

Implementing Adaptation:
Developing Land Use
Regulations and Infrastructure
Policies
to Implement
Great Lakes Shoreland Area
Management Plans

Supported through a grant from the Michigan Coastal Zone Management Program, Office of the Great Lakes, Department of Environmental Quality and the National Oceanic and Atmospheric Administration

Background

- Research team:

- Richard Norton, UM
- Guy Meadows, GLRC MTU

 TAUBMAN COLLEGE

 **Michigan Tech**

- Collaborator:

- LIAA – Harry Burkholder



- Stakeholders:

- Study localities (City of Grand Haven & Grand Haven Charter Township)
- Michigan Association of Planning



Project Focus

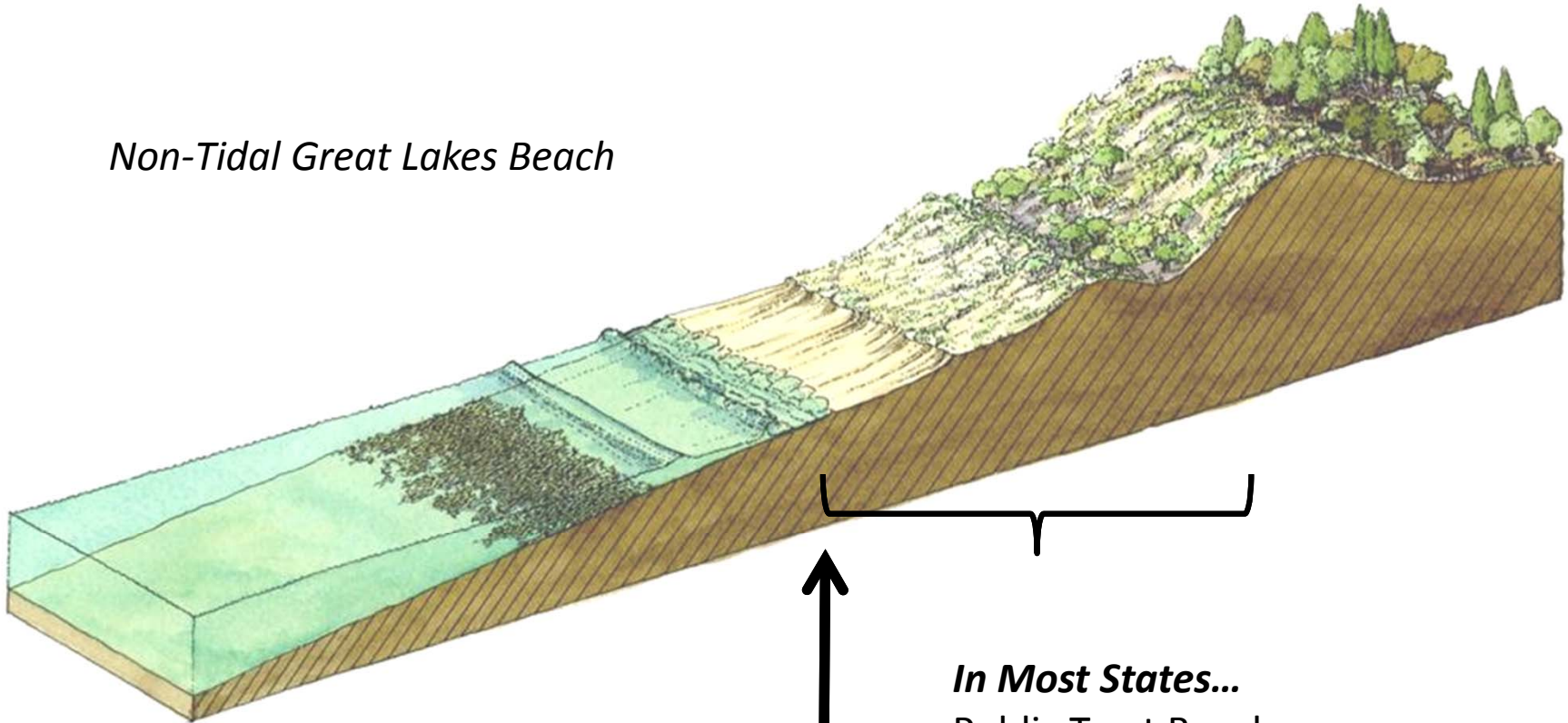
- **Impact Areas**

- Infrastructure
- Shoreline communities/economies
- Nearshore and shoreland habitat

- **Interdisciplinary topics/drivers**

- Planning / policy implementation
- Planning / land use / coastal area law
- Hazard mitigation

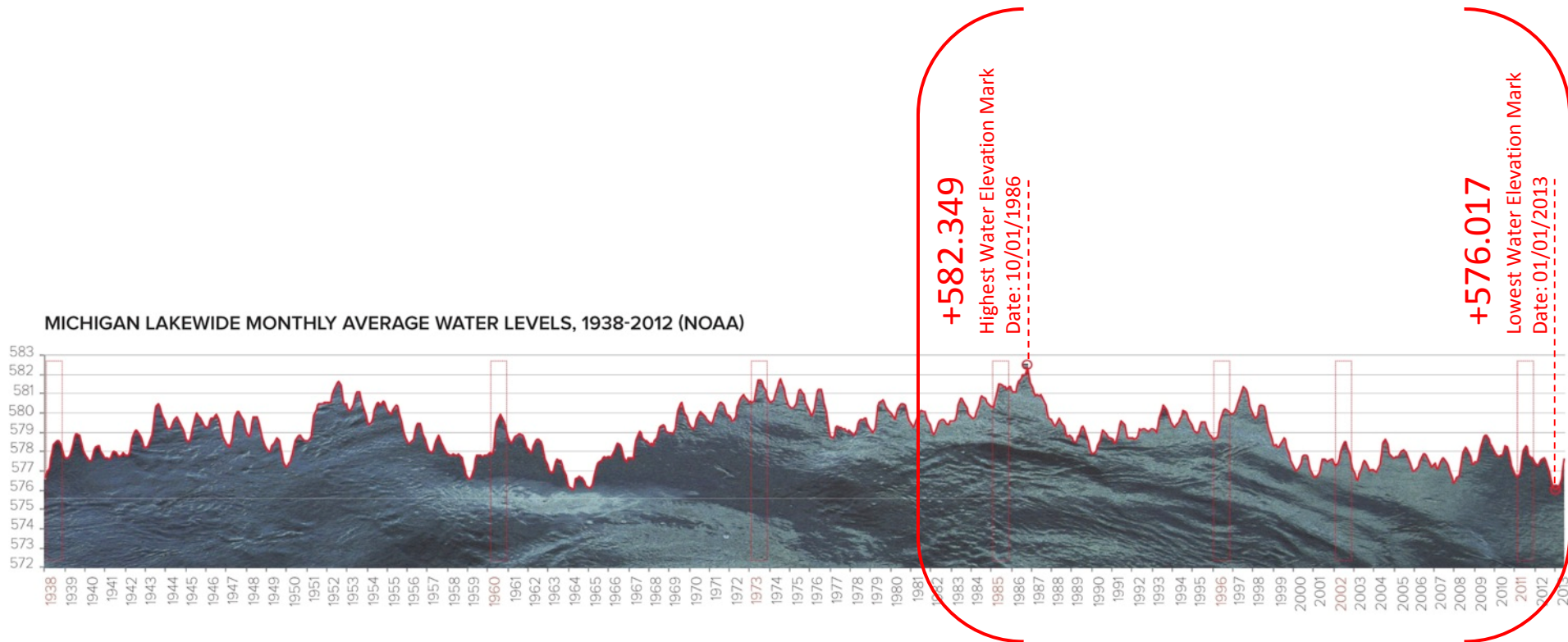
Non-Tidal Great Lakes Beach



In All States...
Submerged Land:
Always owned by the State

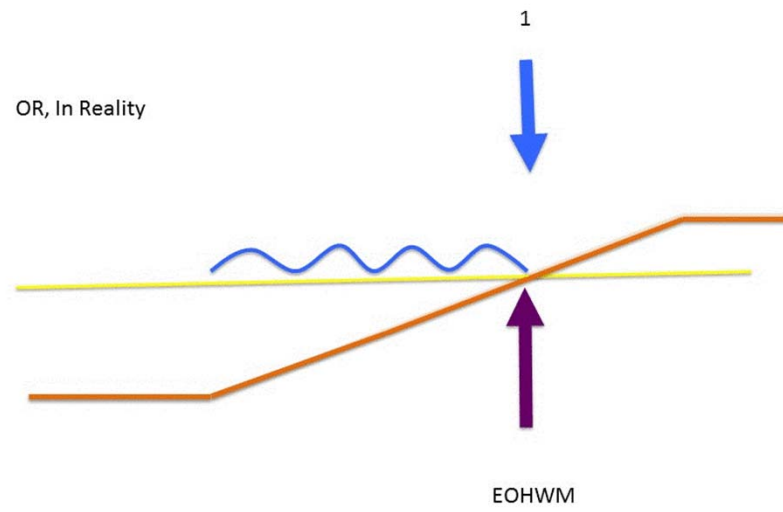
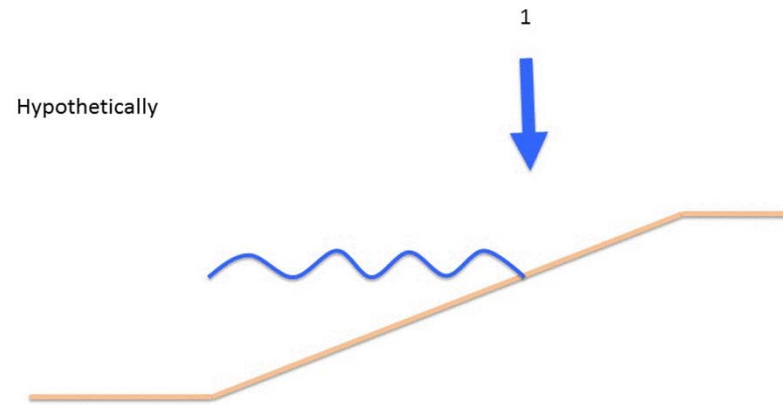
In Most States...
Public Trust Beach:
Some kind of
public trust interest
up to the
Ordinary High Water Mark
(where?)

Public Trust Doctrine



6 feet difference
between highest and lowest water levels

Great Lakes water levels in Lake Michigan



St Joseph
03

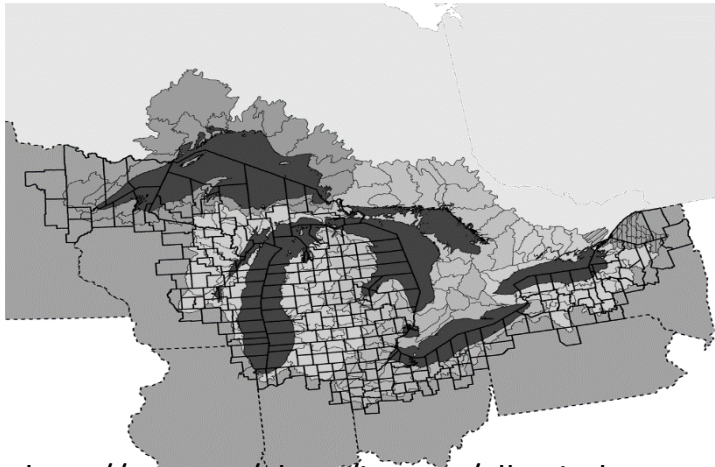


April 2012

1996
April 1985
May 1960
June 1938

**future scenario:
under past conditions**

Institutional Complications: Units of Local Government/Planning Process



<http://epa.gov/glnpo/images/glbasin-large.png>

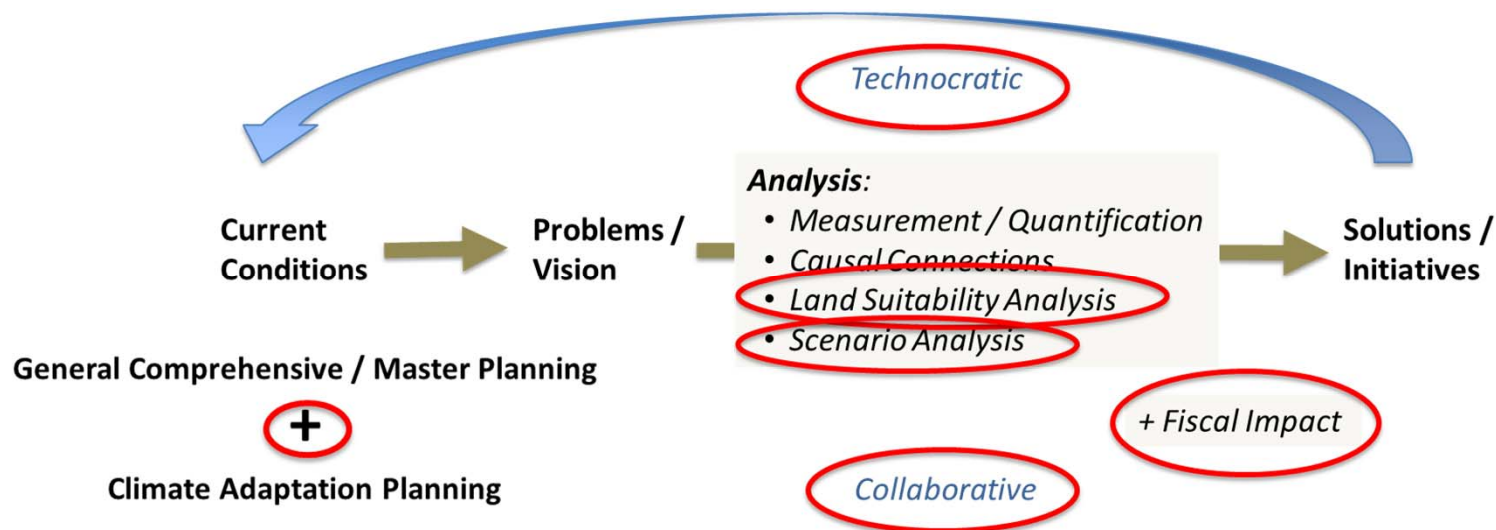
In Michigan alone:

Total:

- 83 Counties
- 1,241 Townships
- 535 Cities/Villages
- 1,859 Combined

Great Lakes:

- 329 Combined



Analysis of Options

- Potential regulatory and non-regulatory options for responding to lake level variability:
 - *Avoidance BMPs (setbacks from natural features)*
 - *Protection of natural features not included in BMPs, i.e., CDAs*
 - *Sensitive Areas Overlay/Floodplain Overlay*
 - *Performance zoning / contingent zoning (developed in conjunction with identification of high-risk zones at varying levels of rigor)*
 - *Coordination with other related policies (e.g., restrictions on infrastructure redevelopment)*
 - We're taking special note of issues that are not strictly related to coastal area management, but that local citizens and officials believe should be addressed concurrently with coastal management concerns as part of a larger regulatory/policy reform effort

Transferability

- The key issues we are addressing are all transferable to other settings around the Great Lakes, primarily through local planning and zoning efforts.
- Key constraints: Local capacity and commitment to addressing near-shore hazard avoidance, hazard mitigation, natural resource conservation.