Great Lakes Coastal Resilience Planning Guide

(Beta Version)

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Association of State Floodplain Managers

Climate Tools Café 2 Webinar
May 7, 2013

Design Objectives

- Bridge coastal hazards with climate adaptation
- Provide “locally relevant” data, science & outreach to promote coastal hazard resilience
- Make available process-driven solutions
- Integrate with other resources

DIGITAL COAST
NOAA COASTAL SERVICES CENTER

Wisconsin Coastal Atlas

cake
Climate Adaptation Knowledge Exchange

GIS INVENTORY
The Ramona GIS inventory is

COASTAL RESILIENCE
Adapting Natural and Human Communities to Sea Level Rise and Coastal Hazards

GREAT LAKES INTERACTIVE GUIDE

Who Is It For?

Stormwater managers

Coastal managers

Floodplain managers

Community planners

Hazards compounding issues
- ! Flooding
- ! Fluctuating lake levels
- ! Erosion
- ! Climate change & variability

Issues
- ❑ Effects of proposed projects on hazards
- ❑ Development in high risk areas
- ❑ Stormwater runoff
- ❑ Habitat loss and degradation

CSC Data | **Partner Resources**

CSC Tools | **Partner Outreach**

USERS CAN…
- ❑ See how proposed projects will amplify or accelerate existing hazards
- ❑ Use green infrastructure
- ❑ Incorporate hazards into community plans
- ❑ Use living shorelines
- ❑ Apply no adverse impacts approaches
- ❑ Make more comprehensive decisions

Challenges and Opportunities

Multiple partners contributing

Tight timeline

Interoperable system

Locally relevant, but regionally applicable

12.1.11

Collaborators & Stakeholders

Collaborators

Digital Coast Partners

- American Planning Association
- ASFPM
- Coastal States Organization
- National Association of Counties
- National States Geographic Information Council
- The Nature Conservancy

- UW – Sea Grant Institute
- UW – Extension
- NOAA Coastal Service Center

Stakeholders

Pilot Counties

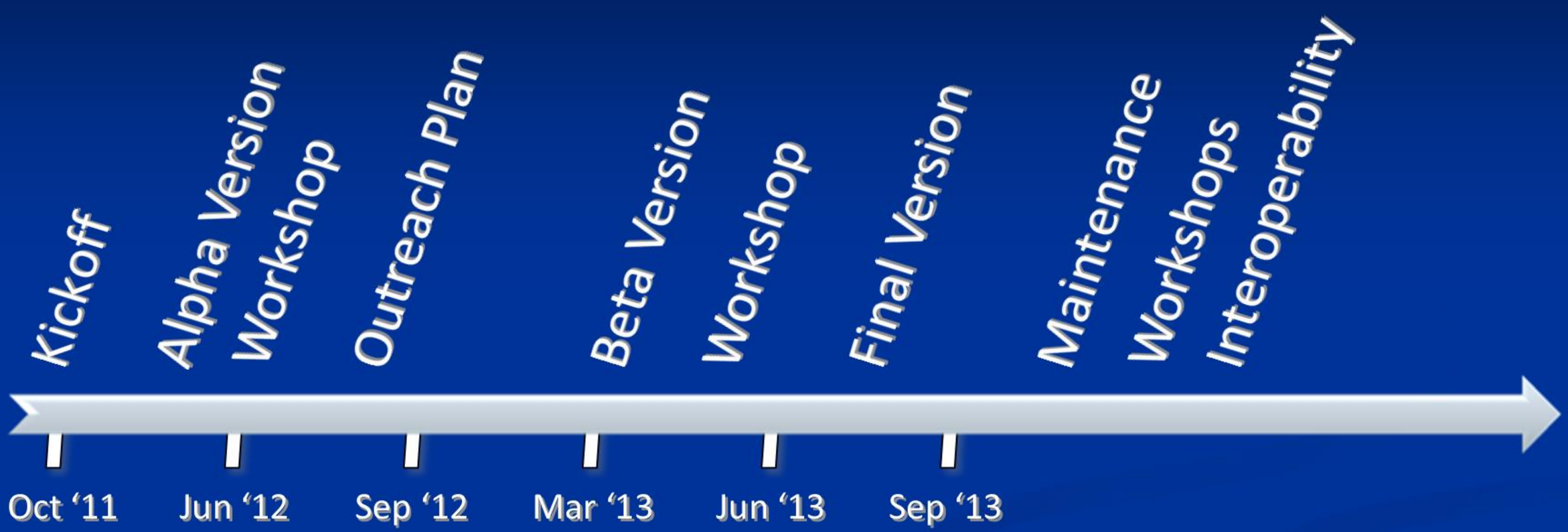
- Brown County, WI
- Ozaukee County, WI
- Sheboygan County, WI
- 5 others

Regional Planning

- Bay Lakes RPC
- Southeast WI RPC

- WI State Floodplain Management
- WI DNR Office of the Great Lakes

Timeline



2012	2013	2014
Phase 1	Phase 2	Phase 3
Planning Guide Local Workshop Outreach Plan	Guide (CMS) Local Workshop Outreach & Content	New Content Stewardship Regional

GLCR PLANNING GUIDE

Coastal Watersheds

Coastal-, Floodplain-, Stormwater-Managers & Planners

Natural Hazards

Climate Change

Explore, Learn, Acquire

Issues | Geography | Resources

Multi-Objective Planning & Management

Land Use & Zoning
Case Study 1
Case Study 2
Case Study …

Habitat & Environment
Case Study 1
Case Study 2
Case Study …

Infrastructure
Case Study 1
Case Study 2
Case Study …

Public Trust | Public Health | Economic Development | Invasive Species

Process-based & Locally Relevant

Case Studies

1) Awareness *2) Understanding* *3) Analysis* *4) Strategy*

Local Stories | Maps, Data & Tools | Library | Stakeholders

GLCR PLANNING GUIDE

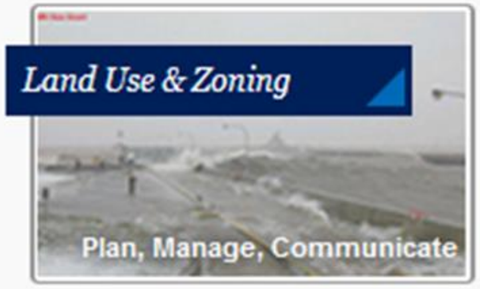
GREATLAKESRESILIENCE.ORG

In This Guide (Beta Version)...

Find hazards and climate change resources that Great Lakes counties and municipalities can use to communicate coastal issues and inform existing and future land use, infrastructure, and natural resource plans and policies to enhance community resiliency. Read more...

Hazard & Climate Case Studies

View science-based case studies across key planning and management areas to learn about data, tools, methods, and policiesthat local governments are using to help make their communities more resilient.



Communicating the Risk of Coastal Flooding
Green Bay, Brown County, Wisconsin

Identifying Restorable Wetlands and Riparian Buffers
Sheboygan County, Wisconsin

Economic Valuation of Port Infrastructure
Duluth, Minnesota

Funding Opportunities & Deadlines ▶

Healing Our Waters (HOW) - Climate Grant Program
Freshwater Future
Funding Amount: $500 to $5,000
Deadline: Tuesday, June 3, 2014 - 12:00pm

The Fred A. and Barbara M. Erb Family Foundation
The Erb Family Foundation
Funding Amount: Varies
Deadline: On-going opportunity

Upcoming Events & Training ▶

Climate Tools Café 2 Webinar
Webinar
May 7, 2014 - 12:00pm

Coastal Climate Adaptation & Resilience Workshop
Owens Community College Toledo Area Campus
June 19, 2013 - 8:00am

Great Lakes Regional Strategy

- Build relationships
  - States, counties, cities
- Identify partners & outreach opportunities
  - ASFPM Chapters / State-wide conferences
  - TNC Collaboratory
  - EcoAdapt CAKE
- Develop workshops & content
  - Create issue-related content with solutions
  - Engage in other grant/funding opportunities
- Promote stewardship & ownership

Case Studies – In Progress

- Communicating the Risk of Coastal Flooding
  Brown County WI
- Planning for Long-term Bluff Erosion
  Ozaukee County / Sheboygan County WI
- Western Lake Erie Coastal Conservation
  Lucas County OH
- Economic Valuation of Port Infrastructure
  Toledo OH , Duluth MN
- Land Use Strategies for Reducing Watershed Impacts
  Sheboygan County WI
- Economic Assessment of Green Infrastructure
  Toledo OH , Duluth MN

Local Story – St. Joseph, MI

The Herald-Palladium
St. Joseph • Benton Harbor, MI www.TheHP.com

Don't build along shoreline

■ That's what St. Joe city planners are recommending. It could be a first in Michigan.

Story Comments Print

Posted: Friday, September 7, 2012 6:00 am

By JOHN MATUSZAK - H-P Staff Writer | 0 comments

ST. JOSEPH - The St. Joseph Planning Commission Thursday recommended that city commissioners adopt a no-build zone along the lakeshore north of the St. Joseph River to protect homeowners from encroaching water and to preserve the beach for the public.

"SECTION 9.7 "EB-OD" EDGEWATER BEACH OVERLAY DISTRICT

9.7.1 Intent. The Edgewater Beach Overlay District (EB-OD) is an overlay District intended to preserve the character of the public trust land along the shore of Lake Michigan, which is found to be a valuable public resource of the community, to prevent damage to the public trust land and to prevent damage to private property.

Based on the record presented the City further finds that the beach and property area near the shoreline is subject to submergence and erosion during periods of higher Lake Michigan water levels and resulting from weather conditions. It has been demonstrated that current state and federal development standards for the Lake Michigan shoreline, such as the Ordinary High Water Mark (OHWM) and the Base Flood Elevation, do not ensure that property shoreward of those locations is protected from erosion, inundation, or damage during such periods of time and/or weather events. The OHWM is not intended to reflect these periods of peril, and the Base Flood Elevation is a still water elevation that does not take into account the effect of wave action. The City further understands that revised federal floodplain regulations are being developed to take into account additional environmental factors such as waves and to provide an improved standard of floodplain development protection, but implementation of these regulations will not likely occur for several years.

TISCORNIA PARK TO 2,650' NORTH

2,650' NORTH TO 4,575' NORTH

ABONMARCHE

Edgewater

CITY OF ST. JOSEPH
COASTAL ENGINEERING STUDY
AREA 1 PROPOSED SHEET PILE LINE

1 of 1

City of St. Joseph Coastal Engineering Study

August 17, 2012

Edgewater resources

ABONMARCHE

Port asset values and economic impacts

New tools for estimating risks of water level changes, failing infrastructure

ECONOMIC IMPACT RISKS OF CLIMATE CHANGE & WATER LEVELS CHANGES

Matrix and Dredging Database results for Toledo Harbor and Maumee River

Federal Channel Dredging Estimate

18,530,167 cy/ft x $5/cy = **$92,650,835/ft of depth**

ADAPTED FROM U.S. ARMY CORPS OF ENGINEERS, BUFFALO DISTRICT

Single Slip Dredging Estimate
Midwest Terminals of Toledo International Facility 1

Vessel: 105' x 1000'
1.2 factor for maneuverability & connection to main channel
Dredging Vol/ft: 105 ft x 4,196 ft x 1.2 = 176,232 cy/ft

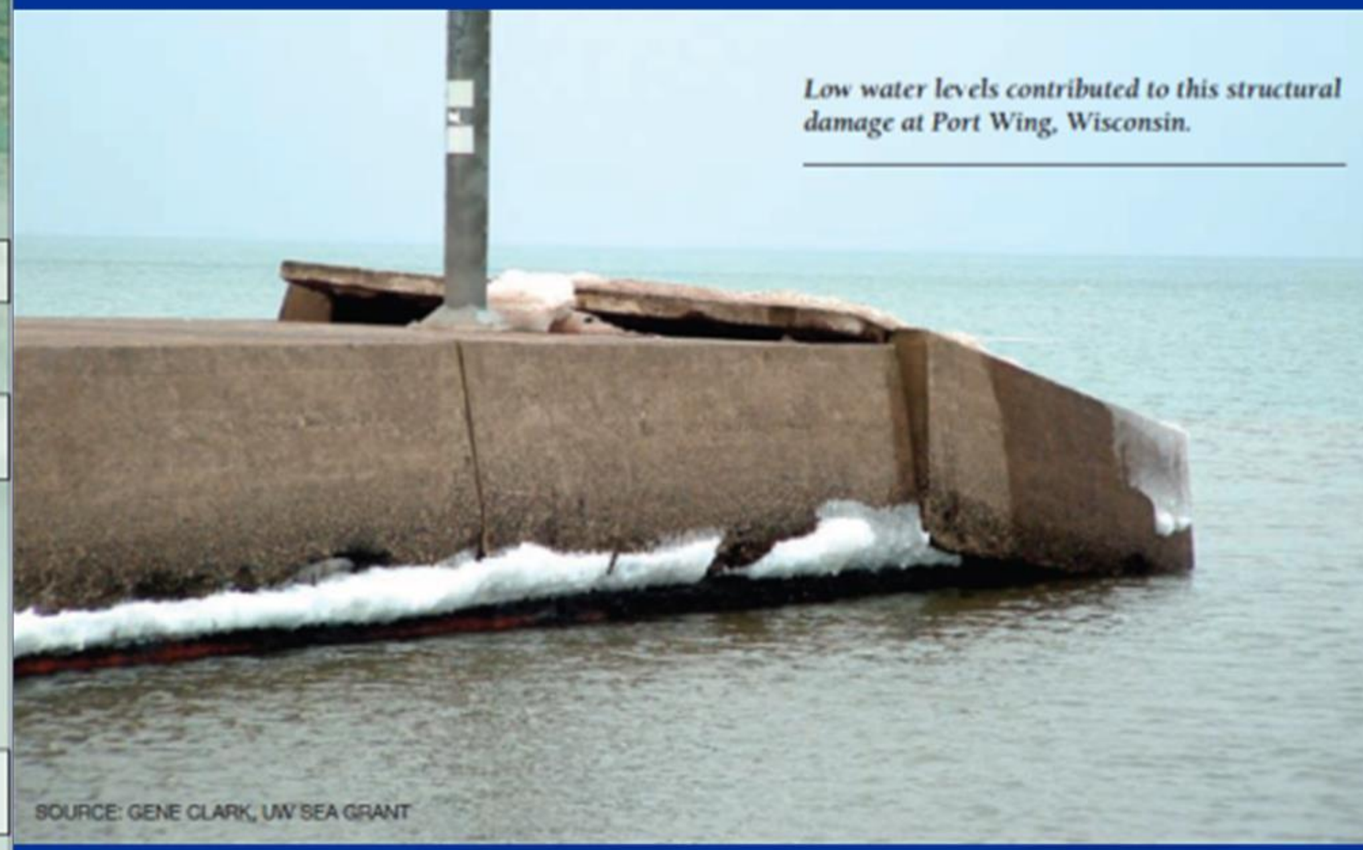
$5/cy	x 176,232 cy/ft	=	**$881,160**
$10/cy	x 176,232 cy/ft	=	**$1,762,320**
$15/cy	x 176,232 cy/ft	=	**$2,643,480**

Single Slip Repair & Replacement Estimate
Midwest Terminals of Toledo International Facility 1

STRUCTURE TYPE	*NEW/REPAIR*	*8'-13'*	*14'-25'*	*26'-35'*
SSP Bulkhead w/Concrete Cap (I-I)	New	1,250-2,400	1,700-4,300	3,300-5,300
	Repair	835-1,350	1,400-2,500	2,400-3,360

New	$5,300/ft	x 4,196 ft	=	**$22,238,800**
Repair	$3,000/ft	x 4,196 ft	=	**$11,748,800**

SOURCE: GENE CLARK, UW SEA GRANT



Low water levels contributed to this structural damage at Port Wing, Wisconsin.

SOURCE: GENE CLARK, UW SEA GRANT

Contact

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OSU - Climate Tools Café 2 Webinar
May 7, 2013