

City of Frankfort Coastal Resiliency Assessment and Chapter



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Resilient Michigan Collaborative project

Funding Provided by

Michigan Coastal Management Program



www.Michigan.gov/ResilientCoast

- Study and analyze the potential coastal hazards along the Great Lakes
- Engage citizens, public officials and community stakeholders
- Help inform local land-use policy and future master planning efforts
- Create hazard-ready coastal communities



LIAA serves the planning, technology and media needs of local governments and other nonprofits in Michigan to build local capacities and increase community resilience.

Coastal Community Resilience Matching Grants



www.ResilientMichigan.org

Guide communities through a sustainability self-assessment tool to develop tailored recommendations for master plan amendments, a master plan chapter, and/or zoning amendments based on community needs.

Deliverables

- Research and mapping
- Community vulnerability assessments, flooding and heat
- Work sessions and public meetings
- Local SEV parcel scenario planning data tables
- Coastal Resiliency Master Plan Chapter



What is Community Resilience?

- The ability of a community to anticipate, accommodate and positively adapt to or thrive amidst changing climate conditions or hazard events and enhance quality of life, reliable systems, economic vitality, and conservation of resources for present and future generations.

Urban Sustainability Directors Network

- *The sustained ability of a community to understand and use available resources to respond to, withstand, and recover from adverse situations.*
- Help address “wicked” problems that defy local control, such as climate change and global economic challenges

What is Coastal Community Resilience?

Responding to:

1. **Shocks**. Shocks are typically considered single-event disasters, such as a severe storm and flooding (impacts associated with climate change)

Metro Detroit – August 2014



Houghton – June 2018



Photo Credit: Sonya Lampre
Detroit Free Press

2. **Stresses**. Stresses are factors that pressure a community on a daily or reoccurring basis, such as development, fluctuating lake levels and climate change

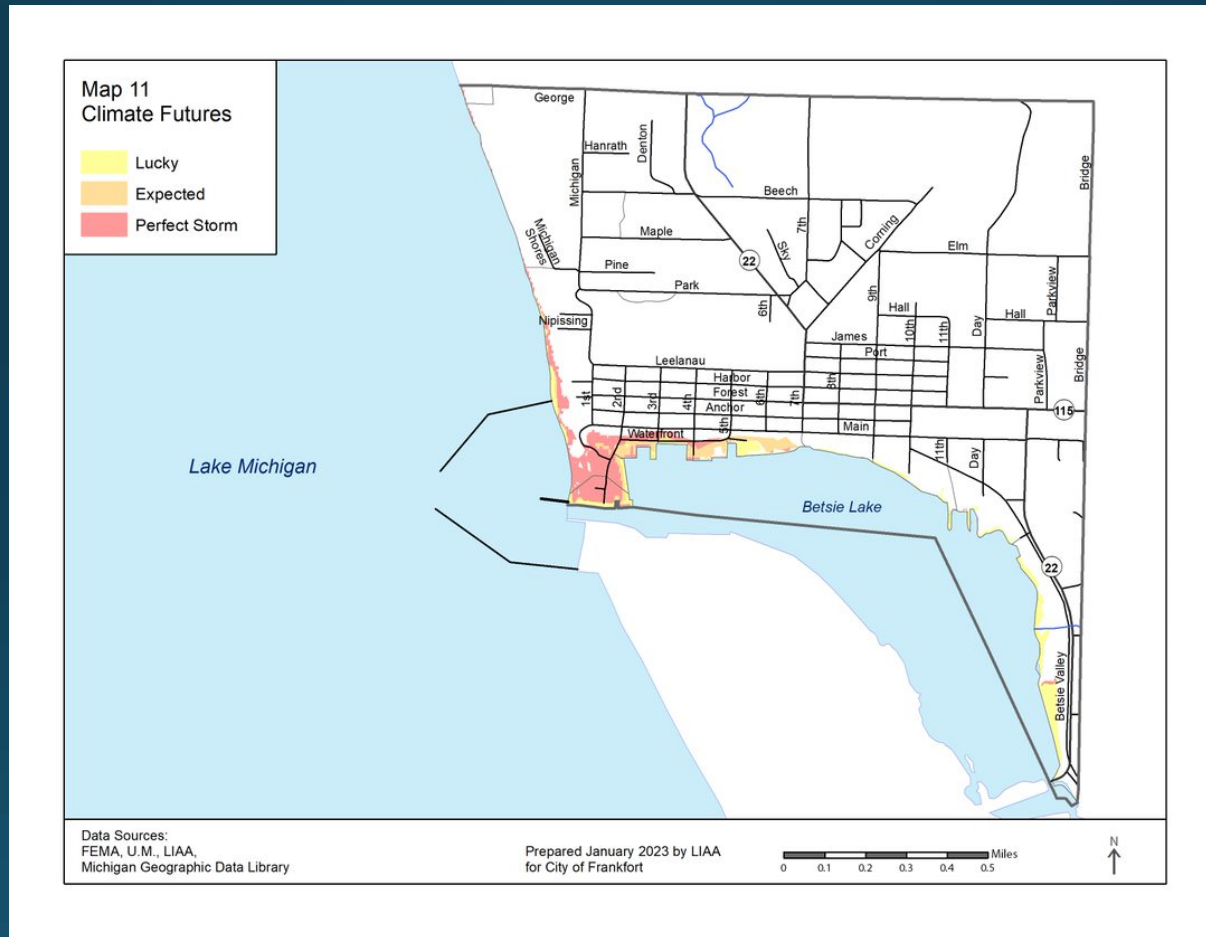


RESILIENT CITY OF FRANKFORT COASTAL ASSESSMENT



Task 1: Data Mapping

Mapping Coastal Hazard Scenarios and Community Vulnerability



Vulnerability = Exposure + Sensitivity

Task 2: Conduct Community Assessments

- Community Sustainability Self-Assessment Tool analysis of current coastal policies in

- 2022 Master plan
- Zoning ordinance
- Hazard mitigation plan
- 2022 Rec Plan

- Requires involvement of knowledgeable local officials (Feb 3rd meeting) + Condo contact and University of Michigan zoning research for 'High Risk Erosion Overlay District'

Data gathering and mapping

Benchmark	Self-Assessment	Description
24.7 Do any plans, and especially the Hazard Mitigation Plan, describe the damage and cost of previous storms, floods or erosion?		Dollar amounts for past damages can help community members decide how risk averse they want to be going forward.
24.8 Does the community track repetitive loss properties within the National Flood Insurance Program?		A repetitive loss property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period, since 1978.
24.9 Are maps or spatial data used to predict the probable extent of future coastal hazards?		Similar to benchmark 24.7, measuring the probability of different coastal scenarios (100-year storm versus 500-year storm, for example) can help community members and decision makers decide to what extent they want to avert coastal risks.
24.10 Do community plans estimate the potential financial losses that may result from lake-level rise?		Along with understanding the sites most at risk of taking on damages, the community also benefits from knowing the potential costs of future damages so they can plan accordingly.
24.11 Does the municipality share the findings from risk and vulnerability assessments with planning staff, public works officials, transportation planners, emergency management, elected officials and the general public?		It is important for each municipal department to be on the same page, especially regarding hazard mitigation efforts. This can help increase consensus and buy-in around decision-making.
24.12 Has the community conducted a buildout analysis using current zoning to better understand the potential for development in at-risk areas?		While a full buildout is rare, communities should be aware of the potential for increased development to occur in risk prone areas. This may help inform zoning changes to improve resilience.

Y—Yes I—Yes, but should improve N—No ?—Don't know NA—Not applicable

Task 3: Community Outreach

Gather public input

- Public review of draft assessment
 - What are the current challenges the community is facing because of changes in the Great Lakes?
 - Is the community doing everything it might to address coastal community resiliency through its planning and zoning? If not, why not?
 - What changes could help it do more?

Task 4: Summary Reporting & Data Sharing

- Sustainability Assessment – identifies current resources and establishes a baseline of the current policies.
- Resiliency Master Plan Chapter – provides background and data to illustrate past climate conditions and forecasts potential future scenarios. Utilized to update current policies to better mitigate possible vulnerability.

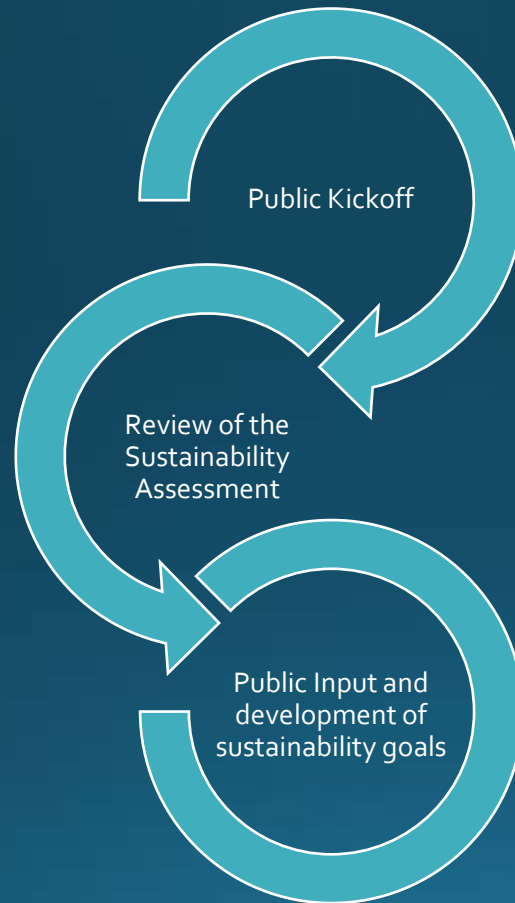


www.ResilientMichigan.org/Frankfort.asp

Planning Process

Public Input

Facilitated discussion with key stakeholders to complete the sustainability assessment



Public Kickoff

LIAA and its Coastal Resilience Team (CRT) partners discuss statewide coastal issues

Planning Commission/City Council
Presentation of assessment results. Community input helps to form goals for the coastal resilience Master Plan chapter

Sustainability Assessment Categories

- Data Gathering and Mapping
- Local Ordinances (including Zoning)
- Critical Facilities & Infrastructure
- Disaster Preparedness
- Professional Training
- Hazard Planning



Sustainability Assessment Summary:

Best Practices:

- Waterfront zoning and ownership is public parkland
- City staff and Coastal Management Committee receive professional development and training networking, courses, conferences, etc.
- Development of rain gardens, permeable surfaces and harbor
- Researching a 'High Risk Erosion Overlay District' for coastline

Opportunities:

- Develop a High-Risk Erosion District
- Coastal management plan
- Adopt Coastal Resiliency chapter into City's Master Plan
- CZM program funding for continued planning efforts

Takeaway: Shorelines Change Quickly... And Will Forever Continue to Do So

- Above the water
- On the water
- Below the water



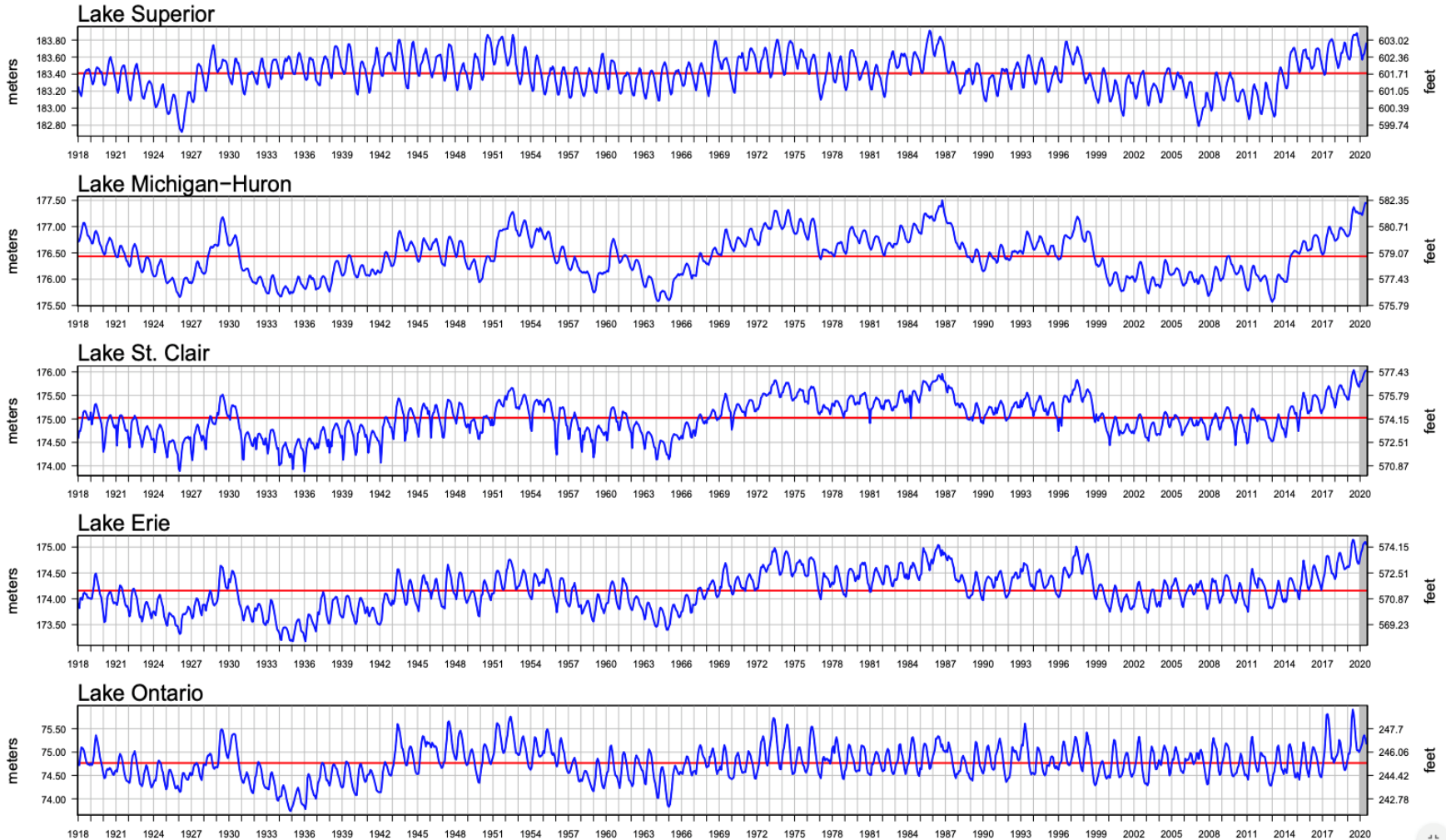
St Joseph, MI

Great Lakes Coastal Shoreline Dynamics



Great Lakes Water Levels (1918–2020)

— Monthly Mean Level — Long Term Average Annual



The monthly average levels are based on a network of water level gages located around the lakes. Elevations are referenced to the International Great Lakes Datum (1985).

Water levels have been coordinated through 2019. Values highlighted in gray are provisional.

Scientific and Legal Uncertainties

Two Ordinary High Water Marks:

1. “natural” (beach walking)
2. “elevation” (regulatory)

Glass v Goeckel (MI S Ct 2005)

“The point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic.”

“Public Trust Beach”



Scientific & Legal Uncertainties

Two Ordinary High Water Marks:

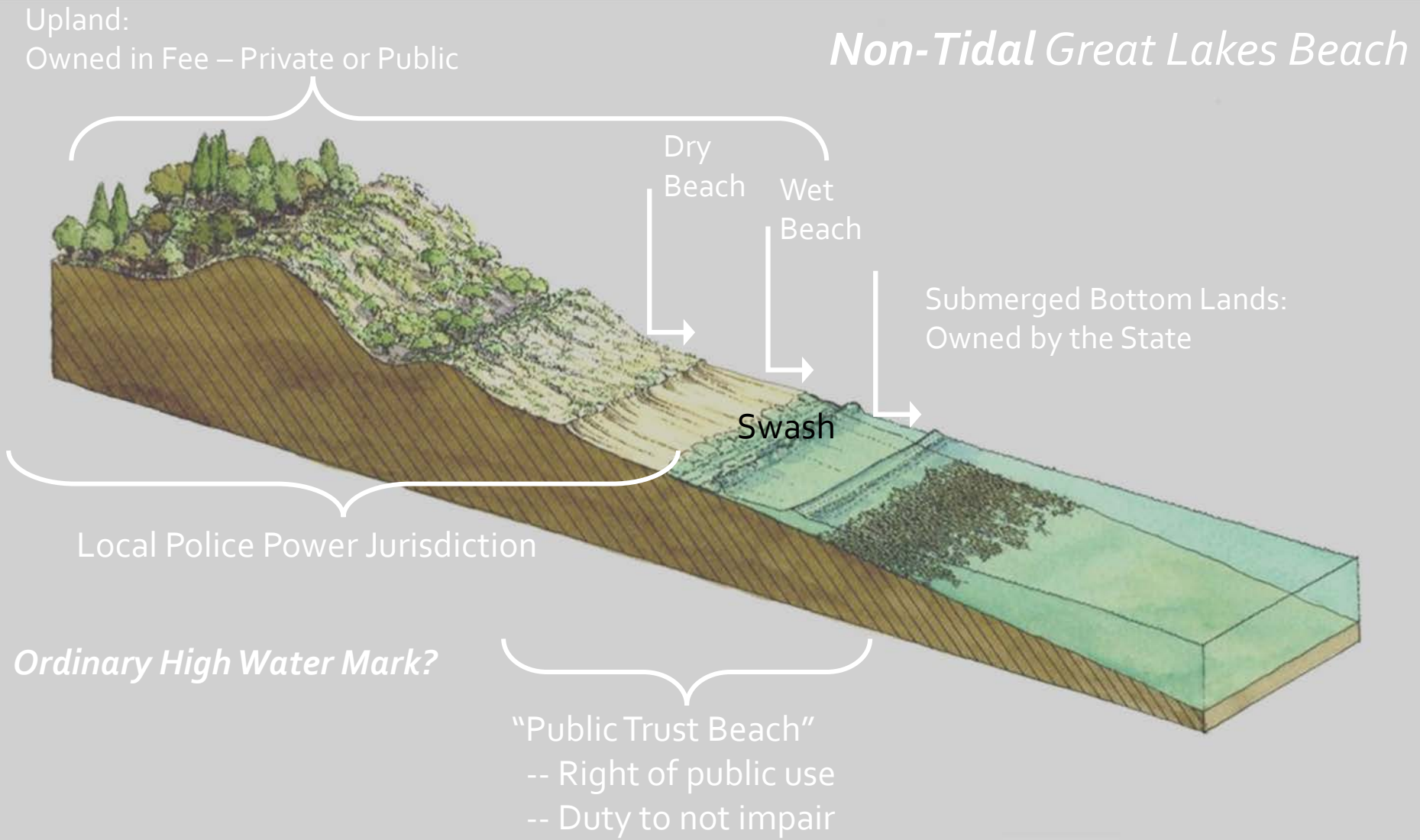
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MI GLSLA (1955)

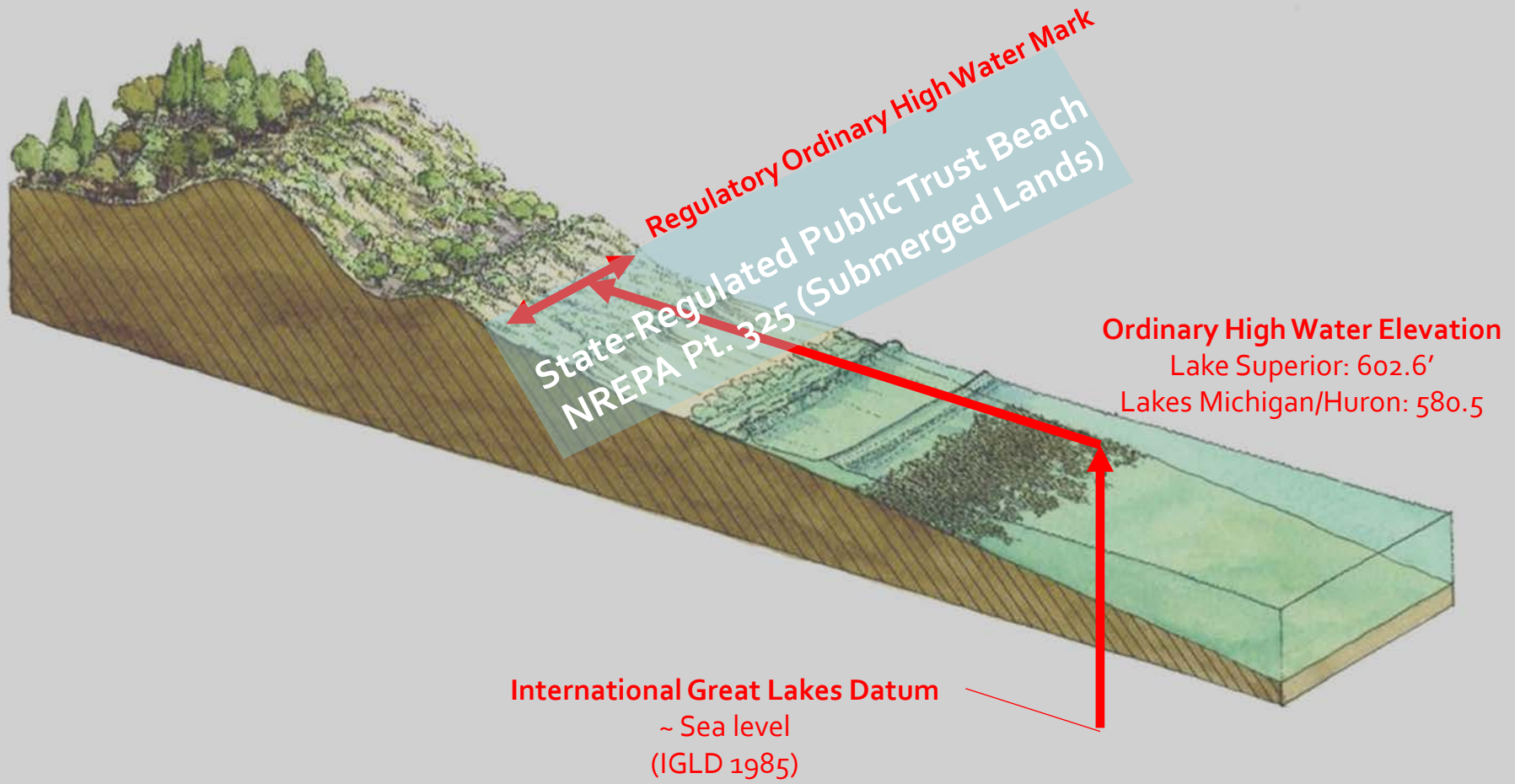
Elevation-based mark set by statute for Lake Michigan and Huron at 580.5 ft. (IGLD 1985)



Scientific + Legal Uncertainties: Drawing Lines on *Shifting* Sandy Great Lakes Beaches



Non-Tidal Great Lakes Beach



Public Input

- What are the current challenges the community is facing because of changes in the Great Lakes?
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Next Steps

- Community invited to provide public input
- LIAA provides Final Drafts to the City



Thank You!

Q&A

www.ResilientMichigan.org/Frankfort

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