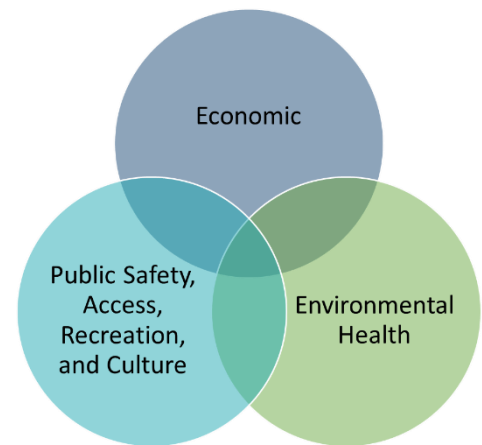




Coastal resources in Wisconsin are vulnerable to numerous hazards including intense storms, erosion, wave energy, flooding and inundation, severe precipitation, and fluctuating Great Lakes water levels. These hazards can impact public and private properties, threaten the health of coastal resources and infrastructure, affect public health and safety, and impact the economic well-being of shoreline communities. **Building and enhancing community and coastal resource resilience can assist in lessening the impacts of multiple hazards.**

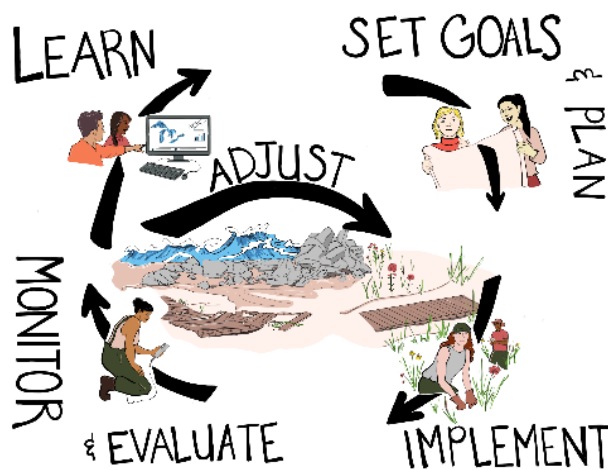
The *Great Lakes Beach Resilience Guide* is an effort to develop resilient-specific beach guidance for coastal communities. The objective of this document is to provide a blueprint to communities and stakeholders on how to plan, build and maintain beaches that are resilient to coastal hazards. **Resilience is the ability to plan for, absorb, recover from, and adapt to coastal hazards and stressors.** This project is part of a larger initiative in Southeastern Wisconsin to improve and enhance communities' resiliency to coastal hazards by developing a community of practice, mapping shoreline recession, developing guidance documents, assessing risks and vulnerabilities, and providing technical and financial assistance for coastal resilience planning efforts.



Why Beaches Matter

Beaches play an integral role in the health of coastal communities by providing **ecosystem services and habitat, public access to community resources, and recreation opportunities.** Investment in improvements to the physical conditions of the beach as well as the community's sense of place can lead directly to local economic benefits.

Adaptive Management



This guide outlines an adaptive management framework for developing and implementing flexible mitigation plans for Wisconsin's Great Lakes beaches. Adaptive management is a cyclical planning process that helps managers prioritize and implement short-term actions while working through the long-term management of the beach. **The framework provides a structured, iterative approach for improving actions through ongoing monitoring, modelling, and assessment of current and alternative strategies.** Natural hazard events or human actions may impact, or even negate, the prior mitigation. Adjusting the original management plan to account for the changing needs of the beach over time will ensure best practices are performing as intended.

Graphic by Brooke Bowser

What's in the Guide?

Chapter 1: Background
Background on resilience, ecosystem services, beach stressors, and potential impacts to the beach.
Chapter 2: Assessments
Intent and examples of assessments used to evaluate a beach's vulnerability to specific hazards and help inform site specific management plans. <ul style="list-style-type: none">• Physical - increases awareness of physical issues at a beach and help recognize changes in the physical condition of the beach.• Biological & Chemical - identifies locations and/or conditions that facilitate the delivery of pollutants to the nearshore environment.• Economic – considers the economic impact of beach remediation project or investments.• Social - assesses the social and community value of the beach, e.g., how many people use the beach, what user groups are represented, how those users are recreating, and how satisfied beach users are with their experience.
Chapter 3: Planning
Description of the adaptive management planning process and considerations for planning a beach mitigation project with a contractor or consultant.
Chapter 4: Case Study
Discussion of Samuel Myers Park Restoration Project illustrates the adaptive management cycle and how it was successfully implemented at a Great Lakes beach.

Example of Adaptive Management for Beach Resilience on the Great Lakes



Courtesy of Julie Kinzelman

The Samuel Myers Park Restoration Project is **an example of what can be achieved through investment in the adaptive management approach** to building resilience at a Great Lakes coastal beach. Adaptive management is a continuous process which the City of Racine Public Health Department utilizes to respond and adapt to coastal hazards that resulted in damage during restoration of the site. Coastal storms frequently overtopped a breakwater, that was intended to mitigate the impacts of waves. In response, the City of Racine Public Health Department iteratively changed their management plan to handle higher water levels, increased volumes of water, and larger storm events to successfully mitigate and restore Sam Myers Park. Chapter 4 of the Guide covers this case study in more detail.

Partners

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