Wisconsin
Coastal Management Program
Assessment and Strategy

2026 to 2030

September 2025

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Introduction

The Coastal Zone Management Act (CZMA) authorized the National Coastal Zone Management Program. The program is a voluntary partnership between the federal government and U.S. coastal states and territories, to meet the goals of the CZMA

The Coastal Zone Enhancement Program was established under Section 309 of the CZMA. There are nine "enhancement areas," including wetlands, coastal hazards, public access, marine debris, cumulative and secondary impacts, special area management plans, ocean and Great Lakes resources, energy and government facility siting, and aquaculture. States and territories are encouraged to strengthen and improve their programs in one or more of the nine areas.

Every five years, states and territories are invited to identify and prioritize needs and opportunities for each of the nine enhancement areas. The states and territories identify areas of high priority and develop corresponding strategies. A state or territory must have a National Oceanic and Atmospheric Administration (NOAA)-approved Needs Assessment and Strategy to be eligible for Coastal Zone Enhancement Program funding. Coastal Enhancement funding is used to implement the strategies identified, to lead to a program change.

This document follows the Needs Assessment and Strategy template provided in NOAA's *Coastal Zone Management Act: Section 309 Program Guidance: 2026 to 2030 Enhancement Cycle*. Requirements of Section 309, including allowable uses of funding, are described in federal regulations (15 C.F.R. sec. 923, subpart K).

The Needs Assessment for each enhancement area is intended to determine the extent to which problems and opportunities exist, determine the effectiveness of existing management efforts to address those problems, and identify high priority needs for program enhancement. The Needs Assessment consists of two parts: a "Phase I (High Level) Assessment" for all nine enhancement areas, and a "Phase II Assessment" for those areas determined to be a "high priority" for the Wisconsin Coastal Management Program (WCMP). The Phase II Assessment is intended to further explore potential problems, opportunities for improvement, and specific needs.

The strategy addresses high priority needs for program enhancement. WCMP identified wetlands and coastal hazards as high priority areas and developed strategies for each. The strategies include goals and methods for meeting the goals over the five-year period. The strategies include proposed program changes, needs and gaps addressed, benefits to coastal management, likelihood of success, strategy work plans, fiscal and technical needs, and a five-year budget summary for each enhancement area.

WCMP staff sought feedback from stakeholders and partners throughout the development of the Needs Assessment and Strategy. Stakeholders were engaged in a number of ways, through email, conversations, and surveys. Following the template, a summary of stakeholder engagement is included for each enhancement area in the Phase 1 Needs Assessment. For the two enhancement areas where Phase 2 Needs Assessments and Strategies were conducted, WCMP engaged multiple stakeholders and partners, as noted at the end of each Strategy section. WCMP shared a draft submission with NOAA and incorporated NOAA's feedback prior to making the draft available for public review and comment, for at least 30 days, following NOAA's review. WCMP will summarize any relevant comments received during

the public review period and include them within the *Summary of Stakeholder and Public Comment* sections within the identified strategies.

Summary of Recent Section 309 Achievements

In the 2021-2025 Needs Assessment and Strategy, the Wisconsin Coastal Management Program (WCMP) proposed strategies to improve Wetlands and Coastal Hazards. Listed below are the major accomplishments completed during the 2021-2025 cycle.

Wetlands

The Strategy Goal of the Wetlands Strategy section of the *Wisconsin Coastal Management Program Needs Assessment and Strategy 2021-2025* is to Enhance local and watershed wetland policies through targeted outreach and collaboration. The strategy identifies several program changes that may result from the strategy, including: Updated comprehensive plans that include wetland conservation language; local hazard mitigation plans and land and water management plans that include wetlands as a way to address flooding; revisions of local ordinances to incorporate functional values of wetlands; adoption of consistent methodology to assess fluvial erosion hazards and natural flood management opportunities; and development of long-term, sustainable plans for addressing invasive species. WCMP worked with partners to achieve the goal through the following efforts:

- *Accelerating Natural Flood Management in the Lake Superior Basin* This project was completed in 2022. Wisconsin Wetlands Association (WWA) staff worked with local officials, emergency and natural resource managers, and transportation planners in Wisconsin's Lake Superior region to gain a shared understanding of strategies for identifying and addressing fluvial erosion hazards. WWA staff facilitated regular meetings with a team of technical experts to develop an integrated protocol for assessing road-stream crossings, fluvial erosion hazards, and natural flood management opportunities. WWA staff hosted a design charette for input and engagement regarding options for addressing areas where erosion was degrading water storage capacities in the Marengo River Watershed. WWA staff worked with the Ashland County Emergency Manager for input on project methods and priorities, and to promote data collection protocols for damage assessments. WWA organized and the University of Wisconsin Extension Natural Resources Institute facilitated a Ripple Effects Mapping activity in May 2021. The effort focused on the results of WCMP's Section 309 investments with WWA. A summary report is available on WWA's website.

- *Integrating Natural Flood Management Into Regional Transportation Resilience Planning*. This project was completed in 2024. The Wisconsin Wetlands Association (WWA) provided targeted outreach to communities and agencies to incorporate Natural Flood Management strategies into flood preparedness and recovery policies and procedures. The task focused on the Marengo River Watershed and Ashland County. As a result of the effort, Ashland County adopted an addendum to their hazard mitigation plan that focuses on Natural Flood Management and resiliency. The addendum is linked on Ashland County's Emergency Planning Website.

  The County's Natural Flood Management strategy is an outcome of several projects and WCMP Section 309 investments. The strategy may be used as a model for other coastal communities interested in nature-based flood risk reduction.

WWA staff reviewed guidance, enabling statutes, and administrative codes for federal and state disaster aid programs. WWA staff worked with the Wisconsin Department of Transportation and Wisconsin Emergency Management to determine where Natural Flood Management could be used as a post-disaster hazard mitigation measure. WWA worked with Fluvial Matters, LLC, to incorporate natural flood management practices into road management procedures. They also met with Wisconsin Department of Natural Resources staff to support the relaunch of the Lake Superior Collaborative Slow the Flow (STF) Workgroup, and release of the STF Whitepaper. WWA also conducted community interviews to promote Ashland County's natural flood management strategy and identify high-priority sites for future efforts. WWA staff provided significant outreach to local communities, state and federal agencies, nonprofit organizations, and state and national conferences. The project also resulted in a document, "Quick Guide for Towns and Tribes," that focuses on using Natural Flood Management and resilient infrastructure. The handout includes content from interviews with communities in the region. It will be used in future efforts to help towns explore natural flood management strategies. Through the project, WWA staff found that towns in Ashland and Bayfield County are looking for more support with project scoping and preliminary design concepts. There is growing interest in using nature-based solutions at both the county and town levels. Rural communities need active and ongoing technical support to pursue infrastructure upgrades. Support is needed, as well, to help Ashland County towns and other users to access data and tools and prioritize sites that would benefit from natural flood management projects. Training for local and tribal road managers is also needed.

Coastal Hazards

The Strategy Goal of the Coastal Hazards Strategy section of the *Wisconsin Coastal Management Program Needs Assessment and Strategy 2021-2025* is to Assist agencies and communities in developing and revising coastal hazards policies through outreach and data development and management. The strategy identifies program changes that may result from the strategy, including: Revisions of locally-adopted plans, maps, and ordinances; inclusion of coastal hazards in local comprehensive plan updates, inclusion of coastal hazards in local hazard mitigation plans; revisions to State of Wisconsin All Hazards Plan; and revisions to local ordinances to address barriers to flood protection.

WCMP provided technical assistance as well as funding to other partners to achieve the goal. The following work and projects were completed under the strategy:

- *Program Administration:* Section 309 funding has supported a half time permanent position for the entirety of the strategy period. The funding enabled staff to implement the 2021-2025 strategy through technical assistance, administration of pass-through grants, and policy development and implementation. The funding has allowed WCMP staff to lead and coordinate, hazards and resilience efforts, including work groups (particularly the Coastal Hazards Work Group) and communities of practice, participating in regional efforts; to mentor the Coastal Hazards Fellows and manage the administrative aspects of the fellowships; to assist communities facing coastal hazards and resilience issues; to present at various webinars and conferences; and to develop, monitor, manage, and report on other projects funding Section 309 efforts, including Projects of Special Merit.

- *Coastal Hazards Fellowship:* Section 309 funding was used to fund several J. Philip Keillor Coastal Hazards Fellows. WCMP worked with Wisconsin Sea Grant Institute in co-sponsoring one-year fellowships that focus on science and policy challenges related to coastal hazards and resilience. The

program supported four fellowships during the strategy period. The fellows tackled various projects and initiatives, including participating on workgroups, assisting with administrative tasks related to hazards, developing outreach materials, and attending conferences and seminars. In addition, each of the fellows worked on updating the Great Lakes Coastal Processes Manual, which is nearing completion. The manual has greatly expanded from its previous editions. The fellows also helped to secure outside funding related to coastal hazards, including several projects of special merit.

- *Continuing CHAOS (Coastal HAzards of Superior): Coastal Hazards Outreach in the Lake Superior Region:* WCMP worked with the University of Wisconsin Sea Grant Institute to sponsor a fellowship focused on coastal hazards in Wisconsin/Minnesota Lake Superior region. The task built on prior successful efforts of the Coastal HAzards of Superior project. The fellow was stationed at the Lake Superior National Estuarine Research Reserve. She engaged the CHAOS Community of Practice and connected local stakeholders to resources, agencies, and technical experts. In her role, Sarah coordinated steering committees, planned and coordinated Community of Practice meetings and activities, produced and published a CHAOS newsletter and other outreach materials, presented at meetings and conferences, and conducted interviews to collect and understand the needs and interests of CHAOS members.

- *Oblique Photo Coordination and Collection:* WCMP coordinated with Wisconsin Civil Air Patrol, the Association of State Floodplain Managers, and the University of Wisconsin-Madison Department of Geoscience to collect and publish photos of Wisconsin's shoreline on the Wisconsin Shoreline Inventory & Oblique Viewer. The photos are publicly accessible and are very helpful in evaluating changes over time to the shoreline, as well as identifying erosion "hot spots." Communities may use the photos to make decisions on publicly owned properties and to inform land use planning and decision making. The photos are available online:

- *Collaborative Action for Lake Michigan Coastal Resilience (CALM): Enhancing Coastal Hazard Resilience Efforts on Wisconsin's Lake Michigan and Green Bay Shoreline:* WCMP received Section 309 funding through a Project of Special Merit, to partner with Wisconsin Sea Grant Institute and the Wisconsin State Cartographer's Office (SCO) to establish the Collaborative Action for Lake Michigan Coastal Resilience (CALM) network. CALM is a new network helping western Lake Michigan coastal communities build resilience to coastal hazards. The main objective of CALM is to increase coastal resilience in Wisconsin by expanding coordination efforts among agencies, organizations, and local governments while sustaining existing coastal management networks and communities of practice). In the course of this work, the CALM network leveraged opportunities to share lessons learned and promote products and tools; support ongoing local and regional coastal resilience efforts; and build on the work of the Wisconsin Coastal Management Data Infrastructure (WICDI) project to share coastal data. The project built on past Section 309 efforts, including Coastal Hazards Fellowship tasks. By completion of the Project of Special Merit, the CALM Network was successfully established with 162 members from state and federal agencies, local municipalities, academic institutions, consulting and engineering firms, sewerage districts, non-profit organizations, elected official's offices, regional planning commissions, as well as other organizations and partnerships working on coastal resilience in Wisconsin. The CALM coordinator produced regular newsletters throughout the project period. CALM supported extensive outreach with the Network members, including an outreach survey and 1-year evaluation survey. The CALM steering committee included 15-members who met on a regular basis. CALM Network meetings and field trips occurred throughout the project. A long-term management plan was developed to help support the network post-award. The CALM website updated and revised the Southeastern Wisconsin Coastal Resilience

Website. The website also hosts a wide range of tools and resources for coastal resilience, including a funding opportunities inventory.

- *Wisconsin Great Lakes Coastal Leadership Academy:* This project of Special Merit started in January 2025 and is ongoing. Section 309 funding is supporting the development of a Wisconsin Great Lakes Coastal Leadership Academy (CLA), which is modeled after the Michigan Coastal Management Program's CLA Planning and Zoning Module. The goal of the project is to increase the resilience of Wisconsin's Great Lakes communities to coastal hazards through in-person workshops targeted towards local officials, planners, and decision makers. Funding will support development of coastal hazards and adaptation strategies, led by a fellow through Wisconsin Sea Grant, training module curriculum, hosting and facilitating three pilot workshops, and developing a post-award plan. WCMP is partnering with Wisconsin Sea Grant Institute on the project.

- *Wisconsin Coastal Management Data Infrastructure (WICDI): Combining a Mapping Community of Practice with an Innovative Digital Collaborative Environment to Improve Coastal Hazard Planning and Policy Development:* This Project of Special Merit was active from October 2018 through March 2021. The project was approved under Wisconsin's 2016-2020 Section 309 Needs Assessment and Strategy, in support of the Coastal Hazards Strategy Goal to *Develop or enhance government hazard policies through targeted outreach and technical assistance*. The project was initiated after a series of extreme rainfall events in northern Wisconsin, in 2012, 2016, and 2018. The project included forming a Community of Practice in northern Wisconsin focused on culvert mapping best practices, developing an aggregated culvert database, and constructing a virtual environment of the Community of Practice to share maps and data. The approach was an attempt to help provide a workflow, database, and toolset to allow local road managers to make better-informed decisions for culvert maintenance and replacement, and to provide a tool for documenting current culvert status after future flooding events. The State of Wisconsin Geographic Information Officer and the State Cartographer led the project, with WCMP participation.

- *Wisconsin Coastal Management Data Infrastructure (WICDI): New Tools and Practices from the Wisconsin Coastal Management Data Infrastructure to Support Hazard Resilience Planning in the Lake Superior Region and Beyond:* WICDI 2 built on the work completed through WICDI. This Project of Special Merit supported the WCMP's Coastal Hazards Strategy for the 2016-2020 Section 309 Needs Assessment and Strategy, by contributing to the goal of *enhancing local government hazard policies through technical assistance*. The project continued support for the Community of Practice established in the first WICDI project and created a Sustainability Plan for future actions. A standardized, usable, community of practice-supported culvert database was created. The Wisconsin Geographic Information Officer and the State Cartographer provided outreach to communities outside of the project area, to expand the efforts of the project. The project period was October 2020 through September 2023.

- *Coastal Actions for Resilience and Economic Security of Southeastern Wisconsin Bluff, Beach, and Infrastructure Assets:* This project, informally called the "Southeastern Wisconsin Coastal Resilience Project," lasted from October 2017-September 2022. The overall goal of this project is to bring the coastal counties and municipalities in Southeastern Wisconsin together to identify vulnerabilities to the region's bluffs, beaches, and infrastructure under a range of potential future conditions and guide the development of plans to address these issues collaboratively with resilient practices. Project tasks included evaluating historic and future scenarios of shoreline recession; developing risk communication and risk reduction guidance; organizing a Southeastern Wisconsin Coastal Resilience

Community of Practice; and Identifying local resilience opportunities and funding their implementation. The project was not funded through Section 309, but it directly supported WCMP efforts related to Coastal Hazards. The project funded several local projects and developed many useful products, which can be found on the Wisconsin Coastal Resilience Website. It also led to the Project of Special Merit, Collaborative Action for Lake Michigan Resilience (CALM).

Phase I Assessment

Wetlands

Section 309 Enhancement Objective: Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands. §309(a)(1)

> *Note: For the purposes of the Wetlands Assessment, wetlands are "those areas that are inundated or saturated at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." [33 CFR 328.3(b)]. See also pg. 14 of the CZMA Performance Measurement Guidance[1] for a more in-depth discussion of what should be considered a wetland.*

Phase I (High-Level) Assessment: (Must be completed by all states.)
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. Using the tables below as a guide, provide information on the status and trends of coastal wetlands. Be as quantitative as possible using state or national wetland trend data.[2] The tables are information presentation suggestions. Feel free to adjust column and row headings to align with data and time frames available in your state or territory. If quantitative data is not available for your state or territory, provide a brief qualitative narrative describing wetlands status and trends and any significant changes since the last assessment.

   Current state of wetlands in 2024 (acres): 1,488,576.0

Coastal Wetlands Status and Trends

Change in Wetlands	from 1996-2021
Percent net change in total wetlands (% gained or lost)*	-5.44%
Percent net change in freshwater (palustrine wetlands) (% gained or lost)*	-5.15%
Percent net change in saltwater (estuarine) wetlands (% gained or lost)*	NA

For Phase I Wetlands Needs Assessment Resource Characterization, Wisconsin used the recently released (February 2025) 2021 NOAA C-CAP Regional Land Cover data to determine wetland acreage, coastal wetland status and trends, and determine how wetlands are changing in the state from 1996-2021. The new 2021 C-CAP Land Cover data is now at 1-meter resolution, a much higher resolution than the previous 30-meter resolution data last updated in 2016. Wisconsin accessed the 2021 C-CAP High Resolution Land Cover data at and also reviewed wetlands data using the C-CAP Land Cover Atlas.

[1] coast.noaa.gov/data/czm/media/czmapmsguide.pdf

[2] National data on wetlands status and trends include NOAA's Land Cover Atlas (coast.noaa.gov/digitalcoast/tools/lca.html), the U.S. Geological Survey's National Land Cover Database (usgs.gov/centers/eros/science/national-land-cover-database), and the U.S. Fish and Wildlife Service's National Wetland Inventory data (fws.gov/program/national-wetlands-inventory).

How Wetlands Are Changing

Land Cover Type	Area of Wetlands Transformed to Another Type of Land Cover between 1996-2021 (Sq. Miles)
Development	-3.34
Agriculture	-3.88
Barren Land	-0.52
Water	-5.51

Management Characterization

1. Indicate any significant changes at the state or territory level (positive or negative) since the last assessment that could impact the future protection, restoration, enhancement, or creation of coastal wetlands.

Significant Changes in Wetland Management

Management Category	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y
Wetlands programs (e.g., regulatory, mitigation, restoration, acquisition)	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

<u>Statutes, Regulations, and Policy Updates</u>

2024 Wisconsin ATCP 50

a) Significance: ATCP 50 is the administrative rule used by the Wisconsin Department of Agriculture, Trade and Consumer Protection to implement state and federal laws covering soil and water resource management grants to counties, county resource management planning, conservation compliance for farmland preservation tax credits, local ordinances, nutrient management and other conservation practices. ATCP 50 was revised with new updates going into effect in 2024. Updates include adding new conservation practices and increased cost-share eligibility to meet conservation goals like stream and wetland (hydrologic) restoration.
b) Section 309/CZM-driven: No
c) Outcomes: New updates to existing state administrative rule.

2023 Wisconsin Act 265

a) Significance: Established the Pre-Disaster Flood Resilience Grant Program. The purpose of the program, to be administered by Wisconsin Emergency Management, is to administer a pre-disaster flood resilience grant program and provide assessment and implementation grants to applicants for the purpose of identifying flood vulnerabilities, identifying options to improve flood resiliency, and restoring hydrology to reduce flood risk and damages in flood-prone

communities. The state program is a first of its kind and will provide funding to encourage tribal and local governments and regional planning commissions to restore and conserve wetlands and undertake other proactive strategies before flooding events occur.

b) Section 309/CZM-driven: No
c) Outcomes: New state grant program. Established as a continuing program and funded at $2 million in the state's 2023-2025 biennial budget.

2021 Wisconsin Act 77

a) Significance: Established a new Hydrologic Restoration General Permit, administered through the Wisconsin Department of Natural Resources. The Department shall issue a general permit that authorizes wetland, stream, and floodplain restoration and management activities that will result in a net improvement in hydrologic connections, conditions, and functions. These activities shall be designed to the extent possible to return wetland, stream, and floodplain hydrology to a natural and self-regulating condition to achieve such goals as slowing the flow of runoff, reduce flood peaks, restore surface and groundwater interactions, improve water quality, or increase soil retention, groundwater infiltration, base flow, upper watershed storage, and flood resilience. An activity is authorized by the general permit only if the applicant demonstrates to the satisfaction of the department that the activity will result in net improvements in hydrologic connections, conditions, and functions and will not injure public rights or interests or result in material injury to the rights of any riparian owner.
b) Section 309/CZM-driven: No
c) Outcomes: Hydrologic Restoration General Permit (HRGP-22) was developed and issued in 2025 following passage of 2021 Wisconsin Act 77.

2019 Wisconsin Act 157

a) Significance: In the 2019-21 fiscal biennium, the Department of Natural Resources shall allocate $150,000 from the appropriation to Ashland County to design, implement, and evaluate not more than three demonstration projects that test natural flood risk reduction practices in that county. Project expenditures for the money allocated may include engineering and design, materials, construction, pre-construction and post-construction monitoring, and project management. The Department shall submit to the legislature and to the Division of Emergency Management in the Department of Military Affairs a report summarizing the results of the demonstration projects and recommendations for how existing state policies or funding streams could be adapted to create incentives to protect and restore natural infrastructure and reduce floods.
b) Section 309/CZM-driven: No.
c) Outcomes: The Ashland County Flood Risk Reduction Pilot Project is complete. The pilot project informed the understanding of barriers to wetland restoration which informed the development of the Pre-Disaster Flood Resilience Grant Program under 2023 WI Act 265.

2019 Wisconsin Act 59

a) Significance: Makes several changes which codify or modify current Wisconsin Department of Natural Resources administrative rules relating to the mitigation of wetland impacts conducted by purchasing credits from a wetland mitigation bank. Created a requirement that wetland mitigation bank credits be in the same watershed (Hydrologic Unit Code 8) as the wetland impacted.
b) Section 309/CZM-driven: No

c) Outcomes: The purpose is to prevent situations where wetlands are heavily impacted in one part of the state and mitigated in another part of the state. Expected outcomes are that affected wetlands will be mitigated within the same watershed.

Wetland Program Updates

Wisconsin Wetland Inventory

a) Significance: Since 2020, the Wisconsin Department of Natural Resources Wisconsin Wetland Inventory mapping team has developed and refined an innovative standard operation procedure to use LiDAR-derived elevation data to improve the accuracy and resolution of coastal wetlands data. In addition, wetland mapping leverages rivers, lakes, and streams hydrography mapping in coastal counties. This integration will ensure that hydrography and wetland mapping data are aligned in coastal counties. And finally, additional outreach is being conducted on wetland mapping methods and the application of data to support land use planning, wetland zoning/permitting, and nonpoint source pollution control.
b) Section 309/CZM-driven: Wisconsin DNR received funding through Section 306 funds.
c) Outcomes: Improved accuracy of wetlands mapping data. Improved integration with hydrography data. Improved usability and access to wetland inventory.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High	__X__
Medium	_____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Wetland protection, restoration, and enhancement will benefit from a coordinated and strategic, inter-agency approach. Wisconsin continues to see new state regulations, impacts on federal protections, an influx of federal funding to improve coastal resiliency, state budget uncertainties, and changes (and shortages) in staffing at the Wisconsin Department of Natural Resources including increased workloads. There continues to be a need for outreach and technical assistance to support local governments and communities in planning how to effectively manage, protect and restore existing wetlands. And there is a need for the state to develop a strategic wetland plan, assess data gaps and needs, and support local planning efforts that intersect wetlands.

There is an increasing appreciation for and understanding of the functional values and environmental services of wetlands that make them important in resiliency planning discussions. Federal, tribal, state and local partners continue to examine the role that wetlands could have in making communities and watersheds more resilient through natural flood management and the numerous other co-benefits wetlands provide.

WCMP engaged with partners for both the Resource Characterization and Management Characterization sections of the Phase I Needs Assessment. Partners engaged included:

- Wisconsin Department of Natural Resources, Monitoring Section, Wetlands Program
- Wisconsin Department of Natural Resources, Office of Great Waters
- Wisconsin Department of Natural Resources, Geographic Information Systems Section

- US Fish and Wildlife Service, Partnerships and Habitat Branch
- US Fish and Wildlife Service, Coastal Program
- US Fish and Wildlife Service, Ecological Services Program
- Wisconsin Wetlands Association
- Lake Superior National Estuarine Research Reserve
- Southeastern Wisconsin Regional Planning Commission
- Milwaukee Metropolitan Sewerage District Greenseams

WCMP will continue to support the protection, restoration, and enhancement of the state's wetlands using Section 309 funding.

Coastal Hazards

Section 309 Enhancement Objective: Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise and Great Lakes level change. §309(a)(2)

Note: For purposes of the Hazards Assessment, coastal hazards include the following traditional hazards and those identified in the CZMA: flooding; coastal storms (including associated storm surge); geological hazards (e.g., tsunamis, earthquakes); shoreline erosion (including bluff and dune erosion); sea level rise; Great Lake level change; land subsidence; and saltwater intrusion.

Phase 1 (High-level) Assessment: *(Must be completed by all states.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. In the table below, indicate the general level of risk in the coastal zone for each of the coastal hazards. The following resources may help assess the level of risk for each hazard. Your state may also have other state-specific resources and tools to consult. Additional information and links to these resources can be found in the "Resources" section at the end of the Coastal Hazards Phase I Assessment Template:

    - The state's multi-hazard mitigation plan
    - Coastal County Snapshots: Flood Exposure
    - Coastal Flood Exposure Mapper
    - Sea Level Rise Viewer/Great Lakes Lake Level Change Viewer

General Level of Hazard Risk in the Coastal Zone

Type of Hazard	General Level of Risk[3] (H, M, L)
Flooding (riverine, stormwater)	H
Coastal storms (including storm surge)	H
Geological hazards (e.g., tsunamis, earthquakes)	L
Shoreline erosion	H
Sea level rise	N/A
Great Lakes level change	H
Land subsidence	M
Saltwater intrusion	N/A

2. If available, briefly list and summarize the results of any additional data or reports on the level of risk and vulnerability to coastal hazards within your state since the last assessment. The state's multi-hazard mitigation plan or risk assessment or plan may be a good resource to help respond to this question.

[3] 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*

NCA5
U.S. Global Change Research Program, 2023

Key Message 24.5 from the Midwest chapter of the NCA5 states with "high confidence" that future adverse impacts from erosion are likely across the Great Lakes due to projected increases in droughts, floods, and runoff events.

2021 State of Wisconsin Hazard Mitigation Plan
Wisconsin Emergency Management, 2021

The *Threat & Hazard Identification and Risk Assessment (THIRA)* appendix includes jurisdiction specific data about hazards of concern including erosion, flooding, and lake level fluctuations. *Section 3.6 Coastal Hazards* describes the natural processes and human activities that affect these hazards. Approximately 80% of Wisconsin's Great Lakes coastline is affected by erosion and recession, presenting a significant risk in almost every coastal county. Coastal communities, including Kenosha County and the City of Green Bay, have a high susceptibility to coastal flooding. Milwaukee, Ozaukee, and Brown Counties are at a medium risk of flooding. High water levels and increased wave action exacerbate both coastal erosion and coastal flooding hazards.

2021 Assessment Report
Nelson Institute for Environmental Studies & Wisconsin DNR, 2021

Key takeaways from the *Great Lakes, Built Environment, and Coastal Resilience* chapters include: a decrease in the extent and duration of ice cover on Lake Michigan and Superior can increase erosion during the winter and more rapid fluctuations in water level extremes, increasing wave energy and storm surges, and increased precipitation will lead to more erosion and flooding of the coastline.

Wisconsin Shoreline Inventory & Oblique Viewer
Association of State Floodplain Managers, Accessed October 2024

The *Shoreline Inventory* layer identifies shore protection structures and qualitatively classifies coastal bluffs as unstable/failing, moderately unstable, or moderately stable. This layer was recently updated in 2018/2019. *Shoreline Oblique Photos* provided by the Wisconsin Civil Air Patrol have been uploaded annually since the previous Assessment.

Coastal Bluff Evolution in Response to a Rapid Rise in Surface Water Level
Krueger et al., 2020

This study of three different bluff types on Lake Michigan concluded that bluff types respond to increased lake levels on different time scales relative to bluff height. Short bluffs cycle through erosion/stabilization cycle rapidly. Tall bluff crests are the most delayed in exhibiting impacts of erosion. They also experience the longest lasting effects after water levels have stabilized.

Cumulative Impacts to Bluff Recession in the Vicinity of Coastal Structures Under Fluctuating Water Levels in Lake Michigan
Tryon-Petith, 2023

This research on bluff recession in Southeastern Wisconsin determined that bluff recession increases during high water periods and areas of high wave impacts. Additionally, this study determined that recession occurs at the flanks of coast-parallel structures during periods of low water levels.

Achieving a Resilient Coast: Coordinated Action in Northeast Wisconsin
Bay-Lake Regional Planning Commission & Wisconsin Sea Grant, 2021

The *Coastal Challenges in Northeast Wisconsin* section of the Northeast Wisconsin Coastal Resiliency Study identifies twelve challenges including rising water levels, erosion, storm surge damage, shoreline conditions, and bluff conditions. Additionally, a survey of community perspectives found that respondents had high concerns about rising Lake Michigan water levels and coastal erosion.

Milwaukee County Coastal Assets Inventory & Assessment Report
Prepared for Milwaukee County, 2020

An assessment of 30 Milwaukee County coastal assets (*Appendix F: Risk Assessment Spreadsheet*) revealed 12 assets at high risk and 10 assets at medium risk to impacts of Lake Michigan coastal processes. The risk classifications were determined based on current condition of the asset, vulnerability, and replacement value.

Coastal County Snapshots (Special Flood Hazard)
National Oceanic & Atmospheric Administration, Accessed October 2024

All 15 coastal counties have land within a FEMA designated Special Flood Hazard Area (SFHA) – the area that will be inundated by a flood event that has a 1-percent chance of being equaled or exceeded in any given year. Number of people, facilities, homes, and businesses at risk vary by county.

Hazard Mitigation Plans

Currently available hazard mitigation plans identify varying vulnerability, risk, or concern for coastal hazards including erosion, flooding, lake level fluctuations, storms/storm surge, and ice shoves. It is notable that some plans were prepared prior to the recent record high water levels.

- Ashland County Hazard Mitigation Plan, 2024 (Draft)
    - The clay bluffs of Ashland County's Lake Superior shoreline are highly vulnerable to the effects of bluff erosion. Recent flooding events (2016-2023) have been intense and destructive due to historic rainfall events.
- Bayfield County All-Hazard Mitigation Plan, 2020
    - Coastal erosion and flooding are a high risk throughout Bayfield County. Bayfield County has a medium vulnerability to landslide hazards.
- Iron County Multi-Jurisdictional Hazard Mitigation Plan, 2024 (Draft)

    - Many of the bluffs along Lake Superior shoreline in Iron County are actively eroding. The annual probability that coastal hazards (erosion, flooding, lake level fluctuations) will affect Iron County is 100%.
- Douglas County Hazard Mitigation Plan, 2021
    - Douglas County has a high risk for coastal hazards (erosion, flooding, lake level fluctuations).
- Marinette County Natural Hazard Mitigation Plan, 2020
    - Portions of the county situated along Lake Michigan are at moderate risk for coastal hazards (erosion, flooding, waves, ice shoves). Coastal hazards are listed as a low priority in the *Prioritized Action Plan (Table 4.1).*
- Oconto County Multi-Hazard Mitigation Plan, 2021
    - Portions of the county situated along Lake Michigan are at risk for coastal hazards (erosion, flooding, waves, ice shoves). Based on previous hazard frequency, Oconto County has a low probability of experiencing a significant coastal hazard event in any given year. Oconto County is at moderate risk of coastal flooding.
- Manitowoc County Hazard Mitigation Plan, 2020
    - Overall, the probability of coastal hazards (erosion, flooding, waves, ice shoves) is medium for the planning area.
- Door County Multi-Jurisdictional Hazard Mitigation Plan, 2022
    - High, county-wide vulnerability for coastal erosion. High vulnerability for lakeshore flooding in some of the towns and low-to-moderate vulnerability for the City and Villages.
- Brown County Hazard Mitigation Plan, 2020
    - Villages of Howard, Suamico, the City of Green Bay, and the Towns of Scott and Green Bay are at risk of coastal flooding. For communities that do not share a border with the Bay of Green Bay but that do have a border with the Fox River and the East River, flooding is a concern and can be a result of the high-water levels in the Bay of Green Bay.
- Sheboygan County, Wisconsin Hazard Mitigation Plan, 2020
    - Sheboygan County is at risk for coastal erosion and coastal flooding. Sheboygan County is identified as an area at “greatest risk” for coastal erosion and at “medium risk” for coastal flooding. The probability of coastal hazards is very high for the planning area.
- Ozaukee County Hazard Mitigation Plan, 2020
    - Shoreline erosion, bluff failure, and coastal flooding, when combined, present a high risk in Ozaukee County.
- City of Milwaukee Hazard Mitigation Plan, 2019
    - Lake Michigan coastal erosion is considered a relatively low-priority hazard in the City of Milwaukee even though there are areas within Milwaukee County where this hazard is more severe.
- Kenosha County Hazard Mitigation Plan, 2023
    - Shoreline erosion, bluff failure, and coastal flooding, when combined, present a moderate risk in Kenosha County.
- Racine County Hazard Mitigation Plan, 2023
    - Shoreline erosion, bluff failure, and coastal flooding, when combined, present a moderate risk in Racine County.

East River Watershed Flood Study
East River Collaborative, 2023

This study produced initial flood data and maps to determine areas at risk to flooding in the East River Watershed. Maps were produced for the entire watershed as well as seven individual communities.

Coastal Resilience Self Assessments
Southeastern Wisconsin Coastal Resilience Project, 2018

Fifteen communities in Southeastern Wisconsin participated in a Coastal Resilience Self-Assessment aimed at identifying coastal resilience needs in their communities. Shoreline recession and bluff failure were reported as having the highest average relative risk across the communities that participated, followed by shore protection damage, beach loss, and coastal flooding respectively.

Management Characterization:

1. In the tables below, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred that could impact the CMP's ability to prevent or significantly reduce coastal hazards risk since the last assessment.

Significant Changes in Hazards Statutes, Regulations, Policies, or Case Law

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Elimination of development/redevelopment in high-hazard areas[4]	Y	Y	N
Management of development/redevelopment in other hazard areas	N	N	Y
Sea level rise or Great Lakes level change	N	Y	Y

Significant Changes in Hazards Planning Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Hazard mitigation	Y	Y	Y
Sea level rise or Great Lakes level change	Y	Y	Y

Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Sea level rise or Great Lakes level change	Y	Y	Y

[4] Use the state's definition of high-hazard areas.

Topic Addressed	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Other hazards	Y	Y	Y

2. Briefly state how "high-hazard areas" are defined in your coastal zone.

For purposes of this document, high-hazard areas are areas within 75 feet of the ordinary high-water mark or areas with actively eroding bluffs as well as areas likely to be affected by flooding within Wisconsin's Coastal Zone.

3. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

Statutes/Regulations/Case Law

FEMA Flood Insurance Rate Maps (FIRMs)

a) FEMA has issued new FIRMs for Wisconsin coastal counties as part of the Great Lakes Coastal Flood Study: Manitowoc (effective February 2023), Oconto (effective March 2023), Brown (effective May 2023), Iron County (effective May 2023), Racine (effective January 2024), Kenosha (effective April 2024), Door (May 2024), Ozaukee (effective July 2024), Kewaunee (effective August 2024), Sheboygan (effective August 2024), Milwaukee (effective October 2024), Marinette (draft maps expected 2025/2026). Ashland and Kewaunee are not published yet because they still need to complete the riverine mapping.
b) It is not a CZM-driven change.
c) The new maps include "VE zones," which are areas close to the shoreline and subject to high-velocity flow and wave action. VE zones are new to Wisconsin. Communities will have to address the changes in transects and implementation of the maps.

The Federal Flood Risk Management Standard (FFRMS)

a) The FFRMS has been codified by FEMA and other agencies. The standard was previously revoked but then reinstated through Executive Order 14030, clarifying that the FFRMS as well as the guidelines for floodplain management under Executive Order 11988 should remain in effect.
b) This was not a CZM-driven, state-level change.
c) The FFRMS defines the floodplain for any project with an investment of federal funds.

Federal disaster declaration (DR-4477-WI)

a) Federal disaster declaration DR-4477-WI was issued in March 2020 by FEMA for Milwaukee, Racine, and Kenosha Counties in response to severe winter storms that affected areas along the Lake Michigan shoreline on January 10-12th of that year, causing extensive damage to public infrastructure throughout the region.
b) This was not a CZM-driven change.
c) Disaster funding was made available to communities impacted by the storm.

Great Lakes Emergency Erosion Control (DNR-3500-127)

a) The Wisconsin DNR is no longer utilizing the Great Lakes Emergency Erosion Control permitting process from the recent high water period. The process was initially established to streamline the temporary erosion control placement authorization process intended for emergency situations on Great Lakes shorelines.
b) This was not a CZM-driven change.
c) Permanent erosion control structures will need a general or individual permit through the DNR. Erosion control projects on the Great Lakes can have separate permitting standards that require additional permit requirements.

Wisconsin Act 265

a) The Pre-Disaster Flood Resilience Grant program was established in 2023 by the Wisconsin State Legislature for the purpose of identifying flood vulnerabilities, identifying options to improve flood resilience, and restoring hydrology. The grant program is administered by Wisconsin Emergency Management (WEM). Funding is available for two types of projects: assessment and implementation.
b) This was not a CZM-driven change, although WCMP has helped provide outreach to coastal communities about this new opportunity.
c) Communities will be able to apply for this funding to reduce flood risk and damage in flood-prone communities.

Wisconsin Act 247

a) Act 247 was enacted in 2024 and establishes a process for local governments to change the uses allowed within a Great Lakes water that was filled before August 8, 1989, pursuant to authorization in specific legislation, a lakebed grant, or a submerged land lease.
b) This was not a CZM-driven change. The Wisconsin DNR is the administering agency.
c) Implementation of the policy is an evolving process that will have site-specific impacts.

Wisconsin Act 77

a) Act 77 was enacted in 2021 which authorizes the Wisconsin DNR to issue a general permit for hydrologic restoration projects. A draft of the permit was released in January 2023. The permit is expected to be issued in 2025.
b) This was not a CZM-driven change.
c) Communities will be able to apply for this permit to support nature-based flood mitigation projects.

Chapter NR 320

a) The DNR has drafted an order to repeal and recreate NR 320, relating to placing structures in navigable waterways. One of the purposes of this chapter is to establish reasonable procedures and limitations for placement of shore erosion control structures in the Great Lakes to ensure that there is no detrimental impact to the public interest.
b) This is not a CZM-driven change, although WCMP provided input on the draft rule through a technical advisory committee. The rule has gone through public comment and is under revision.
c) The draft rule proposes requiring site-specific design engineering, modeling, or geotechnical analysis certified by a professional engineer licensed or certified to practice in the State of Wisconsin under ch. 443, Stats., for proposed structures if they meet a certain set of conditions.

Milwaukee County Coastline Management Guideline

a) Milwaukee County established coastline management guidelines to protect County lakefront property from coastal hazards. This project evaluated the existing conditions of the County's coastal property and established guidelines for proposed development, landscape management, and shore protection modifications and structures. In 2021, the Milwaukee County Coastline Management Guidelines were published.
b) This was not a CZM-driven change; however, WCMP provided funding as part of the Southeastern Wisconsin Coastal Resilience project.
c) Milwaukee County will use the background information on coastal bluffs and the guidelines to evaluate proposed projects on County-owned coastal properties. The guidelines will help the County back up decisions made to protect coastal bluffs from future coastal hazards and water level impacts.

Village of Mount Pleasant Zoning Code Update

a) The Village of Mount Pleasant updated the Village zoning code to include bluff setback and shoreland protection ordinances that would help protect infrastructure investments and public and private property. The updated code was adopted in 2020.
b) This was not a CZM-driven change.
c) WCMP was able to help share a case study of this project with other coastal communities in the Lake Michigan region.

Hazard Planning Programs/Initiatives

Northwest Wisconsin Flood Impact Study

a) The Northwest Wisconsin Flood Impact Study was published in 2018 following extreme rainfall events in 2016 that led to flash flooding in the Lake Superior region. Four lives were lost because of the storm and severe flooding destroyed homes and infrastructure. A Presidential Disaster Declaration DR-4275 was granted in August 2016 for the affected counties including Ashland, Bayfield, Douglas, Iron, and the Bad River Band of the Lake Superior Chippewa.
b) This was not a CZM-initiated project.
c) The study identifies vulnerable areas that may require mitigation/resilience planning. Understanding the combined riverine and coastal flood risk will allow communities to assess the level of readiness and preparedness to deal with a flood disaster.

Southeastern Wisconsin Coastal Resilience Project

a) This coastal resilience project was a multi-year, multi-partner effort to address coastal hazards in communities in Ozaukee, Milwaukee, Racine, and Kenosha Counties. WCMP partnered with the University of Wisconsin Sea Grant Institute, the University of Wisconsin-Madison Department of Civil and Environmental Engineering, and the Southeastern Wisconsin Regional Planning Commission to enhance community capacity to become more resilient to coastal hazards. The project concluded in 2023.
b) It was a CZM-initiated project and received NOAA Coastal Resilience Grants Program funding.
c) Outcomes included improved awareness of coastal hazard risks, reduction in property damage, improvement of coastal assets including beaches and harbors, and multi-jurisdictional coordination to reduce risks.

2021 State Hazard Mitigation Plan (SHMP)

a) The 2021 SHMP addresses multiple hazards in Wisconsin, including a section on Coastal Hazards (see *Resource Characterization: Question 2* above). Wisconsin Emergency Management is the lead agency.
b) It is not a CZM-driven change, although Wisconsin Coastal Management Program is a partner on the plan.
c) An updated state plan helps to influence local plans and gives access to FEMA funding.

Local Hazard Mitigation Plans

a) Multiple local hazard mitigation plans have been updated (see *Resource Characterization: Question 2* above).
b) The projects have not been directly funded by WCMP, although WCMP has provided funding to the regional planning commissions that have assisted in the development of the plans.
c) Updated plans help communities prepare for the impacts of storms and other events. Mitigation plans also help make communities eligible for mitigation and other types of funding.

Collaborative Action for Lake Michigan Coastal Resilience (CALM)

a) CALM was an 18-month, multi-partner effort to address coastal hazards in Wisconsin's Lake Michigan communities. WCMP partnered with the University of Wisconsin Sea Grant Institute, the University of Wisconsin-Madison State Cartographer's Office, the State Geographic Information Officer, and the Southeastern Wisconsin Regional Planning Commission to expand the risk communication framework of the Southeastern Wisconsin Coastal Resilience Project and connect the resilience efforts in Southeastern Wisconsin to those in Green Bay and Northeastern Wisconsin to regionally prioritize and address coastal hazards.
b) It was a CZM-initiated project and received section 309 Project of Special Merit funding.
c) The project formed the CALM network and focused on delivering outreach content to assist communities in developing, revising, or adopting local ordinances and/or coastal hazard plans and policies. The network remains active.

Coastal Hazards of Superior (CHAOS) Community of Practice

a) CHAOS focused on the Minnesota and Wisconsin coasts of western Lake Superior. CHAOS is a platform for engaging communities with a shared concern about coastal hazards and their impacts. CHAOS is led by a partnership of agencies and organizations including WCMP, Wisconsin Sea Grant, Lake Superior National Estuarine Research Reserve, Minnesota Department of Natural Resources-Minnesota's Lake Superior Coastal Program, University of Minnesota Sea Grant Program, and NOAA. CHAOS originally began as a Coastal Management Fellowship project through Minnesota's Lake Superior Coastal Program.
b) WCMP provided 309 funding for a CHAOS coordinator for a year after the end of the fellowship.
c) CHAOS helps connect communities impacted by hazards to those with resources to study, address, or mitigate impacts. CHAOS engages the community of practices through newsletters, field trips, and virtual and in-person meetings. The CoP remains active.

J. Phillip Keillor Coastal Hazards Fellowship

a) WCMP partners with Wisconsin Sea Grant to fund a science-policy fellowship program called the J. Phillip Keillor Coastal Hazards Fellowship. The fellowships have helped WCMP to implement the 309 Strategy, with the most recent Coastal Hazards strategy goal being, "Assist agencies and communities in developing and revising coastal hazards policies through outreach and data development and management." From 2016 – 2024, WCMP has hosted eight fellows. Each of

the fellows have participated in updating the *Coastal Processes Manual,* which will be a valuable resource to communities throughout the Great Lakes.

b) This was not a CZM-initiated project; however, WCMP has contributed section 309 funding annually to support the coastal hazards fellowship.
c) The fellows have provided direct outreach to communities experiencing issues with coastal erosion, flooding, and storm damage. The fellows have increased WCMP's capacity significantly, providing support to staff, outreach to communities, and representation at conferences.

Wisconsin Coastal Leadership Academy (CLA)

a) The Wisconsin CLA is an 18-month project that will develop and pilot a curriculum for a coastal hazards and adaptation strategies training module. WCMP has partnered with Wisconsin Sea Grant to develop and pilot the curriculum based on the Coastal Processes Manual, 3rd Ed. (funded by WCMP 309 funding).
b) It is a CZM-driven project and is funded by section 309 project of Special Merit funding.
c) The training and outreach will move coastal communities towards planning and mitigation actions.

<u>Mapping/Modeling</u>

Wisconsin Shoreline Inventory and Oblique Viewer (Shoreviewer)

a) The Shoreviewer has data layers for oblique photos from 2007-2008, 2012, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, and 2024 as well as historic photos. It also has inventories for shore structures and bluff and beach conditions.
b) The shoreline viewer is a CZM-driven application through Section 309 funding.
c) Updates and maintenance of the viewer will help communities to assess changes to their shoreline and make better decisions (see *Resource Characterization: Question 2* above).

LiDAR-derived measurements of rapid coastal change along Wisconsin's Lake Superior coast (2009–2019)

a) This paper was published in 2024. The authors from the UW-Madison Department of Geosciences used LiDAR to quantify erosion and deposition along Wisconsin's Lake Superior coastline. Their findings indicated that "Wisconsin's Lake Superior coast is eroding at rates similar to other soft coastal cliff systems and there is substantial spatial variability in erosion rates. As of 2019, bluff slopes had increased, and bluff crest retreat is expected to continue to achieve stable slope angles."
b) This was not a CZM-initiated project.
c) The findings will support technical assistance, outreach, and planning.

Wisconsin Coastal Management Data Infrastructure (WICDI)

a) The WICDI project ended in 2023. The project was focused on providing data, tools, and training to coastal communities in Wisconsin to reduce flood and storm damages.
b) It was a CZM-initiated project and received section 309 Project of Special Merit funding.
c) The project ultimately produced an inventory of culverts in the Lake Superior and Lake Michigan regions.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High	__X__
Medium	_____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Coastal Hazards is a high priority enhancement area for WCMP. The Phase 1 Assessment showed that Wisconsin's coastal communities continue to experience challenges related to coastal hazards. Fluctuating water levels and storm damage compound impacts from flooding and erosion. Coastal hazards do not disappear during periods of average or low water levels – damage from flooding, storms, and erosion are ongoing concerns for those living on Wisconsin's coasts and can occur at any water level. Fluctuations in water levels, more frequent and severe storms, and unpredictable ice cover may exacerbate the impacts of coastal hazards and lead to more uncertainty in the timing and scale of water level changes, storms, flooding, and erosion.

Additionally, the Coastal Hazards Workgroup noted dangerous currents as an important hazard. While dangerous currents, including rip currents, are not listed as a CZMA-identified hazard for the purposes of this assessment, they lead to annual safety incidents in the Great Lakes including drownings.

WCMP engaged with partners through the Coastal Hazards Workgroup for both the Resource Characterization and Management Characterization sections of the Phase 1 Assessment. The Coastal Hazards Workgroup includes Wisconsin Sea Grant, University of Wisconsin-Madison Departments of Civil and Environmental Engineering, Geology, and Geoscience, Wisconsin Department of Natural Resources, Wisconsin Emergency Management, the Association of State Floodplain Managers, Southeastern Wisconsin Regional Planning Commission, Wisconsin Geological & Natural History Survey, the United States Geological Survey, local planners, the State Cartographer's Office, and the State Geographic Information Officer.

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. §309(a)(3)

Phase 1 (High-level) Assessment: *(Must be completed by all states.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. Use the table below to provide data on public access availability within the coastal zone.

Public Access Status and Trends

Type of Access	Current number[5]	Changes or Trends Since Last Assessment[6] (↑, ↓, ~~un~~known)	Cite data source
Beach access sites	>158 for all coastal counties 39 (just Superior coastline)	Unknown	WI DNR 2024 Beach List Added all the "Public usages" that mentioned beach but did not say private Northwest Regional Planning Commission (NWRPC)
Shoreline (other than beach) access sites	>150 for all coastal counties	Unknown	Boat Access And Shore Fishing Viewer Shore Fishing Sites and DNR Access Sites for all coastal counties
Recreational boat (power or non-motorized) access sites	> 139 (just coastline of both lakes) 117(just Superior coastline)	Unknown	Community Financial Assistance for WI Dept of Natural Resources NWRPC
Designated scenic vistas or overlook points	7 (just Superior coastline)	Unknown	NWRPC

[5] Be as specific as possible. For example, if you have data on many access sites but know it is not an exhaustive list, note "more than" before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.

[6] If you know specific numbers, please provide. However, if specific numbers are unknown but you know that the general trend was increasing or decreasing or relatively stable or unchanged since the last assessment, note that with a ↑ (increased), ↓ (decreased), –(unchanged). If the trend is completely unknown, simply put "unknown."

Type of Access	Current number[5]	Changes or Trends Since Last Assessment[6] (↑, ↓, ~~un~~known)	Cite data source
Fishing access points (i.e. piers, jetties)	> 33 for all coastal counties	Unknown (method different)	Boat Access And Shore Fishing Viewer Counted "shore fishing sites" in coastal counties
Coastal trails/ boardwalks *(Please indicate number of trails/boardwalks and mileage)*	228 Named trail systems totaling 1,325 Miles, with another 128 Miles of unnamed trails (just Superior coastline)	Unknown	NWRPC
Acres of parkland/open space	2,054,180 2,656 acres of local parks/open space in the region and 7,911 Acres of State Parks(just Superior coastline)	↑57,701 acres	Wisconsin Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2024-2028 Appendix G Totals for each of 15 coastal counties added together GIS analysis by NWRPC
Access sites that are Americans with Disabilities Act (ADA) compliant[7]	142 with accessible features (just Superior coastline)	Unknown	NWRPC WDNR Public Boat Access Sites (filtered by waterbody and ADA "yes")

[7] For more information on ADA see *ada.gov.*

Type of Access	Current number[5]	Changes or Trends Since Last Assessment[6] (↑, ↓, ~~un~~known)	Cite data source
Other (please specify)	430 total public access sites (2018)	Unknown	Wisconsin Coastal Guide (2018) includes collection of points built from multiple sources including Northwest Wisconsin Regional Planning Commission (NWRPC), Bay-Lake Regional Planning Commission (BLRPC), Southeast Wisconsin Regional Planning Commission (SEWRPC), the 15 county and local GIS offices, the 1993 Wisconsin Public Access Guide, as well as some manual digitization. DOA Wisconsin Great Lakes Public Access Locations

2. Briefly characterize the demand for coastal public access and the process for periodically assessing demand. Include a statement on the projected population increase for your coastal counties. There are several additional sources of statewide information that may help inform this response, such as the Statewide Comprehensive Outdoor Recreation Plan,[8] the National Survey on Fishing, Hunting, and Wildlife Associated Recreation,[9] and your state's tourism office.

Wisconsin Department of Administration estimates from 2024 indicate that the population in coastal counties has increased by about 13,000 people, compared to data from 2020. This is a similar growth rate to what was reported in the last assessment which was 24,000 more people in 2019 than 2010.

The Statewide Comprehensive Outdoor Recreation Plan 2025-2030 was recently completed. Since the last plan was published, "Wisconsin, State Parks and Trails welcomed a record number of visitors in 2021 and, after a years-long decline, there were increases in individuals buying hunting and fishing licenses in 2020." Surveyed WI park program directors identified public shore access to lakes, rivers, and streams as the greatest need and Hiking/Walking/Running Trails as their second biggest need.

[8] Most states routinely develop "Statewide Comprehensive Outdoor Recreation Plans", or SCROPs, that include an assessment of demand for public recreational opportunities. Although not focused on coastal public access, SCORPs could be useful to get some sense of public outdoor recreation preferences and demand. Download state SCROPs at *recpro.org/resources--reports/scorp-resources.*

[9] The National Survey on Fishing, Hunting, and Wildlife Associated Recreation produces state-specific reports on fishing, hunting, and wildlife associated recreational use for each state. While not focused on coastal areas, the reports do include information on saltwater and Great Lakes fishing, and some coastal wildlife viewing that may be informative and compares 2016 data to 2011, 2006, and 2001 information to understand how usage has changed. The most recent survey was conducted for 2022 but due to a change in methodology, results cannot be compared to previous reports. See *fws.gov/program/national-survey-fishing-hunting-and-wildlife-associated-recreation-fhwar.*

The Wisconsin Harbor Towns Association also hosts a website (funded in partnership with WCMP and NOAA) with information on 19 harbor towns along the Lake Michigan and Lake Superior shoreline and the recreational opportunities they offer. This site could be used to characterize the public access opportunities across Wisconsin's coastal counties.

3. If available, briefly list and summarize the results of any additional data or reports on the status or trends for coastal public access since the last assessment.

   No reports are known, but since the last assessment, the Wisconsin Coastal Management Program has funded the acquisition of new land for public access and the design and construction of ADA compliant boat/kayak launches. While some access projects are new, some of these projects are restorative to replace damaged launches or address ones no longer accessible due to water level changes (which can be triggered by dam removal/placement).

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

Significant Changes in Public Access Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	N
Operation/maintenance of existing facilities	Y	Y	N
Acquisition/enhancement programs	Y	Y	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
   a. Describe the significance of the changes;
   b. Specify if they were 309 or other CZM-driven changes; and
   c. Characterize the outcomes or likely future outcomes of the changes.

3. Indicate if your state or territory has a publicly available public access guide. How current is the publication and how frequently it is updated?[10]

[10] Note some states may have regional or local guides in addition to state public access guides. Unless you want to list all local guides as well, there is no need to list additional guides beyond the state access guide. You may choose to note that the local guides do exist and may provide additional information that expands upon the state guides.

Publicly Available Access Guide

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	Y	Y	Y
Web address (if applicable)	Multiple	Multiple	Multiple
Date of last update	Varies	Varies	Varies
Frequency of update	Varies	Varies	Varies

The State of Wisconsin does not maintain a single public access guide. There are, however, multiple resources addressing different aspects of public access to coastal resources. Please see the "Resource Characterization" table above. In addition, please see Wisconsin DNR's Lake Michigan State Water Trail interactive web map, the Northwest Regional Planning Commission's Lake Superior Water Trail page, and Milwaukee riverkeeper's urban water trail page.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

   High _____
   Medium __X___
   Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Expanding and improving public access to the natural and cultural resources of Wisconsin's Great Lakes continues to be a focus area of WCMP's section 306/306A activities. WCMP has funded multiple Public Access projects during the current strategy period using section 306/306A funding. WCMP has successfully secured competitive Bipartisan Infrastructure Law funding for several acquisition projects as well, which has further increased public access to coastal resources over the last several years. Although there are significant needs to provide more public access to water resources, to improve sites of public access, and to provide better information about existing resources, there are funding sources available outside of Section 309 Enhancement Funds to help meet those needs.

Partnerships with and engagement of stakeholders like the WI Department of Natural Resources (DNR) and planning commissions such as Northwest Wisconsin Regional Planning Commission (NWRPC), Bay-Lake Regional Planning Commission (BLRPC), and Southeast Wisconsin Regional Planning Commission (SEWRPC) help to build resources to better understand public access needs (example resource: Wisconsin Coastal Guide, 2018). Representatives from NWRPC and the DNR provided input for this Phase 1 assessment.

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. §309(a)(4)

Phase 1 (High-level) Assessment: *(Must be completed by all states.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. In the table below, characterize the existing status and trends of marine debris in the state's coastal zone based on the best-available data.

Existing Status and Trends of Marine Debris in Coastal Zone

Source of Marine Debris	Significance of Source (H, M, L, unknown)	Type of Impact[11] (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (↑, ↓, ~~un~~known)
Beach/shore litter	L	Aesthetic	-
Land-based dumping	L	Aesthetic	-
Storm drains and runoff	L	Aesthetic/resource damage	-
Land-based fishing (e.g., fishing line, gear)	L	Aesthetic/resource damage	-
Ocean/Great Lakes-based fishing (e.g., derelict fishing gear)	L	Resource damage	-
Derelict vessels	L	Aesthetic	-
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	L	Resource damage	-
Hurricane/Storm	L	Aesthetic/resource damage	-
Tsunami	N/A	-	-
Other (please specify)			

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from marine debris in the coastal zone since the last assessment.

   The Alliance for the Great Lakes reported that from 2014-2023, 86% of litter items collected at Wisconsin and other Great Lakes coastal beaches as part of their Adopt-a-Beach program are composed either partially or fully of plastic. And 22% of collected items were smoking related. Glass, metal, paper, and other items comprised a much smaller percentage of litter. Much of the litter is

[11] You can select more than one, if applicable.

from single-use items and 40% of all litter measures less than 2.5 centimeters. In addition, 27% of litter is food related.

The University of Wisconsin-Oshkosh Marine Debris Mitigation Projects have been collecting and characterizing marine debris in Northeastern Wisconsin coastal areas since 2021, including Manitowoc, Kewaunee, Door and Brown Counties. Collections sites have included parks, beaches, marinas, and offshore. In addition to locally produced litter, research has shown that the Door County Peninsula serves as a physical barrier to litter that has been produced in Green Bay and Michigan's Upper Peninsula. Marine debris is deposited along the Door County shoreline due to wind, waves, and water currents.

The NOAA Marine Debris Program funded a study in 2015-2017 that quantified microplastics and microfibers on national park beaches. This study found that the Apostle Islands National Lakeshore in Wisconsin had on average 221.3 pieces of microplastic per kilogram of sand, which is more than any other national park location included in the study.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) for how marine debris is managed in the coastal zone.

Significant Changes in Marine Debris Management

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Marine debris statutes, regulations, policies, or case law interpreting these	Y	N	N
Marine debris removal programs	N	Y	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes and likely future outcomes of the changes.

Wisconsin does not have a formal or funded program to address abandoned or derelict vessels. The state does have a collection of laws that address abandoned and unattended vessels, obstructions to navigation and public nuisances. Wisconsin statutes, under Title 30, make it unlawful for any person to anchor, place, affix or abandon any unattended vessel in the traveled portion of any river or channel or in any established traffic lane that obstructs navigation. The provisions under Title 30 also address notification procedures, removal and disposal requirements, and liability. Removing abandoned or derelict vessels is paid for by the municipalities with jurisdiction, unless the owners can be identified and are able to pay for the removal. Municipalities can recover, by personal action,

all costs, charges and expenses associated with the removal of an abandoned or derelict vessel that is obstructing navigation from the vessel owners.

The State of Wisconsin does not have a marine debris removal program.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	_____
Low	__X__

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

In Wisconsin, there continues to be implementation of projects to address marine debris through research, collection and removal, characterization, and outreach. Listed below are examples of partnerships and projects that are actively working to address the issue of marine debris. These projects sometimes include participation in Great Lakes basin partnerships.

NOAA Great Lakes Marine Debris Action Plan

The NOAA Great Lakes Marine Debris Action Plan contains goals related to research, science-based policy and management decisions, education and community outreach, and marine debris removal. In the 2014-2019 plan, 53 actions were identified for implementation. The Wisconsin Coastal Management Program was a member of the action plan working group that developed the 2014-2019 plan. The 2020-2025 plan was subsequently developed and builds on the progress that has been made with a new set of actions to be implemented through 2025.

Great Lakes Circular Economy Partnership and Plastics Cleanup

The Council of the Great Lakes Region (CGLR) is working to prevent and reduce plastic debris by expanding the Great Lakes Plastic Cleanup program and launching a new binational Great Lakes Circular Economy Partnership (GLCEP). The CGLR established the binational GLCEP, an initiative that includes corporate, government, university and nonprofit partners. Starting with single-use plastics such as bottles, food wrappers, utensils, and other consumer debris as a priority focus, CGLR will complete a comprehensive study of plastics production, use, disposal, and litter in the Great Lakes Region. Once this initial work is complete, CGLR will work with GLCEP partners to develop a circular economy vision, strategy, and five-year action plan, which will identify the priorities, projects, partnerships, and investments required to forge a future without plastic waste in the Great Lakes Region.

University of Wisconsin-Oshkosh Marine Debris Mitigation Projects

The University of Wisconsin-Oshkosh Marine Debris Mitigation Projects, through funding from NOAA and EPA, has been collecting and characterizing marine debris in Northeastern Wisconsin coastal areas since 2021, including Manitowoc, Kewaunee, Door and Brown Counties. Collections sites have included parks, beaches, marinas, and offshore.

1. Through funding from the NOAA Marine Debris Program, the University of Wisconsin-Oshkosh is partnering with two initiatives, the Great Lakes Circular Economy Partnership and the Great Lakes Plastic Cleanup (GLPC) to install marine debris removal technologies at

21 participating public and private marinas, ranging from Lake Superior and Lake Michigan to Lake Ontario.

2. Through funding from the U.S. EPA Great Lakes Restoration Initiative's Trash Free Waters Grant Program, the University of Wisconsin-Oshkosh purchased a trash skimmer boat to target several key waterways that drain into Green Bay and Lake Michigan. This two-hulled catamaran collects litter and debris from Sturgeon Bay, Bay of Green Bay, and the Fox, Ahnapee, Kewaunee and Manitowoc Rivers. Additionally marine debris removal technologies were installed at select coastal marinas.

Wisconsin Clean Marina Program

The Wisconsin Clean Marina Program, co-managed by Wisconsin Sea Grant and Wisconsin Coastal Management Program, and in partnership with the Wisconsin Marine Association, has partnered with the University of Wisconsin-Oshkosh through the above-mentioned NOAA and EPA funded marine debris mitigation projects to install marine debris removal technologies at certified Clean Marina facilities.

Additionally, the Wisconsin Clean Marina Program actively works with marinas in the state to install fishing line receptacles and collect and recycle boat shrink wrap.

Wisconsin Coastal Management Program

Wisconsin Coastal Management Program has provided funding support through Section 306 on marine debris mitigation and education projects.

- Funding support to the University of Wisconsin-Oshkosh to conduct a comprehensive survey of shoreline litter and debris on the Door County peninsula and install and monitor trash receptacles.
- Funding support to the Friends of the Lake Superior NERR and the Lake Superior NERR to develop a traveling marine debris exhibit to raise awareness about the impacts of marine debris and collect pledges from individuals to reduce plastic consumption.

Wisconsin Sea Grant

Wisconsin Sea Grant has partnered on several marine debris projects to both further research as well as promote understanding of the issue.

- With funding from NOAA's Marine Debris Challenge and Community Action Coalition Competition, the project, "Pinpointing the key drivers for the bioaccumulation of nano- and low-micrometer microplastics in the Great Lakes using a modular pretreatment and plasmonic imaging platform," will partner with the University of Wisconsin-Madison to create a standardized, high-speed testing system to study how tiny microplastics and nanoplastics appear and build up in living organisms in the Great Lakes.
- With funding from NOAA's Marine Debris Challenge and Community Action Coalition Competition, the project "Fashioning a model response: Educating members of the fashion industry about microplastics to reduce marine debris in local waters," will partner with Milwaukee Riverkeeper and Mount Mary University to offer workshops for college fashion department faculty, university students and K-12 teachers regarding reducing polyester clothing fiber waste. The project will also pilot and launch an online short course for educators about marine debris prevention and the fashion industry.
- With funding from the NOAA Marine Debris Program, Wisconsin Sea Grant and American Players Theatre incorporated creativity into marine debris education and outreach efforts by authoring a play about marine debris. The partners used the power of storytelling and

performance to engage, educate, and inspire performing artists, students, and community members to be committed stewards of the Great Lakes.
- With funding from the National Sea Grant Office, Wisconsin Sea Grant partnered with Milwaukee Riverkeeper, a key player in an initiative called Plastic-Free Milwaukee, to coordinate Milwaukee youth to lead civic engagement projects on how to reduce single-use plastics in schools. The project created a plastics audit, shared a plastics education toolkit about how plastics impact water quality and human health, and provided resources to students and teachers on how they can reduce plastic pollution in their homes and schools.
- With funding from the NOAA Marine Debris Program, Wisconsin Sea Grant worked with partners to educate fishers about ghost nets in Lake Superior. The project team held workshops for commercial and tribal fishers, as well as the public, to encourage changes in behavior that prevent marine debris from entering the marine environment. Participants received best practices and other tools for preventing fishing net loss, which will help reduce the number of ghost nets in the lake and the amount of harmful bycatch from the nets.

Adopt-a-Beach and International Coastal Cleanup

The Alliance for the Great Lakes, in partnership with Ocean Conservancy, coordinates September Adopt-a-Beach in Wisconsin and the Great Lakes. This annual program includes collection and characterization of marine debris and litter found at sites that include coastal beaches. WCMP has provided funding over the years to support the Adopt-a-Beach program.

Door County Leave No Trace

This initiative is a partnership between Destination Door County and Leave No Trace to minimize impacts on the outdoors, enhance land stewardship, and improve tourism/travel etiquette. The Leave No Trave Seven Principles, and supporting education and outreach, includes proper disposal of trash and litter to minimize impacts to wildlife, water resources, and the outdoor experience.

WCMP engaged with partners for both the Resource Characterization and Management Characterization sections of the Phase I Needs Assessment. Partners engaged included:
- University of Wisconsin-Oshkosh
- Wisconsin Sea Grant
- Wisconsin Clean Marina Program
- Alliance for the Great Lakes
- Great Lakes Clean Marina Network

There has been significant investment from federal, state, local and university partners to address marine debris and its impact on coastal resources and communities in Wisconsin. WCMP, as a networked program in the Department of Administration, has been able to successfully work collaboratively with many of these stakeholders and efficiently leverage financial and technical assistance when involved. No Section 309 funding is proposed. Section 306 funding will continue to be utilized to provide both financial and technical assistance.

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. §309(a)(5)

Phase 1 (High-level) Assessment: *(Must be completed by all states.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. Using National Ocean Economics Program Data on population and housing,[12] please indicate the change in population and housing units in the state's coastal counties between 2017 and 2021. You may wish to add additional trend comparisons to look at longer time horizons as well (data available back to 1970), but at a minimum, please show change over the most recent five-year period data is available (2017-2021) to approximate current assessment period.

Trends in Coastal Population and Housing Units

	2017	2021	Percent Change (2017-2021)
Number of people	2,063,942	2,020,722	-2.0%
Number of housing units	949,368	963,364	+ 1.5%

There was no "coastal zone counties" option, so all 15 counties were added together to get this data.

2. Using the tables below as a guide, provide information on land cover changes and development trends. Be as quantitative as possible using state or national land cover data.[13] The tables are a suggestion of how you could present the information. Feel free to adjust column and row headings to align with data and time frames available in your state or territory. If quantitative data on land cover changes and development trends are not available, provide a brief qualitative narrative describing changes in land cover, especially development trends, including significant changes since the last assessment.

The U.S. Geological Survey's National Land Cover Database Enhanced Visualization and Analysis tool was utilized to obtain this data. There was no option to combine counties, so each of the 15 coastal county's "Land Cover Area and Change Distribution" Table was copied into a spreadsheet. A total was tabbed by adding all of this data together after converting from square miles to acres. Categories are slightly different than those asked for here. Agriculture comprises of crops and pasture, and Forested combined

[12] *www.oceaneconomics.org/*. Enter "Population and Housing" section and select "Data Search" (near the top of the left sidebar). From the drop-down boxes, select your state. Select the year (2021) then select "coastal zone counties." The default comparison year will be 2017 so no need to select a comparison year.

[13] National data on wetlands status and trends include NOAA's Land Cover Atlas (*coast.noaa.gov/digitalcoast/tools/lca.html*) and the U.S. Geological Survey's National Land Cover Database (*usgs.gov/centers/eros/science/national-land-cover-database)*.

the deciduous, evergreen, and mixed categories. Developed, middle intensity was also added to the table.

Distribution of Land Cover Types in Coastal Counties

Land Cover Type	Land Area Coverage in 2021 (Acres)	Gain/Loss Since 2001 (Acres)
Developed, High Intensity	57843.2	11334.4
Developed, Middle Intensity	28192	28192
Developed, Low Intensity	217561.6	12435.2
Developed, Open Space	253523.2	-2310.4
Grassland	71635.2	-26304
Scrub/Shrub	57452.8	-43129.6
Barren Land	18259.2	-857.6
Open Water	6131155	-7398.4
Agriculture	1661126	-41075.2
Forested	2532179	61516.8
Woody Wetland	1605107	4768
Emergent Wetland	124345.6	2848

The “percent land area developed” data in the table, below, was calculated by combining the 4 development categories: high, middle, low, and open and dividing them by the sum of all categories for their respective year. The percent impervious surface was found in a similar manner, but the amount of impervious surface is an assumed coefficient based on the category type according to the U.S. Geological Survey’s National Land Cover Database. “For developed, high intensity, it is 0.8503; for developed, medium intensity, it is 0.5768; for developed, low intensity, it is 0.2929; and for developed, open space, it is 0.0941.” Once these coefficients were applied, the same process of summing and dividing by the total land cover acreage was utilized.

Development Status and Trends for Coastal Counties

	2001	2021	Percent Net Change
Percent land area developed	4.9%	5.2%	+0.3%
Percent impervious surface area	1.5%	1.7%	+0.2%

The table below's data comes from the "Developed" tab of the USGS land cover Enhanced Visualization and Analysis tool. A similar process to the first table in this section was used noting the conversion to acres and the category shifts.

How Land Use Is Changing in Coastal Counties

Land Cover Type	**Areas Lost to Development Between 2001-2021** (Acres)
Barren Land	460.8
Emergent Wetland	230.4
Woody Wetland	2195.2
Open Water	601.6
Agriculture	65740.8
Scrub/Shrub	1241.6
Grassland	2048
Forested	8249.6

3. Briefly characterize how the coastal shoreline has changed in the past five years due to development, including potential changes to shoreline structures such as groins, bulkheads and other shoreline stabilization structures, and docks and piers. If available, include quantitative data that may be available from permitting databases or other resources about changes in shoreline structures.

   As supported by the "Trends in Coastal Population and Housing Units" table, there has been limited development in the last 5 years. While water levels have generally been dropping since the last assessment, erosion is still an ongoing challenge for the coastal shoreline. Installation of shoreline stabilization structures has been common to address and mitigate coastal and nearshore processes and to prepare for future rising water levels. There has not been a recent, comprehensive coastwide shoreline assessment conducted, but some publicly available information on shore structures can be found in the Wisconsin Shoreline Inventory and Oblique Viewer.

4. Briefly summarize the results of any additional state- or territory-specific data or reports on the cumulative and secondary impacts of coastal growth and development, such as water quality, shoreline hardening, and habitat fragmentation, since the last assessment.

   The Wisconsin Wetland Inventory, information about wetland mapping and corresponding water quality monitoring. A more detailed description of this effort was included at the end of the Wetlands Phase 1 Assessment: Management Characterization section. The WI DNR Open Data contains many different land cover analysis applications such as impervious vs forested sections of developed areas of Wisconsin that could be used to support habitat fragmentation studies.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any significant state-level changes (positive or negative) in the 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, since the last assessment.

Significant Changes in Management of Cumulative and Secondary Impacts of Development

Management Category	**Employed by State or Territory** (Y or N)	**CMP Provides Assistance to Locals that Employ** (Y or N)	**Significant Changes Since Last Assessment** (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	N
Guidance documents	Y	Y	N
Management plans (including SAMPs)	Y	Y	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

    High _____
    Medium __X__
    Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The level of priority given is due to the significant problems associated with cumulative and secondary impacts in Wisconsin and the driving forces of development and population growth. These impacts, even if insignificant by themselves, when combined can cause significant impacts to water quality, habitat, navigation, public access, and coastal and nearshore health in both the built and non-built environment. These impacts can severely threaten the state's coastal resources. A member of the Coastal Hazards Work Group (which includes members from state agencies, Wisconsin Sea Grant, and the University of Wisconsin-Madison) noted a specific concern regarding the presence of harmful algal blooms.

WCMP concludes that existing rules, policies, and programs are adequate to address the issues and challenges currently faced in Wisconsin's coastal zone due to cumulative and secondary impacts. There is not a need for new policies to be supported by Section 309 funding.

There has been significant investment from federal, state, tribal and local governments, and many stakeholders in Wisconsin, to address cumulative and secondary impacts. WCMP, as a networked program in the Department of Administration, has been able to successfully work collaboratively with these stakeholders and efficiently leverage financial and technical assistance when involved. No Section 309 funding is proposed. Section 306 funding will continue to be utilized to provide both financial and technical assistance.

Special Area Management Planning

Section 309 Enhancement Objective: Preparing and implementing special area management plans for important coastal areas. §309(a)(6)

The Coastal Zone Management Act 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."

Phase 1 (High-level) Assessment: *(Must be completed by all states and territories.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. In the table below, identify geographic areas in the coastal zone subject to use conflicts that may be able to be addressed through a SAMP. This can include areas that are already covered by a SAMP but where new issues or conflicts have emerged that are not addressed through the current SAMP.

Geographic Area	Opportunities for New or Updated Special Area Management Plans Major conflicts/issues
City of Superior	No major conflicts: Regional General Permit reissued in August, 2024

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of SAMPs since the last assessment.

   Special area management plans (SAMPs) are prepared under the Coastal Zone Management Act, 16 USC §1452(3). Wisconsin currently has a SAMP developed for the City of Superior. The City first developed the SAMP in 1992, with implementation in 1996. The US Army Corps of Engineers has reissued a Regional General Permit (RGP) every 5 years to authorize discharges of dredged and/or fill material into SAMP identified eligible wetlands under Section 404 of the Clean Water Act.

   The RGPs were last reissued in 2024. According to the US Army Corps of Engineer's Public Notice for the project, the reissued SAMP IV RGP reduces the maximum area of adverse wetland impacts for a single project from 10 acres to 5 acres. It also removes the separation of permissive cumulative thresholds for wetland impacts based on the type of development. Staff from the City of Superior, Wisconsin Department of Natural Resources, and US Army Corps of Engineers worked closely with one another in developing the updated RGPs, along with partners from the US Environmental

Protection Agency, and US Fish and Wildlife Service. The City of Superior SAMP IV Regional General Permit is available on the US Army Corps of Engineers St. Paul District Website.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could help prepare and implement SAMPs in the coastal zone.

Significant Changes in Special Area Management Planning

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
SAMP policies, or case law interpreting these	Y	N (except through competitive grants)	N
SAMP plans	Y	N (except through competitive grants)	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

Although the City of Superior SAMP RGPs were revised and reauthorized, the changes were not significant.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium _____
Low __X__

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

SAMPs are not a high priority issue in Wisconsin. Local communities must take the initiative to begin the process of creating a SAMP, or fully support a regional, state, or federal agency's coordination of a SAMP. Coastal communities employ other planning and regulatory tools to address issues that could be addressed through a SAMP. Although there may be interest in the future, currently development of SAMPs is not something that coastal communities or the State of Wisconsin are actively pursuing.

WCMP sought and received comments from US Army Corps of Engineers staff who were involved in reissuing the RGP in the City of Superior for this section. WCMP reached out to City of Superior and Department of Natural Resources staff as well.

Ocean and Great Lakes Resources

Section 309 Enhancement Objective: Planning for the use of ocean [and Great Lakes] resources. §309(a)(7)

Phase 1 (High-level) Assessment: *(Must be completed by all states and territories.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. Understanding the ocean and Great Lakes economy can help improve management of the resources it depends on. Using Economics: National Ocean Watch (ENOW),[14] indicate the status of the ocean and Great Lakes economy as of 2021 (the most recent data) in the tables below. Include graphs and figures, as appropriate, to help illustrate the information. Note ENOW data are not available for the territories. The territories can provide alternative data, if available, or a general narrative, to capture the value of their ocean economy.

Status of Ocean and Great Lakes Economy for Coastal Counties (2021)

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	50,084	799	160	2,822	14,360	158	31,782
Establishments (# of Establishments)	2,241	46	26	27	152	18	1,972
Wages (Millions of Dollars)	1,500	18.3	12.2	160.6	597.2	8.6	666.1
GDP (Millions of Dollars)	2,900	62.5	20.6	438.0	806.4	21.4	1,600

[14] *coast.noaa.gov/digitalcoast/tools/enow.html*. If you select any coastal county for your state, you are directed to various data displays for that county. In the upper left of the screen, click the "State" box, to the left of the county box so that the state name will be highlighted. Now the data will reflect statewide data for all of the state's coastal counties. Make sure "2021" is selected for the year (top right corner). You can then click through the sector types by selecting the icons along the top and the type of economic data (employment, wages, GDP, etc.), by clicking through the icons on the left.

Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2021)[15]

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	11,186	255	-150	-1,185	10,636	-103	1,733
Establishments (# of Establishments)	338	10	-13	-4	20	-14	339
Wages (Millions of Dollars)	813.2	12.9	-0.7	15.0	437.4	-0.7	312.3
GDP (Millions of Dollars)	1,400	42.6	-3.9	149.5	371.8	-4.4	869.6

2. Understanding existing uses within ocean and Great Lakes waters can help reduce use conflicts and minimize threats when planning for ocean and Great Lakes resources. Using Ocean Reports,[16] indicate the number of uses within the ocean or Great Lakes waters off of your state. To avoid duplication, energy uses (including pipelines and cables) are reported under "Energy and Government Facility Siting" in the following template. However, feel free to include energy uses in this table as well if listing all uses within ocean and Great Lakes waters in one place is preferred. Add additional lines, as needed, to include additional uses that are important to your state. Note: The Ocean Reports tool does not include data for the Great Lakes states. Great Lakes states should fill in the table as best they can using other data sources.

Uses within Ocean or Great Lakes Waters

Type of Use	Number of Sites
Federal sand and gravel leases *(Completed)*	N/A
Federal sand and gravel leases *(Active)*	N/A
Federal sand and gravel leases *(Expired)*	N/A
Federal sand and gravel leases *(Proposed)*	N/A
Beach Nourishment Projects	24
Ocean Disposal Sites	N/A
Principle Ports *(Number and Total Tonnage)*	3 principal ports and 30 million tons of cargo
Coastal Maintained Channels	13 commercial port channels
Designated Anchorage Areas	N/A
Danger Zones and Restricted Areas	N/A
Other (please specify)	N/A
	N/A

Beach nourishment: https://gim2.aptim.com/ASBPANationwideRenourishment
Principal ports: https://geodata.bts.gov/datasets/usdot::principal-ports/explore?location=44.202624%2C-87.995133%2C6.53

[15] Trend data is available at the bottom of the page for each sector and type of economic data. Mouse over the data points for 2005 and 2021 to obtain the actual values and determine the change by subtracting 2005 data from 2021.

[16] *coast.noaa.gov/digitalcoast/tools/ort.html*. Select the "view quick reports" button and enter the name of your state or territory in the search bar. Some larger states may have the "quick reports" for their state waters broken into several different reports. Click on the "state waters" reports to view. Note the Ocean Reports tool also generates "quick reports" for national estuarine research reserve boundaries in your state. These reports are just a subset of the "state waters" report(s) so you can ignore the reserve "quick reports." Use the icons on the left hand side to select different categories: general information, energy and minerals, natural resources and conservation, oceanographic and biophysical, transportation and infrastructure, and economics and commerce. Scroll through each category to find the data needed to complete the table. The top six categories in the table above are in the "energy and minerals" section while the other information to complete the table can be found under the "transportation and infrastructure" section.

Coastal maintained channels:
https://www.arcgis.com/apps/mapviewer/index.html?layers=d11c472c6ace4cfe8f1fd478180c8ecc

3. In the table below, characterize how the threats to and use conflicts over ocean and Great Lakes resources in the state's or territory's coastal zone have changed since the last assessment.

Significant Changes to Ocean and Great Lakes Resources and Uses

Resource/Use **Change in the Threat to the Resource or Use Conflict**	**Since Last Assessment** (↑, ↓, ~~un~~known)
Benthic habitat (including coral reefs)	-
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	-
Sand/gravel	-
Cultural/historic	-
Transportation/navigation	-
Offshore development[17]	N/A
Energy production	N/A
Fishing (commercial and recreational)	-
Recreation/tourism	-
Sand/gravel extraction	-
Dredge disposal	↓
Aquaculture	-

Beneficial use of dredged material has increased since the last assessment, so dredge disposal use conflict has decreased in result.

4. For those ocean and Great Lakes resources and uses in the table above that had an increase in threat to the resource or increased use conflict in the state's or territory's coastal zone since the last assessment, characterize the major contributors to that increase. Place an "X" in the column if the use or phenomenon is a major contributor to the increase.

[17] Offshore development includes underwater cables and pipelines, although any infrastructure specifically associated with the energy industry should be captured under the "energy production" category.

Major Contributors to an Increase in Threat or Use Conflict to Ocean and Great Lakes Resources

	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Commercial and Recreational)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Other (Specify)
Example: Living marine resources		*X*	*X*	*X*	*X*	*X*		*X*	*X*			
No resources with increased use conflict/increased threat since last assessment												

5. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of ocean and Great Lakes resources or threats to those resources since the last assessment to augment the national data sets.

   Resource: Recreation & Tourism-

   - Recreation: The Statewide Comprehensive Outdoor Recreation Plan 2025-2030 was recently completed and reported that $11.2 billion was the entire state of Wisconsin's outdoor recreation's gross domestic product for 2023, and this has increased from approximately $8 billion at the end of the last assessment (2019/2020).
   - Tourism: Travel Wisconsin's Economic Impact study found that the total economic impact of tourism in Wisconsin's coastal counties was $8.4 billion in 2022 and $8.8 billion in 2023.

There are no known state-specific reports regarding the other Great Lakes resources.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if any significant state- or territory-level changes (positive or negative) in the management of ocean and Great Lakes resources have occurred since the last assessment?

Significant Changes to Management of Ocean and Great Lakes Resources

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	N
Regional comprehensive ocean/Great Lakes management plans	Y	N	Y
State comprehensive ocean/Great Lakes management plans	Y	N	Y
Single-sector management plans	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

The Lake Superior and Lake Michigan Lakewide Action and Management Plans (LaMPs) are both complete. The Lake Michigan LaMP was last updated in 2008, but the Lake Superior LaMP (2020-2024) was updated since the last assessment and published in 2022. Links to both are provided in the table in #3 below. The Lake Superior LaMP documented and updated the following:

- Current environmental conditions
- Threats to the ecosystem
- Lakewide objectives
- Priorities for future scientific investigations
- Actions and projects to address threats and to achieve lakewide objectives

The LaMPs are not funded by, or driven by, Section 309 or other CZM funding. LaMPs are coordinated by the U.S. Environmental Protection Agency in cooperation with the Wisconsin Department of Natural Resources. The LaMPs continue to serve as guidance for federal and state agencies in addressing and coordinating resource management issues and needs, as well as informing the Great Lakes Restoration Initiative Strategy. Annual reporting on meeting LaMP goals for Lake Michigan and for Lake Superior can be found online.

Another management change since the last assessment was that The Wisconsin Shipwreck Coast National Marine Sanctuary was designated in 2021. The nomination and designation process were driven by Section 306 funding and WCMP staff coordination and technical assistance. The sanctuary will provide opportunities for research, resource protection, education and promote recreation and tourism in the area.

3. Indicate if your state or territory has a comprehensive ocean or Great Lakes management plan.

Comprehensive Ocean/Great Lakes Management Plan	State Plan	Regional Plan	Regional Plan
Completed plan (Y/N) (If yes, specify year completed)	2022	2022	2008
Under development (Y/N)			
Web address (if available)	https://dnr.wisconsin.gov/sites/default/files/topic/GreatLakes/2022-2024_WDNRLakeSuperiorActionPlan.pdf	https://binational.net/wp-content/uploads/2022/09/Lake-Superior-LAMP-2020-2024.pdf	https://www.epa.gov/sites/default/files/2015-11/documents/lake-michigan-lamp-2008-233pp.pdf
Area covered by plan	WI's Lake Superior coast	Lake Superior—Lakewide	Lake Michigan—Lakewide

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium _____
Low __X___

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Great Lakes resources will continue to be a priority for the Wisconsin Coastal Management Program. WCMP and the state continue to support regional and local restoration strategies and efforts to address current and emerging threats. This includes implementation of projects along Lake Superior and Lake Michigan's coasts to improve Great Lakes resources.

There continues to be a need for additional research, assessment and monitoring of Great Lakes resources, including habitat and fisheries, to better understand the impact of emerging threats from new invasive species, pollutants, etc. as well as existing threats from within the watersheds and nearshore.

WCMP will continue to target Section 306 funding to Great Lakes resource projects. WCMP staff (via Section 306) will also continue to provide coordination and technical assistance on Great Lakes resource projects and initiatives by collaboratively working with federal, tribal, state and local partners.

Energy and Government Facility Siting

Section 309 Enhancement Objective: 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. §309(a)(8)[18]

Phase 1 (High-level) Assessment: *(Must be completed by all states and territories.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. In the table below, characterize the status and trends of different types of energy facilities and activities in the state's or territory's coastal zone based on best-available data. If available, identify the approximate number of facilities by type. For ocean-facing states and territories (not Great Lakes states), Ocean Reports[19] includes existing data for many energy facilities and activities.

[18] CZMA § 309(a)(8) is derived from program approval requirements in CZMA § 306(d)(8), which states:

> "The management program provides for adequate consideration of the national interest involved in planning for, and managing the coastal zone, including the siting of facilities such as energy facilities which are of greater than local significance. In the case of energy facilities, the Secretary shall find that the State has given consideration to any applicable national or interstate energy plan or program."

NOAA regulations at 15 C.F.R. § 923.52 further describes what states need to do regarding national interest and consideration of interests that are greater than local interests.

[19] *coast.noaa.gov/digitalcoast/tools/ort.html.* Select the "view quick reports" button and enter the name of your state or territory in the search bar. Some larger states may have the "quick reports" for their state waters broken into several different reports. Click on the "state waters" reports to view. Note the Ocean Reports tool also generates "quick reports" for national estuarine research reserve boundaries in your state but this is just a subset of the "state waters" report(s) so you can ignore the reserve "quick reports." Click on the wind turbine icon on the left ("energy and minerals") for information on energy production. While outside your coastal zone, you may also want to consider facilities/activities in "federal waters" that may have effects on your coastal zone.

Status and Trends in Energy Facilities and Activities in the Coastal Zone

Type of Energy Facility/Activity	Exists in Coastal Zone (# or Y/N)	Change in Existing Facilities/Activities Since Last Assessment (↑, ↓, ~~un~~known)	Proposed in Coastal Zone (# or Y/N)	Change in Proposed Facilities/Activities Since Last Assessment (↑, ↓, –, unknown)
Pipelines	Y	-	Y*	↑
Electrical grid (transmission cables)	Y	-	Y	-
Ports	13	-	N	-
Liquid natural gas (LNG)	N	-	N	-
Electric Power Facilities (Oil)	Y	-	N	-
Electric Power Facilities (Gas)	Y	-	Y**	↑
Electric Power Facilities (Coal)	Y	-	N	-
Electric Power Facilities (Nuclear)	Y	-	N	-
Electric Power Facilities (Wave)	N	-	N	-
Electric Power Facilities (Tidal)	N	-	N	-
Electric Power Facilities (Current, ocean, lake, river)	N	-	N	-
Electric Power Facilities (Hydropower)	Y	-	N	-
Electric Power Facilities (Ocean thermal energy conversion)	N	-	N	-
Electric Power Facilities (Solar)	Y	-	N	-
Electric Power Facilities (Biomass)	Y	-	N	-
Other (please specify)				

* Enbridge, Inc., is seeking to relocate a segment of its existing Line 5 pipeline, which runs through Ashland, Bayfield, and Iron Counties as well as the Bad River Reservation. No state agency has the authority to determine the need for or siting of petroleum pipelines. There are federal and state permits associated with the construction of the new segment. Wisconsin DNR issued waterway and wetland permit decisions in November 2024. WCMP issued a conditional concurrence for federal consistency on November 14, 2024. More information is available on the DNR's Website for the project.

**The Nemadji Trail Energy Center, proposed in Superior, Wisconsin, received a Certificate of Public Convenience and Necessity in 2020. Other state permitting from the Department of Natural Resources was issued between 2019 and 2024. WCMP Federal consistency review concluded in 2024. However, the project applicant withdrew an air permit, making the status of the project currently unknown.

2. If available, briefly list and summarize the results of any additional state- or territory-specific information, data, or reports on the status and trends for energy facilities and activities of greater than local significance in the coastal zone since the last assessment.

   The Wisconsin Public Service Commission (PSC) is responsible for siting approval of most power plants, pipelines, and electric transmission and distribution lines. (Outside of dams: The Federal Energy Regulatory Commission has jurisdiction over most large hydropower projects and DNR regulates the remaining dams.) PSC conducts a biennial Strategic Energy Assessment (SEA) which evaluates the adequacy and reliability of the state's current and future electrical supply.

   The SEA notes that coal was the most common source of electricity generation in Wisconsin for the period of the assessment, but the share of energy produced by coal decreased from approximately 54% in 2015 to 35% in 2020. Natural gas accounted for the largest increase in generation share, from 19 % in 2015 to 33 % in 2020. Wind increased from 6% to 10% and solar from 0.1% to 0.5%. Reduction in carbon dioxide emissions is a priority for the current Evers administration, with a goal of achieving 100% reductions by 2050. This may result in more solar, natural gas, and wind facilities in the near future.

3. Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance[20] in the state's coastal zone since the last assessment.

   There are no federal government facilities or activities of greater than local significance in the coastal zone since the last assessment.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) that could facilitate or impede energy and government facility siting and activities have occurred since the last assessment.

Significant Changes in Energy and Government Facility Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpretations	Y	N	N
State comprehensive siting plans or procedures	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
   a. Describe the significance of the changes;

[20] The CMP should make its own assessment of what government facilities may be considered "greater than local significance" in its coastal zone, but these facilities could include military installations or a significant federal government complex. An individual federal building may not rise to a level worthy of discussion here beyond a very cursory (if any at all) mention).

b. Specify if they were 309 or other CZM-driven changes; and
c. Characterize the outcomes or likely future outcomes of the changes.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	_____
Low	__X__

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Measures are already in place to facilitate siting while maintaining current levels of coastal resource protection. WCMP communicated with Public Service Commission staff in developing the Phase 1 Assessment and prioritization.

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. §309(a)(9)

Phase 1 (High-level) Assessment: *(Must be completed by all states and territories.)*
Purpose: To quickly determine whether the enhancement area is a high-priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization

1. In the table below, characterize the existing status and trends of aquaculture facilities in the state's coastal zone based on the best-available data. Your state Sea Grant Program may have information to help with this assessment.[21]

Status and Trends of Aquaculture Facilities and Activities

Type of Facility/Activity	Number of Facilities[22]	Approximate Economic Value	Change Since Last Assessment (↑, ↓, ~~un~~known)
Farms (Table 1 "Total" of https://www.nass.usda.gov/Publications/AgCensus/2022/Online_Resources/Aquaculture/Aqua.pdf)	74	$16,099,000	↑15 facilities and ↑10 million since 2018

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from aquaculture activities in the coastal zone since the last assessment.

   The Wisconsin Sea Grant Food-Fish Outreach Coordinator, conducted a needs assessment of food-fish farmers in 20/21 and found workforce and regulations challenges as the highest priority.

[21] While focused on statewide aquaculture data rather than just within the coastal zone, the *Census of Aquaculture* (*agcensus.usda.gov/Publications/Census_of_Aquaculture/)* may help in developing your aquaculture assessment. The census is conducted every 10 years and the last report was released in 2018. The report provides a variety of state-specific aquaculture data to understand current status and recent trends.

[22] Be as specific as possible. For example, if you have specific information of the number of each type of facility or activity, note that. If you only have approximate figures, note "more than" or "approximately" before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.

Management Characterization

1. Indicate if the approach is employed by the state or territory and if there have been any state- or territory-level changes (positive or negative) that could facilitate or impede the siting of public or private aquaculture facilities in the coastal zone.

Significant Changes in Aquaculture Management

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Aquaculture comprehensive siting plans or procedures	N	N	N
Other aquaculture statutes, regulations, policies, or case law interpreting these	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal management program?

    High _____
    Medium _____
    Low __X___

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

    The current status and condition of aquaculture in Wisconsin and its coastal zone is relatively static, confirmed by a Wisconsin Sea Grant aquaculture expert who was engaged for this assessment. Two state regulatory agencies, the Wisconsin Department of Natural Resources and Wisconsin Department of Agriculture, Trade and Consumer Protection, are already working collaboratively with the aquaculture industry, tribal governments, the University of Wisconsin, University of Wisconsin Sea Grant Institute, and the Wisconsin Aquaculture Association on best management practices, monitoring and assessment, and outreach and education. University of Wisconsin Sea Grant Advisory Services has provided aquaculture technical assistance since 1985.

    In addition, Wisconsin Department of Agriculture, Trade and Consumer Protection is advised by the Wisconsin Aquaculture Industry Advisory Council, which is comprised of industry, state agency and university representatives. The Council works to identify and address critical issues facing Wisconsin's aquaculture industry. And the Wisconsin Department of Natural Resources established the Aquaculture Industry Working Group, which focuses more specifically on resource protection issues. Both groups have contributed to maintaining communication between Wisconsin's aquaculture stakeholders in pursuing common objectives and identifying challenges.

Phase II Assessment

Wetlands

In-Depth Resource Characterization

Purpose: To determine key problems and opportunities to improve the CMP's ability to protect, restore, and enhance wetlands.

1. What are the three most significant existing or emerging physical stressors or threats to wetlands within your coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout your coastal zone, or are there specific areas that are most threatened? Stressors can be development/fill; hydrological alteration/channelization; erosion; pollution; invasive species; freshwater input; sea level rise/Great Lakes level change; or other (please specify).

	Stressor/Threat	**Geographic Scope** (throughout coastal zone or specific areas most threatened)
Stressor 1	Hydrologic alterations	Coastwide
Stressor 2	Development	Coastwide
Stressor 3	Invasive species	Coastwide

2. Briefly explain why these are currently the most significant stressors or threats to wetlands within your coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

   Listed below are reports, studies, and assessments used to identify the most significant current and emerging stressors on wetlands in Wisconsin and the Great Lakes region:

   Aanji-bimaadiziimagak o'ow aki Vulnerability Assessment Version 2: Great Lakes Indian Fish and Wildlife Commission, 2023, Vulnerability Assessment.

   Adapting to Change: Solutions to Enhance Great Lakes Coastal Wetland Resilience: Government of Canada (ECCC), 2022, Coastal Wetland Resilience.

   Dibaginjigaadeg Anishinaabe Ezhitwaad: A Tribal Adaptation Menu: Great Lakes Indian Fish and Wildlife Commission, 2019, Adaptation Menu.

   Examining the status of Hydrologic Assessment and Hydrologic Restoration in Wisconsin: An Evaluation of Barriers, Needs, and Opportunities: University of Wisconsin Extension and Wisconsin Wetlands Association, 2021, Hydrologic Assessment and Restoration.

   Exploring the Relationship between Wetlands and Flood Hazards in the Lake Superior Basin: Wisconsin Wetlands Association, 2018, Wetlands and Flood Hazards.

   Hydrologic Connections in Apostle Islands Coastal Wetlands: Exploring Dynamics and Resilience to Lake Superior Water Level Fluctuation: Journal of Great Lakes Research, 2025, Apostle Islands Coastal Wetlands

   Model Wetland Conservation Ordinance: A Policy Development Tool for Wisconsin Counties, Cities, Villages, Towns, and Tribes: Wisconsin Wetlands Association, 2015, Model Wetland Conservation Ordinance.

National Wetland Condition Assessment: The Third Collaborative Survey of Wetlands in the United States: US Environmental Protection Agency, 2024, https://wetlandassessment.epa.gov/webreport/.

Natural Flood Management: Marengo Watershed, WI: Wisconsin Wetlands Association and Association of State Floodplain Managers, 2024, Natural Flood Management

R*eversing the Loss: A Strategy to Protect, Restore and Explore Wisconsin Wetlands*: Wisconsin Department of Natural Resources, 2008, Reversing the Loss.

Strategies for Adapting Great Lakes Coastal Ecosystems: USDA Forest Service (NFCH), 2022, Strategies for Adapting Great Lakes Ecosystems.

Wetlands in Peril How Agriculture Damages Critical Ecosystems, Increasing Flood Risk in the Upper Midwest: Union of Concerned Scientists, 2024, Wetlands in Peril.

Great Lakes coastal wetlands are productive systems that provide numerous, irreplaceable ecosystem services and co-benefits and play a contributing environmental, economic, cultural, and recreational role. Wetlands provide habitat for numerous aquatic and terrestrial species, improve water quality, protect shoreline and reduce erosion, provide flood protection, protect against storm and wave surges, and sequester carbon. Coastal wetlands are some of the most productive ecosystems and are important for healthy estuaries.

Great Lakes coastal wetlands face additional stressors not captured in this Section 309 Phase II Assessment. It should be noted that the impacts of the stressors listed here, in addition to the current and emerging threat of changing conditions, are interrelated and cumulative.

1. Hydrologic alterations:

Hydrologic alterations and modifications, including water flow and water level changes within a wetland or coastal system, significantly impact the wetland ecosystem. The duration and depth of inundation, as well as sustained low water levels, can impact native aquatic and terrestrial plant and animal species and change community species composition, including the introduction and spread of invasive species. This can lead to wetland degradation and habitat fragmentation if the hydrologic alterations are significant and sustained.

Hydrologic alterations can be caused by land use changes, development, agricultural and forestry practices, infrastructure construction (dams, barriers, etc.), stormwater management, and changing conditions. Stressors from changing conditions can include altered precipitation patterns, flooding, water level fluctuations, changes in water temperature, etc. Historical land use alterations led to the development of widespread fluvial erosion hazards that caused significant erosion induced drainage of wetlands due to the presence of ravines, gullies, and stream incision.

Wetland plant communities are susceptible to degradation if subjected to hydrological modifications and watershed pollution inputs.

2. Development:

Urban and rural development, infrastructure, transportation and road stream crossings, agriculture, and silviculture contribute to the loss, degradation, and disconnection of coastal wetland habitat. Examples of impacts to wetlands due to development and land use changes can include habitat loss and degradation, altered hydrology, increased watershed inputs and sedimentation, native aquatic and terrestrial species disruption, water quality impairment, loss of storm and wave surge protection, etc.

Fragmentation, and conversion of wetland types have altered the character and capacities of wetlands in the coastal zone and have impacted wetland functions, ecosystem services, and biodiversity. Land use changes and development, both within and outside of a wetland, can degrade and impact wetlands.

3. Invasive species:

Proliferation of invasive species poses a direct threat to the quality and function of existing wetlands, particularly coastal shoreland wetlands. In many cases they are also an indicator of underlying stressors such as hydrologic alterations and adjacent development.

Invasive species in coastal wetlands can significantly disrupt wetland ecosystems. Impacts of invasive species on wetlands can include reduced biodiversity, altered habitat structure (creation of monotypes), loss of microhabitats, altered nutrient cycling, water quality impairments, modified food webs, and increased erosion.

Biodiverse ecosystems like wetlands are more resilient to environmental changes and other stressors. But wetlands are susceptible to invasive species infestations and establishments, and this can be caused by the cumulative impact of multiple stressors like altered hydrology, development, water level fluctuations, flooding, erosion, etc.

3. Are there emerging issues of concern but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Cumulative stressors	The cumulative impact of multiple stressors is a current and emerging threat. The level of threat is high. Information is needed on long-term environmental forecasts, projected changes in temperature and precipitation patterns, Great Lakes water level fluctuations, and impacts on hydrologic processes.

The cumulative impact of multiple stressors, including environmental changes, is both a current and emerging threat to wetlands. The level of threat is high. The impacts of cumulative stressors and environmental change on wetlands are incredibly complex, and intersect and influence other numerous stressors, impact ecosystem services, and are difficult to forecast. While it is generally becoming better understood how multiple stressors and environmental change impact different

types of wetlands, and there are increased efforts to identify resilience indicators and incorporate resilience into planning and restoration, there is still uncertainty and a need for additional data and information.

Impacts, such as warmer water temperatures, more extreme weather, changes in precipitation patterns, and fluctuating Great Lakes water levels, can pose challenges for coastal wetlands. These stressors and disturbances are expected to increase in frequency and intensity and affect wetland ecology by altering its hydrology, increase erosion, impact native plant communities, reduce species movement between microhabitats or along habitat corridors, and increase both the introduction and spread of invasive species.

The *Wisconsin Lake Superior Coastal Wetland Resiliency Study*, led by the Wisconsin Department of Natural Resources and funded by the Great Lakes Restoration Initiative, is an example of the need to better understand the impact of changing conditions on coastal wetlands. The *Wisconsin Lake Superior Coastal Wetland Resiliency Study* is a pilot project that aims to classify Lake Superior coastal wetlands by sensitivity and resilience to changing conditions. Wetlands are being categorized into low, moderate, and high sensitivity to forecasted changes, including water level, precipitation, and temperature. This categorization framework will be used to prioritize wetland sites for adaptation strategies to promote resilience in these coastal wetland ecosystems efficiently and effectively. Wisconsin Coastal Management Program, and other federal, tribal, and state agencies are partnering on the study.

In-Depth Management Characterization

Purpose: To determine the effectiveness of management efforts to address identified problems related to the wetlands enhancement objective.

1. For each additional wetland management category below that was not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Significant Changes in Wetland Management

Management Category	Employed By State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Wetland assessment methodologies	Y	Y	Y
Wetland mapping and GIS	Y	Y	Y
Watershed or special area management plans addressing wetlands	Y	Y	Y
Wetland technical assistance, education, and outreach	Y	Y	Y
Other (please specify)			

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of

the document, please provide a reference to the other section rather than duplicate the information.

a. Describe significant changes since the last assessment;
b. Specify if they were 309 or other CZM-driven changes; and
c. Characterize the outcomes or likely future outcomes of the changes.

Wetland Assessment Methodologies

Development of Bryophyte Community Assessment Protocols for Wisconsin Peatlands

a) Significance: Bryophytes—non-vascular land plants including mosses, liverworts, and hornworts—contribute significantly to the biodiversity of natural plant communities in the Great Lakes Region and are extremely sensitive to changes in water quality and quantity but are not traditionally included in wetland floristic quality assessments. The University of Wisconsin-Green Bay developed and field-tested a set of bryophyte floristic quality assessment protocols for assessing wetland quality using bryophytes. This included identification and listing of indicator species, assessment of the practicality of the protocol, collection of biogeochemical data, and testing the sensitivity of bryophyte floristic quality assessment habitat data.
b) Section 309/CZM-driven: University of Wisconsin-Green Bay received Section 306 funding.
c) Outcomes: Development, field-testing, and inclusion of bryophyte coefficients of conservatism into wetland floristic quality assessments established a protocol for ecologists and natural resource managers to use when conducting wetland assessments.

Refining Bryophyte Community Assessment Protocols for Wisconsin Minerotrophic Peatlands

a) Significance: Bryophytes—non-vascular land plants including mosses, liverworts, and hornworts—contribute significantly to the biodiversity of natural plant communities in the Great Lakes Region and are extremely sensitive to changes in water quality and quantity but are not traditionally included in wetland floristic quality assessments. The University of Wisconsin-Green Bay refined and validated floristic quality assessment protocols in northeastern Wisconsin. Refine field protocols, assess the effect of inclusion of bryophytes into existing vascular plant-based floristic quality assessments, and develop more comprehensive and representative bryophyte species lists for minerotrophic peat-accumulating wetlands.
b) Section 309/CZM-driven: University of Wisconsin-Green Bay received Section 306 funding.
c) Outcomes: Field-test, refine, validate, and include bryophyte coefficients of conservatism into wetland floristic quality assessments establishing a protocol for ecologists and natural resource managers when conducting wetland assessments.

Natural Flood Management: Marengo Watershed, WI

a) Significance: The Wisconsin Wetlands Association conducted a pilot project to develop and test vulnerability assessment methodologies and assessed opportunities to restore wetlands and floodplains to reduce flood risks. A significant portion of the analysis was completed using spatial data and mapping outputs. Hydrologic and hydraulic, hydrologic conditions, ecosystem services, vulnerability, and benefit and cost assessments were conducted as part of the pilot project.
b) Section 309/CZM-driven: Wisconsin Wetlands Association received Section 309 funding to support outreach and engagement.

c) Outcomes: The pilot project was completed. Phase II of the assessment process was funded by NOAA. The work led to the awarding of a NOAA Resilience Regional Challenge Grant that will refine and replicate the vulnerability assessment methodologies in four watersheds across three states in the Lake Superior basin.

Creation of Rare and Unique Wetland Community Quality Thresholds

a) Significance: The Wisconsin Department of Natural Resources developed numeric criteria for wetland condition based on floristic quality in line with existing criteria for common wetland types; updated the ecological description of common wetland types for public use; updated the state statewide status of common wetland types; added baseline floristic quality data from these communities to the wetland floristic quality assessment, wetland monitoring, and occurrence tracking databases; and generated data needed to update state conservation ranks.
b) Section 309/CZM-driven: No. Wisconsin DNR did not receive CZM funding.
c) Outcomes: Targeting these common wetland types will expand wetland monitoring capacity by expanding on existing tools for regulatory and management department staff. Surveys will provide baseline floristic quality data that can be tracked over time to monitor changes in targeted communities. This work will help identify potential future impacts, inform environmental reviews, inform wetland restoration and mitigation projects, and base regulatory decisions on improved scientific metrics.

Development of a Rapid Floristic Quality Assessment Methodology for Wisconsin Wetlands

a) Significance: The Wisconsin Department of Natural Resources existing Floristic Quality Assessment methodology uses coefficients of conservatism assigned to Wisconsin's vascular plant flora as the basis for condition assessment. By identifying each plant in a wetland, botanists can calculate a mean conservatism score to the wetland. The goal was to develop a tool which would not require the user to identify every plant in a wetland to species level. At the same time, the tool was developed with the intention of maintaining consistency in concept, methodology, and resulting in the full Floristic Quality Assessment methodology.
b) Section 309/CZM-driven: No. Wisconsin DNR did not receive CZM funding.
c) Outcomes: Capability to assess the quality of a wetland quickly and easily. Intended to be used by professionals with only a moderate level of botanical experience, the tool is also designed to be flexible: users with more botanical knowledge can identify all dominant plants to species if they choose, while users with less experience can rely on genus-level plant identification options and collect more samples for later verification. Improved capacity to monitor and assess wetlands with current staffing levels and provide external partners with a valuable tool to assist in wetland assessment efforts.

Reference Wetland Hydrologic Regime Monitoring

a) Significance: The Wisconsin Department of Natural Resources conducted this study to inform wetland compensatory mitigation performance standards on the hydrologic regimes of commonly restored wetlands in Southern Wisconsin. This may guide better practices when assessing wetland restoration projects where a local reference wetland is not available. The study collected groundwater level data from wetlands that had been selected for their reference-quality vegetation. The study also assessed each site's floristic quality and evaluated species composition to see what relationships exist between hydrology regimes and plant species assemblages.
b) Section 309/CZM-driven: No. Wisconsin DNR did not receive CZM funding.

c) Outcomes: Improved understanding of wetland communities and wetland compensatory mitigation. Using an established reference wetland with long-term hydrologic data can be used as a substitute when a wetland bank-specific reference site is not available. Opportunities to refine wetland mitigation standards.

Integration of Wetland Monitoring and Assessment into Targeted Watershed Assessments in Wisconsin: A Pilot

a) Significance: The Wisconsin Department of Natural Resources conducted this study to integrate wetland monitoring and assessment as part of standard Department water quality program activities. This included site selection monitoring using wetland monitoring and assessment tools at selected sites, performing cross-calibration and validation of existing tools using collected field data, and integrate wetland survey results with lake and stream monitoring results.
b) Section 309/CZM-driven: No. Wisconsin DNR did not receive CZM funding.
c) Outcomes: The pilot study was a first attempt by the Department to provide an assessment of wetland condition, disturbance, and stressors that can be compared, contrasted, and combined with other results to gain a full picture of water resources health and watershed needs in the targeted study watershed. It was also a first attempt to incorporate all applicable Department wetland monitoring and assessment tools. Additional pilot studies are needed to investigate whether study observations are valid.

Wetland Mapping and GIS

Wisconsin Wetland Inventory

a) Significance: Since 2020, the Wisconsin Department of Natural Resources Wisconsin Wetland Inventory mapping team has developed and refined an innovative standard operation procedure to use LiDAR-derived elevation data to improve the accuracy and resolution of coastal wetlands data. In addition, wetland mapping leverages rivers, lakes, and streams hydrography mapping in coastal counties. This integration will ensure that hydrography and wetland mapping data are aligned in coastal counties. And finally, additional outreach is being conducted on wetland mapping methods and the application of data to support land use planning, wetland zoning/permitting, and nonpoint source pollution control.
b) Section 309/CZM-driven: Wisconsin DNR received Section 306 funding.
c) Outcomes: Improved mapping accuracy. Improved integration of wetland and hydrography mapping data. Enhanced outreach on data availability.

Wisconsin DNR Integrated Wetland and Surface Waters Pilot Study: Progress Toward an Improved, Modernized GIS Data Production Model for the Wisconsin Wetland Inventory

a) Significance: The Wisconsin Department of Natural Resources conducted a pilot wetland mapping study to design, test, and evaluate a process to map wetlands and surface waters in tandem from the same data sources, to produce a single Integrated Surface Waters and Wetlands GIS Layer. The primary goal of this project was to create improved, modernized methods and a viable operating model for the Wisconsin Wetland Inventory to follow.
b) Section 309/CZM-driven: No. Wisconsin DNR did not receive CZM funding.
c) Outcomes: Develop new integrated surface water and wetland GIS layer for ten watersheds and one county. Perform accuracy assessment of the new GIS mapping layers. Develop cost estimates for applying the pilot mapping methodology to new areas.

Improved mapping and data integration methods to improve the watershed approach decision support tools under development and provide better data to a wide variety of users that can lead to enhanced protection and restoration.

Brown County One Map Project

a) Significance: Brown County Planning and Land Services Department and the Wisconsin Department of Administration created an integrated geographic information system database of hydrography, wetlands, and land cover mapping layers from recent high-resolution lidar and imagery. The geographic scope included three HUC10 watersheds in Northeast Wisconsin. Geospatial data used included USGS 3D Hydrography Program (3DHP) data, USFWS National Wetland Inventory (NWI) data, and NOAA Coastal Change Analysis Program (CCAP) 1 meter land cover data.
b) Section 309/CZM-driven: Brown County Planning and Land Services Department received CZM Bipartisan Infrastructure Law capacity funding.
c) Outcomes: Demonstrated process to create an integrated geospatial database that can be used by agencies. An integrated system, coupled with a habitat evaluation model, can be used to assess and prioritize habitat restoration projects.

Coastal Habitat Evaluation Tool

a) Significance: The State Cartographer's Office and Wisconsin Coastal Management Program are developing a GIS model and tool to assess and prioritize protection and restoration opportunities for coastal habitats, including wetlands, in Northeastern Wisconsin. The project is built on the One Map Project in Brown County and utilizes hydrography, wetlands, and land cover mapping data collected and produced.
b) Section 309/CZM-driven: State Cartographer's Office received Section 306 funding.
c) Outcomes: Integration with One Map Project mapping data. Application of mapping data and GIS model to assess and prioritize potential projects. Identification of habitat projects. Outreach of GIS model and tool to stakeholders.

<u>Watershed or Special Area Management Plans Addressing Wetlands</u>

Natural Area Ecological Restoration and Management Planning

a) Significance: The Southeastern Wisconsin Regional Planning Commission developed site specific management plans for a selection of Natural Areas and Critical Species Habitat Sites in Racine, Milwaukee, and Ozaukee Counties identified within the Regional Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin, Planning Report 42. The management plans incorporated recent changes to the regional natural areas inventory and improved communication of that inventory to municipalities, government agencies, and conservation organizations.
b) Section 309/CZM-driven: Southeastern Wisconsin Regional Planning Commission received Section 306 funding.
c) Outcomes: Site specific management plans for a selection of Natural Areas and Critical Species Habitat Sites. Incorporate recent habitat and species updates to the regional natural areas inventory. Improved communication of site plans to stakeholders.

Update to the Natural Areas and Critical Species Habitat Management and Protection Plan for the Southeastern Wisconsin Region (2nd Amendment)

a) Significance: The Southeastern Wisconsin Regional Planning Commission updated the Natural Areas and Critical Species Habitat Management and Protection Plan for Southeastern Wisconsin. The update incorporated recent changes to the regional natural areas inventory, including critical species habitat, and communicate the inventory to municipalities, government agencies, and conservation organizations. Updated Plan.
b) Section 309/CZM-driven: Southeastern Wisconsin Regional Planning Commission received Section 306 funding.
c) Outcomes: Incorporate recent changes to the regional natural areas inventory including critical species habitat. More accurate wetlands/habitat information. Improved communication of inventory to municipalities, government agencies, and conservation organizations.

Wetland Technical Assistance, Education, and Outreach

Integrating Natural Flood Management into Regional Transportation Resilience Planning

a) Significance: Wisconsin Wetlands Association targeted outreach to local communities and state agencies to build local policy frameworks that reflect Natural Flood Management approaches in transportation, hazard mitigation, and disaster recovery programs. NFM emphasizes hydrologic restoration – including wetland conservation – to restore a landscape's ability to infiltrate and slowly release runoff. The geographic focus will be on the Marengo River Watershed and Ashland County.
b) Section 309/CZM-driven: Wisconsin Wetlands Association received Section 309 funding.
c) Outcomes: Improved agency communication. Improved outreach to communities. Increased interest and demand for collaboration. Better understating of rural communities' need for ongoing technical support.

The Wisconsin Wetlands Association partnered with the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) to develop a core curriculum for training DATCP engineers and County Land and Water Conservation Departments on the fundamentals of hydrology and hydrologic restoration. DATCP engineers have also been put through HEC-RAS training to build capacity to complete modeling associated with floodplain restoration projects.

The Wisconsin Wetlands Association plans and hosts an annual Wetland Science Conference to promote education and outreach, and information sharing, among wetland stakeholder attendees.

3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in protecting, restoring, and enhancing coastal wetlands since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

No recently completed studies have been done that directly assess the effectiveness of the state's regulatory management efforts. Though the Wisconsin Wetland Study Council, which was created in 2017 through Act 183, researches and makes recommendations on wetland-related issues. The WSC is composed of nine appointed council members that is a resource for the legislature, agencies, and Governor. The WSC remains active in evaluating the state's regulatory programs.

The Wisconsin Department of Natural Resources, with recent funding from an EPA Wetland Program State Development Grant, proposes to develop a wetland program plan that evaluates all four EPA-

identified core elements. The effort, *Development of a State of Wisconsin Wetland Program Plan*, will allow the Wisconsin DNR to evaluate what activities identified within the EPA Core Element Framework have been achieved, which are in development, and which activities the state will prioritize over the next five years. Efforts will primarily focus on evaluating the regulatory, monitoring and assessment, and voluntary restoration core elements. This project will also review the goals identified in the Wisconsin DNR's 2008 *Reversing the Loss: A Strategy to Protect, Restore and Explore Wisconsin Wetlands*, referenced above.

The report *Examining the Status of Hydrologic Assessment and Hydrologic Restoration in Wisconsin: An Evaluation of Barriers, Needs, and Opportunities* is an evaluation conducted by Wisconsin Wetlands Association and University of Wisconsin-Extension Natural Resources Institute and funded through an EPA Wetland Program Development Grant. The purpose of the evaluation was to investigate conservation practitioners understanding of hydrologic restoration and the role of hydrology in wetland conservation, confirm that hydrologic assessment and hydrologic restoration approaches are not well integrated with current land and water management projects and programs, characterize the barriers preventing further integration of hydrologic assessment and restoration, and explore opportunities for interagency, interdisciplinary, and cross-jurisdictional collaboration to incorporate more hydrologic assessment.

Identification of Priorities

1. Considering changes in wetlands and wetland management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively respond to significant wetlands stressors. *(Approximately 1-3 sentences per management priority.)*

   Management Priority 1: ____Technical assistance, education, and outreach_____

   Description: Many coastal wetland decisions and efforts are made on a local and regional basis. Wisconsin Coastal Management Program has opportunities to assist communities in assessing their policies and approaches to wetland conservation, encourage incorporation of wetland protection into local plans, encourage collaboration between communities, organizations, and agencies, provide outreach and assistance on existing tools and resources, support engineering and design to accelerate coastal wetland restoration, and training and workforce development.

   Management Priority 2: _____Mapping, data, and tools_____

   Description: Tools, data, and mapping have improved since the last assessment, but there are needs for more accessible tools, updated datasets, science on wetland functions, and facilitation and training in using those tools. There is continued need for updated and uniform LiDAR coverage that is hydro-enforced. There is continued need for high-resolution hydrology and stream network data to understand watershed scale hydrologic alterations and downstream impacts.

   Management Priority 3: _____Coordination_____

   Description: There are many federal, tribal, state, and local agencies, non-profit organizations, and universities, currently working on wetland research, assessments, planning, and restoration. There continues to be a need for improving multi-agency and multi-partner coordination and collaboration

on wetland protection efforts, information sharing, project prioritization, project collaboration, and funding proposal development.

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	**Need?** (Y or N)	**Brief Explanation of Need/Gap**
Research	Y	Research on the effect of lake level changes on wetlands, impact from hydrologic alterations, modeling future scenarios and wetland response, effectiveness of adaptation strategies to improve wetland resiliency, understanding of how multiple stressors interact, functional values of wetlands, and quantifying the economic and ecological benefits of wetlands and wetland restoration practices.
Mapping/GIS	Y	Continuing to update wetland mapping through the Wisconsin Wetlands Inventory, continued integration of wetland and hydrography mapping, increase usability of wetland mapping for local planning needs, continued improvement to make mapping and geospatial data accessible, and continued alignment with the USFWS National Wetland Inventory.
Data and information management	Y	Long-term data management is a significant need, and continuing to improve access to data and information is a need. Improve opportunities for data integration. Continued need to collect data on wetland conditions, species composition, and health to help inform wetland planning and restoration.
Training/capacity building	Y	Training is needed in planning and implementing effective adaptation strategies to improve wetland resiliency, assess wetland condition and function, and plan for improved condition and function. Training on decision support tools and mapping/geospatial data. Non-wetland specialists need targeted training to understand the role and value of wetlands across disciplines and in areas of importance to local communities. Where training has been implemented, continued outreach and support are needed to maintain efforts.
Decision-support tools	Y	Need to evaluate, test, and improve existing decision support tools. Utilize or develop new decision support tools to assist communities when developing and implementing watershed, land use, and resource management plans.
Communication and outreach	Y	Interagency communication is a continued need, including between research and resource management. Communication between agencies and communities is a continued need. Local stakeholders, including communities and private landowners, need sustained support to increase awareness of the value of wetlands, ecosystem services, wetland and species identification, and how to restore and manage wetlands. Outreach is needed on available technical resources, how to access resources, and how to use the resources.
Other (specify)		

Enhancement Area Strategy Development

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

   Yes ___X__
   No _____

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

   Wisconsin's coastal wetlands are facing a variety of stressors, including those from the current and emerging threat of changing environmental conditions. Many of these stressors are incredibly complex, intersect and influence other stressors, and collectively impact ecosystem services and wetland functions, natural processes, resiliency, and species.

   Communities are increasingly concerned about the functional value of wetlands, especially with recent severe storm events, flooding, and water quality impacts. Agencies and communities need assistance in evaluating their approach to wetlands, thoughtfully incorporating wetlands into state and local plans, and utilizing the tools and geospatial data available.

   Additional data is needed to better understand the complex impact of changing conditions on wetlands, estimate the actual, functional value that wetland conservation can provide, and to evaluate the condition and restorability of existing or historic wetlands. The Wisconsin Coastal Management Program can provide an important role in coordinating efforts, encouraging collaboration, improving tools and mapping, coordinating training and outreach, and enhancing local wetland conservation activities. Wetland protection and restoration in Wisconsin will continue to benefit from multi-agency, multi-sector coordination.

   WCMP engaged with partners for the Phase II Needs Assessment. Partners engaged included:
   - Wisconsin Department of Natural Resources, Monitoring Section, Wetlands Program
   - Wisconsin Department of Natural Resources, Office of Great Waters
   - Wisconsin Department of Natural Resources, Geographic Information Systems Section
   - US Fish and Wildlife Service, Partnerships and Habitat Branch
   - US Fish and Wildlife Service, Coastal Program
   - US Fish and Wildlife Service, Ecological Services Program
   - Wisconsin Wetlands Association
   - Lake Superior National Estuarine Research Reserve
   - Southeastern Wisconsin Regional Planning Commission
   - Milwaukee Metropolitan Sewerage District Greenseams

Coastal Hazards

In-Depth Resource Characterization

Purpose: To determine key problems and opportunities to improve the CMP's ability to prevent or significantly reduce coastal hazard risks by eliminating development and redevelopment in high-hazard areas and managing the effects of potential sea level rise and Great Lakes level change.

1. Based on the characterization of coastal hazard risk, what are the three most significant coastal hazards[23] within your coastal zone? Also indicate the geographic scope of the hazard, i.e., is it prevalent throughout the coastal zone, or are there specific areas most at risk?

	Type of Hazard	Geographic Scope (throughout coastal zone or specific areas most threatened)
Hazard 1	Erosion	Coast-wide; especially Counties of Kenosha, Racine, Milwaukee, Ozaukee, Sheboygan, Manitowoc, Kewaunee, Door, Brown, Bayfield, Ashland, and Douglas
Hazard 2	Flooding	Coast-wide; especially Counties of Kenosha, Marinette, Oconto, Brown (Bay of Green Bay), Douglas (City of Superior), Bayfield (Bark Bay and Chequamegon Bay) and Ashland (Chequamegon Bay).
Hazard 3	Storms	Coast-wide

2. Briefly explain why these are currently the most significant coastal hazards within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

   Coastal erosion, flooding, and coastal storms present significant risks to public safety and property. The Wisconsin Coastal Hazards Work Group as well as local and regional governments and academic programs surveyed for this assessment identified these hazards (along with changing lake levels) as the most significant coastal hazards. The 2021 State Hazard Mitigation Plan outlines the geographic scope of each of these hazards. See the Phase I assessment for all other reports and studies supporting this assessment.

3. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

[23] See list of coastal hazards on pg. 27 of this assessment template.

Emerging Issue	Information Needed
Fluctuating Water Levels	Research and evaluation of impacts of future Great Lakes water level scenarios and rapid changes between water level extremes to help communities evaluate risk and prepare for future damages to infrastructure.
Coastal Shore Protection Structures	Research and evaluation of the effect of in-water and onshore coastal structures on coastal processes, the cumulative impacts of coastal structures, and alternative coastal management solutions including nature-based options.
Ice	Research to understand interactions between flooding, ice cover, and lake levels and the impacts of winter ice shoves.
Culvert Infrastructure	Evaluation of culvert vulnerability to impacts of large storm events.
Flood Elevation Mapping	Analysis of the impact of FEMA's new flood maps on Wisconsin coastal communities.

In-Depth Management Characterization

Purpose: To determine the effectiveness of management efforts to address identified problems related to the coastal hazards enhancement objective.

1. For each coastal hazard management category below, indicate if the approach is employed by the state or territory and if there has been a significant change since the last assessment.

Significant Changes in Coastal Hazards Statutes, Regulations, and Policies

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Shorefront setbacks/no build areas	Y	Y	N
Rolling easements	N	N	N
Repair/rebuilding restrictions	Y	Y	N
Hard shoreline protection structure restrictions	Y	Y	Y
Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure)	N	Y	Y
Repair/replacement of shore protection structure restrictions	Y	Y	N
Inlet management	N	N	N
Protection of important natural resources for hazard mitigation benefits (e.g., dunes, wetlands, barrier islands, coral reefs) (other than setbacks/no build areas)	Y	Y	N
Repetitive flood loss policies (e.g., relocation, buyouts)	Y	Y	N
Freeboard requirements	N	N	N
Real estate sales disclosure requirements	N	N	N
Restrictions on publicly funded infrastructure	N	N	N

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Infrastructure protection (e.g., considering hazards in siting and design)	Y	Y	N
Other (please specify)			

Significant Changes to Coastal Hazard Management Planning Programs or Initiatives

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Hazard mitigation plans	Y	Y	Y
Sea level rise/Great Lake level change or adaptation plans	Y	Y	N
Statewide requirement for local post-disaster recovery planning	Y	Y	N
Sediment management plans	N	N	Y
Beach nourishment plans	N	N	N
Special Area Management Plans (that address hazards issues)	N	N	N
Managed retreat plans	N	N	N
Other (please specify)			

Significant Changes to Coastal Hazard Research, Mapping, and Education Programs or Initiatives

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
General hazards mapping or modeling	Y	Y	Y
Sea level rise mapping or modeling	Y	Y	Y
Hazards monitoring (e.g., erosion rate, shoreline change, high-water marks)	Y	Y	Y
Hazards education and outreach	Y	Y	Y
Other (please specify)			

2. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's management efforts in addressing coastal hazards since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's management efforts?

   There have not been any studies directly evaluating the state's management efforts in addressing coastal hazards. Several projects, however, have focused on identifying needs and regulatory gaps through policy analysis and community engagement:

- Coastal Hazard Regulations in Great Lakes States, Association of State Floodplain Managers (2023): Summary of noteworthy coastal hazard regulations that states have enacted on the Great Lakes.
- Great Lakes States' Coastal Armoring Laws, Center for Water Policy (2024): Examines and compares coastal armoring statutes and regulations across the eight Great Lakes states.
- Ongoing CHAOS, ERC, and CALM communities of practice in Wisconsin have provided evidence that communities are still looking for strategies to deal with erosion, flooding, and storms.

Identification of Priorities

1. Considering changes in coastal hazard risk and coastal hazard management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively address the most significant hazard risks. *(Approximately 1-3 sentences per management priority.)*

   Management Priority 1: Mapping/GIS/Modeling

   Description: Data and maps provide necessary information for local communities to address hazards. There's an ongoing need for updated data and maps as new information becomes available and to improve consistency of existing data layers. WCMP is well positioned to leverage past enhancement funding, existing data and maps, and the United States Army Corps of Engineers' Great Lakes Coastal Resiliency Study to further enhance mapping and data products to support local communities.

   Management Priority 2: Communication and Outreach

   Description: Coastal communities have an ongoing need for engagement and communication about coastal hazards and the available tools and resources available to support policy and decision-making at the local, regional, and state level. There are many existing tools and resources, but continued outreach is needed to connect local communities to these tools. WCMP is well-positioned to proactively engage communities and decision makers with hazard planning tools, best management practices, and funding opportunities, through partnerships with other agencies and organizations and through regional communities of practice.

   Management Priority 3: Training/Capacity Building

   Description: Providing support for the implementation of coastal hazards best management practices is crucial to the adoption and long-term success of resiliency efforts. WCMP is well-positioned to draw on its large partner network to connect local agencies and communities with funding, technical assistance, and training on how to use existing tools, data, and models.

2. Identify and briefly explain priority needs and information gaps the CMP has for addressing the management priorities identified above. The needs and gaps identified here should not be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Research needed to inform future responses to high-water events and build resilience to hazards includes bluff response to the recent high-water event; effects of waves on the coastline; feasibility of coastal hazards solutions/management actions including nature-based solutions; impact of coastal structures on coastal processes; coastal riverine bathymetry and flow monitoring; and impacts of ice cover and lake levels on flooding.
Mapping/GIS/modeling	Y	Mapping, GIS, and modeling needs to inform regulations and plans and support decision-making including documentation of areas that may be at higher risk for hazards; updating shoreline erosion and recession data; nearshore hydrodynamic modeling; watershed and lake level hydrologic and hydraulic modeling to evaluate impacts of lake levels and possible management scenarios; standardization of existing datasets; continued updates and improvements to the Wisconsin Shoreline Inventory and Oblique Viewer.
Data and information management	Y	Data and information management needs include percentage of shoreline armoring; coastal community stormwater systems, culverts, and bridges; bidirectional flows in tributaries related to lake levels; real time buoy information; improving digital repositories of information to connect communities to relevant state, regional, and local data; integration of data sources between agencies/organizations; and improving knowledge about what data is available, where to find it, and how to use it.
Training/Capacity building	Y	There is an overall need to curate existing coastal hazard resources for use by communities and decision makers. Specific training and capacity building needs include helping communities access existing tools, data sets, funding, and best management practices; connecting communities with training on how to utilize resources for decision making; providing guidance on how to integrate coastal hazard data into long-term plans; and encouraging proactive coastal resiliency efforts to minimize costly emergency response. Addressing these needs may help us better understand gaps in other priorities.
Decision-support tools	N	There are many existing tools and resources. Current needs include connecting communities to these resources and training them in how to use the tools to identify areas at risk, visualizing the impact of different hazards or planning scenarios, and determining the most appropriate methods to mitigate the impacts of hazards.
Communication and outreach	Y	Communication and outreach needs include sharing funding sources; promoting the use of LiDAR, orthophotography, and GIS data layers; identifying and providing counties with outreach materials to share with municipalities to support planning; providing resources to private landowners on hazards; using simple renderings of models and maps to communicate risk to decision makers; helping people understand the overall cycle of the Great Lakes; providing updated information regarding river/lake inundation potential associated with high water levels and flooding; and conducting social science-informed outreach to increase adoption of best management practices.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Other (specify)		

Enhancement Area Strategy Development

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

   Yes __X__
   No _____

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

Wisconsin coastal communities face ongoing hazards that are significantly influenced by fluctuating water levels. Recent fluctuations between extreme high and low water levels have been rapid. Erosion and flooding can occur at high and low water levels threatening coastal property, infrastructure, public safety, and public access to the Great Lakes. These hazards, along with storms, are expected to persist and potentially become more severe. Additionally, recent research has found the full impact of high-water levels is not fully realized immediately after a high-water period; coastal bluffs continue to experience effects after water levels have stabilized. WCMP is well positioned to help develop and share resources to build local capacity to address coastal hazards.

Strategy: Wetlands

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) *(check no more than two):*

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

B. The proposed strategy or implementation activities will also support the following enhancement areas *(check all that apply)*:

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

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types 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;

☐ 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. Strategy Goal: *State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project, with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to the state legislature for consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.*

Strategy Goal: Develop or enhance state and local wetland policies through technical assistance and outreach, mapping data and tools enhancement, updated wetland assessment methodologies, and interagency and stakeholder coordination.

Program changes that may result from the strategy include:

- Incorporation of wetland protection language into existing comprehensive plans, county/local plans, policies, or ordinances.
- Incorporation of the functional value of wetlands into local hazard mitigation, watershed, or resilience planning.
- Revision of local ordinances to incorporate the functional values of wetlands.
- Incorporation of resilience indicators into natural resource management plans.

C. **Description:** *Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. 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.)*

WCMP will work with federal, tribal and state agencies, organizations, and local governments to address wetland conservation at local and watershed levels. WCMP will build on past Section 309 Needs Assessment and Strategy and Section 306 successes to encourage continued collaboration between state and local governments and organizations in the coastal regions. This will include leveraging projects, initiatives, and relationships built through efforts in the Lake Superior, Bay of Green Bay, and Lake Michigan regions. These efforts have included developing resilience indicators for coastal wetlands and wild rice, assessing flood risk and natural flood management opportunities, incorporation of culvert and vulnerability assessments and data, updating the Wisconsin Wetland Inventory and expanding GIS tools and resources, geospatial data accessibility, development of One Map, development of habitat landscape blueprints and watershed plans, and implementing designs and methods through locally-adopted plans and policies.

WCMP will work with partners to encourage and foster new partnerships and initiatives, and manage ongoing partnerships and projects, to better identify shared concerns and develop consistent, effective approaches to wetland conservation. Working with agencies, communities and partners, WCMP will provide technical and coordination assistance, help to develop and expand technical tools and geospatial data, and improve access to information to better support local policy decisions.

III. Needs and Gaps Addressed

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

The following priority needs and gaps will be addressed in the wetlands strategy:

Communication and Outreach: Local governments and communities continue to need information and education on the functional, habitat, aesthetic, recreational, and cultural value of wetlands,

and the importance of wetlands to enhance coastal resiliency. There is a continued need for outreach to make local governments and communities aware of available technical resources, data, tools, and funding, and there is a need to understand how to access and use those resources and how to incorporate wetland functional value and conservation into planning efforts. And interagency communication is also a continued need.

WCMP will work with agencies and partner organizations to develop communication and outreach tools and disseminate information to encourage and support local wetland planning and policy development. And WCMP will work with state agency partners to improve interagency communication and coordination.

Training and Capacity Building: Local governments, communities, regional planning commissions, and organizations continue to need training and capacity building on wetland conservation, wetland science, assessments, and permitting. Non-wetland specialists need targeted training to understand the role and value of wetlands and how to incorporate wetlands into addressing community needs. Where training efforts have been made, continued outreach and communication are needed to maintain efforts, provide continued technical support, and address long-term issues that may develop.

WCMP will work with agencies and partner organizations to develop and provide information on the role and value of wetlands and wetland stewardship and provide targeted training to non-wetland specialists. With its partners, WCMP will explore opportunities to adapt training and capacity building efforts that can be transferred and implemented to other coastal regions of Wisconsin.

Decision Support Tools: Local governments and communities continue to need decision support tools to help make informed decisions on how to incorporate wetlands when developing and implementing land use, hazard mitigation, and watershed plans. Outreach and education need to accompany tool development so that necessary training and support can be provided to local governments and communities on the value, access, and use of the tools. It will be necessary to ensure that any new tools developed are not duplicative of existing tools. For existing tools, there is a continued need to evaluate, test, and make improvements based on user feedback, and to continue conducting outreach on tool availability.

WCMP will support the development and expansion of decision-support tools to help local governments and communities understand, evaluate, and integrate wetlands into community programs and plans. WCMP will also support the outreach and education that must accompany tool development.

Mapping and Geospatial Data: Local governments, communities, and regional planning commissions have a continued need for access to updated wetland maps and high-resolution geospatial data to help make informed decisions on local planning needs. Accompanying wetland maps and geospatial data is a continued need for increased access, interpretation, training, and support of geospatial data use. There has been substantial improvement in the development of high-resolution geospatial data and wetland maps, and these efforts must continue at both the federal and state level, including the alignment and consistency between federal and state data.

WCMP will work with federal and state agencies, and other partners, to improve consistency between geospatial data, improve accuracy with the collection and development of higher-resolution data, update existing maps, and increase accessibility and training.

The current Section 309 wetlands strategy has helped to build partnerships and networks for enhanced communication and information sharing, interagency coordination, collaborative prioritization of needs, identification of opportunities, and capacity building for wetlands protection. This strategy will build on past successes and further engage agencies, local governments, communities, and partner organizations to protect and improve wetlands in Wisconsin's coastal zone.

IV. Benefits to Coastal Management

Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.

The wetlands strategy will advance coastal management in Wisconsin by engaging federal, tribal, and state agencies, local governments, and other partners to protect wetlands in the state's coastal zone. Strengthening local governmental capabilities, improving interagency coordination, supporting outreach and training, and enhancing coordination of existing policies and activities are key objectives of WCMP. WCMP, as a networked program, can facilitate interagency coordination to support state and local planning and conservation efforts. Through facilitating the sharing of information, data, tools, and other resources with agencies, communities, and organizations, the strategy will increase awareness of the benefits (functional, habitat, aesthetic, cultural) of wetlands, and encourage thoughtful and intentional planning, and lead to new conservation efforts.

V. Likelihood of Success

Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change, as well as 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 a high likelihood of success attaining the strategy goal. The strategy will build on current and former Section 309 efforts, Section 306 investments, and staff engagement in interagency projects and initiatives. These tasks have built a strong network and partnership of agencies, communities, and organizations that collaborate to implement actions to protect coastal wetlands in the Lake Superior, Bay of Green Bay, and Lake Michigan regions.

Storm events over the past decade in Wisconsin's coastal zone, and Great Lakes water level fluctuations, have raised interest in the functional value of wetlands. Partners from regional planning commissions in the coastal zone, and local communities, are interested in pursuing wetlands conservation for flooding protection as well as other water quality and habitat co-benefits.

In addition to implementing interagency projects, WCMP collaborates on wetland conservation opportunities through networks like the Lake Superior Collaborative, Headwaters to Coast, Slow

the Flow, Green Bay Habitat Conservation Framework, Green Bay Conservation Partners, and the Great Lakes Coastal and Nearshore Habitat Project. This engagement, collaboration, and coordination will continue and will be used to successfully implement the wetland strategy goal.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. For example, even if the final adoption of the program change is outside of the CMP's control, what steps will be included in the work plan so the CMP ensures the program change is considered, reviewed, and hopefully adopted by the outside entity? Who are the other stakeholders or elected officials that need to be engaged, and how and when during the strategy development process? What is the decision-making or voting process that is involved in the adoption of the program change, and how will the CMP interact with this process to ensure that the proposed program change is considered? If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) 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 milestones are a useful guide to ensure the strategy remains on track, OCM recognizes that they may change somewhat over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

Strategy Goal: Develop or enhance state and local wetland policies through technical assistance and outreach, mapping data and tools enhancement, updated wetland assessment methodologies, and interagency and stakeholder coordination.
Total Years: 5
Total Budget: $269,020

Year(s): 1-5
Description of activities: Direct technical assistance, coordination, and outreach: funding will be used for WCMP staff to provide technical assistance to local governments, communities and networks; coordinate with federal, state, and tribal agencies and partners; develop and maintain interagency coordination; participate in relevant work groups, project teams, and steering committees; identify and prioritize projects; and develop and implement projects with partners. Funding will be used to support 40% of a Full Time Employee position throughout the strategy period.
Major Milestone(s): Identify and support FTE (year 1). WCMP staff will provide improved coordination between agencies and partners (years 1-5). Identification of areas for improvement of state and local communities' policies and guidance (years 2-5). Developed and executed projects to improve state and local protections (years 2-5).
Budget: $201,985. Fund 40% of an FTE for 5 years. Estimated annual budget of $40,397 at a rate of $34.76/hour, 39.13% fringe rate, and 1.40% indirect rate.

Year(s): 1-5
Description of activities: Targeted assistance: pass-through funding to state and tribal agencies, local governments, communities, and other partners for developing and

implementing projects to assist local communities in identifying opportunities to protect and restore vulnerable and potentially restorable wetlands; training and outreach; promoting wetlands for habitat and functional values; updating and enhancing local plans; incorporating resiliency into planning; and developing new or revising guidance. Activities may include:

- Inventory and review existing state and local wetland plans.
- Incorporate wetland functions and ecosystem services in local and state hazard mitigation planning.
- Incorporate wetland functions and assessments in county land and water management plans.
- Incorporate wetland protection language into new or revised plans and policies.
- Assessment of effectiveness of current state and local wetland policies on coastal wetland resilience.
- Training and outreach on Southeast Wisconsin Regional Planning Commission's updated regional natural area plan including incorporation of plan and data into local plans.
- Training and education on coastal wetland vulnerability assessment to hazards and changing conditions.
- Training and education on ecosystem services and economic valuation of wetlands.
- Leverage Wisconsin DNR's EPA Wetland Program State Development Grant, *Development of a State of Wisconsin Wetland Program Plan* and identify additional opportunities.
- Leverage the *Lake Superior Coastal Wetlands Resiliency Project* to transfer and replicate the methodology.

Major Milestone(s): Revised, updated, or new local plans and policies to protect wetlands (years 1-5). Projects implemented that led to new or revised local policies (years 1-5). Revised, updated, or new guidance (years 1-5). Training for wetland and non-wetland professionals (years 1-5). 1-2 projects will be implemented under this task.
Budget: $27,035 for 5 years, $5,407 per year

Year(s): 1-5
Description of activities: Geospatial data, mapping, tools, and technical resources: funding will be used to develop improvements to wetlands data, GIS, mapping, tools, and other technical resources as necessary to complete technical and targeted assistance. In addition, the post-graduate hazards coastal fellowship (in partnership with Wisconsin Sea Grant) will also support implementing the Wetlands Strategy. Activities may include:

- Improve access to data and tools to support state and local wetland policy decisions.
- Training for local governments on how to access and use the Wisconsin Wetland Inventory.
- Inventory existing wetland mapping, data, and tools and identify gaps and needs.
- Expand mapping to wetlands in areas of special natural resource interest.
- Incorporate wetland data into new or updated local and watershed plans.
- Updated and uniform LiDAR coverage that is hydro-enforced.
- Updated high-resolution hydrology and stream network data.
- Integration of high-resolution hydrography, wetlands, and land cover data (implementation, application, and expansion One Map).
- Supplement United States Army Corps of Engineers' Great Lakes Coastal Resiliency Study focus area assessments with wetland mapping and geospatial data.

- Integration of floristic quality assessments of bryophytes into local and state assessment methodologies.
- Identify high priority projects based on a selection of ecosystem, hazard mitigation, and resiliency evaluation criteria.

Major Milestone(s): Updated and/or improved maps and data that enhance local decision making and are incorporated into adopted plans (years 1-5). Development of tools and data that communities and partners can access and use to identify and prioritize sites for wetland conservation (years 1-5). 1-2 projects will be implemented under this task.
Budget: $40,000 for 5 years, $8,000 per year.

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 CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.*

Additional funding will likely be required to implement the wetland strategy and leverage additional opportunities that may develop from the strategy. It is highly unlikely that additional state funding can be secured to support implementation of the strategy, although other federal, state, and local funding, and in-kind work, could leverage Section 309 funding and support agency and partner organizations who are involved with implementation.

WCMP will continue to support wetlands efforts through Section 306 funds, through competitive pass-through grants and staff support. Section 309 funding will complement and expand the work that WCMP can achieve through Section 306 funding. WCMP has had success in working with partners to secure funding for wetland conservation efforts that align with, and build on to, the Section 309 strategy. WCMP will collaborate with partners in securing funding through the Great Lakes Restoration Initiative, National Fish and Wildlife Foundation, National Oceanic and Atmospheric Administration, Fund for Lake Michigan, US Environmental Protection Agency, US Fish and Wildlife Service Coastal Program, and other federal, state, and local sources.

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

WCMP is a networked program and has existing relationships with numerous federal and state agencies, tribal and local governments, networks, universities, and organizations. As a networked program, WCMP works cooperatively with agencies and partners to manage the state's coastal resources. WCMP will coordinate with partners to implement the wetland strategy. For example, partners will include the Wisconsin Department of Natural Resources, Wisconsin Department of Agriculture, Trade and Consumer Protection, US Fish and Wildlife Service, Wisconsin Sea Grant, Wisconsin Wetlands Association, Southeastern Wisconsin Regional Planning Commission, Bay-Lake Regional Planning Commission, Northwest Regional Planning Commission, Wisconsin Land and Water Conservation Association, etc.

VIII. Projects of Special Merit (Optional)

If desired, briefly state what projects of special merit 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 projects of special merit and is simply meant to give CMPs the option to provide additional information if they choose. Project descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the funding competition.

WCMP may pursue PSM funding to support adoption of wetland conservation strategies to increase community resiliency and to implement activities listed in this strategy.

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. Generally, CMPs should only develop strategies for activities that the state intends to fund and work on given their anticipated level of Section 309 funding. However, in some circumstances, CMPs may wish to use the assessment and strategy development process as a broader strategic planning effort for the CMP. In that case, the CMP may elect to include additional strategies that exceed the state's anticipated Section 309 funding over the five-year period. If the CMP chooses this approach, it should still clearly indicate which strategies it anticipates supporting with Section 309 funding and which strategies it anticipates supporting through other funding sources.

Strategy Title	Anticipated Funding Source (309 or Other)	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Develop or enhance state and local wetland policies	309	$ 53,804	$53,807	$53,804	$53,804	$53,804	$269,020
Total Funding		$53,804	$53,804	$53,804	$53,804	$53,804	$269,020

Summary of Stakeholder and Public Comment

This section provides a list of the stakeholder groups or individuals engaged during the assessment development process and a brief summary of their feedback. It also provides a summary of the public comments received during the public comment period and how the CMP responded to those comments.

The following partners were engaged throughout the Phase I and II Needs Assessment as well as the development of the Wetlands Strategy:

- Wisconsin Department of Natural Resources, Monitoring Section, Wetlands Program
- Wisconsin Department of Natural Resources, Office of Great Waters

- Wisconsin Department of Natural Resources, Geographic Information Systems Section
- US Fish and Wildlife Service, Partnerships and Habitat Branch
- US Fish and Wildlife Service, Coastal Program
- US Fish and Wildlife Service, Ecological Services Program
- Wisconsin Wetlands Association
- Lake Superior National Estuarine Research Reserve
- Southeastern Wisconsin Regional Planning Commission
- Milwaukee Metropolitan Sewerage District Greenseams

WCMP shared the draft Phase I and Phase II Needs Assessment documents with the partners listed above and facilitated phone and email conversations with each partner to discuss the documents and obtain feedback on state policies, management updates, threats and stressors, needs, information and data gaps, research, and priority management actions in the last five years. The partners identified above provided feedback on the Phase I and II Wetlands Assessments, and the draft Wetlands Strategy. Below is a summary of the feedback provided:

- State policy and management updates
- Wetland assessment methodology updates
- State wetland planning needs
- Data and wetland mapping progress
    - Wetland mapping needs and opportunities to continue advancing mapping with improved accuracy
    - Need to leverage wetland and improved hydrography mapping to benefit state and local wetland planning needs and application with natural resource management planning
    - Continued discussion between state and US Fish and Wildlife Service on alignment between Wisconsin Wetlands Inventory and National Wetland Inventory.
- Importance of floodplain and hydrologic connectivity with state, local, and natural resource management policy and planning

All comments were summarized and incorporated into the Phase I and II Needs Assessment and used to inform the development of this Wetlands Strategy.

Strategy: Coastal Hazards

I. Issue Area(s)

A. The proposed strategy or implementation activities will *primarily* support the following high-priority enhancement area(s) *(check no more than two):*

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

B. The proposed strategy or implementation activities will also support the following enhancement areas *(check all that apply)*:

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

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types 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;

☐ 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. Strategy Goal: *State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project, with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to the state legislature for consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.*

The goal of this strategy is to build resilience to coastal hazards by assisting agencies and communities in developing and revising coastal hazards policies through outreach, training, data development and mapping.

Program changes that may result from the strategy include:

- Revisions of locally-adopted plans, maps, and ordinances
- Inclusion of coastal hazards in local comprehensive plan updates
- Inclusion of coastal hazards in local hazards mitigation plans
- Revisions to State of Wisconsin All Hazards Plan
- Revision to local ordinances to address barriers to flood protection

C. Description: *Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. 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 numerous resources across Wisconsin and the Great Lakes region related to coastal erosion, flooding, and storms. This strategy will center on curating existing coastal hazard resources, providing outreach and training about how to apply these resources in the context of local and regional hazards issues, developing guidance for interpreting and applying state policies to local plans and projects, and updating existing data and maps to provide necessary information for communities to include in planning and decision-making.

To do this, WCMP will partner with state agencies as well as regional and local governments to identify opportunities to improve plans, maps, and regulations related to coastal erosion, flooding, and storms. WCMP will expand on coordination efforts made through past Projects of Special Merit and resilience initiatives to promote and share the products developed through those projects. WCMP will also coordinate with partners through the Coastal Hazards Work Group and regional communities of practice to identify opportunities to collaborate on mapping, training, and outreach efforts.

WCMP will continue coordinating with other state agencies including Wisconsin Emergency Management (WEM) and Wisconsin Department of Natural resources (WDNR) on the development and interpretation of state plans and regulations.

Through communication and outreach, training and capacity building, and data development and mapping, WCMP will support communities and decision-makers in developing, revising, and/or enhancing adopted plans, maps, and regulations to improve community resilience to coastal hazards.

III. Needs and Gaps Addressed

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

The following priority needs will be addressed by this strategy. These needs were identified through stakeholder input throughout the first and second phase assessments.

1. Mapping/GIS/Modeling: Key findings from the Phase II Assessment identified specific needs including:

- Mapping shoreline recession (supported by oblique aerial photography, LIDAR, and satellite imagery) to provide communities with updated erosion rates and other data necessary to develop resiliency strategies.
- Updating data and maps as new information becomes available to improve consistency of existing data layers and document areas that may be at higher risk for hazards.
- Conducting hydrodynamic, hydrologic, and/or hydraulic modeling to understand coastal processes and nearshore dynamics and evaluate the impact of lake levels on possible management or planning scenarios.

Improved data, maps, and models will help communities identify areas at risk for erosion, flooding, and storm damage. Updates maps and models will assist communities in developing plans, enforcing policies, and decision-support. WCMP will use in-house expertise as well as collaborate with partners to accomplish related activities. Additionally, through participation in the Great Lakes Coastal Resiliency Study, WCMP will be able to leverage modeling of flood risk, lake level change, and ice conditions to assist coastal communities in preparing for multiple planning scenarios and enhance the scope of the study to investigate erosion planning scenarios locally.

2. Communication and Outreach: Key findings from the Phase II Assessment identified specific needs including:

- Developing outreach materials counties can share with municipalities to support planning.
- Developing resources communities can share with private landowners about coastal hazards.
- Sharing funding sources.
- Using simple renderings of models and maps to communicate risk to decision makers.

Information sharing between resource providers and communities will help connect coastal communities and stakeholders to the tools and resources available to support policy and decision-making at the local, regional, and state level. WCMP will leverage partnerships with other agencies and organizations and through regional communities of practice to identify outreach opportunities.

3. Training and Capacity Building: Key findings from the Phase II Assessment identified specific needs including:

- Helping communities access existing tools, data sets, funding, and best management practices.
- Provide training on how to utilize those resources for decision making.
- Sharing guidance on how to integrate coastal hazard data into long-term plans.

Training and capacity building activities that promote proactive coastal resiliency efforts will help minimize costly emergency responses to erosion, flooding, or storm damage. The training and capacity building activities outlined in this strategy will help support longer-term local and regional capacity to utilize state and local policy and apply available resources to coastal hazards issues. WCMP will work with its networked agencies, communities of practice, and coastal communities to provide training for decision-makers at the state, regional, and local level.

IV. Benefits to Coastal Management

Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.

The Coastal Hazards Strategy will advance coastal management by protecting economic investments and resources in Wisconsin's Coastal Zone. The strategy builds on past CZM-funded efforts including Projects of Special Merit and the Southeastern Wisconsin Coastal Resilience Project. The strategy will provide local communities with tools and support to develop local protections for coastal hazards.

V. Likelihood of Success

Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change, as well as 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 a high likelihood of success. As a networked program, WCMP works closely with other state agencies who have informed development of the strategy and have had an opportunity to review it. WCMP will continue to coordinate regular meetings of the Coastal Hazards Working Group (CHWG). WCMP and workgroup members have worked with communities throughout the coastal zone. Lake level fluctuations and increased frequency of storm events have caused significant damage in the region: communities continue to seek resources to address coastal hazards. As indicated through direct interactions with communities and partners as well as feedback received through regional communities of practice, communities are interested in improving their capacity to plan for, respond to, and adapt to impacts of coastal hazards. Additionally, local governments are interested in options for reducing risk in their communities. This strategy will continue to build on past successes. WCMP and CHWG members are committed to assisting local communities and helping to improve understanding of and responses to coastal hazards.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. For example, even if the final adoption of the program change is outside of the CMP's control, what steps will be included in the work plan so the CMP ensures the program change is considered, reviewed, and hopefully adopted by the outside entity? Who are the other stakeholders or elected officials that need to be engaged, and how and when during the strategy development process? What is the decision-making or voting process that is involved in the adoption of the program change, and how will the CMP interact with this process to ensure that the proposed program change is considered? If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) 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 milestones are a useful guide to ensure the strategy remains on track, OCM recognizes that they

may change somewhat over the course of the five-year strategy due to unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

Strategy Goal: The goal of the Coastal Hazards Strategy is to assist agencies and communities in developing and revising coastal hazards policies through outreach, training, data development and mapping. This will support communities and decision-makers in developing, revising, and/or enhancing adopted plans, maps, and regulations to improve community resilience to coastal hazards.
Total Years: 5
Total Budget: $480,980

Year(s): 1-5
Description of activities: WCMP staff time to provide direct technical assistance to communities; coordinate with agencies and partners; participate in the Coastal Hazards Workgroup and other relevant workgroups, communities of practice, and teams; and develop and manage projects with partners. 50% of one full-time employee through the strategy period.
Major Milestone(s): Improved coordination between agencies and partners; outreach to communities promoting policies and practices that can be adopted into local plans and ordinances; developed and executed projects to improve local protections.
Budget: $252,480. (Fund 50% of an FTE for 5 years. Estimated annual budget of $50,496 at a rate of $34.76/hour, 39.13% fringe rate, and 1.40% indirect rate.)

Year(s): 1-5
Description of activities: Post-graduate coastal hazards fellowship position (in partnership with Wisconsin Sea Grant) to provide outreach to communities; coordinate with agencies and partners; participate in the Coastal Hazards Workgroup and other relevant workgroups, communities of practice, and teams; and develop and manage projects with partners. May also support goals of the Wetlands strategy where there are coastal hazard implications. 50% of one post-graduate fellow, annually through the strategy period.
Major Milestone(s): Five fellowships supported, improved coordination between agencies and partners; outreach to communities promoting policies and practices that can be adopted into local plans and ordinances; developed and executed projects to improve local protections.
Budget: $175,000 (Annual budget of $35,000, based on including partial salary, fringe, travel, and indirect costs for research interns set by UW-Madison for post-graduate positions.)

Year(s): 1-5
Description of activities: Targeted financial assistance for projects that assist local communities in identifying opportunities to address coastal hazards in ordinance revisions and plan development. Activities may include:

- Technical assistance to help communities assess and develop local code/ordinance amendments and policy improvement.
- Outreach about the tools and resources available to support policy and decision-making.

- Pass-through funding for policy evaluation projects.
- Pass-through funding for policy or code updates.

Major Milestone(s): Revised, updated, or new local plans and/or ordinances addressing erosion, flooding, and/or storms (2-3 projects).
Budget: $15,000 ($5,000 - $7,500 per project)

Year(s): 1-5
Description of activities: Improvements to data, maps, and models to assist agencies and communities in assessing and responding to impacts of coastal hazards. Activities may include:

- Updates and improvements to the Wisconsin Shoreline Inventory and Oblique Viewer including annual collection of oblique photos of the entire Wisconsin coastline.
- Hydrodynamic modeling to characterize nearshore coastal processes.
- Hydrologic and hydraulic modeling to depict coastal flooding under different lake level scenarios.
- Modeling and/or data collection projects that improve WCMP's and its partner's ability to predict coastal change.
- Developing maps and databases for inventorying infrastructure and documenting shoreline armoring.
- Developing and/or improving interactive mapping tools to provide better visualization for local planning.

Major Milestone(s): Five years of flights, updated and/or improved data, maps, and models; improved infrastructure for collecting, managing, and sharing data and analysis; improved outreach and training about using available data and tools
Budget: $37,500 ($7,500 annually to contract with Civil Air Patrol and Association of State Floodplain Managers to capture and upload oblique photos.)

Year(s): 1-5
Description of activities: Training and capacity building for communities to connect coastal communities and stakeholders to the tools and resources available to support policy and decision-making. Training activities may include:

- Training about how to do a code update or policy evaluation.
- Training about bluff-top water management (stormwater and septic) practices to reduce bluff erosion and failure hazards.
- Develop and deliver Coastal Leadership Academy workshops.

Major Milestone(s): Improved access and understanding of how to use available resources; increased local capacity to revise/update plans and policies that aim to address erosion, flooding, and storm damage; improved communication between communities, property owners, and decision-makers.
Budget: $1,000

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 CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.*

Partner agencies and local communities will be directly involved in this strategy. Their time and expertise will likely help make up additional funding needs. It is highly unlikely that the state funds could be secured to support the strategy, although state funds may support partner agencies who are involved with implementing the strategy. Additionally, partner agencies may be funded through other federal sources (e.g. Federal Emergency Management Agency, Environmental Protection Agency, or U.S. Geological Survey).

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

WCMP relies on strong partnerships with state, regional, and local entities to collect and develop high quality data through models and geographic information systems. WCMP also relies on partnerships to produce and update mapping resources. WCMP has limited capacity to access the software and hardware necessary to collect and produce data. Our partners provide expertise in data collection, analysis, and visualization and are key to making the data useful to Wisconsin's coastal communities. High quality data is important to WCMP for the planning and implementation of hazards policies, practices, and projects.

VIII. Projects of Special Merit (Optional)

If desired, briefly state what projects of special merit 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 projects of special merit and is simply meant to give CMPs the option to provide additional information if they choose. Project descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the funding competition.

WCMP is currently pursuing two projects of special merit and may apply for future funding to expand and/or build upon these projects:

- Wisconsin Coastal Leadership Academy (awarded January 2025)
- Mapping Shoreline Conditions to Support Coastal Hazard Management (submitted January 2025)

Funding may also be sought to help local communities conduct focus area assessments based on the USACE Great Lakes Coastal Resiliency Study. Project elements may include training about how to recreate the focus area assessments in new locations and supplementing the focus area assessments with the inclusion of erosion/recession data.

WCMP may also pursue funding to implement the other activities listed in this strategy.

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. Generally, CMPs should only develop strategies for activities that the state intends to fund and work on given their anticipated level of Section

309 funding. However, in some circumstances, CMPs may wish to use the assessment and strategy development process as a broader strategic planning effort for the CMP. In that case, the CMP may elect to include additional strategies that exceed the state's anticipated Section 309 funding over the five-year period. If the CMP chooses this approach, it should still clearly indicate which strategies it anticipates supporting with Section 309 funding and which strategies it anticipates supporting through other funding sources.

Strategy Title	Anticipated Funding Source (309 or Other)	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Coastal Hazards	309	$96,196	$96,196	$96,196	$96,196	$96,196	$480,980
Total Funding		$96,196	$96,196	$96,196	$96,196	$96,196	$480,980

Summary of Stakeholder and Public Comment

This section provides a list of the stakeholder groups or individuals engaged during the assessment development process and a brief summary of their feedback. It also provides a summary of the public comments received during the public comment period and how the CMP responded to those comments.

The following stakeholder groups were engaged throughout the Phase I and II Assessments as well as the development of the Coastal Hazards Strategy.

- Coastal Hazards Workgroup (CHWG): Led by WCMP. Members include the Department of Natural Resources, Wisconsin Emergency Management, Wisconsin Sea Grant, University of Wisconsin-Madison Engineering and Department of Geoscience, Association of State Floodplain Managers, U.S. Geological Survey, Wisconsin State Cartographer's Office, and local governments.

- Collaborative Action for Lake Michigan (CALM) Coastal Resilience Network: Led by WCMP, Wisconsin Sea Grant, Wisconsin State Cartographer's Office, Bay-Lake Regional Planning Commission, and Southeastern Wisconsin Regional Planning Commission. Members include local, regional, state, and federal planners, managers, and decision-makers; academic programs and institutions; non-profits; consulting and engineering firms; and resource providers.

- Coastal Hazards of Superior (CHAOS): Led by WCMP, Wisconsin Sea Grant, Lake Superior National Estuarine Research Reserve, Minnesota Coastal Management Program, and Minnesota Sea Grant. Members include local leaders, educators, environmental specialists, engineers, planners, and citizens.

- East River Collaborative (ERC): Led by NEW Water, Wisconsin Sea Grant, and The Nature Conservancy and funded in part by WCMP. Members include municipal, state, federal, non-profit, and university partners across the East River Watershed.

Through these channels, feedback and comments were received from the following entities:

- Academic Programs & Institutions
  - Carthage College
  - Northland College
  - State Cartographer's Office
  - UW-Madison Departments
  - Wisconsin Sea Grant
- Non-Profit Organizations
  - Association of State Floodplain Managers
- County Government
  - Door
  - Kewaunee
  - Ozaukee
  - Racine
  - Sheboygan
- Regional Government
  - Milwaukee Metropolitan Sewerage District
  - Southeastern Wisconsin Regional Planning Commission
- State Government
  - Department of Natural Resources
  - U.S. Geological Survey
  - Wisconsin Emergency Management
- Federal Government
  - National Oceanic and Atmospheric Administration

WCMP shared draft assessment and strategy documents with contributing partners, facilitated a discussion and shared draft materials at two CHWG meetings, sent a survey through three regional communities of practice with members across the entire coastal zone of Wisconsin, and contacted individuals directly through email correspondence. CHWG members offered extensive feedback on the Phase I and II Assessments and draft Coastal Hazards Strategy. They identified relevant research characterizing Great Lakes coastal hazards in Wisconsin as well as policy and management updates/changes in the last five years. They also provided significant insight into needs, information gaps, and priority management actions. Survey respondents provided detailed responses regarding priority and emerging hazards as well as insight into the greatest needs and priority actions to address coastal hazards. All comments were summarized and incorporated into the Phase I and II Assessments and used to inform the development of this strategy.