in 1987 was factually incorrect. The adjusted wetland acreage totals 35,798 acres.

There are no ongoing or planned efforts to develop quantitative measures to assess progress in managing this issue area.

3. Provide a brief explanation for trends.

Development/Fill – It is not possible to accurately determine the full and accurate extent of wetlands loss resulting from development activities because Indiana does not have a current inventory of wetlands and does not track Clean Water Act 401 Water Quality Certificates for wetland alterations. The Indiana Department of Environmental Management, Office of Water Quality oversees the 401 Certification program and has indicated that even without specific data for wetlands alterations, they believe development related activities remain a significant source of wetland loss in Indiana. They also estimate that approximately one-third of wetland permits are for activities in the coastal area. However, the loss due to development and fill slowed significantly during the past two years due to the nationwide economic slowdown.

Indiana adopted a wetlands mitigation policy for most wetlands likely to be disturbed during construction activities. The mitigation policy is in effect through an interagency Memorandum of Understanding (MOU) that covers projects sponsored by the Indiana Department of Transportation (INDOT). The MOU is a signed agreement between the Department of Natural Resources, INDOT, and the U.S. fish and Wildlife Service. Construction of replacement wetlands has involved enhancement of existing wetlands, restoration of drained wetlands and creation of wetlands where no wetlands existed before. The Indiana Department of

Environmental Management (IDEM) has adopted standard compensatory mitigation ratios for jurisdictional wetlands (waters of the U.S). These ratios are based on a study of 345 compensatory mitigation sites required by permit during the period of 1986 to 1996. Based on the findings of this study, the compensatory mitigation ratios were changed to the current 4:1-forested, 3:1-scrub shrub, 2:1-emergent, 1:1-open water. In 2004, compensatory mitigation ratios for isolated wetlands (waters of the State) were established by Indiana code. A wetland mitigation Memorandum of Understanding (MOU) was created in 1991 for transportation projects between the Indiana Department of Transportation (INDOT), Indiana Department of Natural Resources (IDNR), and the United States Fish and Wildlife Service (USFWS). This MOU establishes compensatory mitigation ratios for wetlands that fall under the jurisdiction of the IDNR. However, IDNR only regulates wetlands within a floodway area that drains more than one square mile.

The IDEM and partner agencies are developing a "Match-maker" program for mitigation sites. This program seeks to pair permitted disturbance with pre-approved mitigation sites. The roll out of this program should occur in 2010.

Pollution: An excess amount of nutrients, pathogens, sediments, and toxic chemicals can alter or destroy the wetland system. Wetlands within the Indiana coastal area are impacted by all of these pollutants to some extent. Although nutrient enrichment and bacterial contamination are fairly common problems associated with nonpoint pollution, several wetland areas in close proximity to the industrialized areas of the coast around Gary and Michigan City also suffer from toxic contamination and have been classified as RCRA, Superfund, or Brownfield sites. Insufficient funds are the primary impediment to addressing wetlands impacted by toxic contamination. The State in partnership with the EPA and Army Corps is conducting restoration dredging on a portion of the Grand Calumet River AOC. This work includes dredging of river sediments – including some wetland benches – and placement of a reactive cap with clean fill. This project should address a portion of the legacy pollution in the system.

Channelization/Drainage – The effects that draining low-lying lands has on wetlands is a concern throughout the coastal area. State legislation provides that drainage is largely controlled through county drainage boards. The Drainage Code is primarily concerned with excess water removal. The focus of its impact is upon regulated drains. The county surveyor is required to classify all regulated drains as being in need of: (1) reconstruction; (2) periodic maintenance; or (3) removal. These classifications are themselves dependent upon the adequacy of the waterway to properly drain lands affected. Legal drain management can alter hydrology and adversely impact wetland habitat.

Nuisance/exotic species – Invasive species can threaten the diversity or abundance of native species and the ecological stability of the whole habitat. Invasive species displace native species by out competing natives for breeding sites, food, and other needed resources. They disrupt food webs, degrade habitats and alter biodiversity. Two common invasive species found in Indiana wetlands are Purple Loosestrife (*Lythrum salicaria*) and Common Reed (*Phragmites australis).* Other invasive plant species include Bluegreen Algae, Brazilian elodea, Hydrilla, Eurasian watermilfoil, Reed canary grass, Hybrid cattail, and narrow leaf cattail. Although there is little scientific data on the distribution and extent of potentially invasive plant species' populations in

Indiana which makes it difficult to objectively rank invasive species. However, it is the general observation of those concerned with loss in Indiana that Common Reed and Reed Canary Grass are dominating the majority of emergent wetlands in Lake County especially those near the coastline. Many concerned agencies and organizations formed an Invasive Plant Species Assessment Working Group (IPSAWG) to deal with this issue of nuisance and exotic species. The goal of the group is to develop an assessment tool to determine which plant species may threaten natural areas in Indiana due to invasion and to develop recommendations regarding the use of that specific plant species. In addition, several groups recently formed a Cooperative Weed Management Area (CWMA). The CWMA is working to address a variety of exotic invasive species – including wetland specific.

Lake Level Fluctuation – The periodic long-term rise and fall of lake level influences the hydrodynamics of the coastal beaches, offshore sand bars, and freshwater regime of wetlands along the Indiana Lake Michigan shoreline. Lake levels reached a recent high in July 1997, only to drop dramatically from 1997 to 2001. Lake levels have been continuously well below average for the past 9-10 years since 1999. In spite of a temporary rebound in mid-summer of 2002, levels dropped dramatically to near record low by early 2003. Lake levels rebounded up again to near average levels in 2004, only to drop gradually year after year to another near record low in December 2007. This low was even closer to the record low than in 2003. 2008 and 2009 saw significant increases in lake level, finally reaching as high as the long-term average lake level of Lake Michigan by mid-summer 2009. It is uncertain whether this 2 year rising trend will continue, finally keeping the lake lever at or above average, or if another decline will return back to the recent long-term trend of staying well below average since 1999.

Fragmentation –The problem of wetland fragmentation cannot be accurately quantified, individuals concerned with wetlands loss in Indiana generally agree it is a serious and growing threat to wetlands function and productivity. Fragmentation occurs largely from residential and commercial development, road building, and drainage improvements.

4. Identify ongoing or planned efforts to develop monitoring programs or quantitative measures for this enhancement area.

The Indiana Department of Environmental Management (IDEM) is finalizing a new regulatory database system that will include wetland permits.

TEMPO stands for Tools for Environmental Management and Protection Organizations. The TEMPO system allows the Department to integrate environmental data management functions across several programs—including air quality, water quality, solid waste management, and hazardous waste management.

Using TEMPO, Department staff members can perform the following functions:

- Manage electronic documents and files containing information about regulated entities, within folders, similar to how they would be managed in a physical filing cabinet in an office.
- Receive and process applications for permits.
- Issue new permits, modify existing permits, and renew permits.

- Manage requirement profiles and libraries and create custom requirements.
- Create inspection checklists and record inspection results for analysis.
- Record and track violations and generate appropriate enforcement actions, including penalties.
- Receive, document, and track incidents or complaints.
- Assess and invoice fees and penalties.

5. Use the following table to characterize direct and indirect threats to coastal wetlands, both natural and man-made. If necessary, additional narrative can be provided below to describe threats.

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

6. **(CM)** Indicate whether the Coastal Management Program (CMP) has a mapped inventory of the following habitat types in the coastal zone and the approximate time since it was developed or significantly updated

Habitat type	**CMP has mapped inventory** (Y or N)	**Date completed or substantially updated**
Tidal (Great Lakes) Wetlands	N	
Beach and Dune	N	
Nearshore	N	
Other (please specify)		

7. **(CM)** Use the table below to report information related coastal habitat restoration and protection. The purpose of this contextual measure is to describe trends in the restoration and protection of coastal habitat conducted by the State using non-CZM funds or non Coastal and Estuarine Land Conservation Program (CELCP) funds. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

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	670 – Data from NGO partners
Number of acres of coastal habitat protected through acquisition or easement using non-CZM or non-CELCP funds	1,374 – Indiana Heritage Trust Program

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the wetland management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

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	N
Wetland policies related public infrastructure funding	Y	Y
Wetland mitigation programs and policies	Y	Y
Wetland creation programs and policies	N	N
Wetland acquisition programs	Y	N
Wetland mapping, GIS, and tracking systems	Y	Y
Special Area Management Plans	N	N
Wetland research and monitoring	Y	N
Wetland education and outreach	Y	N
Other - Enforcement	Y	Y

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
    a) Characterize significant changes since the last assessment;
    b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and

c) Characterize the outcomes and effectiveness of the changes.

Regulatory Program – The Indiana General Assembly passed House Enrolled Act 1798 (HEA 1798) during the 2003 legislative session, followed by HEA 1277 in the 2004 legislative session. HEA 1798 was enacted on an override of a Governor veto. These enactments are largely in response to the U.S. Supreme Court's SWANCC decision, which declared isolated wetlands are outside the U.S. Army Corps of Engineers permitting authority under section 404 of the Clean Water Act. HEA 1798 creates a new isolated wetlands regulatory permit program, and HEA 1277 further amended certain provisions of HEA 1798. Together, these enactments require compensatory mitigation for permitted activities, allow high-quality wetlands be removed from potential development, allow activities to affect some isolated wetlands, and exempt some isolated wetlands from regulation. The legislation defines three classes of isolated wetlands generally based on the level of disturbance, support of wildlife or aquatic habitat, hydrologic function, and extent of invasive species. Class III is considered the highest-quality isolated wetlands and requires an individual permit for any proposed alteration. Class II isolated wetlands may require an individual permit depending on the level of potential impact. Class I isolated wetlands are covered by a state general permit and do not require an individual permit. Isolated wetlands are exempt from regulation if they were voluntarily created; are incidental features of lawns or landscaped areas, agricultural lands, roadside/irrigation ditches, or drainage control structures; fringe wetlands associated with private ponds; wetlands associated with water bodies or wetlands that have been created from dry land to collect and retain water for agricultural, commercial, industrial or aesthetic purposes. Isolated wetlands can also be exempt from the law based on their size, class, and the number of each type of wetland on a given tract of land. This change was not a CZM initiative.

Wetlands protection policies and standards – HEA 1798 and HEA 1277 contained a mandate that the Water Pollution Control Board adopt rules for general permits for minimum impacts to Class I and II state regulated wetlands, as well as permits for more significant impacts to Class I state regulated wetlands. The Acts also mandate that the Board adopt rules for individual permits for impacts to Class II and III state regulated wetlands. The Wetland Activities Permit Rules (327 IAC 17) became effective on January 1, 2004. This change was not a CZM initiative.

Restoration/Enhancement Programs – Following Federal approval of the Indiana Coastal Program annual grant funds received from NOAA were used to establish a Coastal Grants Program. The purpose of Indiana's Lake Michigan Coastal Grants Program is to protect and restore coastal: natural, cultural and historical resources. Indiana made $975,000 available in 2003 and $900,000 in 2004 for the competitive grants program. The Coastal Grants Program is in addition to $1.6 M made available to local and state entities in 2001 from the Great Lakes Coastal Restoration Grant program. Grant funds have been awarded to organizations, state agencies, and local communities for projects that include acquisition, restoration and enhancement of wetland areas. The Coastal Grants Program is the only new effort in Indiana specifically in support of wetlands conservation and has resulted in direct improvements to the health and quality of wetlands within the coastal area.

Wetlands assessment methodologies – Indiana currently lacks a consistent functional assessment methodology.

Indiana has available a Wetland Rapid Assessment Protocol (INWRAP). INWRAP development finished in 2000. The DNR and Department of Transportation used this protocol to evaluate impacts to wetlands associated with highway development. The scope and use is very limited in the Coastal Region.

The Indiana Division of Nature Preserves is currently partnering with NatureServe and Michigan DNRE, using EPA funding, for a wetland assessment methodology. This change was not a CZM initiative. This new methodology is being field tested currently and should have more applicability to the Coastal Region in Indiana. This project is part of the EPA Wetland Condition Assessment. The stated Goals of this project are to:

1. **Develop a methodology for assessing wetland condition** based on a standard set of wetland classification types, using a scientifically defensible set of metrics, and practical for typical state-level assessment work.
2. **Identify a candidate set of reference wetlands in northern Indiana and southern Michigan (Omernik level 3 ecoregions 55, 56, and 57)** using an objective screening process (remote sensing based metrics), predicted to span the range of reference, from Excellent to Poor (A – D), using landscape stressor models, field-based stressor checklists, state databases and other sources. Sites should span the range of wetland types, ecoregions, and conditions in the project area.
3. **Assess ecological integrity of the candidate reference wetlands using rapid and intensive metrics through field visits and analysis**, as well as record or measure stressors, and conduct a statistically valid analysis that will determine how we can reliably assign A - D ranks to wetland occurrences.

Mitigation Banking – In October 2002, the U.S. Corps of Engineers, Natural Resources Conservation Service, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Indiana Department of Environmental Management, and Indiana Department of Natural Resources entered into an *Interagency Coordination Agreement on Wetland Mitigation Banking within the State of Indiana*. The Agreement covers the mitigation of unavoidable wetland impacts due to the excavating, filling, flooding or draining of waters of the State and U.S. as regulated under the laws of Indiana, Section 401, Section 404 of the Clean Water Act and the wetland conservation provisions of the Food Security Act of 1985. The Agreement includes the criteria for establishing, owning, operating and maintaining wetland mitigation banks. It also establishes the criteria for authorizing applicants to withdraw credits from a wetland mitigation bank to use as compensatory mitigation. The Agreement provides a consistent and agreed upon use of wetland mitigation banking in the State of Indiana. Under this agreement one mitigation bank was approved in Lake County. On April 10, 2008, the U.S. Army Corps of Engineers and U.S. EPA jointly published mitigation regulations (33 CFR Part 332 & 40 CFR Part 230) which established procedures for the approval and operation of wetland mitigation banks. It has been agreed upon by the signatories of the original Interagency Coordination Agreement to void the 2002 Interagency Coordination Agreement and use in the new U.S. Army Corps of Engineers regulations with a wetland mitigation banking supplement specific to the State of Indiana. This change was not a CZM initiative.

Acquisition programs – The Coastal Program has included acquisition as an eligible category in the Coastal Grants Program and has funded acquisition of several wetland areas. In addition, the

state has a funded land acquisition program - The Indiana Heritage Trust program funds the purchase of land from willing sellers to protect Indiana's rich natural heritage for wildlife habitat and recreation.

General Assembly appropriations, Environmental License Plate sales and additional donations from patrons are the three ways the program protected more than 50,000 acres statewide since inception.

3. **(CM)** Indicate whether the CMP has a habitat restoration plan for the following coastal habitats and the approximate time since the plan was developed or significantly updated.

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)		

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the Coastal Management Program and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	**Select type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority (H, M, L)**
Spatial Database	Capacity	H
Preservation and acquisition	Funding, education, assessment (technical data). Easements/Acquisition	H
Data on value of wetlands and function	Data	L
Coastal Wetland Education Program	Communication/Outreach - Comprehensive Education program for school age and decision makers	H
Information on Wetland banks	Data - Assessment of success and function	L

- Spatial Database – The State currently lacks a comprehensive database of wetlands. The TEMPO database may fill a portion of the gap; however, it lacks a comprehensive view of wetlands tracking. The IDEM and DNR currently cannot tie permit databases together. An enhancement of the DNR UNITY and IDEM TEMPO databases would afford permit

decisions to consider cumulative and secondary impacts more fully and allow a more holistic view of water resources. This issue is incorporated into the Cumulative and Secondary Impacts issue area. Work to link the various databases and provide GIS data access is a high priority.

- Education and outreach program – A dedicated wetlands education and outreach program that focuses on wetland values would help inform the public and decision makers as to the importance of wetlands. The LMCP Coastal Grants program funded several outreach and education projects that address these issues. The outputs of these projects can be incorporated into ongoing technical assistance provided through the LMCP.

- Acquisition strategy – One of the most effective ways to ensure the long-term protection of critical wetlands is through the purchase of fee simple title or easements. The state needs a long-term strategy for acquiring wetlands in the coastal area. This identification can be addressed through the State Coastal and Estuarine Land Conservation Plan (CELCP) and other ongoing planning initiatives.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

   High _____
   Medium __X__
   Low _____

   Briefly explain the level of priority given for this enhancement area.

There are a number of initiatives either in development or underway addressing Wetland issues. The issues not addressed by these initiatives – database development and GIS coordination, shall be addressed in the Cumulative and Secondary Impacts (CSI) issue area.

2. Will the CMP develop one or more strategies for this enhancement area?

   Yes _____
   No __X___

   Briefly explain why a strategy will or will not be developed for this enhancement area.

The database development and GIS coordination issues fit better in CSI. The other issues identified as high priority during the public input process either would not result in a Program change as required by the 309 guidelines or overlap with existing efforts.

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
Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

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

   (Risk is defined as: "the estimated impact that a hazard would have on people, services, facilities and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage." *Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. August 2001*)

Type of hazard	**General level of risk** (H,M,L)	**Geographic Scope of Risk (Coast-wide, Sub-region)**
Flooding	M	Sub-regional
Coastal storms, including associated storm surge	M	Sub-regional
Geological hazards (e.g., tsunamis, earthquakes)	L	Coast-regional
Shoreline erosion (including bluff and dune erosion)	H	Sub-regional
Sea level rise and other climate change impacts	-	-
Great Lake level change and other climate change impacts	H	Coast-regional
Land subsidence	L	Coast regional
Other (please specify)	-	-

2. For hazards identified as a high level of risk, please explain why it is considered a high level risk. For example, has a risk assessment been conducted, either through the State or Territory Hazard Mitigation Plan or elsewhere?
   - Indiana Lake Michigan Coastal Program & Final Environmental Impact Statement, Chapter 5-2 and Chapter 10. (program document)
   - National Coastal Conditions Report III, Chapter 7: Great Lakes Coast Condition

3. If the level of risk or state of knowledge of risk for any of these hazards has changed since the last assessment, please explain.

4. Identify any ongoing or planned efforts to develop quantitative measures of risk for these hazards.
   - Ogden Dunes beach nourishment
   - Multi-Hazard Mitigation Plan for Lake and Porter County (in progress)

5. **(CM)** Use the table below to identify the number of communities in the coastal zone that have a mapped inventory of areas affected by the following coastal hazards. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

Type of hazard	**Number of communities that have a mapped inventory**	**Date completed or substantially updated**
Flooding	0	-
Storm surge	0	-
Geological hazards (including Earthquakes, tsunamis)	0	-
Shoreline erosion (including bluff and dune erosion)	0	-
Sea level rise	0	-
Great lake level fluctuation	0	
Land subsidence	0	-
Other (please specify)	-	-

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

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

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

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
    1. Characterize significant changes since the last assessment; **N/A**
    2. Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and **N/A**
    3. Characterize the outcomes and effectiveness of the changes. **N/A**

No significant changes since last assessment.

3. **(CM)** Use the appropriate table below to report the number of communities in the coastal zone that use setbacks, buffers, or land use policies to direct development away from areas vulnerable to coastal hazards. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

For CMPs that use numerically based setback or buffers to direct development away from hazardous areas report the following:

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.	**0**
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.	**0**

For CMPs that do not use state-established numerical setbacks or buffers to direct development away from hazardous areas, report the following:

Contextual measure	Number of communities
Number of communities in the coastal zone that are required to develop and implement land use policies to direct development away from hazardous areas that are approved by the state through local comprehensive management plans.	**0**
Number of communities that have approved state comprehensive management plans that contain land use policies to direct development away from hazardous areas.	**0**

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Public Input/Partnering	Communication/Outreach	H
Updated Maps and Assessments	Data – GIS layer – development within 1,000 feet of shoreline. Determine long-term trends and modeling to prevent construction in areas that may have high ground water.	H

Protect Remaining Undeveloped Dunes	Policy/capacity - Mechanisms for acquisition when these properties are expensive	M
Sand bypass around harbors/breakwaters	Engineering, structures, funding	M

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High _____
Medium _X__
Low _____

Briefly explain the level of priority given for this enhancement area.

This enhancement area received this level of priority because there is a lack of current information compiled in one location or on electronic format readily available the public, stakeholders, and elected officials to make effective land use decision.

2. Will the CMP develop one or more strategies for this enhancement area?

Yes **__X__**
No _____

Briefly explain why a strategy will or will not be developed for this enhancement area.

The strategy shall be developed due to the high level of concern with hazard impact on shoreline development and existing land use within 1000 feet of the Indiana Shoreline of both natural and manmade structures as an assessment of coastal resources.

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
Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Characterize 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)	L	Limited areas of lakefront available for development.	Shoreline
Non-water dependent commercial/industrial uses of the waterfront (existing or conversion)	L	Large amount of Industry along lakeshore with sheet steel walls. Long term potential to convert from private to public ownership/access.	Shoreline
Erosion	M	Development and potential climate changes resulting in increased stream flashiness.	Stream access – fishing, boating.
Sea level rise/ Great Lake level change	M	Long term forecasts and models for Great Lakes levels predict lower water levels This may increase the areas available for public access	Shoreline/beach access
Natural disasters	L	Storm event in 2008 resulted in large amount of debris flushed from tributaries to lake. Public access reduced short term due to safety concerns.	Shoreline/beach access
National security	M	Over the past 10 years some industrial areas that were open to public access have been closed due to security concerns.	Fishing access

Encroachment on public land	M	Municipalities in the CZM are under enormous financial pressure (due in large part to the property tax caps and attendant fiscal budget reductions), and some are reporting the need to dispose of owned properties to lighten the financial load	Public parks and open space (municipal-owned)
Other			

2. Are there new issues emerging in your state that are starting to affect public access or seem to have the potential to do so in the future?

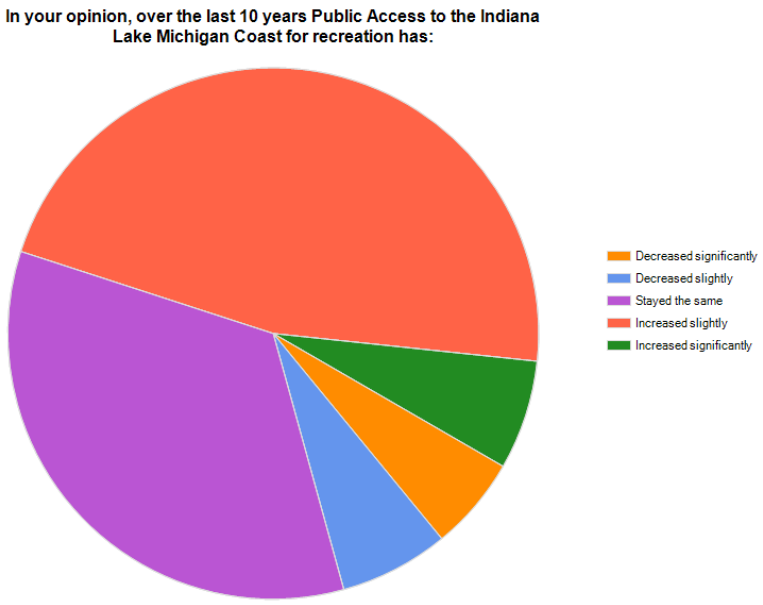
Promotion of tourism (eco-based). Porter County Tourism development of *Beyond the Beach* project and *Dunes Kankakee* trail.

3. **(CM)** Use the table below to report the percent of the public that feels they have adequate access to the coast for recreation purposes, including the following. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

Contextual measure	**Survey data**
Number of people that responded to a survey on recreational access	210
Number of people surveyed that responded that public access to the coast for recreation is adequate or better.	97
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Online via Survey Monkey – email invitations to list serves
What was the geographic coverage of the survey?	Responses primarily from IL and IN, 1 from AZ
In what year was the survey conducted?	2010

4. Briefly characterize the demand for coastal public access within the coastal zone, and the process for periodically assessing public demand.

Online questionnaire used – April 2010. Question posed does not directly answer the question about demand; however, it does address public perception of level of service. The *Marquette Plan* established a goal of 75% public access to the shoreline of Lake Michigan. The attainment of this goal is tracked by the Northwestern Indiana Regional Planning Commission (NIRPC), Northwest Indiana Regional Development Agency (RDA), and the DNR LMCP.



5. Please use the table below to provide data on public access availability. If information is not available, provide a qualitative description based on the best available information. If data is not available to report on the contextual measures, please also describe actions the CMP is taking to develop a mechanism to collect the requested data.

Types of public access	**Current number(s)**	**Changes since last assessment (+/-)**	**Cite data source**
(CM) 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)	PA = 30,593 ac; includes all facility & area types (public private, schools, etc.) Total acres - 388,940	NA – not a measured item in last assessment	IDNR SCORP Facilities Inventory - 2010, Indiana GIS
(CM) Miles of shoreline available for public access (report both the total miles of shoreline and miles available for public access)	45 miles total. 23.2 miles open for public access	NA – not a measured item in last assessment	LMCP-FEIS 2001

Types of public access	Current number(s)	Changes since last assessment (+/-)	Cite data source
Number of State/County/Local parks and number of acres	352 parks; 12,657.85 acres	502 sites / 32,942 Acres reported last time. However, after updating database it appears this number included Federal land holdings	IDNR SCORP Facilities Inventory - 2010
Number of public beach/shoreline access sites	84 total number of public beach/ shoreline access points	NA – not a measured item in last assessment	2008 Beach QAPP
Number of recreational boat (power or non-power) access sites	18	Last report was 22 Boat Ramps – not access sites.	IDNR SCORP Facilities Inventory – 2010
Number of designated scenic vistas or overlook points	Not Inventoried	Not Inventoried	
Number of State or locally designated perpendicular rights-of-way (i.e. street ends, easements)	86	Unknown	BEACH Program 2004
Number of fishing access points (i.e. piers, jetties)	78	Last report 18 piers and 60 sites allowing fishing access	IDNR SCORP Facilities Inventory – 2010
Number and miles of coastal trails/boardwalks	69 trails / 117 miles	57 trails / 60 miles – Increase of 12 trails and 57 miles.	IDNR SCORP Facilities Inventory – 2010

Types of public access	Current number(s)	Changes since last assessment (+/-)	Cite data source
Number of dune walkovers	Information not available	NA – not a measured item in last assessment	
Percent of access sites that are ADA compliant access	Information not available	Not Inventoried	
Percent and total miles of public beaches with water quality monitoring and public closure notice programs	23 total miles, 21 miles of monitored beaches with public notification programs = 91%	2003 – 95.7% beach miles monitored = reduction of 4.7%	2008 Beach QAPP referencing study by Grant Year One Project Partners.
Average number of beach mile days closed due to water quality concerns	2009 had a total of 2,968 Beach Days (Days in the swimming season per Beach) with 89 Advisories and 89 Closures posted.	NA – not a measured item in last assessment	BeachGuard online website 3/15/2010(www.idem.in.gov/beaches

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

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

Management categories	**Employed by state/territory** (Y or N)	**Significant changes since last assessment** (Y or N)
Acquisition programs or policies	Y - Recreational Trails Program, Land & Water Conservation Fund, Indiana Heritage Trust Program, Coastal Grants Program, Coastal & Estuarine Land Conservation Program	N
Comprehensive access management planning (including GIS data or database)	Y	Y
Operation and maintenance programs	N	N
Alternative funding sources or techniques	Y - Corporate & Community Foundation Grant Programs	N
Beach water quality monitoring and pollution source identification and remediation	Yes – BEACH Act Grants – monitoring and Sanitary Surveys	N
Public access within waterfront redevelopment programs	N	N
Public access education and outreach	N	N
Other (please specify)		

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
   a) Characterize significant changes since the last assessment;
   b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
   c) Characterize the outcomes and effectiveness of the changes.

   a) State Comprehensive Outdoor Recreation Plan (SCORP) Database update for Coastal Region. The SCORP database was reviewed and updated. The work included field truthing data and geo-referencing new information.
   b) This project was driven by the LMCP using Section 309 Funds – See Section II for a description of work performed and outcome.
   c) Phase I of this project was a comprehensive inventory of existing public access recreation sites and trails within the Indiana Lake Michigan Coastal Area. The inventory was conducted in 2008 with funding made available through the Lake Michigan Coastal

Program (LMCP) and a federal grant from the National Oceanic and Atmospheric Administration's Coastal Zone Management Program. As part of the deliverables for this project, the Statewide Comprehensive Outdoor Recreation Plan (SCORP) database was updated with information for 712 sites, of which 141 new sites were identified. In addition, approximately 50 miles of trail, or 32 new trails, were also identified. The final corresponding GIS files include 681 sites and 277 parcels.

Newly developed standards for public access in the Indiana Coastal area were established based on the benchmarking study. These standards are recommendations and have not been adopted into statute or administrative code. Future updates to the State Comprehensive Outdoor Recreation Plan and associated Regional Plans shall reference these standards.

3. Indicate if your state or territory has a printed public access guide or website. How current is the publication and/or how frequently is the website updated? Please list any regional or statewide public access guides or websites.

   The DNR Website is updated semi-annually to quarterly; DNR guides printed annually. DNR Division of Fish and Wildlife maintains an online interactive map of public access sites.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
Identify historic resources that are available for public access or suitable for inclusion in current and/or future public access projects	Data - Updated inventory of Historic Resources and public access opportunities.	H
Creek connections for paddlers	Data, Policy - Identify connector opportunities and identify mechanisms for access - easements, fee simple, etc.	L
Dedicated Use Trails	Policy	M
Telling the Native American history of the Area	Outreach	L
Beautification opportunities	Policy	L
Experiential opportunities - observational areas to watch salmon run	Outreach	L
Hardened/armored shoreline	Data, Policy - Assessment	L

	of areas where hardened shoreline may not be necessary	
Education on why areas are of value and the good and bad of public access	Outreach - Signage at access sites. Highlight habitat damage vs. public involvement	L

Enhancement Area Prioritization

4. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

   High __X__
   Medium _____
   Low _____

   Briefly explain the level of priority given for this enhancement area.

Both public input and agency staff input processes identify this as a priority issue.

5. Will the CMP develop one or more strategies for this enhancement area?

   Yes **__X___**
   No _____

   Briefly explain why a strategy will or will not be developed for this enhancement area.

Historic and cultural resource sites are underrepresented in planning efforts at the State and local levels. The inventory of Cultural and Historic Resources is almost
10 years old and is due for an update.

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
Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. In the table below, characterize the significance of marine/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	H	Aesthetic, user conflict, danger to wildlife (dangerous debris items such as syringes, glass, etc.) (potential entanglement from balloon strings, etc. to wildlife)	N
Land Based – Dumping	L	Aesthetic, user conflict, danger to wildlife	N
Land Based – Storm Drains and Runoff	H	Aesthetic, user conflict, danger to wildlife (dangerous debris items such as syringes, glass, etc.) (potential entanglement from balloon strings, etc. to wildlife)	N
Land Based – Fishing Related (e.g. fishing line, gear)	L	Aesthetic, danger to wildlife (potential entanglement in fishing lines, nets, etc.)	N
Ocean Based – Fishing (Derelict Fishing Gear)	L		N
Ocean Based – Derelict Vessels	L		N

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)
Ocean Based – Vessel Based (cruise ship, cargo ship, general vessel)	L		N
Hurricane/Storm	H (September 2008)	Aesthetic, user conflict, danger to wildlife (dangerous debris items such as syringes, glass, etc.) (potential entanglement from balloon strings, etc. to wildlife)	Y
Other (please specify)			

2. If information is not available to fill in the above table, provide a qualitative description of information requested, based on the best available information.

It is difficult to ascertain if the source of debris on the beach is from people using the beach or debris from stormwater runoff. We do know that in 2009 47% of debris removed and cataloged was from items related to shoreline/recreational activities. (Shoreline recreational category includes: food wrappers/packing, beverage containers, bags {plastic/paper}, toys, etc.) In addition another 50% of debris removed in 2009 was from smoking-related activities (Smoking related category results include: cigarette filters, cigar tips, lighters and tobacco packaging)

The top ten items removed from beaches in Indiana in 2009 were:

Cigarettes/Cigarette Filters	16,046
Caps/Lids	4,131
Food Wrappers/Containers	4,115
Straws/Stirrers	2,707
Balloons	1,581
Cigar Tips	1,532
Bags (Plastic)	1,484
Cups/Plates/Eating Utensils	1,205
Bev Containers (plastic)	887
Beverage Cans	778

Source: Alliance for the Great Lakes – Adopt-a-Beach ™ Program

3. Provide a brief description of any significant changes in the above sources or emerging issues.

In September 2008, the Indiana coast experienced an intense storm event that resulted in flooding along the shoreline. The rain event happened just a few days prior to the September Adopt-a-Beach ™ event, part of the International Coastal Cleanup where volunteers remove litter as part of a world-wide effort. A few days after the flood event volunteers removed 6,927 pounds of debris or 11.33 pounds per person compared to 2,326 pounds removed in 2008 or 6.5 pounds per person. The flooding had a major impact on the amount of debris removed during the event.

An emerging issue in the region is consideration of the amount of food waste found on beaches and how it might contribute to larger numbers of wildlife on the beach which may contribute to bacterial pollution issues at beaches.

4. Do you use beach clean-up data? If so, how do you use this information?

   Each year the Alliance for the Great Lakes, a nonprofit organization, that coordinates an Adopt-a-Beach ™ program in Indiana, compiles results from the Adopt-a-Beach ™ program and publishes an annual report with results. (Adopters that participate in the program not only remove debris from shorelines but record their findings during their beach visits scheduled throughout the year.) The publication is posted on the Alliance's website, sent to their members, adopters involved in the program and to volunteers that have participated in Adopt-a-Beach ™ events throughout the year. In addition the Alliance does media outreach including results from the Adopt-a-Beach ™ program.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

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	U	N
Littering reduction programs	N	U	N
Wasteful packaging reduction programs	N	U	N
Fishing gear management programs	N	N	N
Marine debris concerns in harbor, port, marine, & waste management plans	N	N	N
Post-storm related debris programs or policies	N	U	N

Management categories	Employed by state/territory (Y or N)	Employed by local governments (Y, N, Uncertain)	Significant changes since last assessment (Y or N)
Derelict vessel removal programs or policies	N	N	N
Research and monitoring	N	Y	N
Marine debris education & outreach	Y	N	Y
Other (please specify)			

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
   a) Characterize significant changes since the last assessment;
      a. Increased stewardship activities through Alliance for the Great Lakes Adopt-a-Beach ™ program.
      b. Indiana Clean Marina Program Development. Specifically addresses waste management practices for marinas.
   b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and CMZ funded efforts
      a. In 2007 provided financial support to Alliance's efforts to involve volunteers in litter debris removal and cataloging.
      b. Indiana Clean Marina Program developed in partnership with partners using Section 306 funds to meet Section 6217 program requirements.
   c) Characterize the outcomes and effectiveness of the changes.
      a. More debris removed from shorelines by volunteers and increased stewardship activities and out to increase awareness about debris problems.
      b. One Marina certified and two pledged to program. The resulting Marine Debris reduction not measured.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Recycling programs	Policy and Outreach	L
Littering reduction programs	Policy and Outreach	L

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Marine debris concerns in harbor, port, marine, & waste management plans	Policy and Outreach	M
Post-storm related debris programs or policies	Policy	M
Research and monitoring	Policy	L
Marine debris education & outreach	Outreach	L
Urban runoff	Identification of debris source. Entity charged with keeping Lake Debris information. Reduction and cleanup efforts	H
Shoreline garbage and debris	Educate fisherman and boaters	M

Enhancement Area Prioritization

3. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High _____
Medium __X_
Low _____

Briefly explain the level of priority given for this enhancement area.

Many of these issues are locally led. Indiana is a home rule state and local ordinances can only be enforced at the local level.

4. Will the CMP develop one or more strategies for this enhancement area?

Yes _____
No ___X__

Briefly explain why a strategy will or will not be developed for this enhancement area.

The Clean Marina Program encompasses many of the issues relating to the marine environment. The remaining issues are addressed through local ordinance. There is no need for the development of additional program components through an enhancement strategy.

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
Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Identify 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. Provide the following information for each area:

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**
Dunes Complex	Lack of resource management resulting in invasive species.	Unknown	Encroachment, invasive species, sand starvation
Lake Michigan Watershed	Registered Significant Water Withdrawal Facilities (SWWF) within the Lake Michigan Basin	724 SWWFs currently registered in the Lake Michigan Basin. Additional 53 SWWFs registered since 1/09 (approx. 8% increase)	Water diversions, increased consumption use, impacts to salmonid streams, lowering of ground-water levels
Lake Michigan Watershed	Increase of infrastructure construction, public works/municipality projects, multi-use trail development, residential & commercial development, abandonment of industrial areas and reuse/redevelopment	Proposed construction project reviews received: 2006 = 57 2007 = 61 2008 = 79 2009 = 86	Impacts to water resources, erosion, fish, wildlife, botanical resources, in-channel and riparian habitats and sensitive resources

2. Identify sensitive resources in the coastal zone (e.g., wetlands, waterbodies, fish and wildlife habitats, critical habitat for threatened and endangered species) that require a greater degree of protection from the cumulative or secondary impacts of growth and development. If necessary, additional narrative can be provided below to describe threats.

Sensitive resources	**CSI threats description**	**Level of threat** (H,M,L)
Dunes Complex	Invasive Resources	H
Basin 1	Historical flooding in 2008 & 2009	High potential impacts to water resources, erosion, wildlife
Salmonid streams & Outstanding rivers *	Increased construction projects	High impacts to water resources, erosion, wildlife & botanical resources
Groundwater & surface water	High capacity water withdrawal	High potential impacts to decreased availability

*The following waters are designated as salmonid waters within Basin 1 and shall be capable of supporting a salmonid fishery:

(A) Trail Creek and its tributaries downstream to Lake Michigan.
(B) East Branch of the Little Calumet River and its tributaries downstream to Lake Michigan via Burns Ditch.
(C) Salt Creek above its confluence with the Little Calumet River.
(D) Kintzele Ditch (Black Ditch) from Beverly Drive downstream to Lake Michigan.
(E) The Galena River and its tributaries in LaPorte County.
(F) The St. Joseph River and its tributaries in St. Joseph County from the Twin Branch Dam in Mishawaka downstream to the Indiana/Michigan state line.
(G) The Indiana portion of the open waters of Lake Michigan.

The following waters are designated as Outstanding Rivers List for Indiana within Basin 1:

(A) Deep River designated Canoe Trails and having outstanding ecological, recreational, or scenic importance.
(B) West Arm Little Calumet River designated a State Fishing Rivers and identified by states as having outstanding fishing values, such as Blue Ribbon Trout Streams, State-designated canoe/boating routes

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

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

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
   a) Characterize significant changes since the last assessment;
   b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
   c) Characterize the outcomes and effectiveness of the changes.

The Indiana coastal area is influenced by land-use changes taking place within and outside of its coastal boundary. Two general changes in land use are occurring, abandonment of historically industrial uses, and sprawl. The greatest threat associated with the abandonment of industrial sites is the legacy of chemical contamination they leave behind. Sprawl, defined as haphazard growth, represents a change in use of coastal areas or uses and continues to destroy farmland, wetlands, and forests. Uncontrolled growth can result in increased runoff and groundwater contamination. One of the significant issues associated with new development is the use of on-site septic systems. The inappropriate siting, poor maintenance, and failures leads to degraded water quality and health risks. It has been documented that the replacement of natural landscapes with impervious surfaces such as roads, parking lots and rooftops can increase bacterial and chemical pollutant levels, change the physical structure of streams and creeks, and reduce the number of species and aquatic life. Studies show that if a watershed is covered by more than ten percent with impervious surfaces, the rivers, streams and lakes within the watershed become degraded.

The 2005-2009 Assessment identified two items concerning On-site Septic Systems as priority projects.

- County Health Departments need improved guidelines and procedures that reflect the best available technology for the placement, design, and installation of coastal on-site septic systems.

- The E.coli Task Force has identified several projects that could be addressed through a 309 strategy:

- A project that would allow the development of GIS-based maps of sewered and septic communities within a focus area.

- A project that would develop and/or enhance source identification tracking methods, support the continued development of real-time test methods and/or support development of improved indicators and associated procedures.

The State modified the project proposal in 2008 based upon partner input and emerging technology. The proposal modification included the following:

The state will develop a database for onsite septic system locations in all three counties to be adopted by county health departments and the Indiana State Department of Health to support implementation of ISDH Residential Sewage Disposal provisions. This activity will provide additional information to state, county, and local officials to assist with implementation of ISDH authorities and is considered to be a "routine program change." The outcome of this project is included in **Section II.**

Drainage of low-lying lands is also a concern throughout the coastal area. State legislation provides that drainage is largely controlled through county drainage boards. The Drainage Code is primarily concerned with excess water removal. The focus of its impact is upon regulated drains. The county surveyor is required to classify all regulated drains as being in need of: (1) reconstruction; (2) periodic maintenance; or (3) vacation. These classifications are themselves dependent upon the adequacy of the waterway to properly drain lands affected. Legal drain management can alter hydrology and destroy or limit necessary habitat for Lake Michigan fisheries, as well as transport pollutants that impair water quality. Several major waterways and drainage ditches carry pollutants through the coastal area and discharge them into Lake Michigan.

Urban sprawl and inner city decline are happening almost everywhere, but it is very apparent in Northwest Indiana. Statistics from Lake County show that uncontrolled urban sprawl is occurring with abandonment of housing in the inner cities and older suburbs. During the last decade, 18,000 new housing units were created in new areas, while 11,000 were left vacant or demolished in Gary, Hammond, and East Chicago. Much building has gone on south of the three northern cities despite the fact that Lake County lost 8% of its population between 1980 and 1990 and has grown by about 1% since then. It is reported that Porter County is losing 1,000 acres per year to sprawl development, which brings with it air and water pollution. Increased flooding is also a threat as sprawl degrades wetlands in Lake and Porter Counties in Northwest Indiana.

<u>Drainage Study:</u>
Porter County is currently developing a countywide drainage study. A portion of the funds for this initiative are provided by the LMCP through the Coastal Grants Program. It is too early to ascertain the long term impacts of this study.

<u>Regional Comprehensive Plan:</u>
The Northwestern Indiana Regional Planning Commission (NIRPC) is currently developing the 2040 Comprehensive Regional Plan. This planning document shall include several development

scenarios and supporting information for the region. NIRPC will use the Transportation portion to guide their future funding decisions and the remaining elements in other program areas. It is too early to tell the impact and outcomes associate with this initiative. This is not an LMCP funded project.

Marquette Plan:

The LMCP Coastal Grant Program funded Phase 1 and 2 of the Marquette Plan. The stated goals of the Plan are fourfold:

- Comprehensive plan for the Lake Michigan Shoreline
- Recapture 75 percent of the lakeshore for public use;
- Establish a minimum setback from water's edge of 200 feet;
- Create a continuous trail network through northwest Indiana

Implementation of the Plan is supported by NIRPC, DNR LMCP, and the Regional Development Authority (RDA). Adoption and implementation of the concepts and associated project components identified in the plan is the responsibility of the various municipal and county governments. Several projects identified in the Marquette Plan are funded. The LMCP has provided funding and technical assistance to several communities to further develop and refine Subarea plans identified in the Marquette Plan. In addition, the RDA provides funds for project development and implementation. The RDA recently hired the Marquette Implementation Coordinator. This position assists local communities and other partners develop project proposals as well as identify outside sources of funding that can be leveraged against RDA funding.

Great Lakes-St. Lawrence River Basin Water Resources Compact

The Great Lakes Compact was driven by non-CZM efforts. The State of Indiana's implementation of the Great Lakes-St. Lawrence River Basin Water Resources Compact was signed into law as IC 14-25-15 by Governor Daniels in February of 2008. Within the compact, the legislative bodies of each state included in the compact declared that the waters of the basin:

- are precious public natural resources shared and held in trust by the states;
- are interconnected and part of a single hydrologic system; and
- can concurrently serve multiple uses, are interdependent and must be balanced.

The States also declared that future diversions and consumptive uses of basin water resources have the potential to significantly impact the environment, economy and welfare of the region, and that sustainable, accessible and adequate water supplies for the people and economy of the basin are of vital importance. The states agreed to act together to protect, conserve, restore, improve and manage the renewable but finite waters of the basin for the use and benefit of all their citizens, and commit to provide leadership for the development of a collaborative strategy with other regional partners to strengthen the scientific basis for sound water management decision making under the compact, including the collection and application of scientific information to support the following:

- an improved understanding of the impacts of withdrawals and to develop a mechanism for assessment;
- a periodic assessment of the cumulative impacts of withdrawals, diversions and consumptive uses;
- improved understanding of the role of groundwater; and

- the development, transfer and application of science and research related to water conservation and efficiency.

Within five years of implementation of the Great Lakes Compact, each state is required to develop and maintain a water resources inventory for the collection, interpretation, storage, retrieval exchange and dissemination of information. Each state is also required to develop a common base of data regarding the management of the water resource and to establish systematic arrangements for the exchange of data with other states and provinces. The states must also develop and maintain a compatible base of water use information for any person within the basin who withdraws water in an amount of 100,000 gallons per day or greater average in any thirty day period, or diverts water in any amount. Since 1985, Indiana has administered a statewide registration and water use reporting program for all Significant Water Withdrawal Facilities (SWWF) under the provisions of the Water Resources Management Act (IC 14-25-7). A SWWF is defined in the act to mean "the water withdrawal facilities of a person that, in the aggregate for all sources and by all methods, has the capability of withdrawing more than 100,000 gallons of ground water, surface water, or ground and surface water combined in one day".

The reporting and accessibility and complete and accurate water use data within the Great Lakes Basin is required by the Great Lakes Compact, and is imperative for proper analysis and assessment of the water resource, as well as the develop of conservation and efficiency programs within the basin.

In addition, five of the six regulatory programs administered by the Division of Water have oversight authority on cumulative effects as a result of construction projects in and along water bodies including Lake Michigan, streams, and lakes. Statutory authorities include: Indiana Flood Control Act, IC 14-28-1, Navigable Waterway Act, IC 14-29-1, Lowering of the Ten Acre Lake Act, IC 14-26-5, Channels Act, IC 14-29-4, and the Lakes Preservation Act, IC 14-26-2.

Other State Drainage Code regulations delegates primary control of regulated drains to the county drainage boards for moving excess water from local drainage. The county surveyor is required to maintain regulated drains through reconstruction and periodic maintenance. Drainage of low-lying lands throughout the coastal area is a concern; therefore, the Division of Water regulates certain legal drain construction activity though the Flood Control Act and the Lowering of the Ten Acre Lakes Act. However, legal drain activity on waterways that are less than 10 miles in length is exempt from the Flood Control Act. Legal drain management can alter hydrology and destroy riparian forested and in-channel habitats, increase erosion, create certain wildlife access restriction from side-casting dredged materials, and limit necessary habitat for Lake Michigan fisheries.

Increase in economic development opportunities, agricultural initiatives for alternative fuel sources including bio-fuel and wind farms, and changes in land use from development of large residential subdivisions, erection and abandonment of large commercial facilities, associated parking lots, bridge construction, installation of utility lines, and in-stream channel dredging projects in the basin may result in impacts to water resources, wildlife, and botanical resources. Cumulative and secondary impacts to the coastal zone watershed from these changes within the

basin may include an amount of increased soil erosion, migration patterns, stream velocities, water well installation and potential impact to groundwater levels. In addition, this region of the state experienced historic flooding in 2008 and in 2009 which has resulted in increased stream bank erosion and personal and public infrastructure damages. The need for emergency bank stabilization projects, bridge reconstruction, reconstruction of residences and commercial buildings and in-channel debris removal has been prevalent in Basin 1. In order to expedite these repairs, the IDNR, Division of Water issued an emergency rule in the form of a general license for these types of projects.

Data for impacts as a result of construction on streams, Lake Michigan, and the public freshwater lake in this basin is needed by other governmental agencies, environmental groups, county and city planners, and the general public for determining the conservation and protection of the water resources, forested areas, riparian zones, wildlife, and botanical resources.
As previously stated in the Wetlands Section, the Indiana Department of Environmental Management is developing the TEMPO Database. TEMPO stands for Tools for Environmental Management and Protection Organizations. The TEMPO system allows the Department to integrate environmental data management functions across several programs—including air quality, water quality, solid waste management, and hazardous waste management. It is too early to tell how the implementation of this new system will improve data sharing among regulatory programs and associated decision making.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
New development causing flooding	Data and modeling capability to foresee impacts of new development	H
Encouragement/incentive for green business practices	Policy	L
Impacts of Little Calumet Flood control project on Water Quality	Data - Scientific study targeted to assess it.	L
Finding the reasons for flooding - clearing drainage ditches	Data	L
Refine existing Database capabilities and add user interface and mapping enhancements.	Capacity	H

Enhancement Area Prioritization

5. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High __X__
Medium _____
Low _____

Briefly explain the level of priority given for this enhancement area.

The need for data in permitting decisions is cross cutting. Multiple agencies in the state require improved data access and management systems that include GIS capabilities.

6. Will the CMP develop one or more strategies for this enhancement area?

Yes **__X___**
No _____

Briefly explain why a strategy will or will not be developed for this enhancement area.

The State of Indiana currently lacks an integrated data system across permitting programs and agencies. Thus, it is difficult for Cumulative and Secondary Impacts to be taken into consideration as part of the regular permitting process. The Strategy to be developed titled *Integrated State Permitting Database/Connectedness Improvements* shall address these issues.

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
Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Identify geographic areas in the coastal zone subject to use conflicts that can be addressed through special area management plans (SAMP). Also include areas where SAMP have already been developed, but new issues or conflicts have developed that are not addressed through the current plan. If necessary, additional narrative can be provided below.

Geographic Area	Major conflicts	Is this an emerging or a long-standing conflict?
Lakeshore areas down drift of Federal structures in Lake Michigan and the entities experiencing sand accretion. – Ogden Dunes, Indiana Dunes National Lakeshore Mt. Baldy and Portage Lakefront, Burns Waterway (Portage), Michigan City, US Steel	Conflict: Recreational impacts- beach erosion Issue: Sediment transport/beneficial use of dredged materials, sand bypass	Longstanding
Lakefront Communities: Beverly Shores, Michiana Shores, Pines, Dune Acres, Ogden Dunes, Porter (Porter Beach), Miller	Conflict: Similar flooding impacts seen more frequently in the lakefront communities are requiring a comprehensive approach to addressing the issue – investigation of causes needed to dispel cause conflicts, i.e. blame	Emerging

	Issues: Nonpoint source pollution-septic and stormwater, wetland impacts, hydrology and hydraulics-groundwater and surface water interaction, drainage, increase in annual precipitation	

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. Identify below any special management areas in the coastal zone for which a SAMP is under development or a SAMP has been completed or revised since the last Assessment:

SAMP title	**Status** (new, revised, or in progress)	**Date approved or revised**
NONE	NONE	NONE
See Below for description of SAMP "Like" projects		

SAMP Like Documents

Grand Calumet Area of Concern –The Grand Calumet River has been designated as an Area of Concern pursuant to the Great Lakes Water Quality Agreement. The Grand Calumet River, originating in the east end of Gary, Indiana, flows 13 miles (21 km) through the heavily industrialized cities of Gary, East Chicago and Hammond. The majority of the river's flow drains into Lake Michigan via the Indiana Harbor and Ship Canal, sending about one billion gallons of water into the lake per day. The Area of Concern (AOC) begins 15 miles (24 km) south of downtown Chicago and includes the east branch of the river, a small segment of the west branch and the Indiana Harbor and Ship Canal. Today, 90% of the river's flow originates as municipal and industrial effluent, cooling and process water and storm water overflows. Although discharges have been reduced, a number of contaminants continue to impair beneficial uses of the River.

Historically, the Grand Calumet River supported highly diverse, globally unique fish and wildlife communities. Today, remnants of this diversity near the AOC are found in the Ivanhoe, Tolleston Ridges, Gibson Woods, Clark and Pine, Pine Station and Seidner Nature Preserves. These areas contain tracks of dune and swale topography and associated rare plant and animal species, such as Karner blue butterfly, Franklin's ground squirrel, Blanding's turtle, the glass lizard and the black crowned night heron, among others.

Problems in the AOC are primarily driven by the legacy contamination in the river sediments from polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs) and heavy metals, such as mercury, cadmium, chromium and lead. Additional problems include high fecal coliform bacteria levels and suspended solids from combined sewer overflows as well as

biochemical oxygen demand (BOD). These contaminants originate from both point and nonpoint sources.

A Remedial Action Plan (RAP) was developed and is being implemented through an ecosystem based, multi-media approach for assessing and remediating impaired uses. The RAP consists of three stages: Stage I identifies and assesses use impairments, and identifies the sources of the stresses from all media in the AOC; Stage II identifies proposed remedial actions and their method of implementation; and Stage III documents evidence that uses have been restored. It is important to note that, in practice, these stages often overlap, and that the RAPs often become iterative documents, representing the current state of knowledge, planning and remedial activity in the AOC. The last published stage for the Grand Calumet River RAP was stage II.V. Currently, revisions are being done based on assessments of the beneficial use impairments current status as well as identifying needed remediation projects and monitoring for delisting.

The Marquette Plan – The southern shore of Lake Michigan is an unparalleled opportunity and challenge. The Marquette Phase I project set a goal of increasing public access and developing the urbanized area. The Marquette Plan Phase II imposes a new set of challenges with a different set of stakeholders and interest groups. The Marquette Plan Phase II identified the needs of the smaller communities and created a vision that identified and protected greenways, identified possible watertrails in the region and addressed the needs of smaller communities. The Marquette Plan is a regional plan that creates a comprehensive land use vision for the Lake Michigan drainage basin and a strategy for implementation of that vision.

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
   a) Characterize significant changes since the last assessment (area covered, issues addressed and major partners);
   b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
   c) Characterize the outcomes and effectiveness of the changes.

NONE – no SAMPS thus no changes

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy).

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
Lakefront water assessments	Data, issue development and project scoping, comprehensive project	M

	resulting from issue development phase	
Sediment Transport models and sand bypass	Data, stakeholder involvement, feasibility study, design of bypass system and sediment transport modeling, bypass management plan and implementation	H

Enhancement Area Prioritization

7. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High __X_
Medium _____
Low _____

Briefly explain the level of priority given for this enhancement area.

This is given a High Priority rating due to the feedback received by the affected entities and the level of cooperation that has been committed to the strategy as well as the public feedback.

8. Will the CMP develop one or more strategies for this enhancement area?

Yes **_X__**
No _____

Briefly explain why a strategy will or will not be developed for this enhancement area.

The LMCP shall develop two strategies in this enhancement area which include Stakeholder Involvement and a Feasibility Study

Great Lakes Resources

Section 309 Enhancement Objective
Planning for the use of Great Lakes resources

Resource Characterization
Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. In the table below characterize ocean and/or Great Lakes resources and uses of state concern, and specify existing and future threats or use conflicts.

Resource or use	**Threat or use conflict**	**Degree of threat** (H,M,L)	**Anticipated threat or use conflict**
Lake Michigan Fisheries	Pollution, aquatic invasive/nuisance species and habitat loss.	High	Affect commercial/sport fishing, recreation and tourism, transportation
Dredged Material Disposal	Chemical and/or heavy metal contamination, and beneficial use.	High/Medium	Threat to wildlife and human health.
Beneficial Use of Sediment	Artificial Structures impede littoral drift. Sand starvation causing erosion areas down drift of constructed structures	High	Jurisdictional issues affecting solutions.
Water-borne Transportation	Channel maintenance, aquatic invasive species.	High/Medium	Threat to wildlife, human health, commercial/sport fishing, recreation and tourism, transportation and manufacturing industries.
Water Quality	Nonpoint pollution, legacy contaminants in sediments.	Medium	Threat to wildlife, human health, commercial/sport fishing, recreation and tourism.
Ecosystem Health	Aquatic invasive/nuisance	High/Medium	Affect commercial/sport

	species		fishing, recreation and tourism and human health.
Underwater Archaeological Resources	Removal of artifacts, damage and/or destruction of resources.	Medium	Affects commercial and recreational diving, tourism, and educational opportunities.

2. Describe any changes in the resources or relative threat to the resources since the last assessment.

No changes since last assessment.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

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	Y	Y
Regional sediment or dredge material management plan	N	N
Intra-governmental coordination mechanisms for Ocean/Great Lakes management	Y	N
Single-purpose statutes related to ocean/Great Lakes resources	N	N
Comprehensive ocean/Great Lakes management statute	N	N
Ocean/Great Lakes resource mapping or information system	Y	Y
Ocean habitat research, assessment, or monitoring programs	Y	N
Public education and outreach efforts	Y	N
Other (please specify) – Water Quantity	Y	Y

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
   a) Characterize significant changes since the last assessment;
   b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
   c) Characterize the outcomes and effectiveness of the changes.

Great Lakes Resource Mapping - Underwater Archaeology Project

a) The 2005-2010 Section 309 Assessment and Strategy includes a project for Underwater Archaeological Resource planning. The project utilizes 2009 and 2010 funding. One remaining year of funding support remains for this project. Discussions are underway regarding funding a multi-purpose benthic mapping contract. The purpose of the project is to: identify underwater archaeological resources, further study benthic habitat, and develop a more detailed map of benthic structure that can be used in regulatory decisions.
b) This project was the result of a 309 Strategy.
c) It is too soon to assess the outcomes and effectiveness of this project.

Water Quantity - Great Lakes Compact Implementation Agreement.

a) All eight Great Lakes state legislatures ratified the Great Lakes Compact in **2007-2008**. Legislative approval was completed by the U.S. Senate on August 1, 2008, and by the U.S. House of Representatives on September 23, 2008. The final step in the approval process happened on October 2, 2008, when President Bush signed a joint resolution of Congress endorsing the compact. The provisions of the Great Lakes Compact became effective on December 8, 2008, to ensure the protection and sustainable use of the Great Lakes for future generations. The primary requirements of the Great Lakes Compact can be found in Article 4 of Indiana Code (IC) 14-25-15 that includes the following:

   1. registration of all water withdrawals of 100,000 gallons-per-day or greater average in any 30 day period;
   2. development of water conservation and efficiency programs;
   3. regional review for new or increased consumptive uses from the Great Lakes of five million gallons-per-day or greater average in any 90 day period; and
   4. prohibition of diversions from the Great Lakes Basin except those for straddling communities, communities in straddling counties, and intra-basin transfers.

   In addition to these general requirements, Indiana's implementation of the compact is specified in Article 9 and includes the permitting of daily withdrawals in excess of any of the following, calculated on average over any 90 day period:

   1. five million gallons from Lake Michigan surface water;
   2. one hundred thousand gallons from a salmonid stream; and
   3. One million gallons from any other surface or ground water source.

b) This initiative was not a 309 project nor was it driven by CZM efforts. The initiative is the culmination of many years work by a variety of governmental, Non-Governmental Organizations, and business/industry.
c) It is too soon to assess the outcomes and effectiveness of this project. Implementation and tracking components are in process.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need Description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H, M, L)
Economic impact of natural areas	Consensus of valuation	H
Bringing public awareness to data (GIS being added to Google map network for public)	Outreach and Data	L
Potentials for use	Data	L
Sustainability of water usage	Water use assessments - residential, agricultural, industrial	M
Modeling impacts of shoreline structures on littoral transport	Data	H
Early detection/Rapid Response on shoreline invasives (i.e. Lyme Grass)	Data, policy	H
Underwater Archaeology Project development.	Capacity and Outreach	H

Enhancement Area Prioritization

9. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High _____
Medium __X__
Low _____

Briefly explain the level of priority given for this enhancement area.

10. Will the CMP develop one or more strategies for this enhancement area?

Yes _____
No ___X__

Briefly explain why a strategy will or will not be developed for this enhancement area.

Littoral Impacts of Shoreline Structures –
The Indiana Lake Michigan shoreline is composed of natural and manmade elements. The 45 miles shoreline has both natural sand beaches and armored shoreline. The manmade structures impact the littoral drift of sand and result in accretion of sand updrift and sand starved areas downdrift. Some work exists to date addressing this issue. However, additional feasibility work on sand bypass systems is needed. Given the complex nature this issue is to be addressed in the Special Area Management Plan (SAMP) issue area.

Underwater Archaeology –
The data issues required shall be incorporated into the baseline information obtained for the Energy Facility Siting Strategy. The work done for the benthic habitat mapping can also be used for underwater archaeological assessments thus reducing mobilization and contracting costs.

Early Detection Rapid Response Invasive Species – A newly formed entity is addressing the issue of invasive species cooperatively. The Cooperative Weed Management Area (CWMA) group formed this past year. The purpose is to mobilize multiple partners in a coordinated manner. The DNR Division of Nature Preserves is participating in this initiative. The core group aspires to establish a 501(c)3 organization to handle fiduciary responsibilities and fund raising duties.

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

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. In the table below, characterize the types of energy facilities in your coastal zone (e.g., oil and gas, Liquefied Natural Gas (LNG), wind, wave, Ocean Thermal Energy Conversion (OTEC), etc.) based on best available data. If available, identify the approximate number of facilities by type.

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	Y	N	N	Y
Pipelines	Y	N	N	N
Electric transmission cables	Y	N	Y	N
LNG	N	N	N	N
Wind	Small scale	N	Y	N
Wave	N	N	N	N
Tidal	N	N	N	N
Current (ocean, lake, river)	N	N	N	N
OTEC	N	N	N	N
Solar	Small scale	Y	Y	N
Other (please specify)	N	N	N	N

2. Please describe any significant changes in the types or number of energy facilities sited, or proposed to be sited, in the coastal zone since the previous assessment.

   No additional resources have been brought online since 2004. The BP Whiting Refinery has started its facility expansion to ultimately be able to refine petroleum found in tar sands. The State issued the requisite permits for this work.

3. Does the state have estimates of existing in-state capacity and demand for natural gas and electric generation? Does the state have projections of future capacity? Please discuss.

The State of Indiana consumed 129,510,294 megawatt hours of electricity in 2008 and 509,767 million cubic feet of natural gas (non-electric consumption) per the Energy Information Administration. The State Utility Forecast Group runs estimates for energy supply and demand on a bi-annual basis and is currently in the process of developing their latest review. As is typical across the country and particularly in manufacturing intensive states, the demand for energy is substantially lower than those projections from 2008. Energy demand will continue to increase in Indiana as a function of a growing populous and economy. However, demand for energy in the coming years will be difficult to project due to the current economic climate.

4. Does the state have any specific programs for alternative energy development? If yes, please describe including any numerical objectives for the development of alternative energy sources. Please also specify any offshore or coastal components of these programs.

   The Indiana Office of Energy Development does advocate for alternative energy sources that are "homegrown" in Indiana. To that end, OED does provide a few grant programs to assist business owners with developing energy on-site. Those programs are currently under review and have not been defined for the upcoming year as of the completion of this survey.

5. If there have been any significant changes in the types or number of government facilities sited in the coastal zone since the previous assessment, please describe.

   N/A

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. Does the state have enforceable policies specifically related to energy facilities? If yes, please provide a brief summary, including a summary of any energy policies that are applicable to only a certain type of energy facility.

   Powerplant Construction: Construction of a power plant requires a certificate of necessity. Before construction begins, certification from the IURC must be obtained which provides that energy facility siting laws in Indiana have been met and the analysis of the need for electricity has been determined.

   Analysis of Long-range Electricity Needs: Documentation of estimated needs for electricity due to growth. In addition the report includes information on the potential location of new generating facilities to meet demand, as well as arrangements for pooling of power among various utilities to achieve maximum efficiency of energy. A forecasting group develops and maintains methodologies to estimate future growth of the use of electricity in the State. – The Indiana Utility Regulatory Commission (IURC) shall develop, publicize, and keep current an analysis of the long-range needs for expansion of facilities for the generation of electricity.

The analysis must include an estimate of:

1) the probable future growth of the use of electricity;
2) the probable needed generating reserves;
3) the optimal extent, size, mix, and general location of generating plants;
4) the optimal arrangements for statewide or regional pooling of power and arrangements with other utilities and energy suppliers to achieve maximum efficiencies for the benefit of the people of Indiana; and,
5) the comparative costs of meeting future growth by other means of electric service. In making the analysis and developing the plan the IURC shall conduct public hearings and submit to the governor the analysis and plan

2. Please indicate if the following management categories are employed by the State or Territory and if there have been significant changes since the last assessment:

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

3. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
   a) Characterize significant changes since the last assessment;
   b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
   c) Characterize the outcomes and effectiveness of the changes.

   No significant changes since last Assessment.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Alternative Energy Siting Process and criteria	Policy and Data - Impact on fish movement and spawning; cultural resources; logistics, etc.	H
Fiber Optic Networks		L
Underwater powerlines	sediment impacts	L
Calumet Trail/NIPSCO	determine how to improve trail	L

Enhancement Area Prioritization

11. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High __X__
Medium _____
Low _____

Briefly explain the level of priority given for this enhancement area.

Alternative Energy Development – specifically Offshore Wind development is an emerging issue nationwide and in the Great Lakes. The State of Indiana currently lacks guidelines to address this issue. An improperly sited offshore wind farm could have far reaching long term impacts to coastal resources.

12. Will the CMP develop one or more strategies for this enhancement area?

Yes **__X__**
No _____

Briefly explain why a strategy will or will not be developed for this enhancement area.

The LMCP will develop a strategy for this enhancement area. The development of an offshore wind sitting planning tool requires coordination of multiple agencies and divisions.

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

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Generally characterize the private and public aquaculture facilities currently operating in your state or territory.

Type of existing aquaculture facility	Describe recent trends	Describe associated impacts or use conflicts
Pond systems	Same	Potential impact is addressed with fish production, fish transportation and NPDES permits
Cage culture systems	Increasing	No discharges because they are cages submerged in enclosed water bodies
Indoor recirculating systems	Increasing	Potential impact is addressed with fish production, fish transportation and NPDES permits

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Aquaculture regulations	Y	N
Aquaculture policies	Y	N
Aquaculture program guidance	Y	N
Research, assessment, monitoring	Y	N
Mapping	Y	N
Aquaculture education & outreach	Y	N
Other (please specify)		

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
   a) Characterize significant changes since the last assessment;
   b) Specify if it was a 309 or other CZM driven change (specify funding source) or if it was driven by non-CZM efforts; and
   c) Characterize the outcomes and effectiveness of the changes.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	**Type of gap or need** (regulatory, policy, data, training, capacity, communication & outreach)	**Level of priority** (H,M,L)
Develop wider understanding	feasibility and outreach	H

Enhancement Area Prioritization

13. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High _____
Medium _____
Low __X_

Briefly explain the level of priority given for this enhancement area.

The Indiana region has very few producers and no emerging issues to address. Current regulations address current needs. Although the Public Input process resulted in an identified need with a "High" ranking that was a function of the voting process. As there was only one identified need in this issue area it received all possible votes resulting in a "High" ranking.

14. Will the CMP develop one or more strategies for this enhancement area?

Yes _____
No __X__

Briefly explain why a strategy will or will not be developed for this enhancement area.

This is a low priority issue. The identified need would not result in a Program Change. Higher level needs exist and funding shall be allocated accordingly.

IV. Strategy

OVERALL STRATEGY BUDGET SUMMARY

		2011	2012	2013	2014	2015
Issue Area	**Project**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Hazards	Updated Maps and Assessments		$19,000	$20,000		
Public Access	Historic Resource Public Access Opportunities		$11,000	$5,000		
CSI	Database Integration Study			$10,000		
	Database Enhancements				$75,000	$75,000
SAMP	Lakefront Water Assessment	$20,000				
	Sediment Transport Models and Sand Bypass	$30,000				
Energy	Resource Assessments	$36,000	$45,000			
	Alternative Energy Siting Criteria			$40,000		
	Annual Total	**$86,000**	**$75,000**	**$75,000**	**$75,000**	**$75,000**

Strategy: Coastal Hazards

Model Coastal Hazard Ordinance Implementation Updated Maps and Assessments

I. Issue Area(s)

The proposed strategy or implementation activities will support the following priority (high or medium) enhancement area(s) *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy & Government Facility Siting
- X Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- X Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- X Public Access

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type(s) of program changes *(check all that apply):*

- ☐ A change to coastal zone boundaries;
- ☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- X New or revised local coastal programs and implementing ordinances;
- ☐ New or revised coastal land acquisition, management, and restoration programs;
- ☐ New or revised Special Area Management Plans (SAMP) or plans for Areas of Particular Concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- ☐ 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. Describe the proposed program change(s) or activities to implement a previously achieved program change. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

Indiana Lake Michigan Coastal Program is the initial agency in coastal management in the 45 mile shoreline of Indiana. Out of date maps, land use changes, and assessments have varied. Much of this data is still maintained in hard copy format and has proven to be not easily accessible. Although some of this information may be available in electronic format, this is not cohesive, nor is there a clearinghouse for such land use information. Consequently, there is a need for a system that would provide access to updated and accurate data to, local government, stakeholders and the general public.

Creating such a library of structures within 1000 feet of the shoreline will:

(1) identify opportunities and constraints to create more efficient and effective public access for recreational and emergency purposes;

(2) identify necessary processes and management of information changes; and

(3) develop, design, and manage a clearing of coastal maps and assessments.

Program changes may include amendment filing requirements to build and maintain an electronic database and guidance. Updated maps and assessments will help make planning and regulatory review and policy development and analysis quicker and more accessible to local governments and priority enhancement areas; as well as, develop ways to increase access to current coast information.

III. Need(s) and Gap(s) Addressed

Identify what priority need the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority need. This discussion should reference the key findings of the Assessment and explain how the strategy addresses those findings.

Priority standards of coastal resource planning and management policies in areas such as public access, protection of wetland and other environmentally sensitive habitats, marine resources, and development. Where local staff may have compiled decades old documents and may not agree on what constitutes a legal and complete data. Additionally, once compiled, hardcopy materials can sometimes be difficult to maintain and make available to various staff located in different offices. As a result, better access to data maps and assessment policy information in digital format will facilitate information sharing more effectively and identify need of updating efficiently. Another essential component in any effort to strengthen implementation is improved communication of stakeholders in the process, i.e. local government planners, locally elected officials, and the public. The strategy also builds on efforts to improve coordination with regional agencies

A mapping assessment also will also identify benchmark measures to ensure that emerging policies have a better understanding of how to implement changes through land use planning and development. The types of guidance and management tools described could be used by local government For example: The need to ensure wetland, land use, survey plat definition and recognition to implement protective policies. A guidance for locating and updating public access, recreation policies and hazard mitigation plans.

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities including a clear articulation of the scope and value in improved coastal management and resource protection.

Model Shoreline Ordinance implementation and Updated Mapping and Assessments within 1000 feet of the coast line provide more effective technical assistance to local governments,

stakeholders, and the public by facilitating better, more efficient, and more cost effective access to existing data. It will also showcase the best examples of new policies and ordinances to address emerging issues. Such information sharing will result in improved and shared policies.

Continued evaluation and development of guidance for updating data will strengthen a key vehicle for implementing coastal management at the local level. Over time, implementation of such policy improvements may allow for improved and more effective coastal resource management.

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities. The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

There is strong support to improve policies and ordinances from elected official at the local MPO Agency through the creation of the Local Government Assistance Committee. Discussion includes areas of resource planning and management, better access to quality information and set out a plan to build a clearinghouse of regional cost effective information as well as the catalyst for facilitating the Marquette Plan. A multi jurisdictional plan that sets forth access to recreational opportunities along the Indiana lake shore.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps necessary for achieving the program change and/or implementing a previously achieved program change. The plan should identify significant projected milestones/outcomes, a schedule for completing the strategy, and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 4
Total Budget: $39,000.00
Final Outcome(s) and Products:

Year(s): 2011 & 2014
Description of activities: Staff Support – Ordinance adoption and Implementation
Outcome(s): Shoreline communities have incorporated or updated coastal hazards into local ordinances and policies.
Budget: 306 Staff

Year(s): 2012 –2013

Description of activities: Assess the current status and format of mapping documents as to validity, completeness, recent update, or existing digital format. Research any regulatory changes that might be necessary to require that electronic documentation be submitted as part of any local documentation. Research current land use planning techniques to further protect coastal resources by directing new development to urban areas, and develop guidance on implementing techniques. Develop GIS layer of shoreline structures within 1,000 feet of shoreline. Use shoreline structure and water level information to develop GIS model that can be used for future development siting.

Outcome(s): Make platted shoreline and potential hazards accessible through GIS format, and recommendations for modifying local codes and policies for land use assessments within 1,000 feet of the Indiana Lake Michigan shoreline. GIS model that can be used for future development siting that takes into account water level fluctuations.

Budget: $39,000.00

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy.

Staff time paid for with Section 306 shall provide technical assistance to local communities. Over the past year LMCP staff worked with local communities to develop a hazard needs assessment. This staff time shall be used to work with local communities in incorporating model ordinances into local zoning and ordinances.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out the proposed strategy, identify these needs. Provide a brief description of what efforts the applying agency has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

Implementation would require coordination and integration efforts with local municipalities, as well as with the Coastal Advisory Board Planning Committee to proceed with ascertaining land use assessments and mapping. Staff is qualified and able to attain resources to apply the technical knowledge, skills or equipment to carry out the proposed strategy.

Contractual services shall address mapping of existing shoreline structures. In addition, modeling capacity for water assessments shall be contracted out as well.

VIII. Projects of Special Merit (Optional)

No Project of Special Merit anticipated at this time. Depending on information needs identified through staff outreach a formal PSM application may be warranted.

5-Year Budget Summary by Strategy

Strategy Title	**Year 1 Funding**	**Year 2 Funding**	**Year 3 Funding**	**Year 4 Funding**	**Year 5 Funding**	**Total Funding**
Updated Maps and Modeling		$19,000	$20,000			$39,000
Total Funding		$19,000	$20,000			$39,000

Strategy: Public Access

Historic Resource Public Access Opportunities

I. Issue Area(s)

The proposed strategy or implementation activities will support the following priority (high or medium) enhancement area(s) *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy & Government Facility Siting
- ☐ Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- X Public Access

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type(s) of program changes *(check all that apply):*

- ☐ A change to coastal zone boundaries;
- ☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- ☐ New or revised local coastal programs and implementing ordinances;
- X New or revised coastal land acquisition, management, and restoration programs;
- ☐ New or revised Special Area Management Plans (SAMP) or plans for Areas of Particular Concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- X 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. Describe the proposed program change(s) or activities to implement a previously achieved program change. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

There have not been any prior program changes addressing Cultural and Historic Resources. The LMCP contracted for an updated inventory of passive public access facilities. However, the inventory work did not include cultural or historic resource sites.

III. Need(s) and Gap(s) Addressed

Identify what priority need the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority need. This discussion should reference the key findings of the Assessment and explain how the strategy addresses those findings.

The priority Need addressed is: Identify historic resources that are available for public access or suitable for inclusion in current and/or future public access projects. There are a number of public access plans in development for the coastal area currently. Many of these plans focus primarily on Natural Resources and overlook cultural and historic resources as point for increased public access.

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities including a clear articulation of the scope and value in improved coastal management and resource protection.

The LMCP Coastal Grants Program guidelines and *The Coastal Historic and Cultural Resource Study of the Lake Michigan Watershed* will be revised and updated to include the new information. The purpose of The *Coastal Historic and Cultural Resource Study* was *to develop a database of cultural and historical sites, districts, objects, and buildings of significance. The purpose of this database is to begin to identify some of the areas of need for protection and restoration that may help improve the value, integrity, public access to, and knowledge of significant resources in the future.* However, as of this time the data has not been utilized to increase public access.

This project will result in public access opportunities that can be incorporated into ongoing LMCP planning efforts – Marquette Plan, Coastal and Estuarine Land Conservation Program, and the Coastal Grants Program.

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities. The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

1) There is a fairly high degree of support for pursuing this strategy and proposed change. Cultural and Historic Resources have been underrepresented in the Coastal Grant Program, CELCP, and Marquette Plan.
2) The information gained from this project is easily assimilated into other LMCP program areas. There is no need to neither build support for this project nor need for additional outreach. The LMCP shall include this information in revised Coastal Grant guidance for Section 306A projects, and use it as a basis for identifying priority areas for CELCP. In addition, information gained from this project can be used to help form site specific designated Areas for Preservation and Restoration.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps necessary for achieving the program change and/or implementing a previously achieved

program change. The plan should identify significant projected milestones/outcomes, a schedule for completing the strategy, and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 2
Total Budget: $16,000
Final Outcome(s) and Products:

- Updated Cultural and Historic Inventory
- Revised Condition Assessment – Public Access
- GPS Coordinates and GIS layer of opportunity areas
- Site specific Areas for Preservation and Restoration (APRs)
- Priority Opportunity Areas for CELCP funding

Year(s): 2012-13
Description of activities:

- Steering group formation
- Scope of services
- RFP for contractor
- Site assessments and inventory update

Outcome(s):

- Updated Cultural and Historic Inventory
- Revised Condition Assessment – Public Access
- GPS Coordinates and GIS layer of opportunity areas

Budget: $16,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out the proposed strategy, identify these needs. Provide a brief description of what efforts the applying agency has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

Indiana Historic Sites and Structures Inventory: DNR identifies and records all potentially important historic buildings, bridges, sites, and other items on inventory

forms and enters them in computer databases. Results are published in Interim Report books - Detailed criteria for the inclusion of the sites and structures are included in the Guidebook. The Agency maintains the legal and technical ability for this task.

The Agency possesses the technical skills to perform the work. However, due to workload issues and staff reductions the LMCP does not have adequate personnel time to perform the requisite field work and information updates. The LMCP shall partner with the DNR Division of Historic Preservation and Archaeology (DHPA) and the Division of Outdoor Recreation as well as local historical bureaus in the completion of this project.

VIII. Projects of Special Merit (Optional)

There are not plans for development of a Project of Special Merit at this time.

5-Year Budget Summary by Strategy

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Historic Resource Public Access Opportunities		$11,000	$5,000			$16,000
Total Funding		$11,000	$5,000			$16,000

Strategy: Cumulative and Secondary Impacts

Integrated State Permitting Database/Connectedness Improvements

I. Issue Area(s)

The proposed strategy or implementation activities will support the following priority (high or medium) enhancement area(s) *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy & Government Facility Siting
- ☐ Coastal Hazards
- X Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- X Cumulative and Secondary Impacts
- X Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type(s) of program changes *(check all that apply):*

- ☐ A change to coastal zone boundaries;
- X New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- ☐ New or revised local coastal programs and implementing ordinances;
- ☐ New or revised coastal land acquisition, management, and restoration programs;
- ☐ New or revised Special Area Management Plans (SAMP) or plans for Areas of Particular Concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- X 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. Describe the proposed program change(s) or activities to implement a previously achieved program change. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

The project shall result in coordinated permitting programs and increased consideration of Cumulative and Secondary Impacts. This issue area has not been addressed in previous 309 projects.

III. Need(s) and Gap(s) Addressed

Identify what priority need the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority

need. This discussion should reference the key findings of the Assessment and explain how the strategy addresses those findings.

The State maintains multiple regulatory databases among several agencies and divisions. To this point there has not been a concerted effort to integrate these databases nor the information they contain. Thus, cumulative and secondary impacts may not be fully considered in regular permitting decisions. Staff from the Indiana State Department of Health, Indiana Department of Environmental Management, and Indiana Department of Natural Resources will work together to identify opportunities to integrate data management processes and management.

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities including a clear articulation of the scope and value in improved coastal management and resource protection.

It is anticipated that this project shall result in more coordinated permitting decisions. Thus, long term cumulative and secondary impacts to coastal resources should be reduced. The majority of the participating regulatory programs address water resource use and impacts. As such, the end product of this project will address many of the outstanding Management Measures in the Coastal Nonpoint Pollution Control Plan (Section 6217).

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities. The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

It is highly likely that this proposed program change and implementation shall be attained. 1) There is support among the three participating agencies to pursue this opportunity. 2) The participating agencies shall work together during year 1 – Database Assessment to identify data integration opportunities and technical assistance needs. The parties shall work together to develop a scope of services for the implementation work.

Upon completion of the project the partners will promote the public access component of the respective databases. Information sharing includes website updates and presentations in appropriate public forums including but not limited to the DNR LMCP Coastal Advisory Board, and Northwestern Indiana Regional Planning Commission's Environmental Management Policy Committee (EMPC).

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps necessary for achieving the program change and/or implementing a previously achieved program change. The plan should identify significant projected milestones/outcomes, a schedule for completing the strategy, and budget estimates. If an activity will span two or

more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 3
Total Budget: $160,000
Final Outcome(s) and Products:

- Integrated State Permitting Database/Connectedness Improvements
  - Improved Data Access – Permitting Agency Staff
  - Improved Data Access – Permittee
  - Improved Data Access – Public
- Data availability for improved Cumulative and Secondary Impact considerations on individual permits

Year(s): 2013
Description of activities: Database Assessment
Outcome(s):

- Assessment of State Permitting database functionality and integration potential
- Developed scope of work for database integration and userability enhancements

Budget: $10,000

Year(s): 2014-2015
Description of activities: Functionality improvement/integration implementation – Proposed activities – subject to modification during year 1 Database Assessment:

- Develop a web portal for the public to access the various regulatory and water resource data
- Develop an interactive GIS map (point & click functionality) within the web application for ease of searching SWWF, permit applications, by watershed, region, county, address, etc.
- Develop the ability for a user to search and retrieve data, public records, and reports from the Division's database through the web portal
- Provide the ability for the user to submit text/digital/image data to the Division through the web portal.
- Develop an application for data to be submitted electronically and uploaded automatically into the Unity database.
- Need scanning capabilities to upload files and documents to Unity for web access
- Develop the ability for a user to establish user accounts in order to retrieve status updates.
- Integration/data sharing developed across IDEM TEMPO (Air, Land, Water Permits) and ISDH iTOSS (Septic System Permits) with Unity (DNR Division of Water Permits)

Outcome(s):
- Improved database connectedness
- Improved Data Access – Permitting Staff, Permittee, Public

Budget: $150,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy.

The Department of Natural Resources Division of Water submitted a 2010 grant proposal Modernizing and Improving State Coastal Zone Management Information Systems, NOAA-NOS OCRM-2010-2002621. The purpose of the proposal is to more fully integrate the Water related permitting programs within the DNR Division of Water. This is the first step to fully integrating the State Permitting databases.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out the proposed strategy, identify these needs. Provide a brief description of what efforts the applying agency has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The State does not currently posses the technical ability to integrate the various database components. It is anticipated that this project will be put out for bid for private contract. At this current time the State Personnel Department has imposed a hiring freeze for non-essential personnel. Thus, it is unlikely that the State could hire new employees to carry out the scope of this project. The Indiana Office of Technology and the DNR Division of MIS can provide some assistance in developing the scope of the project and ensuring the proper state protocols for data access are followed. Additional equipment is not anticipated for implementation of this project, however, the Database Integration Study proposed for Year 3 funding shall make recommendations on required resources to implement this study.

VIII. Projects of Special Merit (Optional)

Undertake GIS and database integration for improved permitting decision capabilities. Projects contingent upon funding decisions on current grant proposals.

5-Year Budget Summary by Strategy

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Database Enhancements						
Database Integration Study			$10,000			$10,000

Database Enhancements				$75,000	$75,000	$150,000
Total Funding			$10,000	$75,000	$75,000	$160,000

Strategy: Special Area Management Planning

Sediment Transport Models and Sand Bypass

I. Issue Area(s)

The proposed strategy or implementation activities will support the following priority (high or medium) enhancement area(s) *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy & Government Facility Siting
- ☐ Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- X Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type(s) of program changes *(check all that apply):*

- ☐ A change to coastal zone boundaries;
- X New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- X New or revised local coastal programs and implementing ordinances;
- ☐ New or revised coastal land acquisition, management, and restoration programs;
- X New or revised Special Area Management Plans (SAMP) or plans for Areas of Particular Concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- X 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. Describe the proposed program change(s) or activities to implement a previously achieved program change. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

There are no prior program changes in this enhancement area. The proposed Program change is a new policy or permit condition regarding use of dredged material for beach nourishment (beneficial use of dredged material), and a new agreement between affected entities regarding sand bypass and the agreed upon sand bypass strategy.

III. Need(s) and Gap(s) Addressed

Identify what priority need the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority need. This discussion should reference the key findings of the Assessment and explain how

the strategy addresses those findings.

The priority need the strategy addresses is the stakeholder involvement and feasibility study. Currently the agencies, communities and entities affected are addressing the issue on their own and making very little progress. The issue is larger than each community alone and requires priority issue identification and stakeholder coordination, data, analysis, modeling, and feasibility of potential solutions.

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities including a clear articulation of the scope and value in improved coastal management and resource protection.

The recreational beaches in the Town of Ogden Dunes and within the Indiana Dunes National Lakeshore at Mt. Baldy are experiencing severe erosion due to their location down drift of lake structures. Meanwhile the beaches in the City of Michigan City, for example, are experiencing sand accretion. These structures, breakwaters, are impeding sand movement along the southern shore of Lake Michigan and have forever altered the dynamics of sand movement. The issue is bigger than each of the entities alone and coordination is desired. By bringing together the stakeholders, the priority issues will be identified, as well as goals, objectives and actions needed to move forward. Modeling assessments, mitigation alternatives and a feasibility study for implementation will then be created in order to move towards action.

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities. The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

All potential stakeholders have expressed a willingness to participate in this effort and have sought out this as the preferred avenue for coordination.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps necessary for achieving the program change and/or implementing a previously achieved program change. The plan should identify significant projected milestones/outcomes, a schedule for completing the strategy, and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 1
Total Budget: $30,000
Final Outcome(s) and Products:

Year(s): 2011-2012
Description of activities:

- Stakeholder Steering Committee
- Scope of Services
- RFP for facilitation, modeling assessments and feasibility study
- Completed Sediment Transport Modeling Assessments and Bypass Alternatives
- Completed Feasibility Study of Bypass Alternative

Outcome(s):

- Completed Sediment Transport Modeling Assessments and Bypass alternatives
- Completed Feasibility Study for chosen Bypass Alternative

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy

None pursued.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out the proposed strategy, identify these needs. Provide a brief description of what efforts the applying agency has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The State will commit the Technical expertise of its coastal dynamics professional, the DNR Lake Michigan Specialist.

VIII. Projects of Special Merit (Optional)

If desired, briefly indicate what PSMs the CMP may wish to pursue to augment this strategy. Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above. The information in this section will not be used to evaluate or rank PSMs and is simply meant to provide the CMPs the option to provide additional information if they choose. PSM descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not do provide detailed project descriptions that would be needed for the PSM competition.

A PSM would include Bypass Design and Management Plan for chosen alternative to prepare for implementation/construction.

5-Year Budget Summary by Strategy

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Sediment Transport Models and Sand Bypass	$30,000					$30,000
Total Funding	$30,000					$30,000

Lakefront Water Assessment

I. Issue Area(s)

The proposed strategy or implementation activities will support the following priority (high or medium) enhancement area(s) *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy & Government Facility Siting
- ☐ Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- X Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type(s) of program changes *(check all that apply):*

- ☐ A change to coastal zone boundaries;
- X New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- X New or revised local coastal programs and implementing ordinances;
- ☐ New or revised coastal land acquisition, management, and restoration programs;
- X New or revised Special Area Management Plans (SAMP) or plans for Areas of Particular Concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- X 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. Describe the proposed program change(s) or activities to implement a previously achieved program change. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

There are no prior program changes in this enhancement area. The proposed Program changes include lakefront community specific ordinances regarding stormwater to be included in the LMCP TAP Program, as well as new ordinances regarding septic system maintenance to be included in the LMCP 6217 Program. Should a new formal regional water management entity be created, such as a Conservancy District, this will also be reflected as a program change.

III. Need(s) and Gap(s) Addressed

Identify what priority need the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority need. This discussion should reference the key findings of the Assessment and explain how the strategy addresses those findings.

All of the lakefront communities are experiencing an increase in flooding impacts in the last three years. Each community is struggling to determine the cause of the recent flooding and how to mitigate the damage. Most, if not all, of the communities are on septic. A couple of communities went so far to commission (some with CZM Sect 306 funds) studies to investigate the relationship between the groundwater and surface water, due to the relatively high water table and perceived increase in precipitation/rainfall. Many of these communities house unique natural areas, such as wetlands and marshes. Drainage has also been altered with ditching. Each of the communities are addressing the issue alone, however the issue is common and coordination would benefit all. By bringing together the affected communities in a comprehensive approach will lend itself to resource sharing and a better understanding of the causes and put an end to speculation. The strategy will lead to issue development and scoping.

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities including a clear articulation of the scope and value in improved coastal management and resource protection.

As no coordinated effort currently is underway, this strategy will be the only action where all affected communities will be brought together to discuss the issue on a regional scale and pursue activities that will further the knowledge needed to implement actions such as a Conservancy District, regional watershed planning or stormwater management projects.

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities. The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing

the program change, including education and outreach activities.

All of the lakefront communities are engaged and are supportive of this comprehensive approach facilitated by LMCP. Three communities have sought financial assistance in the past from LMCP to investigate the issue. One coastal county, Porter County, is pursuing a county-wide drainage study, which will contribute to this effort.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps necessary for achieving the program change and/or implementing a previously achieved program change. The plan should identify significant projected milestones/outcomes, a schedule for completing the strategy, and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 2011-2012
Total Budget: $20,000
Final Outcome(s) and Products:

Year(s): 2011-2012
Description of activities:

- Stakeholder Workgroup/Steering Committee
- Scope of Services
- RFP for Plan Development: Issue Development and Scoping
- Completed Scoping Plan

Outcome(s):

- Completed Scoping Plan

Budget: $20,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy.

None pursued.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out the proposed strategy, identify these needs. Provide a brief

description of what efforts the applying agency has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The State will provide Technical Assistance through participation from DNR Division of Water staff; the State will engage the USGS for their technical expertise

VIII. Projects of Special Merit (Optional)

If desired, briefly indicate what PSMs the CMP may wish to pursue to augment this strategy. Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above. The information in this section will not be used to evaluate or rank PSMs and is simply meant to provide the CMPs the option to provide additional information if they choose. PSM descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not do provide detailed project descriptions that would be needed for the PSM competition.

A PSM will include a Comprehensive Project that implements the preferred approach agreed upon by all of the Community Stakeholder members such as the creation of a Conservancy District, watershed planning or implementation of regional green infrastructure projects. This may require further data gathering through a Coastal Hydrology and Hydraulic Study and modeling.

5-Year Budget Summary by Strategy

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Lakefront Water Assessment	$20,000					$20,000
Total Funding	$20,000					$20,000

Strategy: Energy & Government Facility Siting

Alternative Energy Siting Criteria

I. Issue Area(s)

The proposed strategy or implementation activities will support the following priority (high or medium) enhancement area(s) *(check all that apply)*:

- ☐ Aquaculture
- X Energy & Government Facility Siting
- ☐ Coastal Hazards
- X Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Program Change Description

A. The proposed strategy will result in, or implement, the following type(s) of program changes *(check all that apply):*

- ☐ A change to coastal zone boundaries;
- X New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- ☐ New or revised local coastal programs and implementing ordinances;
- ☐ New or revised coastal land acquisition, management, and restoration programs;
- ☐ New or revised Special Area Management Plans (SAMP) or plans for Areas of Particular Concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- X 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. Describe the proposed program change(s) or activities to implement a previously achieved program change. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

The proposed program change is the development of offshore alternative energy siting criteria and process. The development of the criteria and process requires adequate resource information. Thus, a portion of this project focuses on resource categorization and assessment.

III. Need(s) and Gap(s) Addressed

Identify what priority need the strategy addresses, and explain why the proposed program change or implementation activities are the most appropriate means to address the priority

need. This discussion should reference the key findings of the Assessment and explain how the strategy addresses those findings.

The State currently lacks sufficient data and policies to address safe siting of alternative energy facilities offshore. This strategy addresses the need for enhanced data and the development of a siting policy and associated guidelines. Data required include fish spawning areas; cultural resources; current modeling, logistics considerations (shipping lanes), aesthetics, and migratory bird and bat routes.

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities including a clear articulation of the scope and value in improved coastal management and resource protection.

The end product of this strategy is the addition of new tools to the coastal resource management toolkit. Acquisition of the baseline data is of benefit to coastal resources in general. Improved data regarding fish spawning and utilization areas can be used in fish stock management. Benthic habitat mapping is beneficial to underwater archaeological resource management as well as permitting decisions regarding transmission line placement. The development of guidelines for alternative energy facility siting ensures that multiple uses are balanced and that priority coastal resources protected. Information and guidelines will be coordinated as best as possible with other guidelines in the region, including state (Ohio, Michigan) and regional (GL Wind Collaborative, USFWS) efforts.

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities. The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

1) The state plans to continue coordinated discussions and planning efforts in developing alternative energy facility siting criteria and guidelines. Staff from the DNR LMPC, DNR Division of Fish and Wildlife, and the Office of Energy & Defense Development worked to develop the strategy for this issue area.
2) The participating agencies will work together to implement the recommendations from the contractor on siting guidelines. The partners agree on the importance of data acquisition required to develop the siting guidelines and are committed to working together to achieve that end. The partners will establish a working group to provide input and oversight to the process. Once established, the guidelines will be made available through the DNR technical services section.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps necessary for achieving the program change and/or implementing a previously achieved program change. The plan should identify significant projected milestones/outcomes, a

schedule for completing the strategy, and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual outcomes are a useful guide to ensure the strategy remains on track, OCRM recognizes that these benchmarks may change some over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. Further detailing of annual tasks, budgets, benchmarks, and work products will be determined through the annual award negotiation process.

Total Years: 3
Total Budget: $121,000
Final Outcome(s) and Products:

Year(s): 2011-2013
Description of activities:
- Steering group formation
- Scope of services
- RFP for contractor
- Site assessments and inventory update
- Alternative Energy Siting Guidelines Development

Outcome(s):
- Alternative Energy Siting Guidelines
- GIS modeling
  - Fish Spawning Areas
  - Shipwreck/Underwater Archaeology sites
  - Migratory Bird Routes
  - Migratory Bat Routes

Budget: $121,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy.

The LMCP shall use base 306 funding starting this year to provide staff support to this project. The LMCP part time employee will research the issue in advance of the project development. Items of interest: Great Lakes Wind Collaborative – best practices guidelines, US Fish and Wildlife Service voluntary siting guidelines, other state siting guidelines, baseline assessments (bird migration, bat migration, known fish habitat areas, underwater archaeology, lake current models, etc.)

The Indiana Office of Energy & Defense Development is a partner to this initiative with the DNR. The OED will contribute staff time and financial resources to this project. The

financial resources are being made available in 2010 for the benthic habitat mapping project that is in development. This additional funding leverages the underwater archaeology mapping initiative to include additional investigative items.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out the proposed strategy, identify these needs. Provide a brief description of what efforts the applying agency has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The DNR and OED do not possess the staff time or technical resources to complete this study. The level of detail required is similar to research being conducted at the university level and by Non Governmental Organizations currently. The initial research work shall identify existing studies that provide the information needed and identify the gaps that this strategy needs to address. The LMCP consulted with staff within the DNR and Office of Energy & Defense Development in the project development process. These discussions confirmed the need for additional research and need for outside technical assistance.

VIII. Projects of Special Merit (Optional)

At this time there is no Project of Special Merit identified for this Issue Area. There is a possibility that a PSM may be developed for this issue area if the additional outside funding is not secured.

5-Year Budget Summary by Strategy

At the end of the Strategy section, please include the following budget table summarizing your anticipated 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
Resource Assessments	$36,000	$45,000				$81,000
Alternative Energy Siting Criteria			$40,000			$40,000
Total Funding	$36,000	$45,000	$40,000			$121,000