

Planning for Sustainable Small Harbors: Project Overview & Useful Tools

Housekeeping



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meeting



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box in at the
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screen



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recording
this meeting



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY



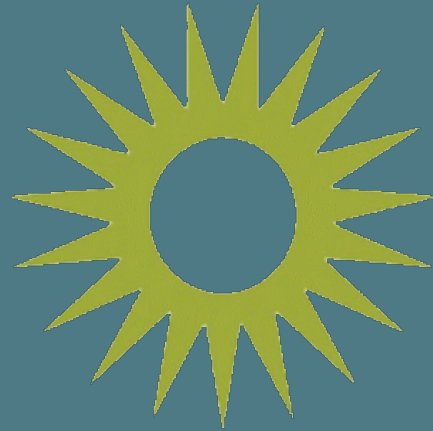
Jeff Spencer, Manager, Energy and Recycling Section,
Materials Management Division

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800-662-9278 | Michigan.gov/EGLE

Catalyst Communities

Resources to aid communities
with their decarbonization efforts



Michigan Green Communities

Resources for benchmarking and
tracking sustainability progress



Today's Speakers

- **Don Carpenter**, Principal, Drummond Carpenter
- **Kate Bailey**, Water Resources Engineer, Drummond Carpenter

SUSTAINABLE SMALL HARBORS



Tools & Tactics for Sustainable Small Harbors
EGLE Catalyst Communities Webinar
24 January 2024



Michigan Sea Grant helps to foster economic growth and protect Michigan's coastal, Great Lakes resources through research, education and outreach.



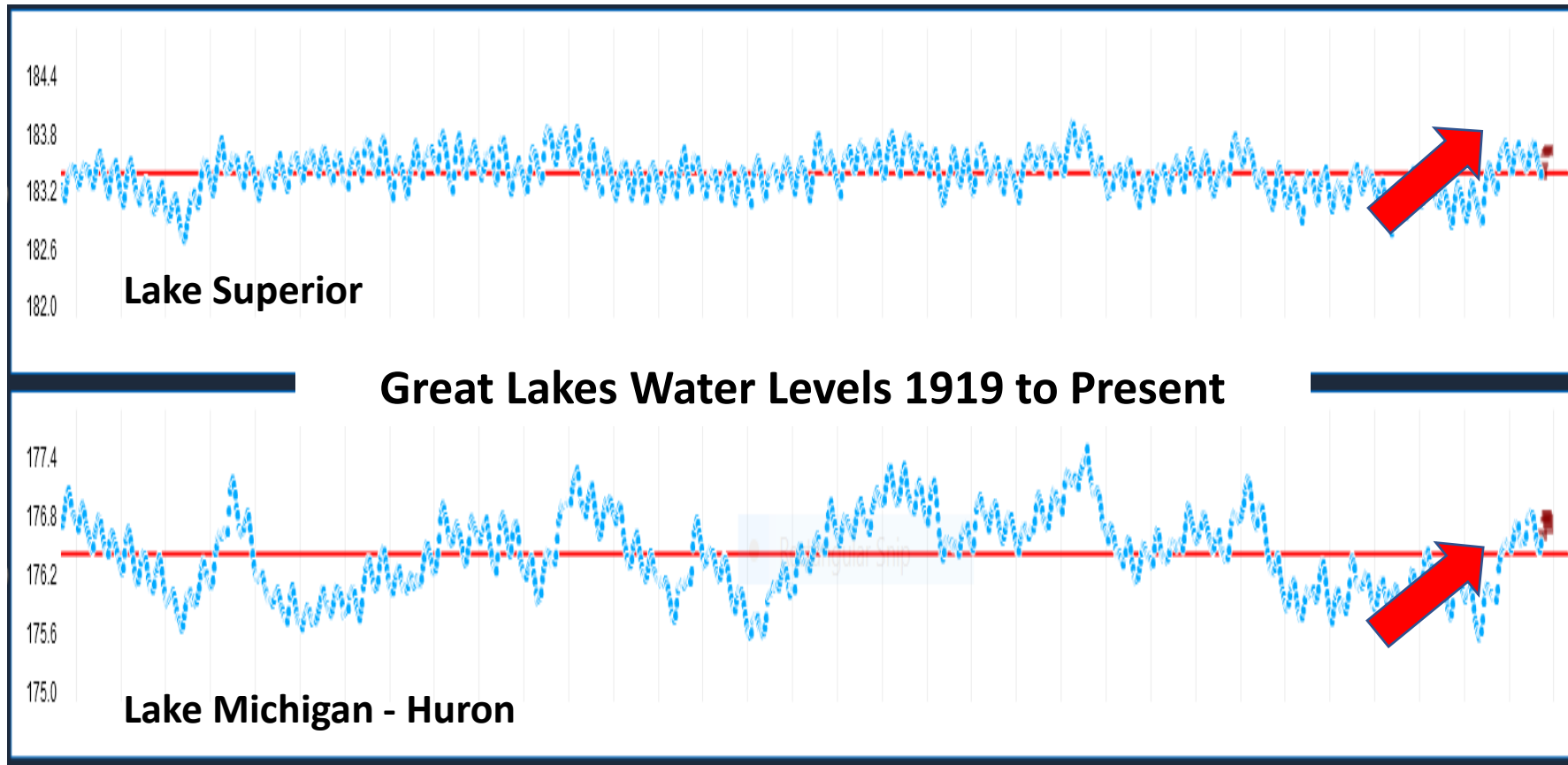
MICHIGAN STATE
UNIVERSITY



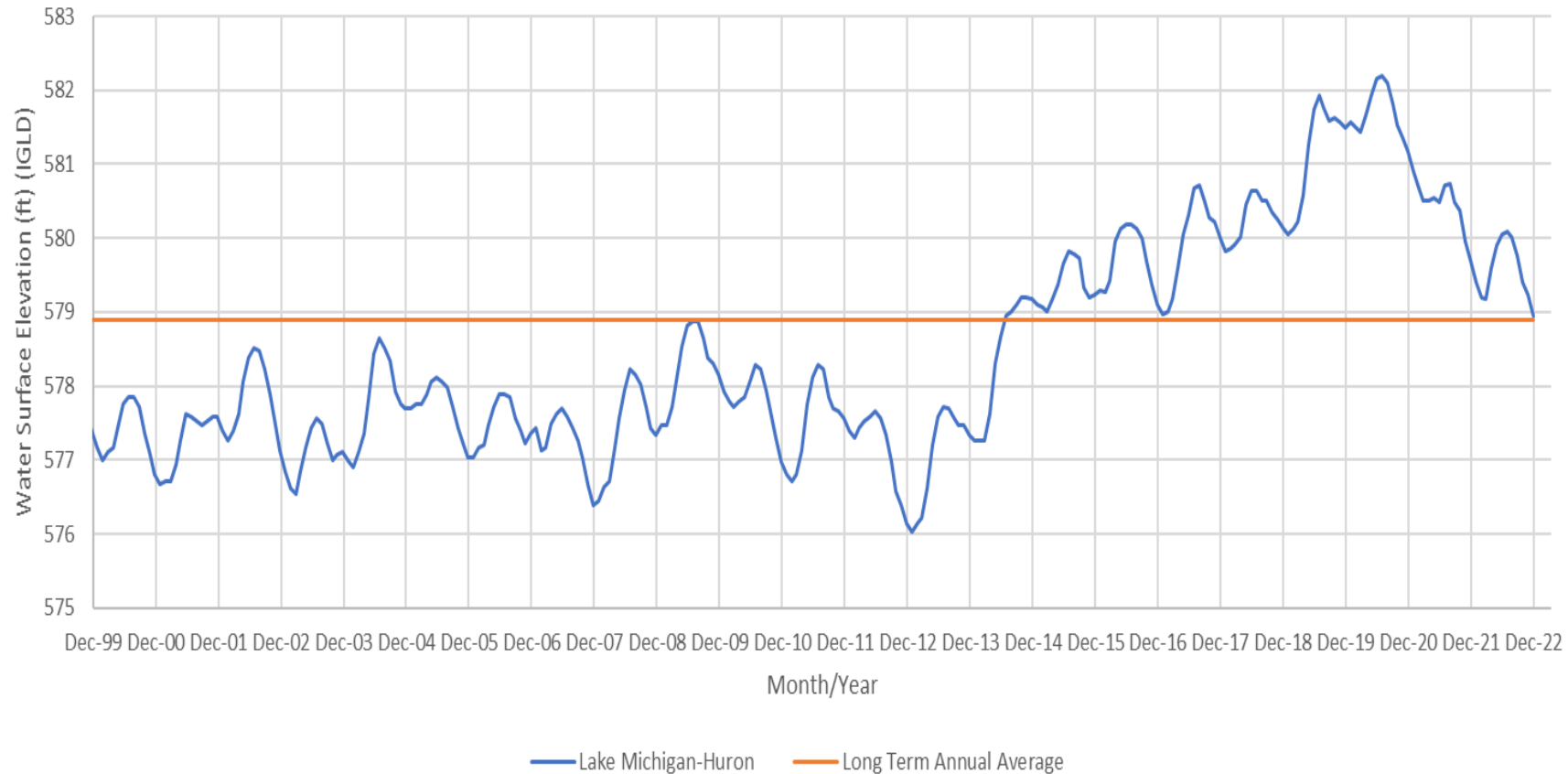
sustainable-small-harbors.org

Driving Factors

- Climatic and water level extremes threatening waterfronts



Monthly Water Levels for Michigan Huron (2000 to Present)



January 2013 = 576.02 ft (Record Low)

July 2020 = 582.19 ft (near Record High)

October 1986 = 582.35 ft (Record High)

Driving Factors

- Climatic and water level extremes threatening waterfronts
- Aging infrastructure
- Deindustrialization of Michigan's coastal economy
- Funding constraints for maintenance & improvements
- Need for new strategic vision at the local level



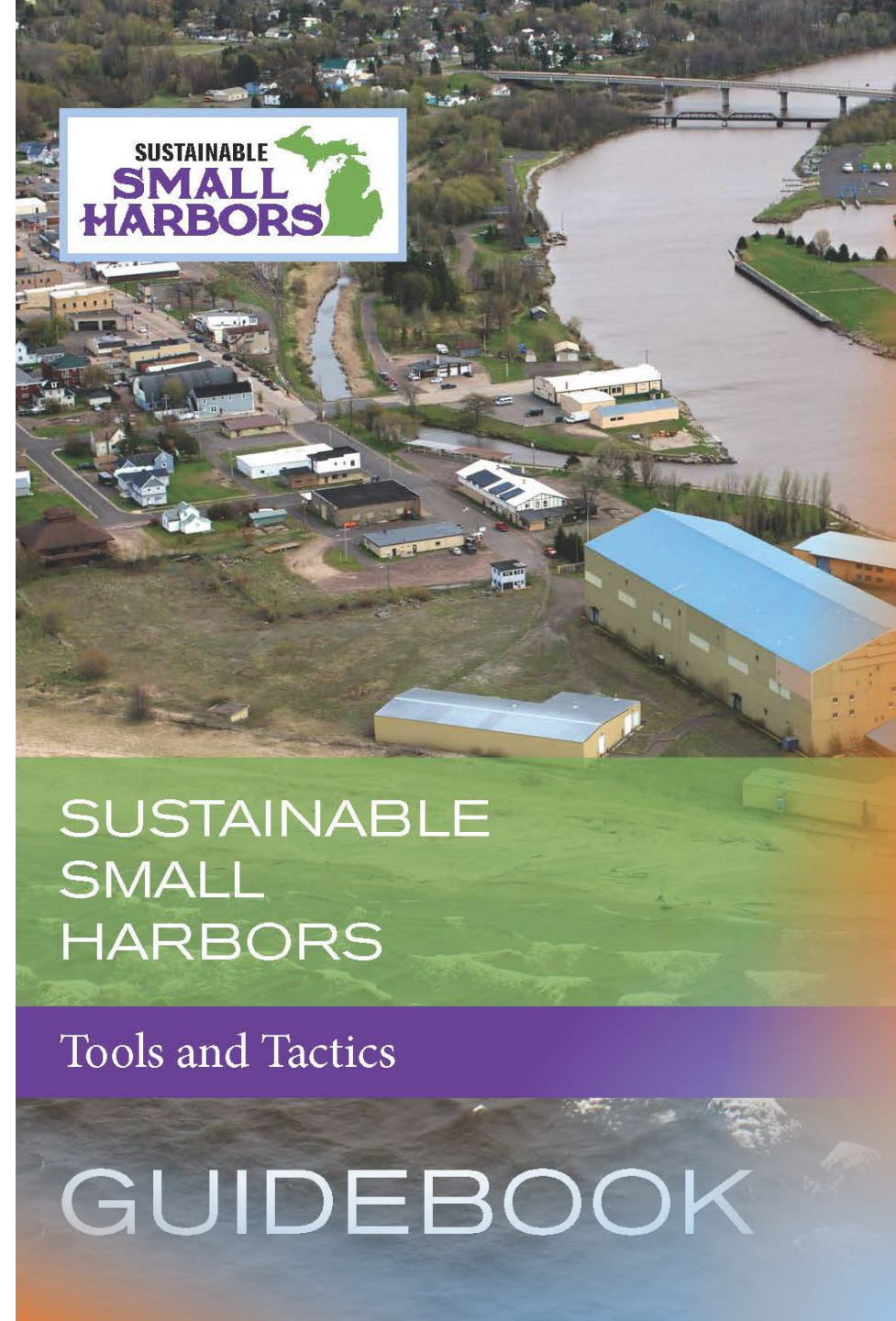
State Goals for Harbor Communities

- Recreational harbors are integrated into community and economic development planning as strategic assets.
- Harbors and waterways are well-maintained, vibrant, and support sustainable recreational and commercial use.
- Finite state resources are being invested in a strategic manner for public access to water amenities.
- Transferrable tools and resources are used to support development of a shared vision that integrates the harbor into the community's future.



Project History

- Michigan Sea Grant Research Project (2014-2017)
 - What are the barrier to small harbor economic, social, and environmental sustainability and what tools would help small harbor managers create more stability in their communities?*
- Publish and Disseminate a Tools & Tactics Guidebook for small harbors including case studies (V1 – 2017)
- Development a placemaking strategy and value creation analysis for coastal communities
 - National Charrette Institute (NCI) Process



THREE VISITS TO THE COMMUNITY



March 25

INITIAL VISIONING MEETING 1 DAY

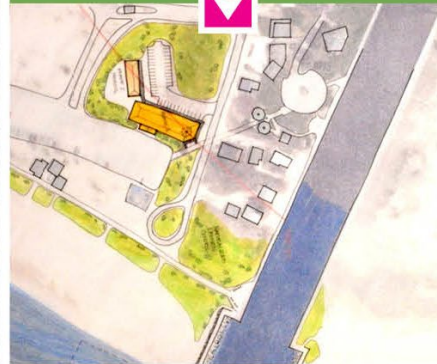
- a. Assets
- b. Weaknesses
- c. Barriers
- d. Connections



April 17-19

DESIGN CHARRETTE 3 DAYS

- a. Public Input Workshop
- b. Open House: Selecting A Preferred Option
- c. Public "Work in Progress" Session



June 8

FINAL PRESENTATION 1 DAY

- Presentation to City/
Village Council
- a. Updated graphics
- b. Final Report



Iterative process balancing community input and expert design work.



Small Harbor Communities

Findings

- Unique Historical Impediments
- Need Supported Visioning Sessions
- Local Champions and Implementation Team
- Plan Alignment (Master, DDA, Parks, Harbor)
- Importance of Partnerships
- Visitor Experience (& Authenticity)



VISITOR ATTRACTIONS

1

ACCESSIBLE

- ☼ Visual and physical public access to harbor, waterfront, parks
- ☼ Boat access for fishing, tours, safe harbor for boats small and large
- ☼ Harbor kept dredged

2

CONNECTED

- ☼ Walking, biking, car, boat, transit
- ☼ Public internet
- ☼ Linked to downtown
- ☼ Available parking

3

DIVERSE

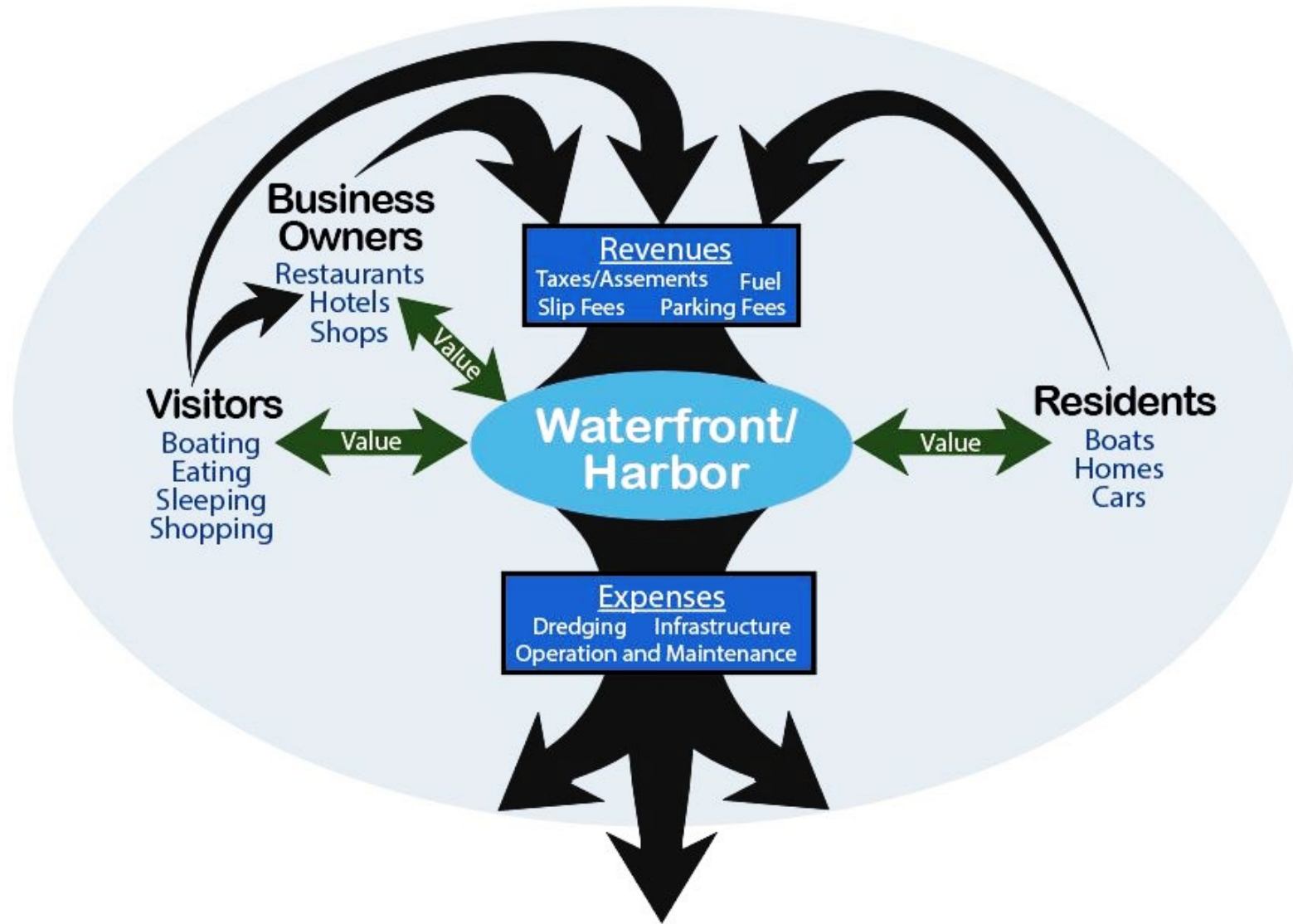
- ☼ Working waterfront for commerce, industry, recreation
- ☼ Services, rentals, sales
- ☼ Physically and economically resilient

4

WELCOMING

- ☼ Food, beverage, lodging
- ☼ Retail and entertainment
- ☼ Safe, clean, well-lit







SUSTAINABLE SMALL HARBORS

Tools and Tactics: Phase 2

GUIDEBOOK

MICHU-23-502

2023 Revisions

- Incorporating New Sections (& corresponding Tools & Tactics):
 - Engineering with Nature
 - Environmental Justice and Diversity, Equity, & Inclusion
 - Decarbonization, Energy Innovation and Electrification
 - Climate & Resiliency
- New & Revised Case Studies
- Updated Funding Strategies
- Robust Dissemination Strategy
 - Conferences (presentations & exhibiting)
 - Regional Councils of Government
 - Webinars, Listserves, and Articles



TABLE OF CONTENTS

1.0 PROJECT OVERVIEW

- 1.1 Project Purpose and Background
- 1.2 Guidebook Updates and Lessons Learned (pending)
- 1.3 Regional Scope and Context: Fit with other Coastal Efforts
- 1.4 Connecting People to Place – Building Connectedness and Opportunity
- 1.5 Attributes of a Sustainable Harbor

2.0 ENVIRONMENTAL CONSIDERATIONS

- 2.1 Dynamic Water Levels
- 2.2 Dredging in the Great Lakes
- 2.3 Engineering with Nature
 - 2.3.1 Engineering with Nature Case Study
 - 2.3.2 Green Infrastructure Case Study
- 2.4 Climate and Resiliency
 - 2.4.1 Decarbonization
 - 2.4.1 Energy Innovation and Electrification

3.0 SOCIAL CONSIDERATIONS

- 3.1 Community Engagement Process
- 3.2 2017 Community Updates (pending)
- 3.3 Social Sustainability, Environmental Justice and Diversity, Equity and Inclusion Strategies
- 3.4 Twin Cities Sustainable Small Harbor Case Study (pending)

4.0 ECONOMIC CONSIDERATIONS

- 4.1 Small Harbor Economic Sustainability Concepts
- 4.2 Financial Instruments, Programs and Strategies to Support Long Term Sustainability
- 4.3 South Haven Case Study
- 4.4 Buying a Dredge Case Study
- 4.5 Lake Ontario Dredging Case Study

5.0 TOOLS AND TACTICS

- 5.1 Flowchart
- 5.2 References and Tactics
 - 5.2.1 Inventory — Community
 - 5.2.2 Inventory — Waterfront
 - 5.2.3 Visioning/Planning
 - 5.2.4 Value capture
 - 5.2.5 Implementation

Michigan Sustainable Small Harbors Strategic Flowchart

	INVENTORY		VISIONING/PLANNING	VALUE CAPTURE	IMPLEMENTATION
	COMMUNITY	WATERFRONT			
HIGHLY RECOMMENDED	<ul style="list-style-type: none"> Identify community capacity and possible participants/leaders Collect existing data and documents: <ul style="list-style-type: none"> Economic information Existing tourist information (fliers, magazines, etc.) and wayfinding signage Recent planning or improvement grants received Community master plan Zoning maps Capital improvement plan Parks and recreation plan Regional plan(s) Land use data 	<ul style="list-style-type: none"> Collect marina statistics (boats berthed or launched, slip demand, etc.): <ul style="list-style-type: none"> Compile three years of harbor financial summaries Compile three years of harbor logs Complete the Clean Marina self-assessment checklist Determine water level variances Assess local sediment dynamics 	<ul style="list-style-type: none"> Conduct a facilitated community visioning meeting Initiate a Michigan Economic Development Corporation (MEDC) community development program Watch and Read resources from EGLE – Michigan's Resilient Coast Program Complete Land Policy Institute (LPI) Placemaking Assessment Tool Engage in local, county, and regional planning efforts 	<ul style="list-style-type: none"> Complete expense vs. income balance sheet Identify harbor marketing opportunities Evaluate value capture options: <ul style="list-style-type: none"> Marine investment fund Water resource tax increment financing (TIF) Fee structures for public facilities Public/private partnerships Crowdfunding Michigan - Invest on Main Street Review grant funding opportunities and requirements 	<ul style="list-style-type: none"> Form implementation team and identify task leaders Develop or update existing plans with focus on the waterfront <ul style="list-style-type: none"> Community master plan Five-year recreation plan Waterfront operations and maintenance plan Zoning and ordinance Capital improvement plan Emergency response plan
RECOMMENDED	<ul style="list-style-type: none"> Collect existing data and documents: <ul style="list-style-type: none"> Organizational/leadership charts of the community Employment and related census data Aerial photos, maps, and GIS User feedback and surveys Great Lakes Climate and Demographic Atlas FEMA Resilience Analysis and Planning Tool (RAPT) 	<ul style="list-style-type: none"> Collect existing data and documents: <ul style="list-style-type: none"> USACE jurisdiction and federal dredging USACE oblique waterfront photos Visit the USACE Great Lakes Dredging Team website Complete <i>Nature-Based Solutions for Coastal Hazards – the Basics training module</i> Track <i>Great Lakes Region: Quarterly Climate Impacts and Outlook</i> reports Read <i>Clean Marina Program Dredging Best Practices</i> Read <i>Clean Marina Program Infrastructure Best Practices</i> 	<ul style="list-style-type: none"> Determine your community's waterfront and downtown Walk Score Review <i>Michigan Coastal Community Working Waterfronts</i> resources Review <i>Sustainable Working Waterfronts Toolkit</i> Review <i>Smart Growth for Coastal and Waterfront Communities</i> report Prioritize natural solutions Conduct a National Charrette Institute (NCI) Charrette Review American Planning Association - <i>Michigan Chapter Master Plans - Resilient Waterfronts</i> Read <i>Michigan's Statewide Comprehensive Outdoor Recreation Plan</i> Explore Michigan Catalyst Communities (MCC) Resources and Program Review <i>Creating Equitable, Healthy, and Sustainable Communities: Strategies for Advancing Smart Growth, Environmental Justice, and Equitable Development</i> 	<ul style="list-style-type: none"> Review MIplace Resources section Review <i>Sustainable Working Waterfronts Toolkit</i> — Financing and Economics sections 	<ul style="list-style-type: none"> Apply to applicable grant programs Pursue Redevelopment Ready Communities certification Pursue Clean Marina certification Create a dynamic water level plan Engage with the Michigan Green Communities network and consider completing the Green Communities Challenge Review resources and contacts at Michigan EGLE Shoreline Protection / Michigan Natural Shoreline Partnership Consider engaging with The National Park Service – Rivers, Trails, and Conservation Assistance program (NPS-RTCA)
ADDITIONAL RESOURCES	<ul style="list-style-type: none"> Review Additional Resources in Section 5.2.1 Inventory - Community 	<ul style="list-style-type: none"> Review Additional Resources in Section 5.2.2 Inventory - Waterfront 	<ul style="list-style-type: none"> Review Additional Resources in Section 5.2.3 Visioning/Planning 	<ul style="list-style-type: none"> Review Additional Resources in Section 5.2.4 Value Capture 	<ul style="list-style-type: none"> Review Additional Resources in Section 5.2.5 Implementation

4.2.1 INVENTORY COMMUNITY



Highly Recommended

- Identify community capacity and possible participants/leaders
- Collect existing data and documents:
 - Economic information
 - Existing tourist information (fliers, magazines, etc.) and wayfinding signage
 - Recent planning or improvement grants received
 - Community master plan
 - Zoning maps
 - Capital improvement plan
 - Parks and recreation plan
 - Regional plan(s)
 - Land use data

Recommended

- Collect additional data and documents
 - Organizational/Leadership charts
 - Employment and Census data
 - Aerial photos, maps, GIS data
 - User surveys and feedback
 - *Great Lakes Climate and Demographic Atlas*
 - *FEMA Resilience Analysis Planning Tool*

4.2.2 INVENTORY WATERFRONT



Highly Recommended

- Collect marina statistics (boats berthed or launched, slip demand, etc.):
- Compile three years of harbor financial summaries
- Compile three years of harbor logs
- Complete the Clean Marina self-assessment checklist
- Determine water level variances
- Assess local sediment dynamics

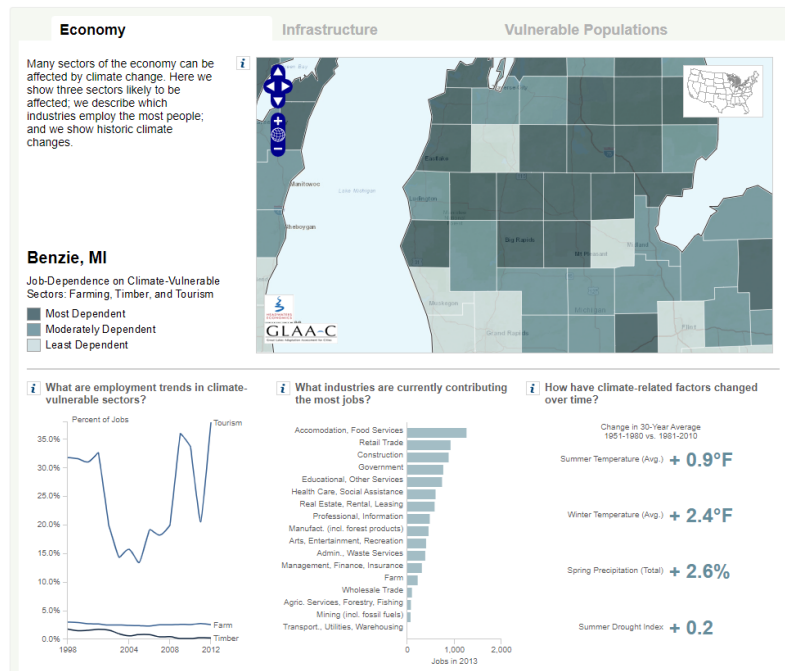
Recommended

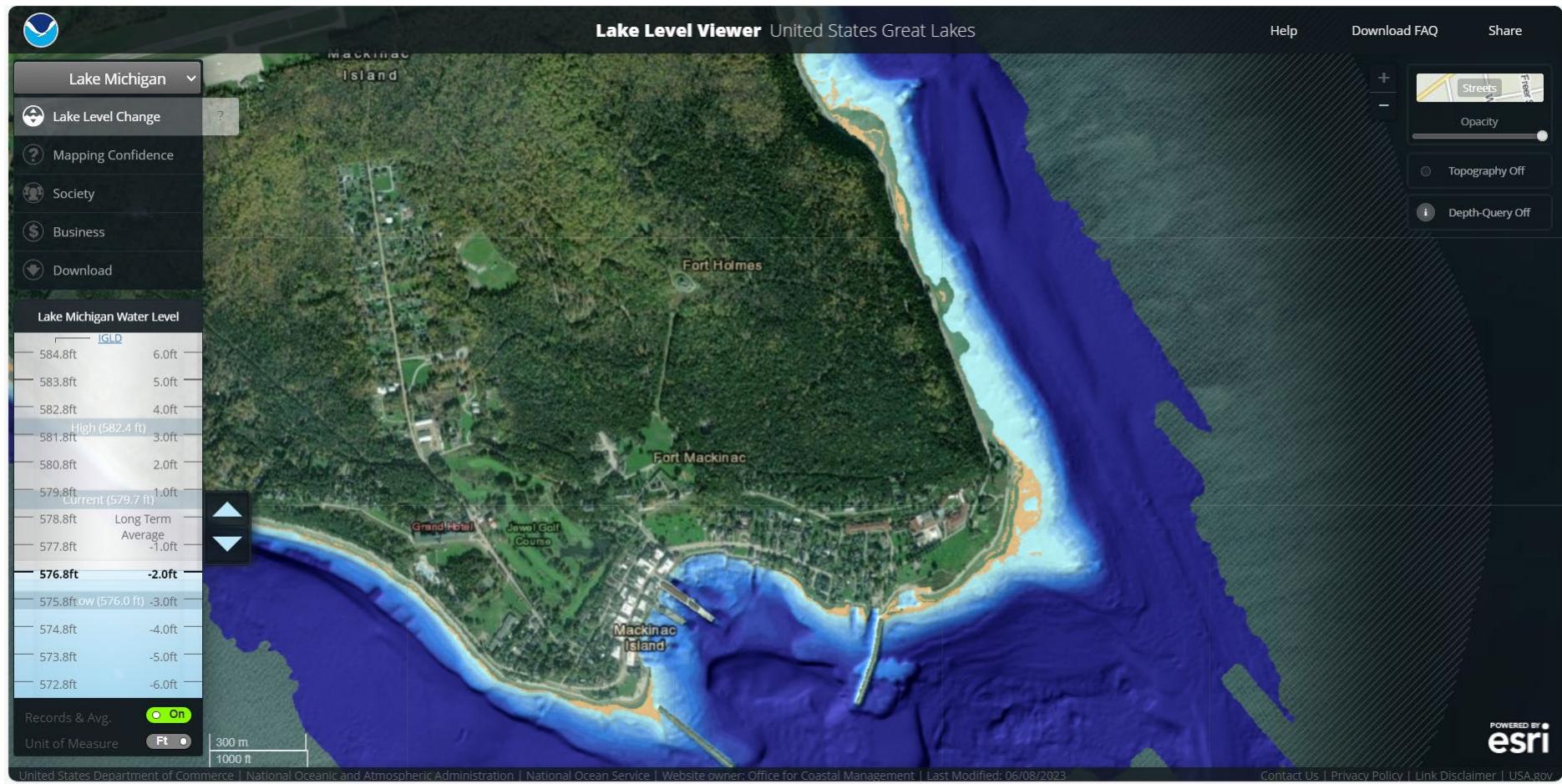
- Collect existing data and documents:
 - USACE jurisdiction and federal dredging
 - USACE oblique waterfront photos
 - Visit the USACE Great Lakes Dredging Team website
- Complete *Nature-Based Solutions for Coastal Hazards – the Basics* training module
- Track *Great Lakes Region: Quarterly Climate Impacts and Outlook* reports
- Read *Clean Marina Program Dredging Best Practices*
- Read *Clean Marina Program Infrastructure Best Practices*

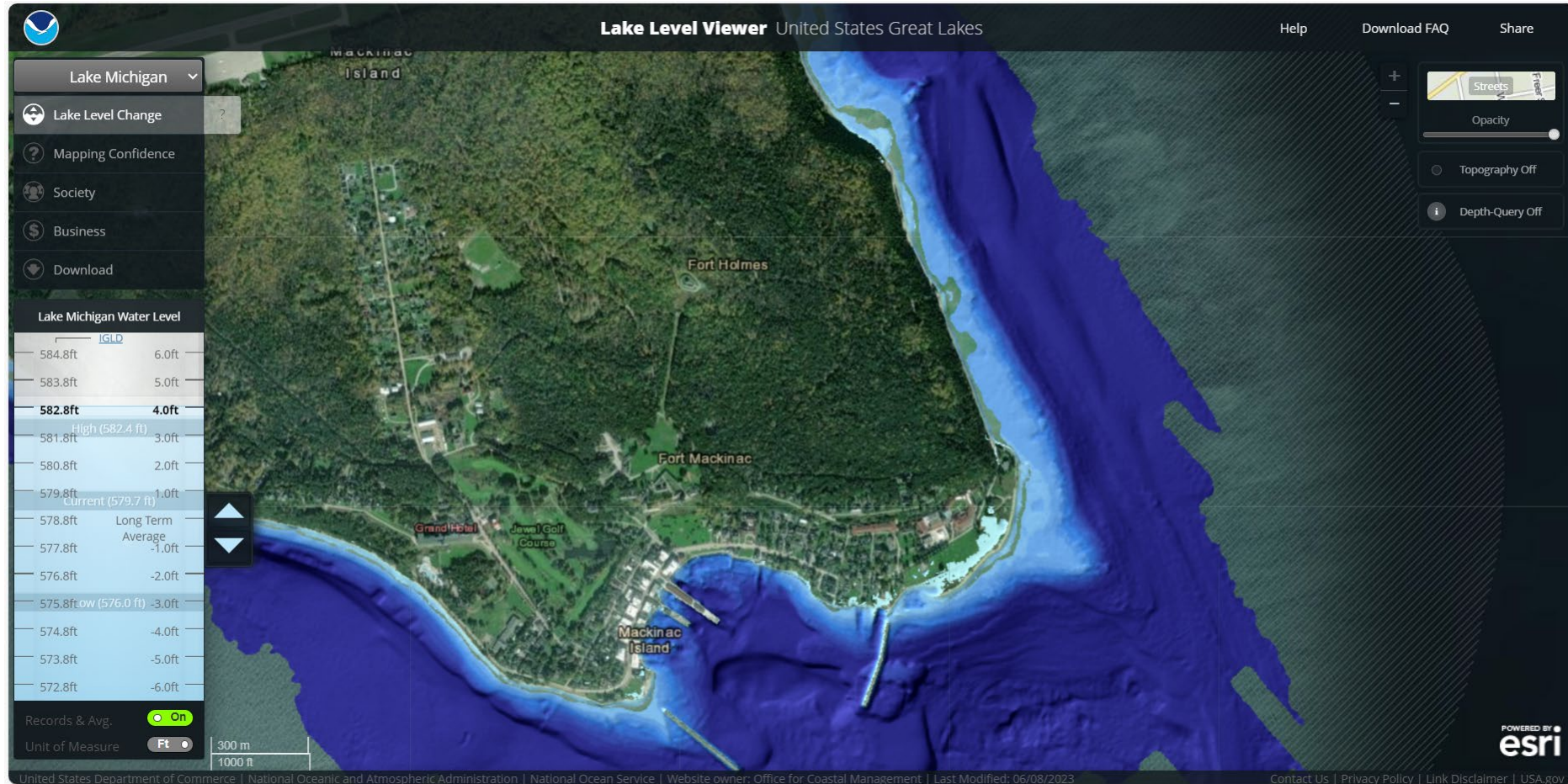
Tools and Resources

Inventory

- Great Lakes Climate and Demographic Atlas
 - <https://graham.umich.edu/glaac/great-lakes-atlas>
- Lake Level Viewer
 - <https://coast.noaa.gov/llv/#/lake/michigan>

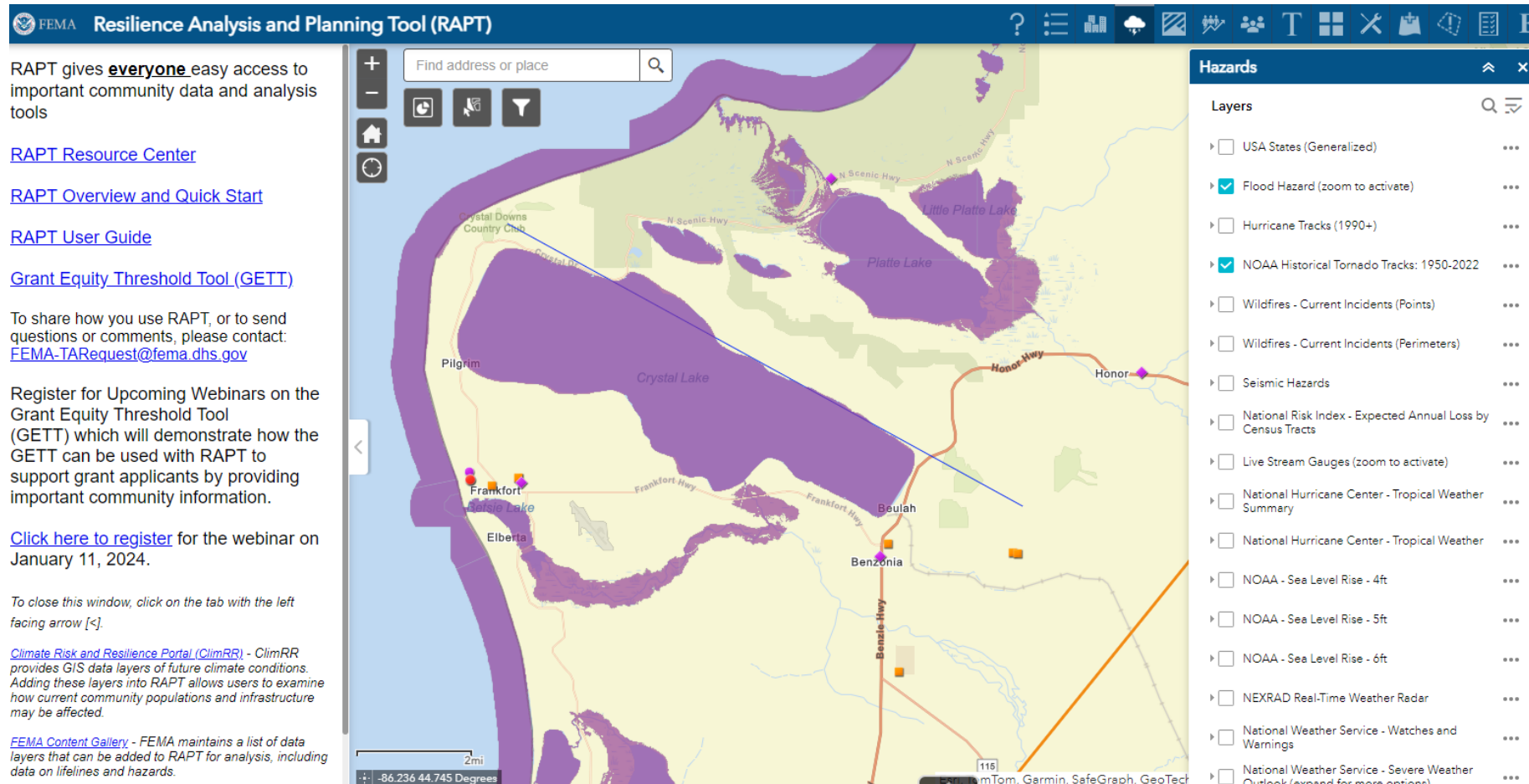






Tools and Resources Inventory

- FEMA Resilience Analysis Planning Tool [RAPT](#)



FEMA Resilience Analysis Planning Tool (RAPT)

RAPT gives **everyone** easy access to important community data and analysis tools

[RAPT Resource Center](#)

[RAPT Overview and Quick Start](#)

[RAPT User Guide](#)

[Grant Equity Threshold Tool \(GETT\)](#)

To share how you use RAPT, or to send questions or comments, please contact:
FEMA-TARequest@fema.dhs.gov

Register for Upcoming Webinars on the Grant Equity Threshold Tool (GETT) which will demonstrate how the GETT can be used with RAPT to support grant applicants by providing important community information.

[Click here to register](#) for the webinar on January 11, 2024.

To close this window, click on the tab with the left facing arrow [←].

[Climate Risk and Resilience Portal \(ClimRR\)](#) - ClimRR provides GIS data layers of future climate conditions. Adding these layers into RAPT allows users to examine how current community populations and infrastructure may be affected.

[FEMA Content Gallery](#) - FEMA maintains a list of data layers that can be added to RAPT for analysis, including data on lifelines and hazards.

Hazards

Layers

- ☐ USA States (Generalized) ...
- ☒ Flood Hazard (zoom to activate) ...
- ☐ Hurricane Tracks (1990+) ...
- ☒ NOAA Historical Tornado Tracks: 1950-2022 ...
- ☐ Wildfires - Current Incidents (Points) ...
- ☐ Wildfires - Current Incidents (Perimeters) ...
- ☐ Seismic Hazards ...
- ☐ National Risk Index - Expected Annual Loss by Census Tracts ...
- ☐ Live Stream Gauges (zoom to activate) ...
- ☐ National Hurricane Center - Tropical Weather Summary ...
- ☐ National Hurricane Center - Tropical Weather ...
- ☐ NOAA - Sea Level Rise - 4ft ...
- ☐ NOAA - Sea Level Rise - 5ft ...
- ☐ NOAA - Sea Level Rise - 6ft ...
- ☐ NEXRAD Real-Time Weather Radar ...
- ☐ National Weather Service - Watches and Warnings ...
- ☐ National Weather Service - Severe Weather Outlook (expand for more options) ...

Tools and Resources

Inventory

- Michigan's Great Lakes Shorelines Throughout Time
 - [Shoreline](#)

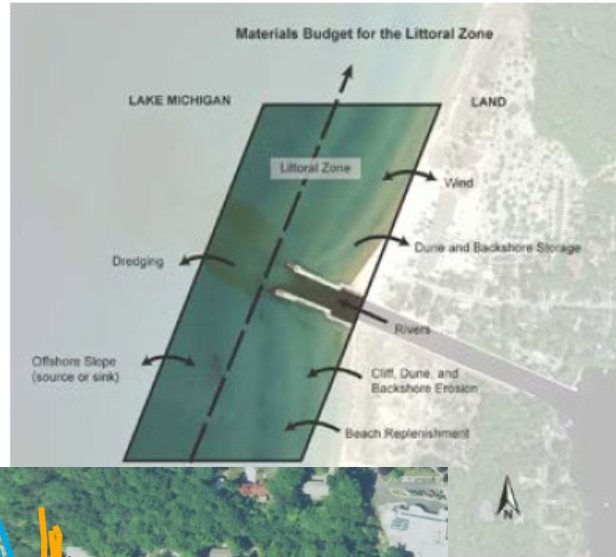


Figure 2: Sediment motion in Great Lakes.

ArcGIS WebMap



October 19, 2023

2015 Oblique Coastal Photos

Long Term Rate-of-Change - meters/year - (1938-2020)

-1 To -0.5 m/yr (Erosion)

-0.5 To -0.25 m/yr (Erosion)

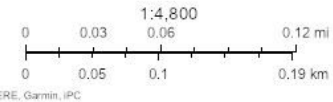
Coastlines 2020 (Water Elev = 582.3')

bluff

water

Coastlines 1938 (Water Elev = 578.5')

water



ArcGIS WebApp Builder

[Michigan's Great Lakes Coast Through Time \(mtu.edu\)](https://mtu.edu)



4.2.3

VISIONING/ PLANNING



Highly Recommended

- Conduct a Facilitated Community Visioning Meeting
- Initiate a MEDC community development program
- Complete the Land Policy Institute Placemaking Assessment Tool
- Watch and Read resources from Michigan's Resilient Coast Program (EGLE)
- Engage in Local, County, and Regional Planning Efforts

Recommended

- Determine Community Walk Score
- Review *Michigan Coastal Community Working Waterfronts* Resources
- Review *Sustainable Working Waterfronts Toolkit*
- Review *Smart Growth for Coastal and Waterfront Communities* report
- Prioritize Resilient Solutions & Engineering with Nature
- Conduct a National Charette Institute (NCI) charette
- Review American Planning Association *Michigan Chapter Master Plans - Resilient Waterfronts*
- Review *Michigan's Statewide Comprehensive Outdoor Recreation Plan*
- Explore *Michigan Catalyst Communities (MCC)* Resources and Program
- Review *Creating Equitable, Healthy, and Sustainable Communities: Strategies for Advancing Smart Growth Environmental Justice, and Equitable Development*

Tools and Resources

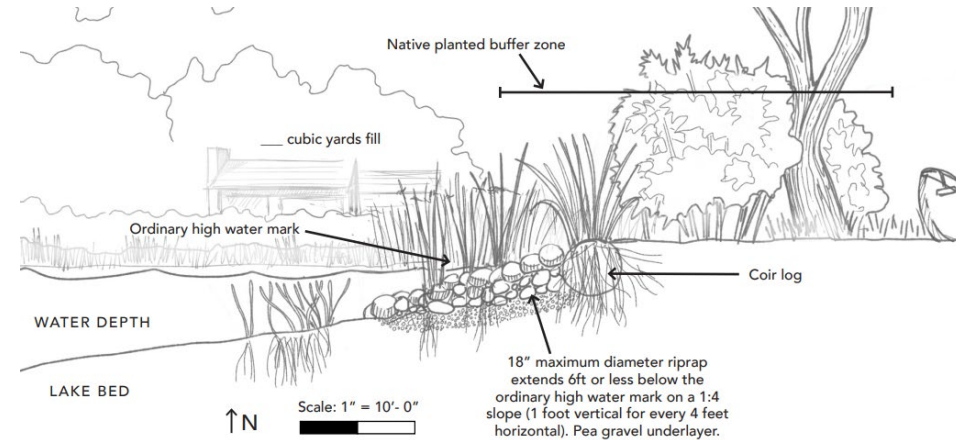
Visioning/Planning

- Placemaking Assessment Tool
 - [Land Policy Institute](#)
- Regional Collaboration
 - [Michigan Association of Regions Home \(miregions.com\)](#)
 - <https://www.networknorthwest.org/community/recreation/>
- Michigan Natural Shorelines (EGLE)
 - <https://www.michigan.gov/egle/about/organization/water-resources/inland-lakes-and-streams/shoreline-protection>

The Michigan Association of Regions (MAR) is committed to the advancement and advocacy of Michigan's planning regions as a means to support sustainable, collaborative communities and a strong state.



Bioengineering project right after installation. Photo courtesy of Michigan Natural Shoreline Partnership.



EGLE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

800-662-9278 | Michigan.gov/EGLE

4.2.4 VALUE CAPTURE



Highly Recommended

- Expense vs. Income Balance Sheet
- Marketing Strategy
- Evaluate Funding Sources:
 - Marine investment fund
 - Water resource tax increment financing
 - Fee structures for public facilities
 - Public/private partnerships
 - Crowdfunding Michigan – Invest on Main Street
- Grant Opportunities and Requirements

Recommended

- Review MIPlace Resources
- Review *Sustainable Working Waterfronts Toolkit*

Tools and Resources

Value Capture

- CrowdFunding Michigan
 - <https://www.crowdfundingmi.com/get-funded/>
- Marina Life Manager
 - <https://marinalifemanager.com/>
- SSH Funding Table
 - [Funding Opportunities](#)



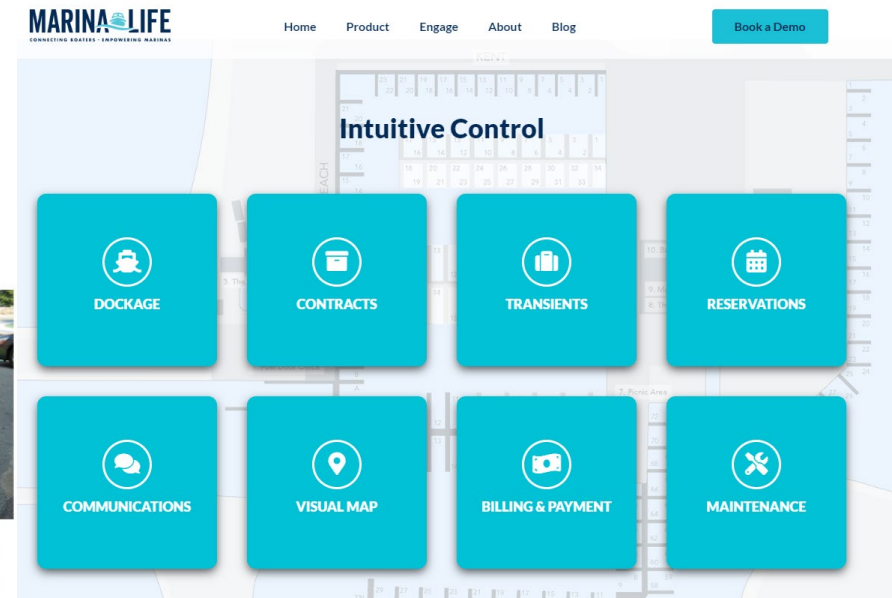
Public Space & Community Projects: Crowdfunding & Crowdgranting

The Public Spaces Community Places (PSCP) program is a partnership between the League, MEDC, and crowdfunding platform **Patronicity**. The goal of the program is to fund public space projects like plazas, greenspace, access to public amenities, farmers markets, and other place-based initiatives. Qualifying communities can raise local money toward the project and get a matching grant from MEDC up to \$50,000. In just over two years, PSCP has helped fund more than 100 Michigan projects and raised more than \$3 million. Download a copy of the [application guide here](#) and learn more about the opportunity on **Patronicity's website**.

Case Study: Ironwood Art Park



A lot had been sitting vacant for years in downtown Ironwood. Through a civic engagement process, residents identified a need for a public gathering space and a desire for more local art, so it didn't take long for the city to connect the dots. Ironwood convened a leadership committee composed of municipal officials, the Downtown Development Authority, an arts nonprofit, and local artists to create a plan and funding strategy for the future art park. The committee worked with Patronicity to launch a PSCP crowdgranting campaign and raised more than \$15,000 locally and received a match from MEDC and MSHDA. Find out how they did it [here](#).



4.2.5 IMPLEMENTATION



Highly Recommended

- Form Implementation Team and Identify Task Leaders
- Develop / update plans with a focus on the waterfront:
 - Community master plan
 - 5-year recreation plan
 - Waterfront operations / maintenance plan
 - Zoning and ordinance
 - Capital improvement plan
 - Emergency response plan

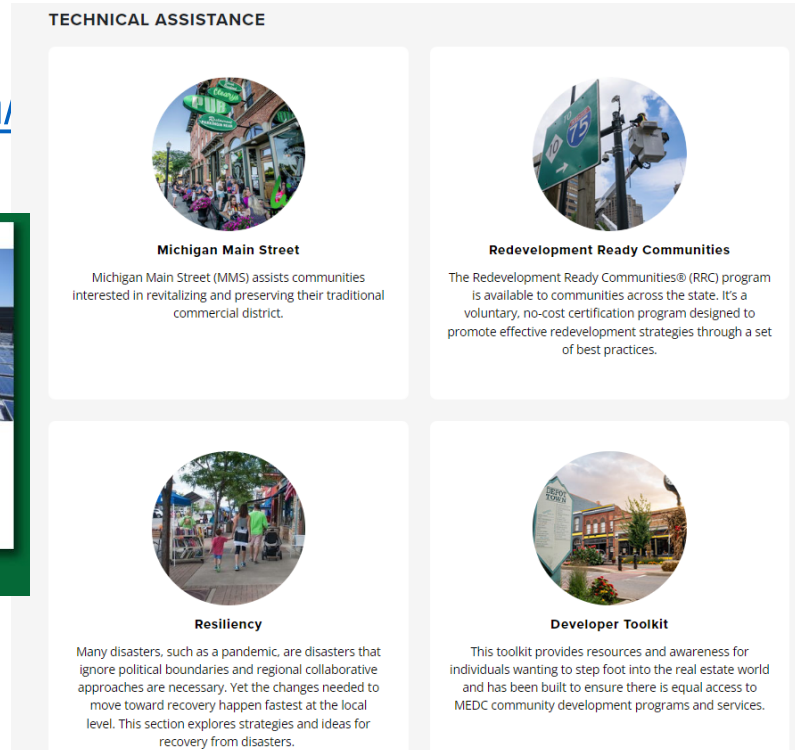
Recommended

- Apply for related grant programs
- Redevelopment Ready Certification
- Clean Marina Certification
- Dynamic Water Level Evaluation
- Engage with Michigan Green Communities network/ challenge
- Review resources and contacts at Michigan EGLE Natural Shoreline Partnership
- Consider engaging with The National Park Service – Rivers, Trails, and Conservation Assistance program (NPS-RTCA)

Tools and Resources

Implementation

- MEDC Community Building Programs
 - <https://www.miplace.org/>
- Michigan Green Communities
 - <https://migreencommunities.com/>



Project Website

Presentations, Project Resources, Social Media

ArcGIS StoryMap

sustainable-small-harbors.org

Sustainable Small Harbors



The Visioning Process



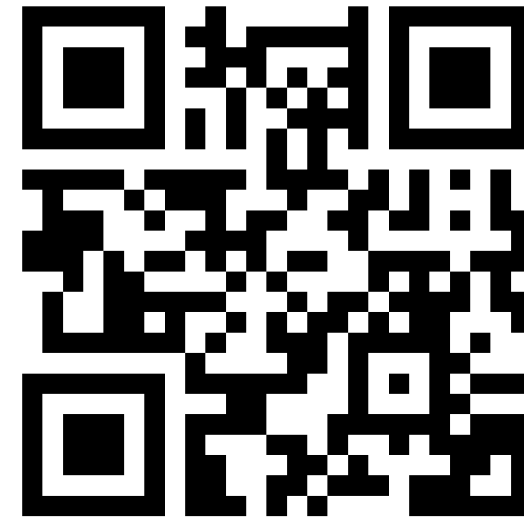
Tools and Tactics Guidebook



Communities



Contacts and Partners



Rogers City – Case Study

- MEDC Redevelopment Readiness Community – certification (2021)
- MEDC Main Street program – Select Level (2021)
- Dedicated City Manager and Harbormaster positions
- Hydraulic Sling Load Trailer
- Increased from 8 to 60 boats for winter storage
- Increased Boater Amenities
- Marina Redesign and Plans
- Huron Pines Collaboration



Au Gres – Case Study

- Riverside Park Acquired
 - Refurbished Existing Infrastructure
 - Fish Cleaning Station
 - Splash Pad and Playscape
 - Kayak Launch
 - Barrier-free Fishing Pier
- Campground
 - Increased from 4 to 35 seasonal campers
 - Added 6 camping cabins
 - Need and plans for expansion
- Lake Huron Forever Community
 - Huron Pines Collaboration
 - First Community to take the pledge
 - Rain Garden and 2 Bioswales built



Project Website

Presentations, Project Resources, and Social Media
sustainablesmallharbors.org

Sustainable Small Harbors



The Visioning Process



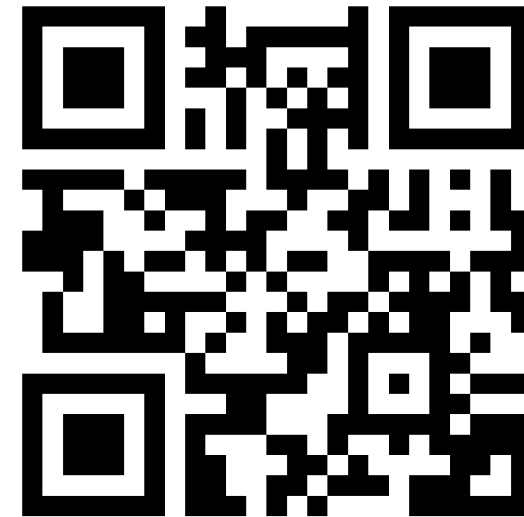
Tools and Tactics Guidebook



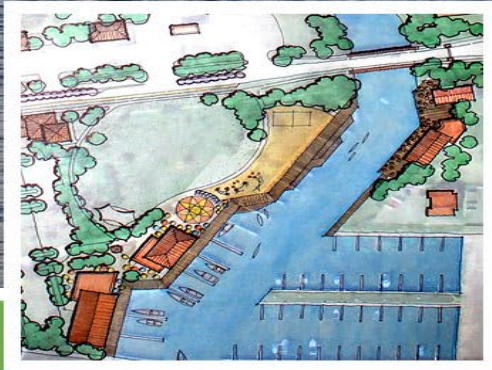
Communities



Contacts and Partners



SUSTAINABLE SMALL HARBORS



Q&A

QUESTIONS?

Upcoming Webinars

January 26, 11-12 pm

Community Energy Management Program Request for Proposal and Application Overview Webinar

February 13th and 14th

Virtual Materials Management Conference— Registration is \$20 and includes access to recordings and Whova networking ap

February 21, 11-12 pm

Climate and Health Adaptation Planning: A Health in All Policies Approach Webinar 2