



COASTAL EROSION HAZARD MAPPING LAKE SUPERIOR'S NORTH SHORE

Project Outcomes

- Develop a tool that can be used to identify the suitability for development
- Create a resource for property owners living along the coast
- Provide recommendations for property owners regarding conservation concerns/hazard erosion areas

Why map erosion?

- Although data for Lake Superior's coastal region does exist, current mapping efforts do not directly address coastal erosion along the dynamic North Shore.
- Past efforts to map erosion on the North Shore occurred 30 years ago, rendering them outdated considering increased water levels and storm cycles – it's time for an update!

Who will benefit?

Property owners, public officials, local decision makers, realtors, developers, and researchers will all benefit from this mapping tool.

The main goal of the Coastal Erosion Hazard Mapping (CEHM) Task Force is to develop a web-based mapping tool that can be used to confidently identify areas along Lake Superior's North Shore that are susceptible to high rates of erosion.

[ARDC.ORG/CEHM](https://ardc.org/cehm)

Erosion Facts

- Shoreline erosion affects landowner property values and structures, yet also impacts water quality and the habitat for critical species.
- At an average increase of 2 degrees per decade, Lake Superior's rising water temperatures are leading to more storm events causing erosion which put a stress on community infrastructure, economy, and resiliency.
- The Great Lakes Coastal Flood Study conducted by FEMA from 2018 found that Lake Superior's water levels are increasing which leads to increased wave action causing erosion on the North Shore.

Who is involved?

Partners involved with this project include:

- North Shore Management Board
- Lake and Cook County's Soil and Water Conservation Districts & GIS
- Arrowhead Regional Development Commission
- University of Minnesota Duluth
- Minnesota's Lake Superior Coastal Program

PROJECT IMPLEMENTATION

Phase 1

- Gather available data
- Process, clip, and manage all data for coastal area
- Identify data gaps
- Share data between partners

Deliverables:

Mapping application showcasing data related to erosion

Funding Amount: \$34,500

IWIP - \$34,500

Completion:

2019

Phase 2

- Strategies and methodologies defined
- Identify pilot areas
- Run GIS analysis for identified pilot areas
- Review findings and identify process and project along North Shore

Deliverables:

Pilot study results

Methodology and plan for the completion of the entire North Shore

Funding Amount: \$129,890

MNDNR Coastal Program Grant - \$64,945
In-kind partner match - \$64,945

Completion:

2021

Phase 3

- Use methodology developed in Phase 2 to run analysis for North Shore
- Determine symbology
- Coordinate with partners

Deliverables:

Completed Erosion Recession Analysis for the North Shore

Funding Amount: \$94,400

MNDNR Coastal Program Grant - \$47,200

IWIP - \$33,200

In-kind partner match - \$14,000

Expected Completion:

2023

Phase 4

- Incorporate data into NSMB Plan
- Inform stakeholders and landowners about the project
- Develop a tool for landowners living on the coast
- Continued outreach

Deliverables:

Updated NSMB Plan & Model Ordinance Language

Tool for landowners to be more informed

More informed landowners

Funding:

MNDNR Coastal Grant (unsecured)

Potential Completion:

2024