

Resilient Michigan

Chikaming Township Coastal Resiliency Master Plan Chapter Presentation



June 15, 2022

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
- Master Plan Resilience 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

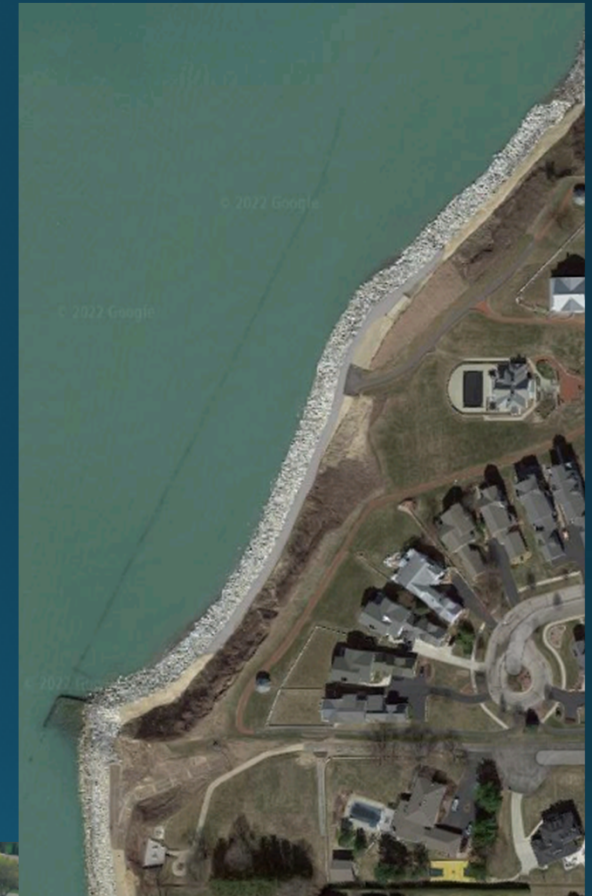
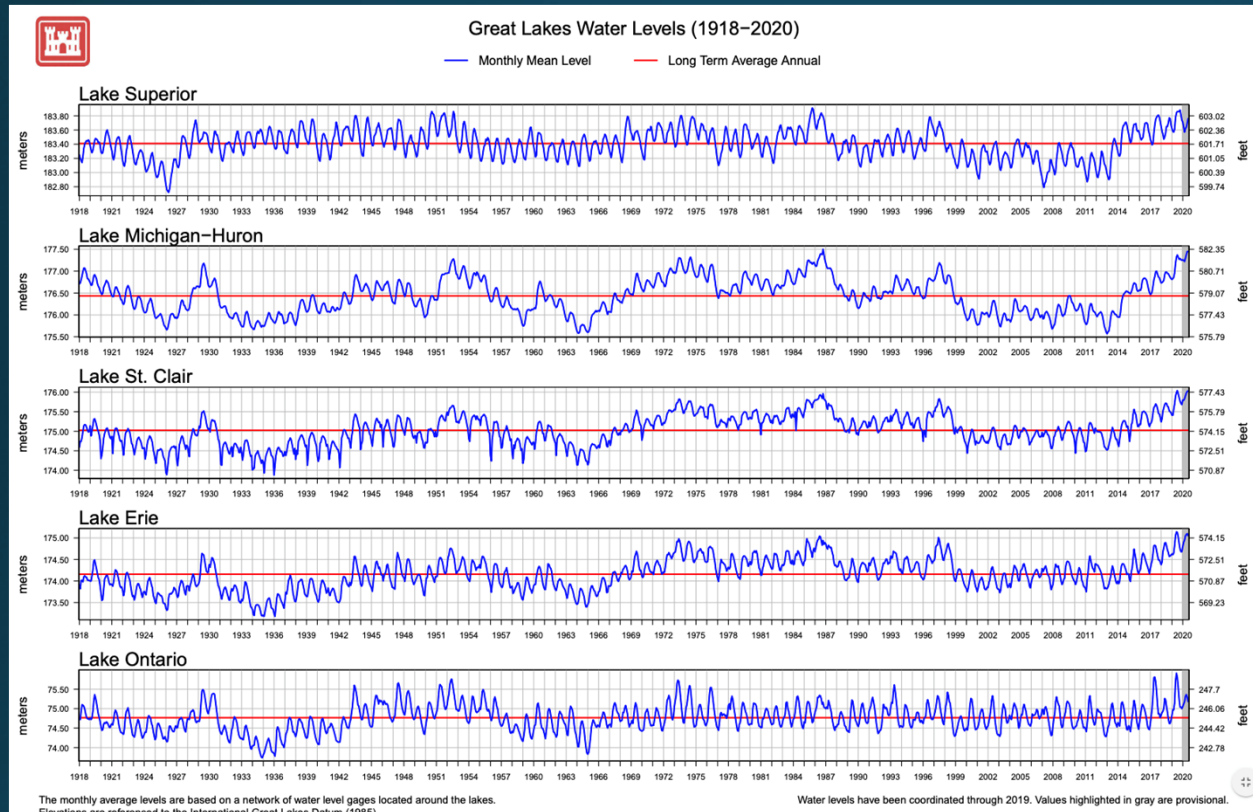


Photo Credit: Sonya Lampre
Detroit Free Press

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

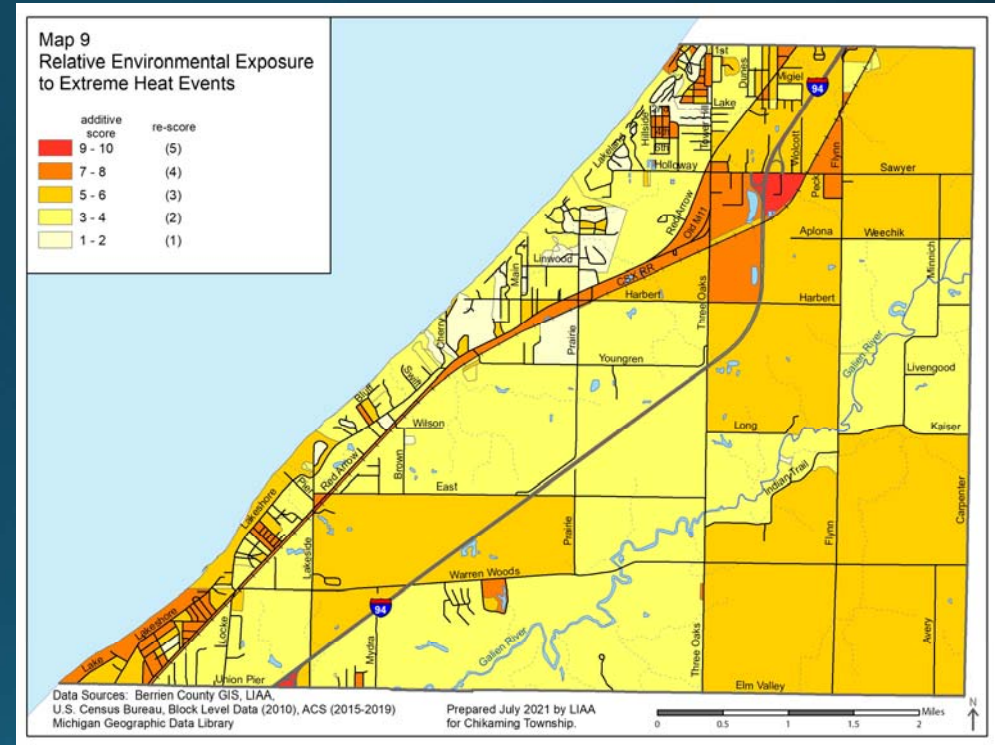
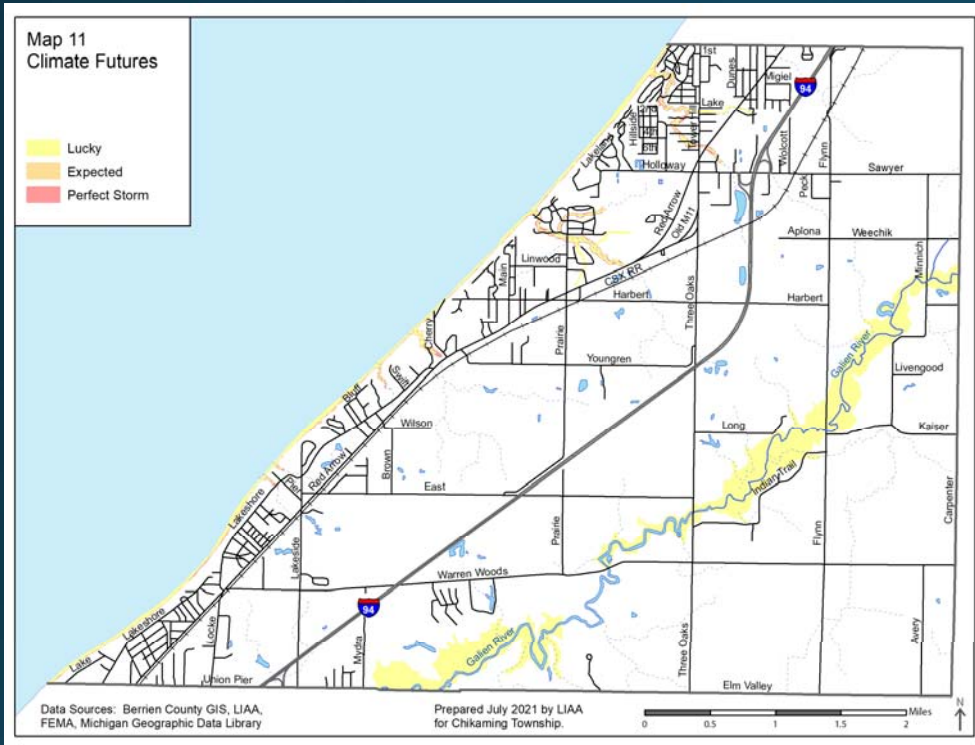


Great Lakes Coastal Shoreline Dynamics



Task 1: Vulnerability Mapping

Mapping Flooding Scenarios and Heat Vulnerability



Vulnerability = Exposure + Sensitivity

Task 2: Conduct Community Assessments

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

- Master plan
- Zoning ordinance
- Hazard mitigation plan

- Requires involvement of knowledgeable local officials

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 welcome, to review assessment and draft master plan chapter:
 - 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?

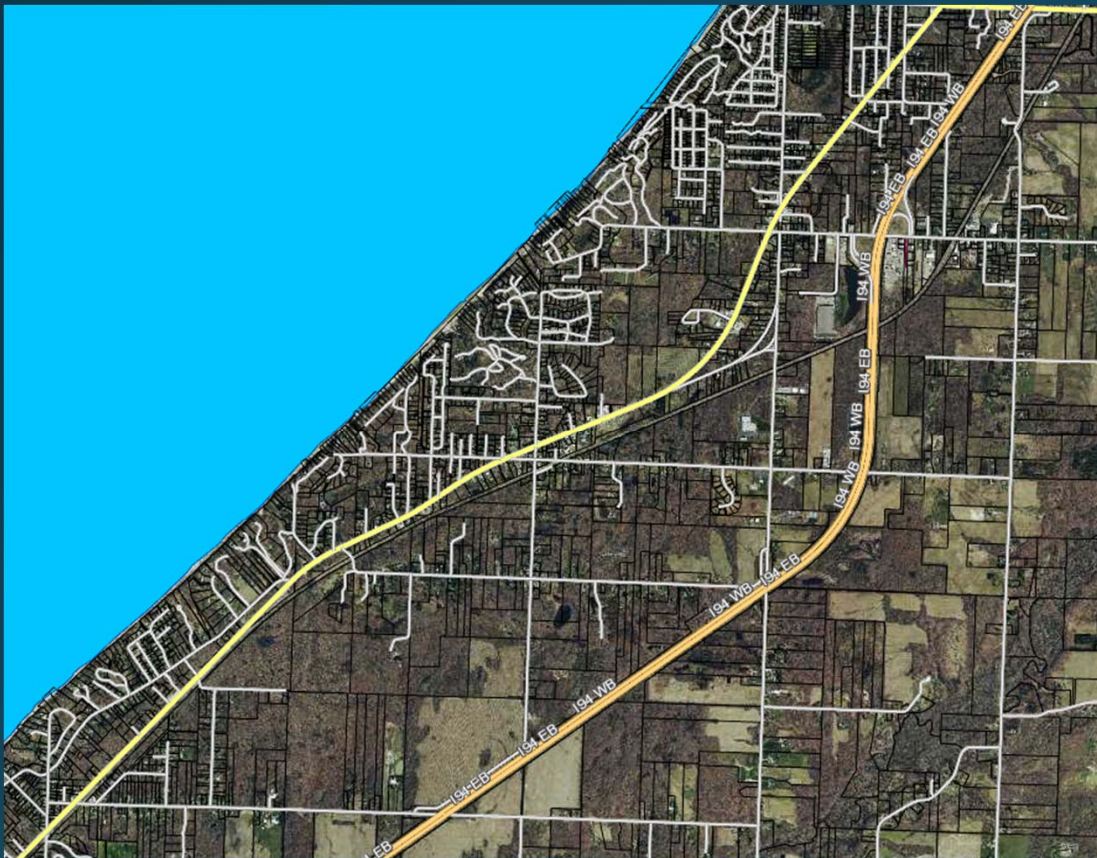
Task 4: Summary Reporting & Data Sharing

- 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

RESILIENT CHIKAMING ASSESSMENT AND MASTER PLAN



Barry Hicks, AICP
Land Information Access
Association (LIAA)
Community Planner

Documents available for review!

The screenshot shows the website for Resilient Michigan. The header includes the logo 'Resilient MICHIGAN' and a navigation menu with 'ABOUT', 'COMMUNITIES', 'VIDEOS', 'DOCUMENTS', and 'TOOLBOX'. The main content area is titled 'RESILIENT CHIKAMING TOWNSHIP' and includes a breadcrumb trail: 'Home > Communities > Chikaming Township'. A sidebar on the left lists three documents: 'Coastal Resilience Presentation', 'Meeting Documents', and 'Draft Master Plan Chapter'. The main text describes the township's process of updating its master plan to become more resilient, mentioning the involvement of the Land Information Access Association (LIAA) in conducting a coastal sustainability assessment.

Resilient
MICHIGAN

ABOUT COMMUNITIES VIDEOS DOCUMENTS TOOLBOX

Home > Communities > Chikaming Township

RESILIENT CHIKAMING TOWNSHIP

Chikaming Township is in the process of updating its master plan to become a more resilient community. The master plan will serve as a guide for local policies and initiatives aimed at reducing the effects of exterior shocks and stressors that Michigan communities have to face, from climate change and shifts in economies to rising and falling lake levels. Residents are encouraged to attend all public meetings to give their input on their vision for the future and what they would like to see preserved, improved and created in their community.

The community will partner with the nonprofit Land Information Access Association (LIAA) to review current local regulations and gain input from citizens and community stakeholders to incorporate into the master plan. LIAA will assist the township by conducting a coastal sustainability assessment that considers shoreline resilience in relation to other community systems.

Coastal Resilience Presentation

Meeting Documents

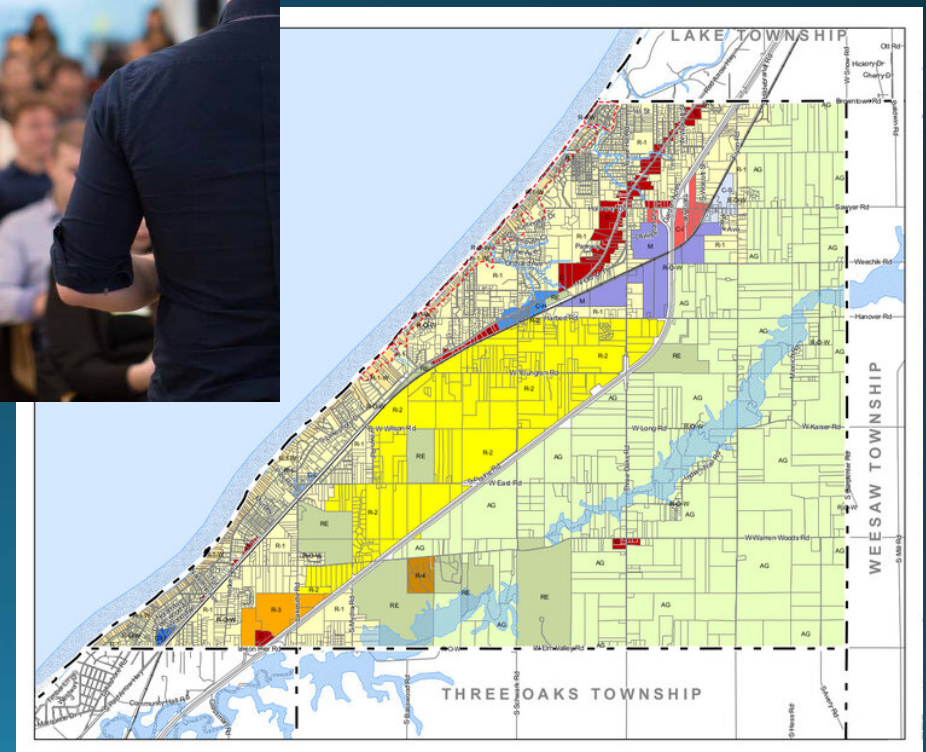
Draft Master Plan Chapter

Full copy of the community assessment and master plan chapter available at:

www.ResilientMichigan.org/chikaming

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:

- Township does utilize technology, such as GIS, to assess coastal conditions and make policy decisions
- There is little to no public infrastructure that would be impacted by a “worst-case-scenario” storm
- Partnership with the County to address hazard mitigation concerns and emergency preparedness

Opportunities:

- Analyze current ordinances for potential vulnerabilities/risks
- Setbacks from high waters are established, but more could be done to establish native plantings to reduce erosion
- Consider house siting/location with regard to natural dune formation

Climate Futures Definitions

“Lucky” Future

Water levels will stay relatively low. Although there will be wave and wind action, major storm events and wave impacts will not encroach on properties landward of current beaches.

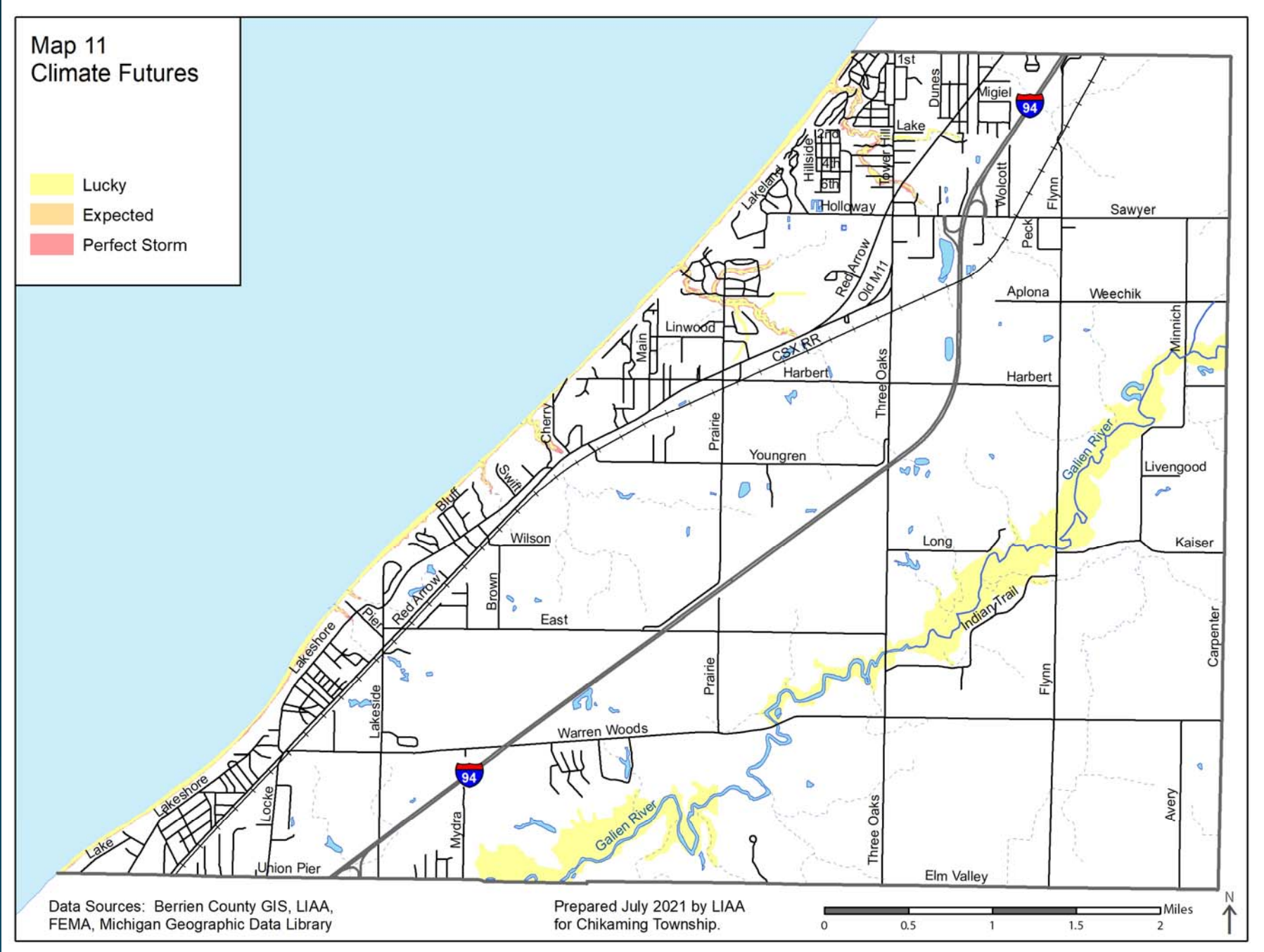
“Expected” Future

Water levels will continue to fluctuate according to long-term decadal patterns, including recent extreme storm events. In addition, this Climate Future anticipates the so-called “100-year storm event” becoming more like a 20-50 year storm event.

“Perfect Storm” Future

Water levels will continue to fluctuate according to decadal patterns, consistent with assumptions made for the Expected Future. The estimated elevation is set closer to the long-term high. In addition, this Climate Future anticipates the occurrence of a “500-year storm event” occurring while lake levels are high.

Climate Futures Results



Climate Futures Results

Table 3. Total Land Acres Impacted by Flooding

	Lucky	Expected	Perfect Storm
Chikaming Township	694.7	709.4	746.4

Table 4. Number of Parcels Impacted by Flooding

	Lucky	Expected	Perfect Storm
Chikaming Township	358	378	461

Table 5. Parcels Affected in Chikaming

		Lucky	Expected	Perfect Storm
Chikaming Township	Residential Parcels Affected	308 (86.0%)	326 (86.2%)	403 (87.4%)
	Non-residential Parcels Affected	50 (14.0%)	52 (13.8%)	58 (12.6%)

Table 6. SEV* of Properties in Chikaming's Flood Scenarios

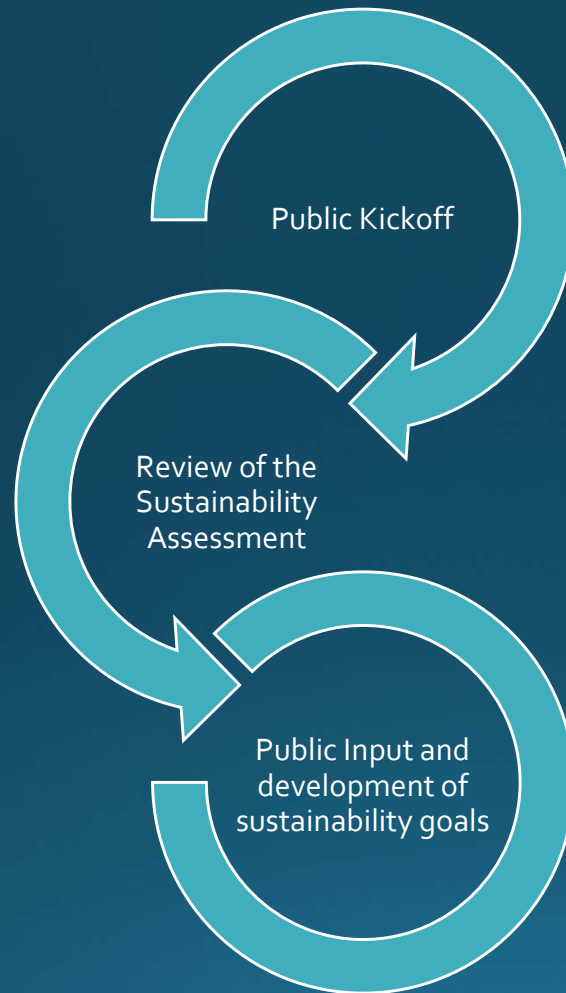
	Lucky	Expected	Perfect Storm
Chikaming Township	\$151,911,700	\$169,030,000	\$222,906,000

*2020 Berrien County SEV

Planning Process

Public Input

Facilitated discussion with key stakeholders to complete the sustainability assessment



Public Kickoff

Public Kickoff

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

Review of the
Sustainability
Assessment

Public Input and
development of
sustainability goals

Final Meeting

Presentation of assessment results. Community input helps to form goals for the coastal resilience Master Plan chapter

Next Steps

Planning Commission (July 6th, 2022)

- Review Master Plan Chapter
- Hold Public Hearing
- Consideration of Resiliency Master Plan Chapter
- Revise and recommend; or
- Review revisions (depending on scope/changes)

Township Board

- Review revised/finalized Master Plan Chapter
- Adopt Master Plan Chapter as an amendment to current plan



Next Steps

Public welcome, to review assessment and draft master plan chapter:

www.ResilientMichigan.org/chikaming

- 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?
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Thank You!

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