




# What is the Group 4 Project?

- An impromptu scientific research project lasting 10 hours
- Collaboration between students of different scientific disciplines
- *“The group 4 project is a collaborative activity where students from different group 4 subjects work together on a scientific or technological topic, allowing for concepts and perceptions from across the disciplines to be shared.” - IBO.org*

# Michigan Lakeshore

*Group 4 2020*





**What are the  
challenges facing  
Michigan's shoreline  
infrastructure?**

# Great Lakes



# Lake Michigan



# Mackinac Island



# Detroit Dock





# Belle Isle





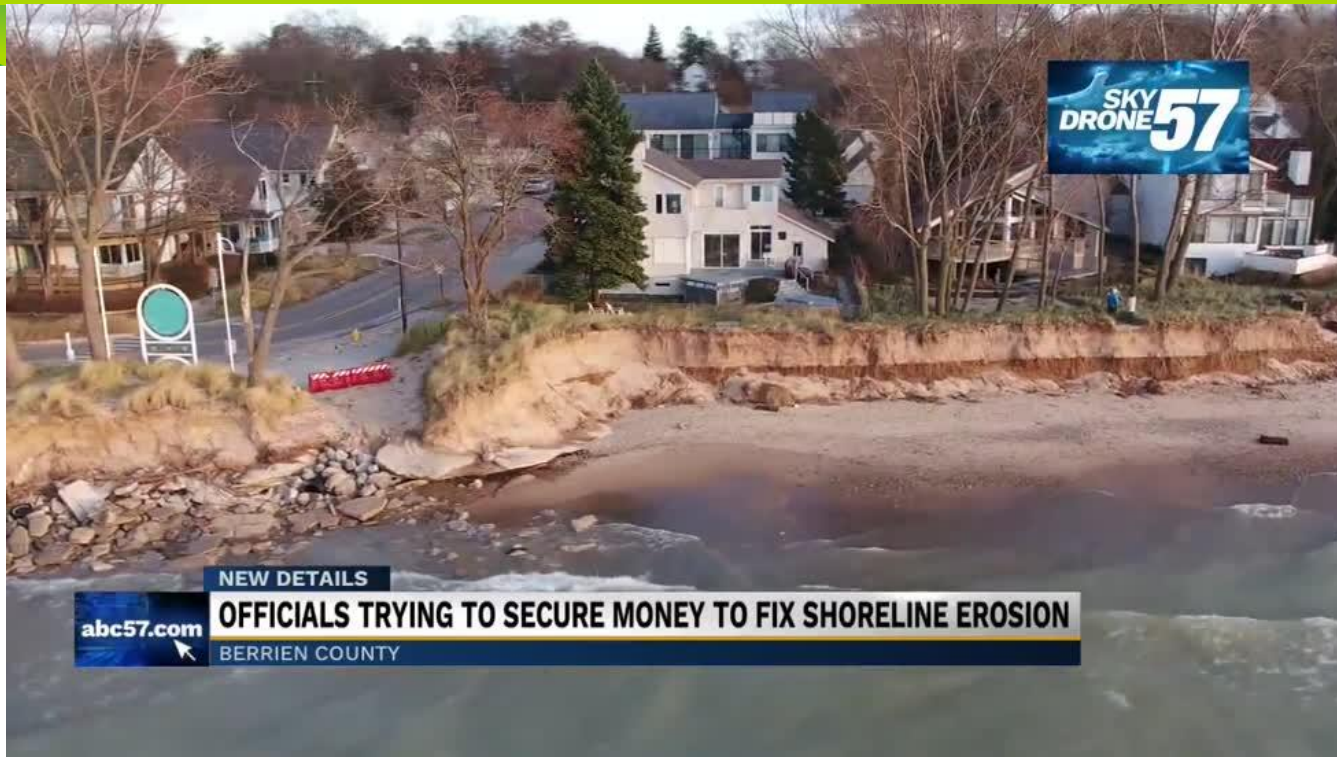
# Van Buren County



# South Haven



# Berrien County



abc57.com

NEW DETAILS

**OFFICIALS TRYING TO SECURE MONEY TO FIX SHORELINE EROSION**

BERRIEN COUNTY

# Port Sanilac





# Muskegon







Right click to play video





**What can we do to  
secure shorelines?**

**What are the  
potential impacts of  
these solutions?**

# Potential Shoreline Sites

## Business/Industrial

DeYoung Plant site (Holland)  
Sappi Paper Mill site (Muskegon)  
Revere Copper site (Detroit)  
Zug Island (Detroit)  
Soo Locks (Sault Ste Marie)  
Marathon Refinery (Fort St, Detroit)  
DTE River Rouge Power Plant  
Manistee Wastewater Treatment  
Grand Marais Harbor  
Waugoshance Lighthouse

## Residential/Community

South Haven  
Ferrysburg/North Beach Park  
Port Sanilac M-25  
Michiana  
Lincoln Township Beach  
Detroit Riverwalk  
Saugatuck  
St Joseph  
St Claire Shores  
Muskegon

## Park/Wilderness

Belle Isle Riverfront  
Pictured Rocks Nat'l Lakeshore  
Presque Isle State Park  
South Manitou Island Lighthouse  
Little Traverse Wheelway  
Little Girl's Point (Gogebic)  
Big Sable Point Lighthouse  
Holland State Park  
Tisconia Park (St Joseph)  
Port Crescent State Park

# Reliable Sources to Consider

Michigan Sea Grant

Michigan Department of Environment, Great Lakes, and Energy (EGLE)

National Oceanic and Atmospheric Association (NOAA)

United States Geological Survey (USGS)

# Timeline

## **The Group 4 Project is a 10 hour project.**

- ▷ Today (2/25) - 2 Hours for preliminary planning
- ▷ Tuesday (3/3) - 3 Hours (periods 5-7) for research
- ▷ Wednesday (3/4) - 3 Hours (periods 1-3) for research and presentation planning
- ▷ Tuesday (3/17) - 1 Hour of presenting (periods 5 and 6)
- ▷ This leaves 1 hour of outside work.

# Your Task

1. Describe the specific issues with your site.
2. Describe a potential solution. This can be a new solution or one that has already been proposed.
3. Evaluate your solution through the lenses of each subject represented in your group. (Biology, Chemistry, Physics, ESS)