Testimony by the Department of Administration's Wisconsin Coastal Management Program to the United States Senate Committee on Commerce, Science, and Transportation Subcommittee on Oceans, Science, Fisheries, and Weather titled "America's Waterfronts: Addressing Economic, Recreational, and Environmental Challenges."
Specifically, regarding working waterfronts
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Members of the subcommittee. I'm honored to provide this testimony and speak with you today regarding our nations working water.

To truly appreciate something, one must experience it firsthand. Wisconsin's Great Lakes are no exception. The Great Lakes are a source of recreation, commerce, and spiritual renewal. The tributaries, rocky shorelines, sandy beaches and high bluffs of Lake Michigan, Green Bay and Lake Superior are our gateway to their waters. Providing and improving public access to the coastal resources for communities and individuals to grow an appreciation of these places is an important mission of the Wisconsin Coastal Management Program (WCMP).

Challenges

While many of us may think nothing of taking a walk along the shore, getting into a watercraft, wading into the water or fishing from the shore, for others it is not so simple. By their nature, some of these special public spaces are remote or are difficult to access for members of society that lack physical or financial means. Their inability to access these public treasures and develope an appreciation for our Great Lakes coastal resources is a loss for us all. Ensuring balanced resource protection, achieving sustainable economic development and maintaining the quality of life in our state is a goal of the Wisconsin Coastal Management Program. For the program it means all of the citizens of Wisconsin should have the opportunity for a personal experience and to develop an understanding of our coastal resources. That goal is achieved through partnerships with local governments and nonprofits and with the Program's funding assistance to develop the ideas, plans, and the construction of trails, fishing piers and boat launch sites that can be utilized by people with different physical abilities and in population centers where these amenities can be enjoyed and enrich the lives of as many of our fellow Wisconsinites and visitors as possible.

Cities and towns were built around working waterfronts and they are still a valuable resource for Wisconsin's economy. Our communities have made a significant number of improvements to increase access to their coastal waterfront but with the current climatic conditions and rapid deterioration of infrastructure, they are struggling to keep up. Our coastal communities are facing a number of natural waterfront challenges such as high-water levels, bluff erosion and increased frequency and severity of coastal storms and flash flood events. In addition, communities are left dealing with man-made challenges like legacy contaminants on land and in the water and aging infrastructure that commercial and recreation users depend on. Our communities cannot keep up with the demand on their coastal waterfronts from locals, tourists and commercial activities without State and Federal financial assistance.

Wisconsin and Great Lakes Management and Development Initiatives Examples

CARES - Coastal Actions for Resilience and Economic Security (CARES) of Southeastern Wisconsin's bluff, beach, and infrastructure assets

This effort is providing resources and assistance to communities in Southeastern Wisconsin to plan and prepare for coastal hazards. Funded by the former NOAA Regional Coastal Resilience Grants Program, this project has enabled the Wisconsin Coastal Management Program, Wisconsin Sea Grant, the University of Wisconsin-Madison, and Southeastern Wisconsin Regional Planning Commission to collaborate and provide needed resources and focused assistance to 22 municipalities and 4 counties in Southeastern Wisconsin dealing with Lake Michigan coastal hazards which are currently exacerbated by high water levels. This effort is bringing together the local governments in the region with state and federal agencies, scientists and outreach specialists in a *"Community of Practice"* to learn about shared experiences and develop approaches to plan and prepare for coastal hazards.

Project goals include: *Enhanced risk awareness*, *Identification of coastal hazard vulnerabilities, guide risk-reduction actions* and possible actions to address them; *Enhanced risk awareness* through outreach and mapping of shoreline recession; *Guidance on risk-reduction actions* like bluff best management practices, bluff slope vegetation, nature-based shorelines, harbor maintenance planning, and erosion-resilient beach practices; *Identification of coastal hazard vulnerabilities* and possible actions to address them; and *Funding and technical assistance* to plan the implementation of coastal resilience actions.

Early outputs of the project include:

- A "Great Lakes Port, Harbor, and Infrastructure Cost Matrix and Dredging Contract Database" which provides a framework for smaller harbors and marinas to estimate future maintenance costs due to dredging and storm damage to support resilience planning at these facilities.
- Mapping of historic shoreline and bluff erosion rates to help understand how the coast has receded in the past to identify hot spots and aid in future planning. This information is available publicly on the Wisconsin Shoreline Inventory and Oblique Photo Viewer.
- A "Coastal Resilience Self-Assessment" tool to help staff and decision-makers of coastal counties and municipalities weigh the effects of coastal hazards and begin to consider planning and mitigation actions which may increase the coastal resilience of their community. This tool has been used with 13 communities to help identify coastal resilience issues and priorities.
- Based on the self-assessment results, a portfolio of community projects was solicited and funded to address local resilience priorities. For example, Port Milwaukee identified a need to conduct regular assessment of its waterfront infrastructure. Using grant funds, the Port will upgrade the capacity of its harbor survey boat to allow staff engineers to conduct a thorough infrastructure inspection to assess vulnerabilities to coastal hazards and identify strategic mitigation measures. The Port will leverage the Harbor Infrastructure matrix to aid in this project.

Lake Superior Coastal Hazards Community of Practice (COP) is a NOAA Project of Special Merit to the WCMP. This project group formed out of an expressed interest in the mapping and policy communities of northern Wisconsin to more effectively organize people, resources, information and data to aid in the mitigation and response to coastal hazards events.

The initial specific hazard issue to be addressed in this project is culvert mapping, which is important to accurately understand flood hazard risk but is at present performed piecemeal by various entities in Wisconsin's Lake Superior watershed. This uncoordinated approach has led to duplication of effort and discrepancies between culvert inventories and associated hydrologic models, problems which can hinder planning and response to extreme coastal flooding events. The project will coordinate strategic efforts to: a) reduce redundancy; b) formalize data and communication channels amongst members and; c) provide opportunities for technical assistance to local communities.

Project goals include:

- Formally organize the structure for a self-sustaining Coastal Hazards Community of Practice that provides technical assistance and guidelines to local Wisconsin communities.
- Utilize COP members mapping expertise to collectively improve flood risk data, mapping and models which can be used to demonstrate the value of the COP by providing technical assistance to local communities and influencing subsequent administrative policies and guidelines through the case study on culvert mapping.
- Create and manage a cloud-based collaborative support environment (CSE) that promotes the best available data and improves communication among COP members.
- Develop a Hazard Action Plan that outlines best practices for information sharing that can be quickly implemented during a future hazard event.

Port and harbor planning

The Conference of Great Lakes and St. Lawrence Governors and Premiers unites the chief executives from Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Ontario, Pennsylvania, Québec and Wisconsin. This group has created the Great Lakes Maritime Task Force and called for the Great Lakes St. Lawrence River maritime transportation system (MTS) to be authorized, managed and funded as a single system. The MTS includes more than 100 commercial ports spread across eight states and two provinces, more than 40 provincial and interstate highways, and nearly 30 rail lines link the 15 major ports of the MTS and 50 regional ports with consumers, products and industries all over North America. These ports serve as a critical connection between the Atlantic Ocean and the Ohio, Illinois and Mississippi River transportation systems, and integrate the region with global supply chains. The MTS supports a $6 trillion regional economy, more than 220,000 jobs and $30 billion in business revenue each year. Yet each year, the aging system and its ability to sustain this activity continues to decline.

The Great Lakes St. Lawrence Governors & Premiers supports implementation of the Strategy for the Great Lakes-St. Lawrence River Maritime Transportation System, which was developed in 2016. The strategy's goals are to double maritime trade, shrink the environmental impact of our transportation network, and support the region's industrial core. The strategy recommends actions to maintain and expand the maritime transportation system and established a Regional Maritime Entity to coordinate state and provincial actions.

Great Lakes Marinas

Developing a Coastal Storm Preparedness, Adaptation, and Response Plan for Great Lakes Marinas (NOAA Coastal Storms Grant): This project was to develop a regionalized coastal storms preparedness, adaptation, and response plan for marinas in the Great Lakes. This tool is being developed to guide marinas in implementing long-term hazard mitigation, and to provide them with the resources and planning mechanisms necessary to respond properly to a coastal storm event.

Advancing Stormwater Management at Marinas in the Great Lakes (Great Lakes Protection Fund Grant): Green infrastructure (GI) is an approach to stormwater management that can result in substantial environmental benefits including improved water quality and greater resilience to climate change impacts such as flooding from storm events. This project will: 1) assemble a set of educational resources geared to stormwater management at marinas including development of a decision support tool to identify appropriate marina GI practices; 2) support the marinas to design and implement GI practices at three Great Lakes marinas; 3) monitor the effects of the GI practice on water quality.

The Great Lakes Clean Marina Network is a group of Great Lakes marina stakeholders and state clean marina programs. Network members collaboratively work with technical experts and outreach professionals to promote clean and resilient marinas in the Great Lakes. The Wisconsin Clean Marina Program started by the WCMP provides guidance, training and education that help marina and boatyard operators and owners improve their management practices, promote environmental stewardship and resiliency, and educate recreational boaters. Most coastal states and territories have a clean marina program.

Coastal Tourism
Coastal tourism continues to be a vibrant industry for many coastal communities. Coastal tourism provides a significant impact to local and regional economies and supports local businesses and employment. Coastal tourism is heavily reliant on a healthy community waterfront, clean water and public access.

There are numerous examples of successful coastal tourism initiatives and partnerships across the nation. In Wisconsin, partnerships between the Wisconsin Coastal Management Program, Wisconsin Department of Tourism, Wisconsin Harbor Towns Association and the Lake Superior Scenic Byway have created opportunities to strengthen coastal tourism in innovative, meaningful and impactful ways. This not only reaches to the state's remote and rural areas but includes our urban coastal working waterfronts.

In Wisconsin, the value and connection between tourism and the state's natural resources is readily apparent. Because of this, Governor's Evers has included in the current state budget the creation of the Office of Outdoor Recreation within the Department of Tourism.

Public access & social justice
Living within extensively built environments is a situation that may limit the opportunity and exposure to outdoor recreational experiences for people. In Milwaukee, for example, the Wisconsin Coastal Management Program has partnered with the City, County, the Milwaukee Metropolitan Sewerage District and numerous nonprofits to provide for and enhance the experience for that area's residences and visitors. The Menomonee River in the heart of Milwaukee was a forgotten place for generations. Just below the bluffs of working-class neighborhoods, the river was blocked by railroads, highways, and high sheet pile walls along factory property lines, with no public access to the thousands of residents who lived within walking distance to it. Through WCMP's support on several projects along the Menomonee River, public access has been opened, sheet pile walls have been replaced by natural riverbanks with paths to the river's edge, canoe launches and fishing piers have been built, and the river is now visited by anglers, families, and classes of children. Corey Zetts, Executive Director of the Menomonee Valley Partners told me "It's shocking today to see the photos of the channelized, inaccessible waterway just 20 years ago. Today, along this same stretch of the Menomonee, you can see fish, herons, and a diverse cross section of the Milwaukee community

walking, fishing, or just taking in the view. Through WCMP's investments, people now enjoyed the public space along the river, vibrant stretches of riverfront which were unavailable to previous generations."

These partnerships and the investments from the WCMP have provided the connection and experience the Great Lakes, their shores and tributaries with trails, boat launches and fishing piers. These amenities that enhance the quality of life and allows for that personal experience with our Great Lakes resources, fosters and creates a stewardship ethic that will preserve them.

LiDAR & Geospatial Data Sharing (NOAA's Digital Coast)
Water resources are an important topic to the citizens of Wisconsin whether one is talking about fishing, using tap water from your own well or municipal water system, or swimming at one of the Great Lakes' many beaches. Federal, state and local land and water managers all use geographic information systems (GIS) to inventory, analyze and make maps showing the distribution, quality, quantity and environmental conditions that contribute to good water quality. By combining factors such as soils, vegetation, wetlands and streams, wells, agricultural activity, underground storage tanks, pipelines, and where people live, these managers can analyze existing problem areas, such as contaminated wells, algal blooms or model potential wastewater discharge impacts of new construction. In many cases, they can identify potential remedial solutions to existing problems or point to smarter alternatives before construction begins.

Promote water industry technology
Combining research and technology and targeting growing water technology businesses is critical to solving environmental health and economic challenges in the nation's coastal communities. Water technology can provide an opportunity to build and sustain coastal economies along the nation's waterfronts. An example to draw from is the Water Council in Milwaukee, WI whose objective is to assist in assembling industry and academic R&D collaboratives.

Conclusion

The economic and environmental well-being of all our nations waterfronts benefit us all and the shared stewardship is a responsibility we should accept.

Intergovernmental (local, state, tribal and federal) collaboration and cooperation is necessary to be able to revitalize and enhance our working waterfronts and build local capacity. Coordination allows for sharing of expertise and resources to realize the most successful impact.