# Environmental Assessment

# Algoma Harbor Breakwater Repair

# Algoma, Kewaunee County, Wisconsin

**U.S. Army Corps of Engineers**
**Chicago District**

**August 2023**

# FINDING OF NO SIGNIFICANT IMPACT
# ALGOMA HARBOR BREAKWATER REPAIR
# ALGOMA, KEWAUNEE COUNTY, WISCONSIN

The U.S. Army Corps of Engineers, Chicago District (USACE) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The Environmental Assessment (EA) dated August 2023, for the Algoma Harbor Breakwater Operations and Maintenance Project addresses the need to support the navigability of Algoma Harbor, Kewaunee County, Wisconsin.

The EA, incorporated herein by reference, evaluated two alternatives that include the No Action plan and USACE's Recommended Plan, encapsulating the existing south breakwater and north pier in sheet pile armoring, installing a new concrete cap, and placing armor stone to prevent scouring along the structure.

For the Recommended Plan, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the Recommended Plan are listed in the below table:

| | Insignificant effects | Insignificant effects as a result of mitigation* | Resource unaffected by action |
|---|---|---|---|
| Aesthetics | ☐ | ☐ | ☒ |
| Air quality | ☒ | ☐ | ☐ |
| Aquatic resources/wetlands | ☐ | ☐ | ☒ |
| Invasive species | ☐ | ☐ | ☒ |
| Fish and wildlife habitat | ☒ | ☐ | ☐ |
| Threatened/Endangered species/critical habitat | ☐ | ☐ | ☒ |
| Historic properties | ☐ | ☐ | ☒ |
| Other cultural resources | ☐ | ☐ | ☒ |
| Floodplains | ☐ | ☐ | ☒ |
| Hazardous, toxic & radioactive waste | ☐ | ☐ | ☒ |
| Hydrology | ☐ | ☐ | ☒ |
| Land use | ☐ | ☐ | ☒ |
| Navigation | ☐ | ☐ | ☒ |
| Noise levels | ☒ | ☐ | ☐ |
| Public infrastructure | ☒ | ☐ | ☐ |
| Socioeconomics | ☒ | ☐ | ☐ |
| Environmental justice | ☐ | ☐ | ☒ |
| Soils | ☐ | ☐ | ☒ |
| Tribal trust resources | ☐ | ☐ | ☒ |
| Water quality | ☒ | ☐ | ☐ |
| Climate change | ☐ | ☐ | ☒ |

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the Recommended Plan. Best management practices (BMPs) will be implemented, as appropriate, to minimize impacts. To minimize impacts to threatened and endangered species, or migratory species, work will not be conducted during critical life stages (i.e., breeding or nesting).

No compensatory mitigation is required as part of the Recommended Plan.

Public review of the draft EA and Finding of No Significant Impact (FONSI) was completed on March 24, 2023. All comments submitted during the public review period were considered in the Final EA and FONSI.

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the Recommended Plan would have "no effect" on the federally listed northern long-eared bat, Hine's emerald dragonfly, monarch butterfly (candidate), and Dwarf Lake Iris, or their designated critical habitat.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that historic properties would not be adversely affected by the Recommended Plan. The Wisconsin State Historic Preservation Office concurred with the determination in an email dated June 20, 2023. The Miami Tribe of Oklahoma submitted a letter on June 28, 2022, indicating no historic properties or sites would be affected.

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the Recommended Plan has been found to be compliant with section 404(b)(1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b)(1) Guidelines for evaluation are found in Appendix 1 of the EA.

A water quality certification pursuant to section 401 of the Clean Water Act has been obtained from the State of Wisconsin on August 8, 2023. The Recommended Plan has met the requirements of the water quality certification. Through ongoing coordination with the state, it was determined that no in-water work can take place between October 1 and December 1 and between February 1 and June 15 to protect fish spawning, movement, and egg incubation. All other conditions of the water quality certification will be implemented to minimize adverse impacts to water quality.

A determination of consistency with the Wisconsin Coastal Zone Management (CZM) program pursuant to the Coastal Zone Management Act of 1972 has been obtained from the Wisconsin Department of Administration's Coastal Management Program. The CZM program was notified of this project in a scoping letter dated October 21, 2022. On October 27, 2022 Wisconsin stated that the Recommended Plan will be fully reviewed for CZM Act compliance as part of the Section 401 Water Quality Certification process and once water quality certification is received, federal consistency can be presumed. All conditions of the consistency determination shall be implemented in order to minimize adverse impacts to the coastal zone. USACE believes that the Recommended Plan is consistent with Wisconsin's Coastal Management Program and shall be implemented to minimize adverse impacts to the coastal zone.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed.

Technical, environmental, and cost effectiveness criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the Recommended Plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

September 1, 2023

Date

Kenneth P. Rockwell
Colonel, Corps of Engineers
District Commander

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# Chapter 1 Purpose & Need

## 1.1 National Environmental Policy Act and Related Procedures

The National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321 et seq.), the Council on Environmental Quality (CEQ) NEPA regulations (Final Rule 2020) (40 Code of Federal Regulations [CFR] Parts 1500 to 1508), and the U.S. Army Corps of Engineers' (USACE) NEPA implementing regulations (33 CFR Part 230) require that the USACE consider the potential environmental effects of a proposed action before recommending a plan for implementation. This Environmental Assessment (EA) includes the direct, indirect, and cumulative effects of repairing the existing south breakwater and north pier at Algoma Harbor (hereafter breakwater). This EA provides the USACE, other decision makers, and the public with the information needed to make an informed decision about the breakwater repair activities.

## 1.2 Project Location & Authorization

Algoma Harbor is a recreational harbor located in Algoma, Wisconsin on the western shore of Lake Michigan at the mouth of the Ahnapee River (Figure 1). The federal project consists of an outer basin enclosed by a 1,102-foot-long north pier and a 1,530-foot-long south breakwater. The harbor also has a 2,100-foot-long entrance channel with the channel extending about 1,000-feet upriver. The harbor is located 30 miles east of Green Bay and 115 miles north of Milwaukee. The harbor supports mainly recreational navigation and serves as a harbor of refuge (i.e., a port, inlet, or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and safely moor). The project was authorized by the River and Harbor Acts of March 3, 1871, March 2, 1907, August 30, 1935, and July 3, 1958.


**Figure 1:** Algoma Harbor breakwater project site and vicinity map.

### 1.3 Purpose & Need

The primary purpose of this federal action is to support the navigation functions of Algoma Harbor.

The need is to repair the structure and install new sheet pile along approximately 1,102 linear feet of the north pier and 1,530 linear feet of the south breakwater. A concrete cap would also be installed over both structures. Both actions are to maintain operational integrity of the structure. The proposed project would provide a more stable and long-lasting structure, better maintaining safe passage for vessels entering and exiting the port.

### 1.4 Related NEPA Documentation, Previous Studies & Projects

This EA was prepared to comply with NEPA of 1969, as amended and includes a 404(b)(1) evaluation pursuant to Section 404 of the Clean Water Act. This EA addresses only the maintenance and repair of the existing breakwater structures.

- River and Harbor Act of March 3, 1871, authorized the Algoma Harbor project, which includes operation, maintenance and repair when needed.
- Negative Declaration (Statement of Facts) Algoma Harbor, Wisconsin Maintenance Dredging. July 1975. USACE – Chicago District.
- Algoma small boat harbor, Wisconsin. Report on the degree of pollution of bottom sediments. October 1977. USEPA – Region V
- The results of analyses performed of sediment samples for Algoma, WI. 1987. USACE analytical report.
- Algoma Harbor analytical results. 1992. Aquatec Inc.
- Sediment sampling and analysis Algoma Harbor, Wisconsin. June 2002. Altech Environmental Services Inc. Contract No DACW-35-98-D0007.
- Algoma Marina and Harbor Sedimentation Study, June 2013. USACE – Detroit District
- Algoma Harbor/Marina Study June 2017. USACE – Detroit District.

### 1.5 Breakwater Maintenance and Repair History at Algoma Harbor

In 2014, the City of Algoma submitted an application for a study of the feasibility of constructing additional navigation improvements at Algoma Harbor, Wisconsin. In response to that request, the USACE Detroit District completed a study under the authority of Section 107 of the River and Harbor Act of 1960, as amended. An initial assessment of the project and its proposed alternatives were conducted. It was recommended that the No Action Alternative be undertaken, as the current harbor configuration is functioning as designed and there is no Federal interest in a Section 107 project. It was recommended that the City of Algoma seek further analysis through the Planning Assistance to States (PAS) program.

Prior to the Section 107 study, the federal navigation channel was dredged only rarely and was last dredged in 1993 with 17,000 cubic yards (cy) of material being removed. Prior to 1993 the channel was dredged in 1964 and 1957 with 8,675 and 19,760 cy of material being removed, respectively. The marina within the harbor was dredged to bedrock in 2010 and dredged again in 2013 by the City of Algoma. Prior to 2010, it is unknown when the marina was last dredged.

# Chapter 2 Proposed Alternatives

This EA evaluates alternatives for the repair and maintenance of the north pier and the south breakwater at Algoma Harbor.

## 2.1 List of Alternatives

There are two alternatives considered to support navigability of the Algoma Harbor.

1. **No Action Plan –** Under the no action alternative, USACE would not encase the breakwater at Algoma Harbor in sheet pile. The no action alternative would not adversely impact cultural and archaeological resources. Physical, biological, and social resources, however, could be impacted if breakwater repairs are not made. The structure will further deteriorate, thereby limiting safe access to the harbor and potentially reducing employment, business, and recreational activity in the area by limiting the recreational and transportation capabilities of the harbor.

2. **Breakwater Repair -** The breakwater repair alternative proposes to install a sheet pile encapsulation for the entirety of the breakwater. The current breakwater's internal timber crib has deteriorated to the point where stone fill has been lost, leading to voids and increased channel sedimentation. To repair the breakwater, it will undergo encapsulation along 1,102 linear feet of the north pier and 1,530 linear feet of the south breakwater. This sheet pile encapsulation will include scour protection, likely through placement of toe stone. The footprint of the breakwater will increase in all sections of the breakwater. Sections A, B, D, and E will have an increased footprint of 4-feet (2-feet on either side), section C will increase by 5-feet, and section F by 7-feet. These sections are depicted in Figure 2. The Breakwater Repair alternative would provide a more stable and long-lasting structure, better maintaining safe passage for vessels entering and exiting the port. The majority of repairs would be conducted by barge with the work in the nearshore areas being conducted from land due to the shallow waters of the lake.

## 2.2 Recommended Plan

Algoma Harbor Breakwater Repair is the Preferred Alternative and the Recommended Plan. The Algoma breakwater, constructed in 1871, currently requires stabilization. The structure has not been repaired since the 1930s when the superstructure was constructed and currently needs significant repair. USACE proposes to encapsulate the full length of the north pier and south breakwater in steel sheet pile, and a new concrete cap will be installed along the entire length. The interior timber crib has deteriorated and much of the interior fill has been lost. This has created voids within the breakwater and, as a result, has increased sedimentation within the channel. Toe stone will be placed along the new sheet pile as necessary and may contribute to the increased footprint of 4-feet in sections A, B, D, and E, 5-feet in section C, and 7-feet in section F. Locations of section A through F are shown in Figure 2. Existing cross sections of the breakwater and north pier are shown in Figure 3 and an example cross section of the proposed project is shown in Figure 4. The Recommended Plan would provide a more stable and long-lasting structure, better maintaining safe passage for vessels entering and exiting the port. The majority of repairs would be conducted by barge, with the work in the nearshore areas being conducted from land due to the shallow waters of the lake.

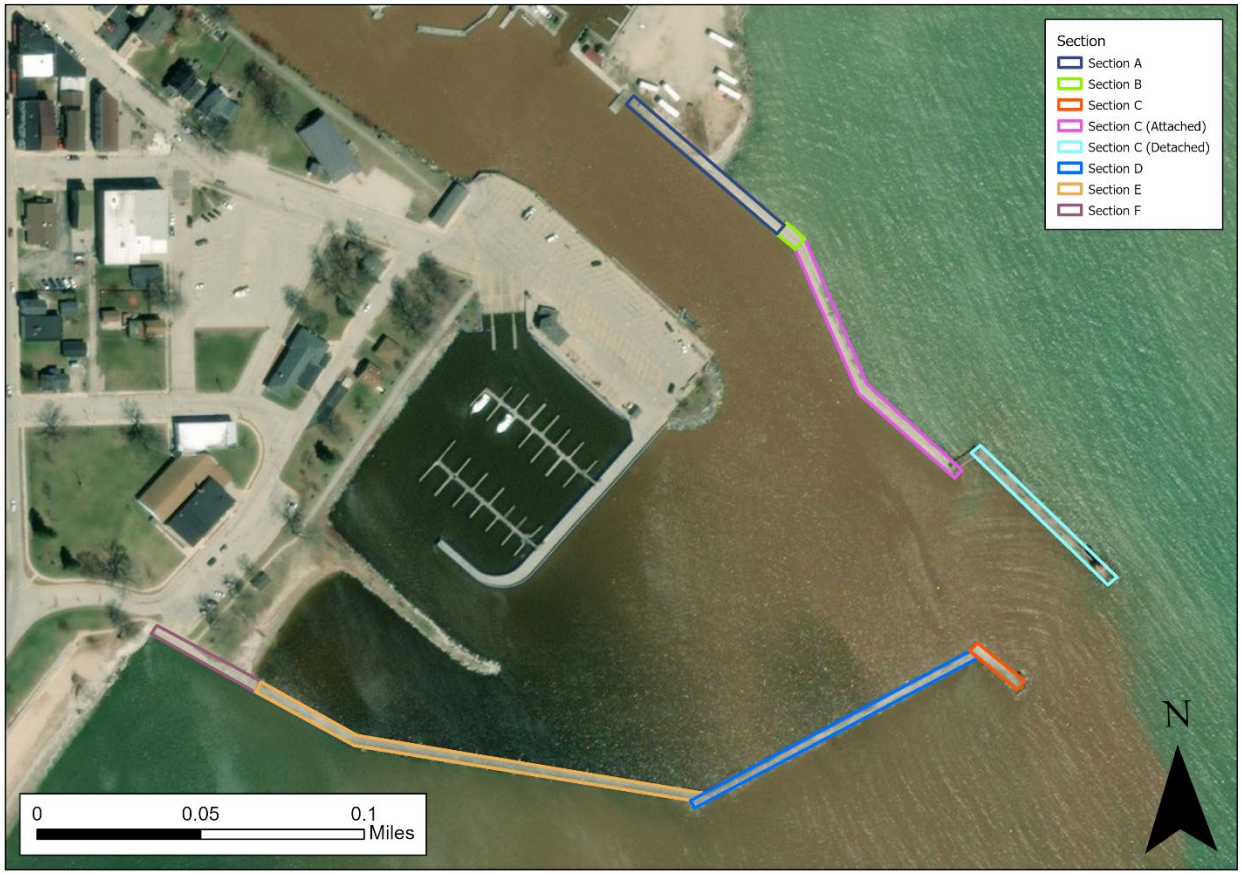


**Figure 2:** Aerial view of Algoma Harbor showing Sections A through F of the North Pier and South Breakwater.

USACE armor stone specifications require stone to be clean and free of contaminants and organic debris. Sources can be newly quarried stone, to be approved by USACE assessment and inspection, or reuse of the stone that is currently in use as toe stone along the breakwater. The specifications do not identify required sources, however all armor stone for projects on the west side of Lake Michigan in the last 10 years has come from one of seven established and licensed commercial quarries, all of which are located in Wisconsin. In order to feasibly perform this work, any new stone will be transported by trucks from quarries to a contractor designated stone dock, from where they will be transported by barge to the site. The staging area is currently six parking spots in the parking lot outside of the Algoma Parks and Recreation Department and the rock peninsula to the south of the marina. The peninsula will be used to hold and load materials (e.g., sheet pile and stone) and equipment onto the work barge. There is also potential that any stone that is able to be reused from the current breakwater will be stored either in the staging area or on a work barge. All transportation would be performed in compliance with federal, state, and local regulations.

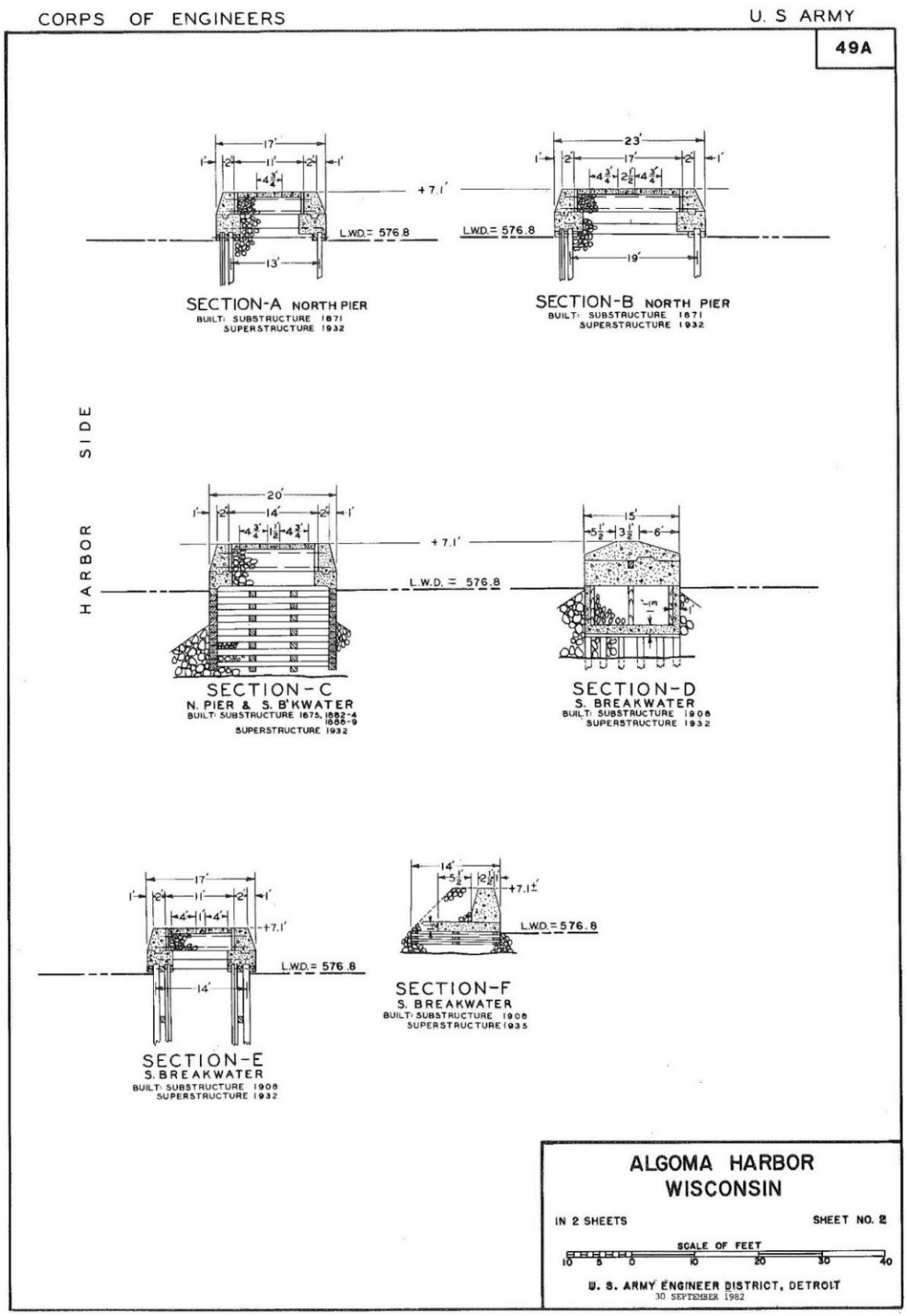


**Figure 3:** Existing Breakwater Cross Section

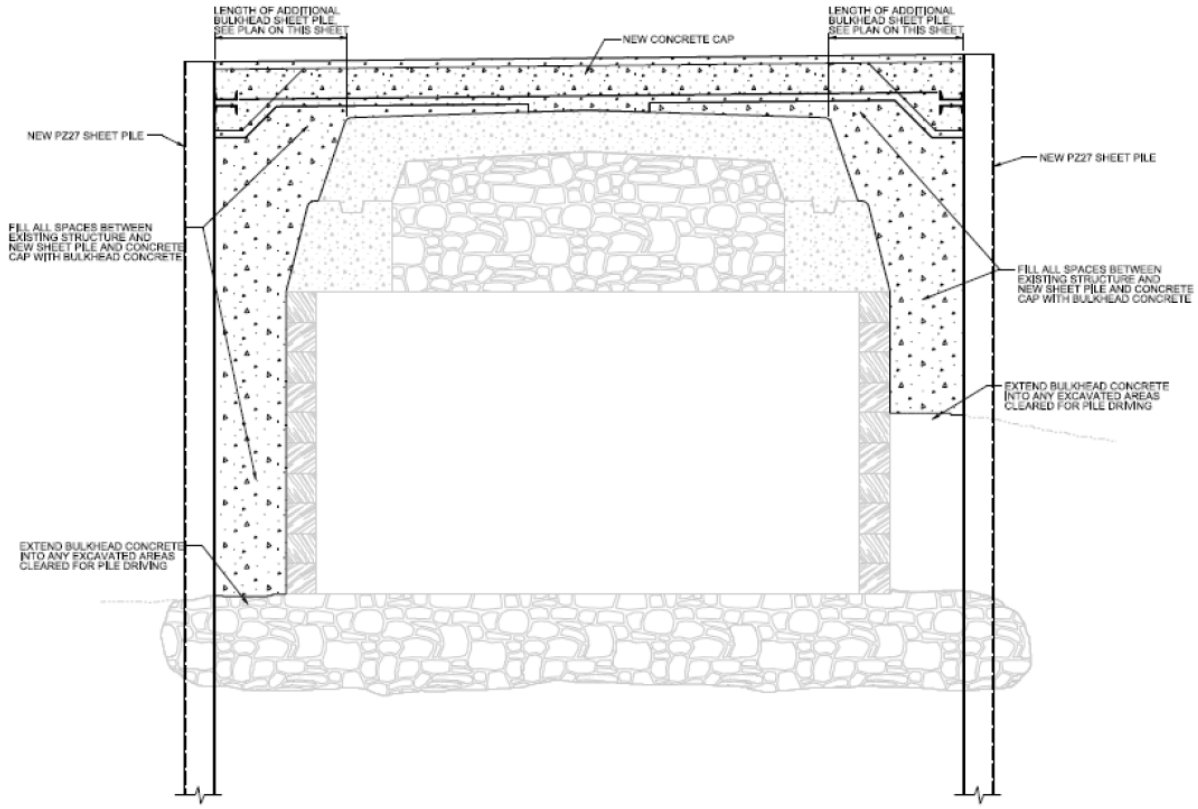


**Figure 4:** Example cross section of the proposed breakwater encapsulation.

### 2.2.1 Miscellaneous Project Details

The Recommended Plan may require the construction of temporary upland structures. The staging area is currently six parking spots in the parking lot outside of the Algoma Parks and Recreation Department and the rock peninsula to the south of the marina. The peninsula will be used to hold and load materials (e.g., sheet pile and stone) and equipment onto the work barge. There is also potential that any stone that is able to be reused from the current breakwater will be stored either in the staging area or on a work barge. The work barge will be moored within the harbor. Additional types and locations of temporary structures and/or construction materials cannot be determined at this time, since they would be incidental to the contractor's methods for the work being performed. Potential examples are additional work and storage areas, access roads, and office facilities. Any necessary temporary structures would be at USACE-approved locations within project boundaries or rights-of-way, outside of any wetlands, areas containing federal or state protected species or their critical habitat, properties listed on or eligible for listing on the National Register of Historic Places, or properties listed on the Wisconsin's State Register of historic places. Temporary activities will include appropriate precautionary measures to prevent erosion and sedimentation or other undesirable environmental impacts. These construction aids would be removed when no longer needed and their sites would be restored to pre-project conditions upon project completion. All construction activities will be carried out in accordance with federal and state laws and regulations, and local ordinances.

## 2.3 Compliance with Environmental Protection Statues, Executive Orders, and Regulations

As discussed in detail below, the Recommended Plan is in full compliance with appropriate statutes, executive orders and regulations, including the National Historic Preservation Act of 1966, as amended, Fish and Wildlife Coordination Act, as amended, Endangered Species Act of 1973, as amended, Coastal Zone Management Act (CZMA), 16 USC 1451, 1456 et seq and implementing regulations at 15 CFR Part 930, Section 10 of Rivers and Harbors Act of 1899, Clean Air Act of 1963, as amended, National Environmental Policy Act of 1969, as amended, Executive Order 12898 (Environmental Justice), Executive Order 11990 (Protection of Wetlands), Executive Order 11988 (Floodplain Management), and the Clean Water Act of 1972, as amended.

# Chapter 3 Existing Conditions and Alternative Impacts

## 3.1 Level of Environmental Impact Significance

This section discusses the existing conditions by resource category and any potential environmental impacts associated with the No Action Plan as well as with implementation of the Recommended Plan of Breakwater Repair.

The USACE evaluated the potentially affected environment and the degree of the effects of the action, respectively, to consider whether the proposed action's effects are significant. In considering the potentially affected environment, USACE considered the affected area and its resources. USACE defined effects or impacts to mean changes to the human environment from the proposed action or alternatives that are reasonably foreseeable, including direct, indirect, and cumulative effects. In considering the degree of the effects, USACE considered short- and long-term effects; beneficial and adverse effects; any effects to public health and safety; and whether the action threatens to violate federal, state, or local laws established for the protection of the human and natural environment. USACE considered the severity of an environmental impact as follows:

- None/negligible – No measurable impacts are expected to occur.
- Minor – A measurable and adverse effect to a resource. A slight impact that may not be readily obvious and is within accepted levels for permitting, continued resource sustainability, or human use. Impacts should be avoided and minimized if possible but should not result in a mitigation requirement.
- Significant – A measurable and adverse effect to a resource. A major impact that is readily obvious and is not within accepted levels for permitting, continued resource sustainability, or human use. Impacts likely result in the need for mitigation.
- Adverse – A measurable and negative effect to a resource. May be minor to major, resulting in reduced conditions, sustainability, or viability of the resource.
- Beneficial – A measurable and positive effect to a resource. May be minor to major, resulting in improved conditions, sustainability, or viability of the resource.
- Short-Term – Temporary in nature and does not result in a permanent long-term beneficial or adverse effect to a resource. For example, temporary construction-related effects (such as, an increase in dust, noise, traffic congestion) that no longer occur once construction is complete. May be minor, significant, adverse or beneficial in nature.
- Long-Term – Permanent (or for most of the project life) beneficial or adverse effects to a resource. For example, permanent conversion of a wetland to a parking lot. May be minor, significant, adverse or beneficial in nature.

USACE used quantitative and qualitative analyses, as appropriate, to determine level of potential impact from proposed alternatives. USACE analyzed ecological, aesthetic, historic, cultural, economic, social, and health effects, as applicable. Based on the results of the analyses, this Environmental Assessment (EA) identifies whether a particular potential impact would be adverse or beneficial, and to what extent. This chapter discusses the existing conditions by resource category and any potential environmental impacts associated with the implementation of the Recommended Plan and the No Action Plan.

## 3.2 No Action Plan

Under the No Action plan, there would be no repair of the breakwater at Algoma Harbor. This alternative would not adversely impact cultural, environmental, and archaeological resources. Physical and social resources, however, economic resources could be impacted in that if breakwater repairs are not made, the structure will further deteriorate, thereby limiting safe access to the harbor and potentially reducing employment, business, and recreational activity in the area by limiting the recreational, commercial, and transportation capabilities of the harbor.

## 3.3 Alternative Impacts

The following sections identify those environmental, cultural, and social resources that could potentially be affected by the proposed breakwater repair activities at Algoma Harbor.

## 3.4 Physical Resources

### 3.4.1 Climate

#### *3.4.1.1 Existing Condition*

The climate of the project area is predominantly continental with some modification by Lake Michigan. There is no climatological data available from the National Oceanic and Atmospheric Administration's (NOAA) Online Weather Data Portal for the City of Algoma. The closest available data is for the City of Kewaunee, WI which is 12-miles south of the project area. Given the proximity of Kewaunee to Algoma and the fact that they are both located on the western coast of Lake Michigan, it is expected that the climate data will be similar for both cities. Daily and monthly normals for temperature, precipitation, and snowfall between 1991 and 2020 were available for the City of Kewaunee (NOAA 2021a). The mean winter high temperature is 26.1°F while the mean winter low temperature is 12.4°F (January). The mean summer high temperature is 76.3°F while the mean summer low temperature is 60.2°F (July). Annual total precipitation normal for the Kewaunee City area is 31.08 inches. In winter, total snowfall is generally heavy with an annual total snowfall normal for the area of 48.1 inches. The majority of snowfall occurs between December and March with total snowfall normals ranging from 6.2 inches (March) to 13.5 inches (January) during this timeframe. All climate normals can be found in Figure 5 **Error! Reference source not found.**and Table 1.

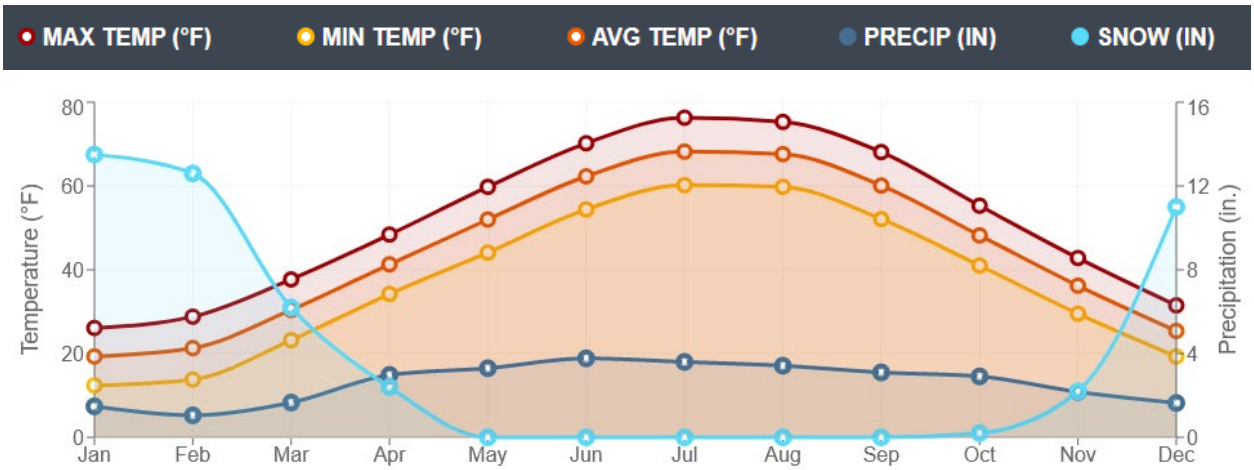

**Figure 5:** Precipitation and Temperature Normals for the City of Kewaunee, Wisconsin Area Between 1991 and 2020 (NOAA 2021a).

**Table 1:** Precipitation and Temperature Normals for the Kewaunee City, Wisconsin Area (NOAA 2019a)

| Month | Total Precipitation Normal (inches) | Mean Max Temperature Normal (°F) | Mean Min Temperature Normal (°F) | Mean Avg Temperature Normal (°F) | Mean Snowfall Normal (inches |
|---|---|---|---|---|---|
| **January** | 1.48 | 26.1 | 12.4 | 19.3 | 0.0 |
| **February** | 1.05 | 28.8 | 13.8 | 21.3 | 0.0 |
| **March** | 1.66 | 37.7 | 23.2 | 30.4 | 0.0 |
| **April** | 2.98 | 48.4 | 34.2 | 41.3 | 0.2 |
| **May** | 3.30 | 59.8 | 44.1 | 52.0 | 2.2 |
| **June** | 3.77 | 70.2 | 54.4 | 62.3 | 11.0 |
| **July** | 3.60 | 76.3 | 60.2 | 68.2 | 13.5 |
| **August** | 3.42 | 75.3 | 59.8 | 67.6 | 12.6 |
| **September** | 3.10 | 68.1 | 52.1 | 60.1 | 6.2 |
| **October** | 2.91 | 55.3 | 41.0 | 48.2 | 0.0 |
| **November** | 2.17 | 42.8 | 29.5 | 36.2 | 0.0 |
| **December** | 1.64 | 31.5 | 19.3 | 25.4 | 0.0 |
| **Annual** | **31.08** | **51.7** | **37.0** | **44.3** | 0.2 |

#### *3.4.1.2 Alternative Impact*

Construction of the Recommended Plan would not have short-term, long-term, direct, or indirect impacts on climate. Additional fossil fuels would be needed during the breakwater repair process for the operation of associated construction vehicles. However, there would be no measurable impact on climate, even though there may be localized increases in greenhouse gas emissions during construction. Once construction is complete, additional fossil fuels would not be needed for operation of the breakwater.

### 3.4.2 Geology

#### *3.4.2.1 Existing Conditions*

The City of Algoma lies on the western shore of Lake Michigan and east of a major subcontinental divide between the Mississippi River and the Great Lakes – St. Lawrence River drainage basins within Kewaunee County. This is in the Eastern Ridges and Lowlands region of Wisconsin. The bedrock formations underlying the county consist of the Maquoketa Formation that is overlain with over 500-feet of Silurian Dolomite. In some parts of Kewaunee County, the dolomite is overlain by more than 150-feet of Pleistocene sediment (Carson et al. 2016). The Maquoketa Formation includes shale, dolomitic shale, and dolomite. The dolomite underlying the city consists of Cayungan, Niagaran, and Alexandrian series. There are no geologic sites of importance in the City of Algoma. Within the harbor, bedrock was encountered between 19.2 and 39.5 feet below the top of the breakwater at elevations of 539.8 – 561.8 (NADV 88 datum).

The U.S. Department of Agriculture web soil survey was consulted to assess the soil makeup of the areas around Algoma Harbor. The surrounding soils are composed of Hortonville silt loam and Oakville loamy fine sand. Sediment borings were conducted in the harbor by Prairie-Hanson SBA 8(a) JV and the lakebed was found to consist of loamy fine sand followed by silt loam and bedrock. The unconsolidated materials overlaying the bedrock in the harbor are mostly loose sands with scattered gravel overlying very soft loamy clays from 2.1 – 19.4 feet thick. The loamy clays are 2.5 – 11.3 feet thick.

#### *3.4.2.2 Alternative Impact*

The Recommended Plan would be to encapsulate the old timber crib and breakwater in sheet pile armoring, install a new concrete cap, and place toe stone along the base of the breakwater. This would be done on both the inland and Lake Michigan side of the breakwater. The worksite is currently Lake Michigan bottom and is directly adjacent to the existing breakwater bounding the recreational Algoma Harbor. The sheet pile would need to be driven into the Lake Michigan sediment with toe stone being placed as a scour prevention method in several locations. This would result in short term impacts in the form of a small amount of sediment displacement. There will be a long-term impact in that the breakwater will be expanded by several feet along some sections where there is no current armor stone. Lake Michigan nearshore bottom is relatively uniform and vast and the amount of bottom that is lost due to the expanded footprint is insignificant when compared to the larger available habitat. While there is a long-term direct impact, it is anticipated that the Recommended Plan would have no direct or indirect long-term adverse impacts to geologic resources.

### 3.4.3 Sediment Quality

#### *3.4.3.1 Existing Conditions*

Algoma Harbor is a federal navigation channel with authorized depths of 14-feet for the 2000-feet long and 200-feet wide entrance channel and a depth of 14-feet for the channel within the Ahnapee River that extends from the harbor to the Second Street bridge. The sediment is not dredged regularly and sediment removal in the federal navigation channel last took place in 1993. The marina was dredged to bedrock in 2010 and, because of excessive sedimentation, needed to be dredged again in 2013. Material removed from the federal channel has historically been placed at an upland disposal site. Factors potentially affecting sediment quality in the harbor include effluent from industries, agricultural runoff, and stormwater discharges. Sediment quality is monitored by USACE and was last sampled in 2012 at several locations in and around the harbor (USACE 2013). The sediment from the littoral zone outside the harbor is composed primarily of sand with low organic content. Samples taken from the outer harbor were also primarily comprised of sand, though the sample taken at the harbor mouth was approximately 58% sand, 35% silt, and 7% clay. The material in the outer harbor, especially near the mouth of the harbor, is likely being deposited by the Ahnapee River, as the composition of the materials are similar. Sediment taken from the marina is highly organic in nature with little to no mineral material found. Any sediment that is carried into the marina is likely sourced from the river as well. The overall sediment quality in the harbor is generally good. Sediment quality issues are related to sediment particle distribution and point sources. These localized issues do not significantly detract from the overall high quality of the sediment in Lake Michigan.

#### *3.4.3.2 Alternative Impact*

The Recommended Plan includes the placement of sheet pile and toe stone along the north and south harbor structures. No sediment will be dredged for this project, and the sheet pile will be driven into the existing lake bottom. The existing toe stone would need to be removed in order encapsulate the existing structure. It would then be replaced along the toe of the new structure as a means of erosion control. Removal and replacement may temporarily cause a short-term direct disturbance of the sediment in the area, but it is anticipated that this alternative would have no direct or indirect long-term impacts on sediment quality.

### 3.4.4 Water Quality

### *3.4.4.1 Existing Condition*

The City of Algoma draws its drinking water from three, 500-foot or greater deep ground water wells located within Algoma (well numbers BG094, BG096, and BG097). As ground water flows through the ground, metals such as iron and manganese are dissolved, and their concentration can become elevated within the water. Industrial discharges, urban activities, agriculture, groundwater pumpage, and waste disposal can all affect groundwater quality. The groundwater quality within Kewaunee County was analyzed in 2014 by the Land and Water Conservation Department and the University of Wisconsin-Stevens Point Environmental Analysis Lab. Their tests showed that 29.7% of the private rural wells throughout the County were not safe for human consumption due to the presence of coliform bacteria and/or nitrates above the human health standard of 10 ppb (Kewaunee Co., 2014). The quality of water used in people's homes or businesses in Algoma is monitored for many contaminants by Wisconsin Department of Natural Resources (WDNR) and Algoma Utilities (public utility). Contaminants regularly being tested for include arsenic, manganese, and strontium. The WDNR's Groundwater Retrieval Network webpage (https://dnr.wisconsin.gov/topic/Groundwater/GRN.html) houses the ground water well information. In general, the water quality of the ground water used in Algoma is good, with all tested contaminates being well below WDNR limits.

Water quality of Lake Michigan in the vicinity of Algoma is monitored by WDNR. There is a stormwater discharge for the City of Algoma located in the south end of the harbor. The City of Algoma created a bioretention pond in 2020 that can filter approximately 42,000 gallons of stormwater before flowing directly into Lake Michigan in the harbor. At various times of year, aquatic plant material does accumulate on the harbor side of the breakwater in the same area as the stormwater discharge. According to Algoma residents, it is predominantly duckweed (*Lemna sp.*), a free-floating aquatic plant. This material is described as not causing a significant odor issue and is quickly eaten by the waterfowl in the area (Photo 1).

**Photo 1:** Accumulation of duckweed at the southern corner of Algoma Harbor. Photo taken August 2022.

On the lake side of the breakwater, at the north end of Crescent Beach, green filamentous algae (predominantly *Cladophora sp.*) accumulates where the south breakwater meets the shore (Photo 2). According to residents, as the algae accumulates and decays, it produces an offensive odor that can travel a significant distance from the beach. In recent years, *Cladophora* is becoming more prevalent within

Lake Michigan, especially along the western shores due, in part to increased water clarity caused by the established population of invasive *Dreissena* mussels and by phosphorus and nitrogen levels in Lake Michigan. *Cladophora* is a native species to the Great Lakes and an important component of the food web. It does not produce toxins the way blue-green algae does, but as it decays it can promote bacterial growth within the algae mats. Crustaceans can become trapped with the floating algae mats and be washed onto shore with the algae. This can attract numerous gulls, which can deposit fecal material and subsequently bacteria onto the beach or into the lake. Nearshore issues with bacteria (*Escherichia coli*) are not uncommon on public beaches, but in general, the water quality of the nearshore zone of Lake Michigan is good. Beach water quality issues can also be related to several factors, including the beach/shore configuration, point sources, wildlife, and human use. These localized issues do not significantly detract from the overall high quality of Lake Michigan water.

**Photo 2:** Accumulation of *Cladophora* on Algoma's Crescent Beach, just south of harbor. Photo taken August 2022.

#### *3.4.4.2 Alternative Impact*

The proposed activities associated with the breakwater repair would cause localized, minor, and temporary increases in turbidity within Lake Michigan around the work area. The increase in turbidity is expected to be a direct short-term effect to Lake Michigan, temporary in duration and will not have a direct or indirect effect to the ground water supply in either the short or long-term. The short-term localized impact to water quality of Lake Michigan is expected to subside when construction activities end. There is not expected to be direct or indirect long-term effects to the water quality of Lake Michigan. Best Management Practices such as use of floating containment booms will be used to control spills, if necessary. The Contractor will maintain a spill plan and response materials on site. The proposed

activities will not have a direct or indirect long or short-term effect to the presence of *Cladophora* or duckweed in or around the harbor as the general shape as the configuration of the breakwater will remain the same and not significantly impact the present Lake Michigan currents that carry the algae to the shore.

### 3.4.5 Air Quality

#### *3.4.5.1 Existing Condition*

The Federal Clean Air Act requires the U.S. Environmental Protection Agency (USEPA) to set national ambient air quality standards (NAAQS) for six criteria pollutants that are considered harmful to public health and the environment. These include carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur oxides. Areas not meeting the NAAQS for one or more of the criteria pollutants are designated as "nonattainment" areas by the USEPA. Kewaunee County is listed as being in attainment and in maintenance for the revoked 1-hour ozone standard (1979) and the revoked 8-hour ozone standard (1997). The most recent year of non-attainment is 1995 and 2007 respectively (Table 2).

**Table 2:** Non-attainment Status for Kewaunee County, Wisconsin**.**

| NAAQS | Area Name | Most Recent Year of Nonattainment | Current Status | Classification |
|---|---|---|---|---|
| 1-Hour Ozone (1979) – NAAQS revoked | Kewaunee Co, WI | 1995 | Maintenance (since 1996) | Moderate |
| 8-Hour Ozone (1997) – NAAQS revoked | Kewaunee Co, WI | 2007 | Maintenance (since 2008) | Former Subpart 1 |

USEPA Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants (aka "Green Book"), accessed on April 12, 2022 at https://www3.epa.gov/airquality/greenbook/anayo_wi.html

#### *3.4.5.2 Alternative Impact*

The local air quality in Kewaunee County is considered 'in attainment' under the Clean Air Act. Due to the small scale and short duration of this project, the main sources of releases would be vehicle emissions and dust associated with the construction activities. The project does not include any stationary sources of air emissions, and a General Conformity Analysis was not completed. The temporary (short-term) mobile source emissions from this project are minor in terms of the NAAQS and the State Implementation Plan. The project is not expected to be a significant source of greenhouse gas emissions. All construction equipment would be in compliance with current air quality control requirements for diesel exhaust, fuels, and similar requirements. USACE follows Engineering Manual (EM) 385-1-1 for worker health and safety and requires all construction activities to be completed in compliance with Federal health and safety requirements.

All equipment operation, activities, or processes performed by the Contractor shall be in accordance with all federal, state, and local air emission and performance laws and standards. Also required is an Air Pollution Control Plan that details provisions to assure that dust, debris, materials, trash, etc. do not become airborne and travel off the project site. Air pollution control shall comply with NR 415, Wis. Adm. Code. Once implemented, the breakwater project itself would be neutral in terms of air quality, with no features that either emit or sequester air pollutants to a large degree, including greenhouse gas emissions. Therefore, no direct or indirect long-term impacts to air quality are expected.

### 3.4.6 Limnology

#### *3.4.6.1 Existing Condition*

Lake Michigan's ordinary high-water mark (OHWM) is on average approximately 581.5 feet (International Great Lakes Datum [IGLD] 1985) for 2020 (Table 3). The lake has a total surface area of 22,404 square miles ($mi^2$), with an average depth of 279 feet and a maximum depth of 923 feet. At its greatest extent, Lake Michigan is 307 miles long and 118 miles across. Only a relatively small amount of water flows out the bottleneck straits between lakes Michigan and Huron, so Lake Michigan holds its water a long time, nearly 100 years. Lake Michigan is bordered by 1,659 miles of shoreline, of which 495 miles of shoreline are located in Wisconsin.

**Table 3:** Characteristics of Lake Michigan

| Great Lake | Water Surface Area ($mi^2$) | OHWM (IGLD, feet) | Length (miles) | Breadth (miles) | Maximum Depth (feet) | Drainage Area ($mi^2$) |
|---|---|---|---|---|---|---|
| **Lake Michigan** | 22,404 | 581.5 | 307 | 118 | 923 | 67,900 |

The natural hydrology and littoral hydraulic processes have been considerably altered from their natural state. Sand is now transported and trapped at many different points due to the numerous structures along the whole southern basin of Lake Michigan. Water levels within lakes Michigan and Huron have been recorded since 1918. The lake wide period of record average (1918 to present) is currently 578.8 feet (IGLD 85) (NOAA 2021b). Table 4 depicts the monthly observed water levels for 2020, the monthly and annual averages, and the monthly minimum and maximums. The data for these lakes (i.e., Michigan and Huron) are presented together since hydrologically they are considered one lake.

**Table 4:** Final 2020 and long-term (1918-2020) mean, max, and min monthly mean water levels (Based on gage networks) for Lakes Michigan-Huron (Feet, IGLD85). Accessed Feb 3, 2021 (USACE 2022).

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2020** | 581.56 | 581.53 | 581.43 | 581.69 | 581.96 | 582.19 | 582.22 | 582.09 | 581.82 | 581.53 | 581.36 | 581.17 | 581.73 |
| **Mean** | 578.44 | 578.41 | 578.48 | 578.74 | 579.07 | 579.30 | 579.40 | 579.33 | 579.17 | 578.94 | 578.74 | 578.61 | 578.87 |
| **Max** | 581.56 | 581.53 | 581.43 | 581.69 | 581.96 | 582.19 | 582.22 | 582.09 | 581.96 | 582.35 | 581.96 | 581.56 | |
| **Year** | 2020 | 2020 | 2020 | 2020 | 2020 | 2020 | 2020 | 2020 | 1986 | 1986 | 1986 | 1986 | |
| **Min** | 576.02 | 576.08 | 576.05 | 576.15 | 576.57 | 576.64 | 576.71 | 576.67 | 576.64 | 576.44 | 576.28 | 576.15 | |
| **Year** | 2013 | 1964 | 1964 | 1964 | 1964 | 19644 | 1964 | 1964 | 1964 | 1964 | 1964 | 2012 | |

#### *3.4.5.2 Alternative Impact*

Construction of the Recommended Plan does not include the placement of material that would further disrupt lacustrine processes and therefore would have no direct or indirect, short-term or long-term impacts to lacustrine processes. Construction would not impact the surface elevation of Lake Michigan.

## 3.5 Ecological Resources

### 3.5.1 Macroinvertebrates

#### *3.5.1.1 Existing Condition*

Macroinvertebrate populations in Northeastern Lake Michigan near the project site were sampled in 1999 and 2019 by Burlakova of the Great Lakes Center in Buffalo, NY. In those two sampling years *Diporeia sp.*, *Enchytraeidae*, *Gammarus sp.*, *Heterotrissocladius subpilosus*, *Limnodrilus sp.*, *Lumbriculid*, *Micropsectra sp.*, *Monodiamesa sp.*, *Mysis relicta*, *Nemertea*, *Oligochaeta*, *Paracladopelma winnelli*, *Rhyacodrilus sodalis*, *Sphaeriidae*, *Spirosperma ferox*, *Stylodrilus heringianus*, *Tanytarsus sp.*, *Tubificid*, *Vejdovskyella intermedia* were the macroinvertebrates found. Other populous macroinvertebrates within Lake Michigan include the non-native zebra and quagga mussels (*Dreissena polymorpha* and *D. rostriformis bugensis*) (personal communication).

#### *3.5.1.2 Alternative Impact*

The Recommended Plan would remove the existing toe stone, drive steel sheet pile into the sediment along the existing breakwater, and replace the toe stone along the sheet pile. Placement of the sheet pile and stone would likely smother aquatic macroinvertebrates located where the material is to be placed. In addition, the work may temporarily increase turbidity in the area which in turn would affect filter-feeding macroinvertebrates. Therefore, the placement of sheet pile and filling of stone as part of the breakwater repair would have a direct short-term impact to aquatic macroinvertebrates in the project area. The macroinvertebrate community of Lake Michigan is very large and most species are considered very abundant. Therefore, these short-term impacts are not significant. Long-term it is anticipated that aquatic macroinvertebrates adjacent to the project area would colonize the newly placed sheet pile and stone, therefore, there would be no direct or indirect long-term impacts to macroinvertebrate communities.

### 3.5.2 Fishes

#### *3.5.2.1 Existing Condition*

In general, the surf zone fish assemblage of Lake Michigan would be the target community that occurs within the project vicinity at Algoma Harbor. No formal surveys of the harbor or river exist, but Algoma has a strong recreational fishing community. Local fishermen and WDNR personnel were consulted about the possible fish community for this report. The species assemblage in the Algoma Harbor is likely to be quite diverse much of the year. Particularly because of the transition of fish in and out of the Ahnapee River. During the spring there is likely to be Steelhead (Rainbow) Trout (*Oncorhynchus mykiss*) in the harbor and in the fall there will be Chinook Salmon (*Oncorhynchus tshawytscha*). Various members of the Centrarchidae family such as Smallmouth Bass (*Micropterus dolomieu*), Largemouth Bass (*Micropterus salmoides*), Pumpkinseed (*Lepomis gibbosus*), and Bluegill (*Lepomis macrochirus*) will be present around the harbor. Rock Bass (*Ambloplites rupestris*) and Yellow Perch (*Perca flavescens*) are consistently caught off of the breakwater. Crappies (*Pomoxis sp.*) and Northern Pike (*Esox lucius*) have been caught by anglers around the mouth of the Ahnapee and are expected to be present in the harbor at times. Invasive species such as Round Goby (*Neogobius melanostomus*), Rainbow Smelt (seasonal) (*Osmerus mordax*), and Alewife (seasonal) (*Alosa pseudoharengus*) are present in and around the harbor. There are likely a variety of forage/minnow species present including a variety of shiners. The occasional sucker species, Bowfin (*Amia calva*), gar, bullheads (*Ameiurus sp.*), Common Carp (*Cyprinus carpio*), and Burbot (*Lota lota*) have also been caught in the harbor.

#### *3.5.2.2 Alternative Impact*

This effort will not be implemented between in the October 1 and December 1 and between the February 1 and June 15 spawning windows to avoid impacts to fish during their critical life stages. During construction, appropriate erosion control measures will be taken to minimize potential adverse impacts of the sheet pile placement and stone removal and placement activities on the aquatic ecosystem. General construction scheduling and sequencing would minimize impacts to any spawning fish present in the project area. Best management practices such as erosion control fabric, silt fencing, and containment booms would be implemented to minimize any temporary upland sources of turbidity, spill, or debris impacts associated with the proposed activities. Overall, the placement/replacement of stone has the potential to smother nekton and increase turbidity in the area, which in turn would affect sight feeding fish species. However, this would be a short-term, less than significant impact to fish species in the project area. In the long-term, it is anticipated that fish species could utilize the newly placed sheet pile and stone as shelter and a foraging location. Therefore, there would be no negative direct or indirect long-term impacts to the surf zone fish community.

### 3.5.3 Amphibians & Reptiles

#### *3.5.3.1 Existing Condition*

Reptiles and amphibians that may be present in the area include those that utilize beach habitat. These are quite limited along the coast of Lake Michigan, and may include Painted Turtle (*Chrysemys picta*), Red Ear Slider (*Pseudemys scripta*), Snapping Turtle (*Chelydra serpentina*), and the Garter Snake (*Thamnophis sirtalis*). The existing breakwater structure could also support Mudpuppy Salamander (*Necturus maculosus*), which spend their entire life underwater and forage along rocky shoals.

#### *3.5.3.2 Alternative Impact*

Limited areas for food, cover, and reproduction result in reptile and amphibian population diversity that is absent to low. However, the existing structure could support the Mudpuppy Salamander. Overall, the placement of sheet pile and stone would have a potential less than significant impact to aquatic salamanders that may be currently using the existing breakwater structure. This potential impact would be further reduced with the implementation of best management practices, such as construction scheduling and sequencing, to minimize impacts to any reproducing salamanders and the use of floating containment booms to control spills. In the long-term, aquatic salamanders would be expected to return to the area around the repaired breakwater structure; therefore, there would be no direct or indirect long-term impact to amphibians or reptiles.

### 3.5.4 Birds

#### *3.5.4.1 Existing Condition*

The open water of Lake Michigan provides resting and foraging habitat for many waterfowl such as divers, mergansers, terns, gulls, and raptors. According to the eBird citizen scientist observations associated with The Cornell Lab of Ornithology, common birds observed within a 0.25 miles radius of Algoma Marina/Harbor and the existing breakwater, include: Red-breasted Merganser (*Mergus serrator*), Canada Goose (*Branta canadensis*), Herring Gull (*Larus argentatus*), Mallard (*Anas platyrhynchos*), Common Goldeneye (*Bucephala clangula*), Great Blue Heron (*Ardea herodias*), Common Merganser (*Mergus merganser*), and Greater Scaup (*Aythya marila*). In total, 129 bird species have been recorded within the vicinity of the harbor.

A list of migratory birds that could be present at the project site was generated using the U.S. Fish and Wildlife Service's (USFWS) Environmental Conservation Online System Information for Planning and Consultation (ECOS-IPaC) tool on February 6, 2023. The migratory birds that could be present at or near the project site are the American Golden-plover (*Pluvialis dominica*), Bald Eagle (*Haliaeetus leucocephalus*), Black Tern (*Chlidonias niger*), Black-billed Cuckoo *(Coccysus erythropthalmus*), Bobolink (*Dolichonyx oryzivorus*), Golden-winger Warbler (*Vermivora chrysoptera*), Lesser Yellowlegs (*Tringa flavipes*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Ruddy Turnstone (*Arenaria interpres morinella*), Rusty Blackbird (*Euphagus carolinus*), Short-billed Dowitcher (*Limnodromus griseus*), and Wood Thrush (*Hylocichla mustelina*).

#### *3.5.4.2 Alternative Impact*

Harbor breakwaters are inhospitable structures where birds do not typically nest, although pelicans, terns, and gulls may congregate there seeking a safe place to roost during the night. Additionally, the current breakwater is utilized by the public as a popular fishing and walking location, preventing anything more than short-term resting and usage of the breakwater by bird species. The open water of Lake Michigan provides resting and/or foraging habitat for these and other bird species such as mergansers and other

divers, as well as raptors. These and other avifauna would temporarily avoid the immediate breakwater repair area because of construction noise and activity but would be expected to return shortly following these operations. Therefore, having a direct short-term effect during active construction times, but the proposed project would not have direct or indirect, long-term impacts on migratory birds.

### 3.5.5 Threatened & Endangered Species

#### *3.5.5.1 Existing Conditions*

Federal

A query of the USFWS's ECOS-IPaC on February 6, 2023, resulted in an official species list (Project Code: 2022-0045007) of federally-listed species that may be present within the project area. Obtaining the official species list from ECOS-IPaC fulfills the requirement for federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action". Federally listed species for the Algoma Harbor vicinity (Table 5) include the Northern Long-eared Bat (*Myotis septentrionalis* [threatened]), Hine's Emerald Dragonfly (*Somatochlora hineana* [endangered]), the Monarch Butterfly (*Danaus plexippus* [candidate]), and Dwarf Lake Iris (*Iris lacustris* [threatened]). There are no designated critical habitats in the project vicinity.

**Table 5:** Federally Listed Species with the Potential to Occur in the Project Area.

| Species Name | Federal Status | Preferred Habitat | Potential to Occur |
|---|---|---|---|
| Northern Long-eared Bat (*Myotis septentrionalis*) | Threatened | During summer roost underneath bark, in cavities or in crevices of both live trees and snags. During winter hibernate in caves and mines. | **Not Present;** lack of suitable habitat. |
| Hine's Emerald Dragonfly (*Somatochlora hineana*) | Endangered | Found in spring fed wetlands, wet meadows, and marshes. | **Not Present;** lack of suitable habitat. |
| Monarch Butterfly (*Danaus plexippus*) | Candidate | Prefer grassland ecosystems with native milkweed and nectar plants. | **Not Present;** lack of suitable habitat. |
| Dwarf Lake Iris (*Iris lacustris*) | Threatened | Shallow soil over moist calcareous sands, gravel and beach rubble, and limestone crevices. | **Not Present;** lack of suitable habitat |

State of Wisconsin

State-listed endangered species were reviewed for the project area by the Chicago District. Wisconsin listed species and their critical habitats are identified by WDNR as occurring within Kewaunee County and listed in Table 6.

**Table 6:** Wisconsin State listed threatened and endangered species, Kewaunee County.

| Scientific Name | Common Name | Scientific Name | Common Name |
|---|---|---|---|
| ***Acipenser fulvescens*** | Lake Sturgeon | *Jefersonia diphylla* | Twinleaf |
| ***Bartramia longicauda*** | Upland Sandpiper | *Lepomis megalotis* | Longear Sunfish |
| ***Bombus insularis*** | Indiscriminate Cuckoo Bumble Bee | *Notropis anogenus* | Pugnose Shiner |
| ***Bombus perplexus*** | Confusing Bumble Bee | *Nycticorax nycticorax* | Black-Crowned Night-Heron |

| Scientific Name | Common Name | Scientific Name | Common Name |
|---|---|---|---|
| ***Cakile edentula var. lacustris*** | American Sea-Rocket | *Paravitrea multidentate* | Dentate Supercoil |
| ***Calamovilfa longifolia var. magna*** | Sand Reedgrass | *Phalaropus tricolor* | Wilson's Phalarope |
| ***Chlidonias niger*** | Black Tern | *Polystichum acrostichoides* | Christmas Fern |
| ***Erigenia bulbosa*** | Harbinger-of-spring | *Somatochlora hineana* | Hine's Emerald Dragonfly |
| ***Euphorbia polygonifolia*** | Seaside Spurge | *Striatura exigua* | Ribbed Striate |
| ***Eurybia furcata*** | Forked Aster | *Sturnella neglecta* | Western Meadowlark |
| ***Falco peregrinus*** | Perigrine Falcon | *Vertigo nylanderi* | Deep-throated Vertigo |
| ***Hendersonia occulta*** | Cherrystone Drop | *Viola rostrata* | Long-spurred Violet |
| ***Heterosternuta wickhami*** | Hydroporus Diving Beetle | *Vitrina angelicae* | Transparent Vitrine Snail |
| ***Hydroprogne caspia*** | Caspian Tern | *Xanthocephalus xanthocephalus* | Yellow-headed Blackbird |
| ***Ixobrychus exilis*** | Least Bittern | | |

#### *3.5.5.2 Alternative Impact*

Federally Listed Species

The USACE determined that the Recommended Plan would have 'no effect' on the Northern Long-Eared Bat, Hine's Emerald Dragonfly, Monarch Butterfly, and Dwarf Lake Iris. This is because construction activities are planned to take place along the harbor's existing breakwater structures away from coastal wetlands, prairies, and woodlands, which are the preferred habitats for these species, and would not directly impact any established terrestrial habitats. Therefore, the proposed project would not have direct or indirect, short-term or long-term impacts on threatened and endangered species.

Wisconsin State Listed Species

Potential state listed species that could be within the project area include surf zone fish species such as the Pugnose Shiner, Longear Sunfish, and Lake Sturgeon. Appropriate erosion control measures would be taken to minimize potential adverse impacts of the stone removal and placement/replacement activities on the aquatic ecosystem. General construction scheduling and sequencing would minimize impacts to any spawning fish present in the project area. Best management practices such as erosion control fabric, silt fencing, and containment booms would be implemented to minimize any temporary upland sources of turbidity, spill, or debris impacts associated with the proposed activities. Overall, the removal and placement/replacement of stone has the potential to disturb state listed fish species that may be within the project area. However, this would be a short-term less than significant impact to state listed fish species. In the long-term, fish could use any toe stone present along the new sheet pile as shelter and foraging habitat.

### 3.5.6 Natural Areas & Nature Preserves

#### *3.5.6.1 Existing Conditions*

There are not state natural areas within Kewaunee County. However, there are several unique and diverse areas in Kewaunee County Wisconsin, including the Ahnapee River, Crescent Beach, Threemile Creek, Stony Creek, Krohns Lake, Kurtz Woods, Gardener Swamp State Wildlife Area, Big Creek Ida Bay

Preserve. These sites vary in distance from the offshore Algoma breakwater from directly adjacent (Crescent Beach and Ahnapee River) to several miles away.

#### *3.5.6.2 Alternative Impact*

Construction activities are planned to take place along the harbor's existing breakwater away from coastal wetlands, prairies, and woodlands and would not directly or indirectly impact any established natural areas and nature preserves. The proposed breakwater repair results in a potential disturbance of Lake Michigan bottom directly adjacent to the current breakwater. While this minimally productive ecosystem supports a small amount of flora and fauna, the proposed action will provide structural diversity in the form of rubble mound habitat. This is unlikely to significantly impact the habitat's productivity of Lake Michigan and may have minor habitat benefits in the future. The proposed action is not expected to have a more than minimal direct or indirect, short-term or long-term impact on existing ecosystem functions.

## 3.6 Cultural & Social Resources

### 3.6.1 Social Setting

#### *3.6.1.1 Existing Condition*

Algoma Harbor is located in the City of Algoma, Wisconsin. The 2022 population was 3,054, 19.8% of whom are under the age of 18 years. The median household income is $53,259. Algoma is not listed as a top 100 city in Wisconsin by population. The City of Algoma is not racially and/or ethnically diverse and has a low-income population on-par with the larger geographic area of Wisconsin (Table 7).

The U.S. Census Bureau's American Fact Finder and Quick Facts (U.S. Census Bureau 2020) for Algoma, Kewaunee County and the State of Wisconsin were reviewed for socioeconomic information, which is presented in Table 7.

**Table 7:** 2019 U.S. Census data for Algoma, Kewaunee County, and Wisconsin.

| Category | Algoma | Kewaunee County | Wisconsin |
|---|---|---|---|
| Total Population | 3,243 | 20,543 | 5,895,908 |
| Under 18 years | 19.1% | 21.5% | 21.8% |
| Under 5 years | 5.4% | 5.2% | 5.7% |
| White | 92.4% | 97.3% | 87.0% |
| Black or African American | 0.7% | 0.6% | 6.7% |
| American Indian and Alaska Native | 0.7% | 0.5% | 1.2% |
| Asian | 0.4% | 0.5% | 3.0% |
| Native Hawaiian and Other Pacific Islander | 0.6% | 0.0% | 0.1% |
| Hispanic or Latino | 2.9% | 3.4% | 7.1% |
| Two or more races | 4.4% | 1.1% | 2.0% |
| High School Graduate or Higher | 94.5% | 93.6% | 92.6% |
| Bachelor's Degree or Higher | 17.7% | 19.9% | 30.8% |
| Median Household Income | $53,259 | $68,474 | $63,293 |
| Below Poverty Level | 10.0% | 6.7% | 10.0% |

#### *3.6.1.2 Alternative Impact*

The Chicago District conducted an evaluation of potential environmental justice impacts using minority and low-income populations as criteria. This evaluation was conducted to ensure that no minority and/or low-income populations in the area were disproportionately affected due to activities from this project.

As defined in Executive Order 12898 and CEQ guidance, a minority population occurs where one or both of the following conditions are met within a given geographic area:

- The American Indian, Alaskan Native, Asian, Pacific Islander, Black, or Hispanic population of the affected area exceeds 50 percent.
- The minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

A minority population also exists if more than one minority group is present, and the aggregate minority percentage meets one of the above conditions. The selection of the appropriate unit of geographic analysis could be a governing body's jurisdiction, a neighborhood, census tract, or other similar unit. Note that the Hispanic/Latino population is a multi-racial group, which may overlap with other minority groups.

Executive Order 12898 does not provide criteria to determine if an affected area consists of a low-income population. For this assessment, the CEQ criteria for defining a minority population has been adapted to identify whether the population in an affected area constitutes a low-income population. An affected geographic area is considered a low-income population (i.e., below the poverty level, for purposes of this analysis) where one or both of the following conditions are met within a given geographic area:

- The poverty rate of the total population is above 50 percent.
- The percentage of individuals in poverty is meaningfully greater than in the general population or other appropriate unit of geographic analysis.

The City of Algoma does not appear to have a disproportionate number of minority individuals, households below the poverty line, or children under the age of 18 in relation to the county and state.

The U.S. EPA's Environmental Justice Screening and Mapping Tool (https://ejscreen.epa.gov/mapper/) was used to investigate environmental justice indexes and socioeconomic indicators for the City of Algoma. Algoma and the surrounding area are classified as being within or below the 60$^{th}$ percentile for the demographic index and low-income indices. Additionally, the area was within or below the 60$^{th}$ percentile for each of the environmental justice indices.

The socioeconomic environment of the affected area was also investigated using the following web based analytical tool:

- Council on Environmental Quality (CEQ) Climate and Economic Justice Screening Tool (https://screeningtool.geoplatform.gov/en/)

This tool uses various geographically based data visualization methods to analyze the socioeconomic conditions in an area using census and other data sources. This tool was used to assess conditions in the City of Algoma.

The CEQ tool uses these data sets to determine if a census tract area is considered disadvantaged based on eight categories. Under the current formula, a census tract will be identified as disadvantaged in one or more categories of criteria if the census tract is above the threshold for one or more environmental or climate indicators (8 total) and the census tract is above the threshold for two socioeconomic indicators which have been identified as relevant to the environmental indicator. For the majority of the environmental indicators, the corresponding socioeconomic indicators involve relative income and education levels. More information on the methodology can be found on the CEQ web site (https://screeningtool.geoplatform.gov/en/methodology).

Based on the methodology of this screening tool, the City of Algoma is not considered disadvantaged in multiple categories. An image of this tool, as appled to the relevant area is shown in Figure 6.

Given these facts this project will not have a disproportionate adverse effect on minority populations, low-income populations, or children under the age of 18 in the project area. It is anticipated that the Recommended Plan would have no short-term or long-term effects to the social setting of the project area.

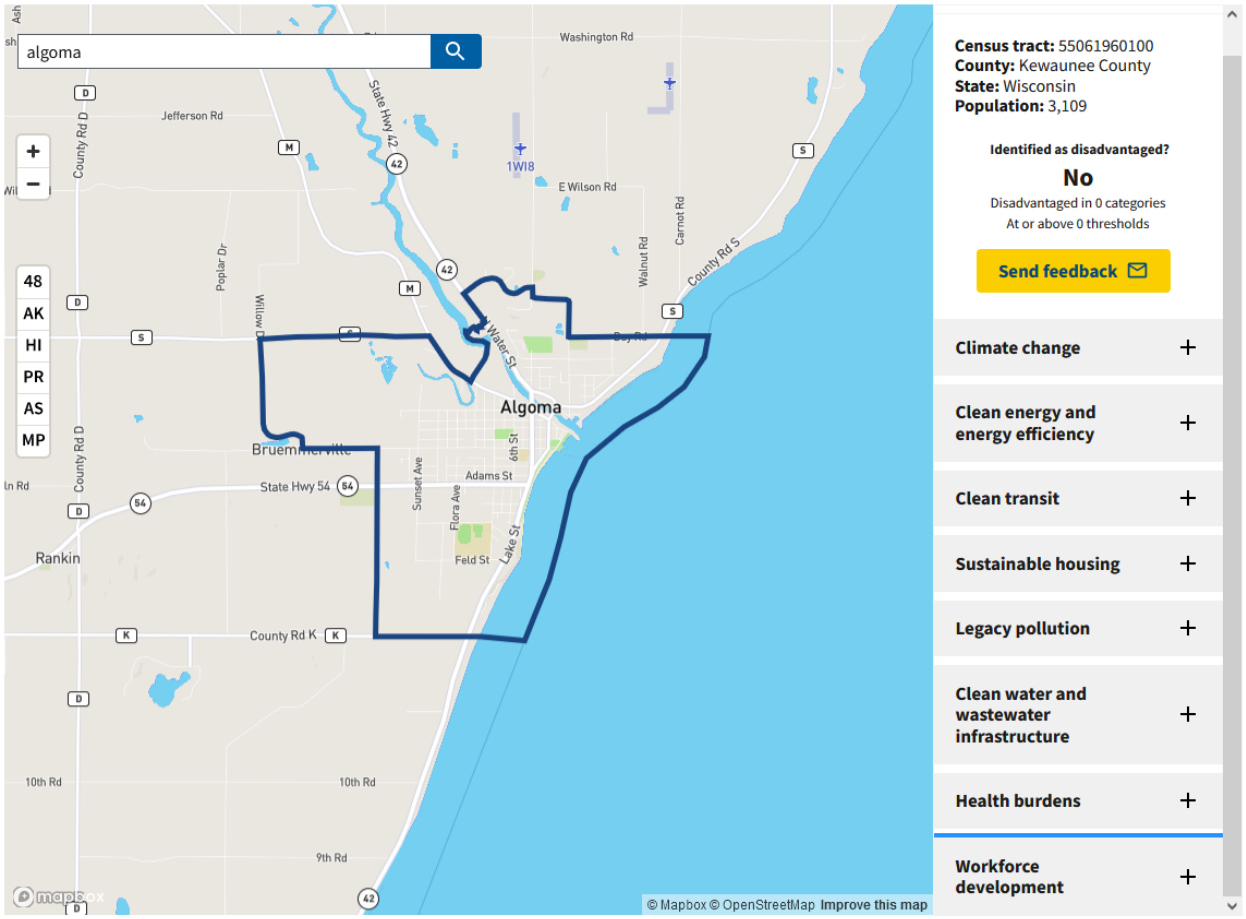


**Figure 6:** City of Algoma results of the Council on Environmental Quality's Climate and Economic Justice Screening Tool.

### 3.6.2 Archaeological & Historic Properties

#### *3.6.2.1 Existing Condition*

The USACE has conducted a records search and literature review of the project APE on the Wisconsin Historic Preservation Database and the National Register of Historic Places (NRHP). The literature review and records search revealed that the wreck of the Abner Howes (47KE0069) is adjacent to the project APE to the northeast and would need to be avoided during the repair project. While the wreck meets the age threshold for listing on the NRHP, the condition of the wreck has not been confirmed by field investigation. The Algoma Pierhead Light (AHI # 26537) sits within the project APE on the Algoma North Pier and has been determined to be eligible for the NRHP along with the associated breakwaters.

#### *3.6.2.2 Alternative Impact*

The USACE has made a reasonable and good faith effort to identify historic properties that may be affected by this undertaking. While the removal of the deteriorated metal catwalk from the breakwater will be a visual change, the project would not alter the primary historic purpose of providing a safe harbor and safe passage through Algoma Harbor and the project would better preserve the Pierhead Light in the long term. Given the information above, the Corps has determined that the project would not adversely impact the potential NRHP eligibility of the Algoma Pierhead Light. Wisconsin SHPO was sent a letter dated January 24, 2023 notifying them of the Corps' determination that the proposed project would result in "No Adverse Effect to Historic Properties." SHPO concurred with this finding on June 20, 2023. Federally recognized tribes with potential historical ties to the area were contacted at the beginning of this project and during the review period of the EA and were asked to provide information as to their historic connection to the land and the possibility of encountering historic tribal artifacts. Comments were received from The Miami Tribe of Oklahoma on June 28, 2022. No indication of impacts was given by any commenting tribe and it is unlikely that the project will have cumulative adverse effects on tribal resources.

### 3.6.3 Recreation

#### *3.6.3.1 Existing Condition*

The City of Algoma maintains multiple parks and beaches within a mile distance to the harbor: Crescent Beach and Boardwalk, American Legion Park, Perry Park, Peterson Park, Olson Park, and Heritage Park. Within the harbor is a recreational marina that is used by recreational boaters and charter companies to dock their boats. According to the city engineer, the harbor supports approximately three million dollars worth of charter fishing business annually. The breakwater itself may be used for fishing, bird watching, or other pedestrian recreation.

#### *3.6.3.2 Alternative Impact*

Proposed activities associated with the breakwater repair would have short-term, temporary effects on recreation to those areas that are immediately harbor adjacent but would not result in significant impacts to these areas. Inland parks and recreational areas outside of the harbor would be minimally impacted if at all. Recreational fishing, should it occur within the proximity of the project site, could potentially be impacted in the short term due to construction activities that would likely frighten fish away from the construction area. Activities would also prohibit fishing from the breakwater during construction. Other recreational opportunities such as swimming and boating could potentially be impacted in the short-term due to construction related noise and temporary increases in turbidity. Noise from barges and cranes, if used, would generally be in accordance with local noise ordinances. Noise and aesthetic impacts from the sheet pile placement efforts would be limited to the breakwater area. Overall, the Recommended Plan would have direct and indirect short-term less than significant impacts to recreation and no direct or indirect long-term impacts to recreation.

## 3.7 Hazardous, Toxic & Radioactive Wastes (HTRW)

#### *3.7.1.1 Existing Condition*

USEPA's EnviroMapper online tool and the Wisconsin DNR Bureau for Remediation and Redevelopment Tracking System (BRRTS) were used to determine whether any environmental issues attributed to unresolved contaminated sites that would impact construction activities or armor stone re-setting and placement and steel sheet pile driving. Although various environmental compliance sites and regulated activities exist around the harbor, no sites are located on or adjacent to the breakwaters being repaired. There are no sites within the harbor proper or within Lake Michigan.

#### *3.7.1.2 Alternative Impact*

There are no identified regulated sites on or adjacent to Algoma Harbor. The armor stone placement/replacement and driving of steel sheet pile would not impact any regulated or unresolved environmental sites. There are no identified HTRW impacts associated with the Recommended Plan.

## 3.8 The 17 Points of Environmental Quality

The 17 points are defined in Section 122 of the Rivers, Harbors and Flood Control Act of 1970 (P.L. 91-611). Effects to these points are discussed as follows:

**Noise** – Temporary increases in noise from material off-loading machinery could be noticeable by harbor visitors. Construction material off-loading operations would be primarily water-based with a terrestrial staging area at Christmas Tree Point for some materials (e.g., sheet piling). Driving of sheet pile would also increase the noise level and be noticeable by harbor visitors. However, increased noise levels are only expected to be present during construction activities and end when construction has stopped. Construction activities would only occur during business hours and not at night. Therefore, noise impacts are expected to be minimal and temporary. Ambient noise levels would return once construction is complete.

**Displacement of People** – The proposed breakwater construction material placement will not displace any people.

**Aesthetic Values** – The proposed breakwater repair will not obstruct or otherwise diminish the visual quality of the adjacent lighthouse once the project is completed. The breakwater itself will also have improved visual appeal, as the deteriorated concrete cap and sides will be replaced with a new concrete cap and sheet pile sides.

**Community Cohesion** – The proposed construction material placement would not disrupt community cohesion.

**Desirable Community Growth** – The proposed construction material placement would not affect community growth.

**Desirable Regional Growth** – The proposed construction material placement would not affect regional growth.

**Tax Revenues** – The proposed construction material placement would not affect tax revenues.

**Property Values** – The proposed construction material placement would not negatively affect property values.

**Public Facilities** – The proposed construction material placement would restore the breakwater structure and function and will help to maintain public and semi-public facilities.

**Public Services** – The proposed construction material placement would allow public services to continue, including recreation, public safety, and economic driven activities.

**Employment** – The proposed construction material placement would provide short-term beneficial employment impacts during construction activities through the hiring of construction personnel.

**Business and Industrial Activity** – The proposed breakwater repair material placement would promote local business and industry that supports critical infrastructure construction and water recreation.

**Displacement of Farms** – There are no farms within the project area; none will be displaced.

**Man-made Resources** – The proposed construction material placement would positively affect the breakwater structure, function, and durability.

**Natural Resources** – The proposed construction material placement would have potential short-term, less than significant direct and indirect impacts to natural resources; however, there would be no long-term direct or indirect impacts on natural resources. Refer to the individual discussions under Physical Resources section under Ecological Resources in chapter 3 of this report.

**Air Quality** – The proposed Algoma Harbor breakwater repair location is within an air quality attainment area. Due to the small scale, short duration and nature of the breakwater repair project, emissions will be limited to temporary vehicle/equipment emissions. Temporary vehicle emission impacts would meet current federal regulations. Greenhouse gas emissions are expected to be negligible.

**Water Quality** – The proposed breakwater repair would have temporary, minor, localized impacts on water quality during construction material placement activities, particularly in the form of turbidity. Those impacts are expected to subside after construction is completed and return to pre-project levels.

### 3.9 Irreversible and irretrievable commitment of Resources

NEPA requires that an EA include a discussion of the irreversible and irretrievable commitments of resources that may be involved should the project be implemented. The irreversible and irretrievable commitments of resources are the permanent loss of resources for future or alternative purposes. The irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms. Project implementation would result in the irreversible and irretrievable commitments of energy and material resources during project construction and maintenance, including the following:

1. Construction materials, including such resources as sand, rock, and metals.
2. Energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for project construction and operations and maintenance.

The use of these nonrenewable resources are expected to account for only a small portion of the region's resources and would not meaningfully affect the availability of these resources for other needs in the region. Construction activities would not result in the inefficient use of energy or natural resources. As described throughout this EA. Without implementation of the plan, the risk of increased sedimentation within the harbor and loss of an economic resource for Algoma would continue to grow. The harbor itself contributes approximately $3 million to the local economy annually, and any impacts to the resource would negatively impact both residential incomes and the local government tax base. This loss in revenue could impact the city's ability to finance new projects. To mitigate increased sedimentation, increased dredging of the harbor would need to be undertaken to keep the harbor navigable and/or periodic, smaller scale breakwater repairs would need to occur. Thus, implementation of the proposed plan preempts potentially substantial future consumption of resources and is likely to result in long-term energy and materials conservation.

### 3.10 Short-term uses of Man's Environment and long-term productivity

NEPA, Section 102(2)(C)(iv) calls for a discussion of the relationship between local short-term uses of man's environment as well as the maintenance and enhancement of long-term productivity in an environmental document. The recommended alternative would repair the south breakwater and north pier, positively affecting the function and durability of the structure as part of keeping the harbor navigable. This repair would lead to wave attenuation that would reduce water turbidity cause by Lake Michigan and provide calmer hydrologic processes for navigational purposes. Under the no action alternative, no project would be implemented, therefore, physical, biological, and social resources could be impacted in that the structure will further deteriorate. This would limit safe access to the harbor and potentially reduce employment, business, and recreational activity in the area by limiting the recreational, commercial, and transportation capabilities of the harbor.

Algoma Harbor breakwater repairs will have no negative impact on harbor access or navigation. The harbor will remain open and navigable and will function normally during the construction period. The contractor will accommodate the passage of commercial and recreational vessels during construction. Breakwater repair activities will not impede traffic into and out of the harbor.

### 3.11 Probable adverse effects which cannot be avoided

There are no significant effects which cannot be avoided from the implementation of the preferred alternative. The short-term effects described above are not significant and overall would not have significant direct or indirect long-term effects to the project area.

### 3.12 Cumulative Effects

Consideration of cumulative effects requires a broader perspective than examining just the direct and indirect effects of a proposed action. It requires that reasonably foreseeable future impacts be assessed in the context of the past and present effects to important resources. Often it requires consideration of a larger geographic area than just the immediate "project" area. One of the most important aspects of cumulative effects assessment is that it requires consideration of how actions by others (including those actions completely unrelated to the proposed action) have and will affect the same resources. When assessing cumulative effects, the key determinate of importance or significance is whether the incremental effects of the proposed action will alter the sustainability of resources when added to other present and reasonably foreseeable future actions.

Cumulative environmental effects for the proposed maintenance and repair project were assessed in accordance with guidance provided by the President's Council on Environmental Quality. This guidance provides for identifying and evaluating cumulative effects in NEPA analysis.

The overall cumulative impact of the project is considered to be beneficial environmentally, socially, and economically.

The cumulative effects, issues, and assessment goals are established in this environmental assessment. The spatial and temporal boundaries are determined, and reasonably foreseeable future actions are identified. Cumulative effects are assessed to determine if the sustainability of any of the resources are adversely affected, with the goal of determining the incremental impact to key resources that would occur should the proposal be permitted. The spatial boundary for the assessment encompasses the harbor and the associated facilities. The temporal boundaries are:

1. Past-1834, settlement Ahnapee (eventually known as Algoma) founded.
2. Present-2023, when the breakwater repair plan was being developed.
3. Future-2073, the year used for determining project life end.

Projecting reasonably foreseeable future actions is difficult at best. Clearly, the proposed action is reasonably foreseeable, however, the actions by others that may affect the same resources are not as clear. Projections of those actions must rely on judgment as to what are reasonable based on existing trends and, where available, projections from qualified sources. Reasonably foreseeable does not include unfounded or speculative projections. In this case, reasonably foreseeable future actions include:

1. Dredging the harbor to restore the authorized navigational depth.
2. Continued application of the environmental requirements such as the Clean Water Act.
3. Dredging the recreational harbor

Cumulative Effects on geology and soils

Other developments in the study area would be subject to the same types of geology, topography, and lake sediment characteristics as the proposed project. Impacts on these types of characteristics represent site-specific effects and do not result in a greater combined impact than the individual impacts.

Cumulative Effects on Water Quality and Aquatic Communities

The project would have no cumulative adverse effects on water quality or aquatic communities in Lake Michigan.

Cumulative Effect of Terrestrial Resources

Relatively small modifications for this project will have no long-term adverse or cumulative effects to terrestrial resources, plants, or animals.

Cumulative Effects on Air Quality

The project will have no long-term cumulative effect on air quality.

Cumulative Effects on Land Use

The project will have no cumulative effect on land use.

Cumulative Effects on Aesthetic Values

Implementation of the project within the study area would result in temporary impacts to visual resources related to the loss of visual quality during construction. An algae and aesthetic issue is also known to occur in the southwest portion of the project where the southern breakwater meets with the terrestrial environment. Depending on the wind direction, this corner of the harbor is known to collect algae and other detritus. As these materials decompose, it produces noxious odors that detract from the aesthetic value of the area. During the comment period residents have asked that this issue be examined and a way to reduce the collection and growth of material be sought. A water operations technical support program (WOTS) application was submitted to USACE's Army Engineer Research and Development Center (ERDC) on June 29, 2022, to determine if future breakwater modifications can be made to reduce the impacts of this material. Additionally, a Statement of Need (SoN) outlining the issue and requesting

research into potential solutions was also submitted to ERDC. The current project is not expected to increase the growth or collection of materials. However, it is not expected to reduce it either. This project is not expected to have a long-term negative impact on the visual setting of the project area.

Cumulative Effects on Public Facilities

The project will have no cumulative adverse effects on public facilities.

Cumulative Effects on Biological Resources

The project could contribute to impacts on foraging birds that utilize the breakwater as resting and hunting grounds, but it is anticipated that there will be no long-term or cumulative effects to the birds' ability to forage and find food. Likewise, modification of the breakwater would impact aquatic organisms by potentially limiting foraging and nesting habitat. However, after construction is complete, the area is expected to be recolonized by a similar organismal community that was there previously, and as a result the project will have no cumulative adverse effects on biological resources.

Cumulative Effects on Cultural Resources

There is an historic lighthouse located on the end of the North Pier of the project and the project has the potential to impact this structure temporarily but not adversely. The Wisconsin SHPO has agreed to our finding of no adverse effect in an email dated June 20, 2023. This project will have no cumulative adverse effects on cultural resources.

Tribal Cultural Resources

The project is located entirely over and within Lake Michigan and is not anticipated to encounter tribal resources. Federally recognized tribes with potential historical ties to the area were contacted at the beginning of this project and during the review period of the EA and were asked to provide information as to their historic connection to the land and the possibility of encountering historic tribal artifacts. Comments were received from The Miami Tribe of Oklahoma on June 28, 2022. No indication of impacts was given by any commenting tribe or the SHPO and it is unlikely that the project will have cumulative adverse effects on tribal resources.

Cumulative Effects Summary

Along with direct and indirect effects, cumulative effects of the proposed project were assessed following the guidance provided by the Presidents' Council on Environmental Quality (Table 8). There have been numerous effects to resources from past and present actions, and reasonably foreseeable future actions can also be expected to produce both beneficial and adverse effects. The effects of the proposed project are relatively minor.

**Table 8:** Cumulative effects summary.

| Potential Impact Area | Past Actions | Construction Impacts | Operation Impacts | Cumulative Impact |
|---|---|---|---|---|
| Geology & Soils | adverse | insignificant effects | no impact | no impact |
| Hydrology | adverse | no impact | no impact | no impact |
| Water Quality | adverse | no impact | no impact | no impact |
| Sediment Quality | adverse | no impact | no impact | no impact |
| Aquatic Resources | major adverse | insignificant effects | no impact | no impact |
| Terrestrial Resources | adverse | insignificant effects | no impact | no impact |
| Air Quality | no impact | insignificant effects | no impact | no impact |
| Land Use | adverse | no impact | no impact | no impact |
| Aesthetics | adverse | insignificant effects | no impact | no impact |
| Biological Resources | adverse | insignificant effects | no impact | no impact |
| Cultural Resources | no impact | no impact | no impact | no impact |
| Tribal Resources | no impact | no impact | no impact | no impact |

# Chapter 4 Conclusions & Compliance

Algoma Harbor breakwater maintenance activities would not result in significant adverse environmental effects, nor would they be expected to contribute to any significant cumulative adverse impacts. Adverse effects would be negligible and include short-term noise and air emissions from equipment operation; temporary, minor turbidity from stone placement operations; and temporary displacement of some macroinvertebrate, fish, amphibian, and bird species as well as associated recreational fishing activities. Macroinvertebrates, fish, amphibians, birds, and recreational fishermen would return upon completion of construction. The analysis detailed in this EA documents these conclusions. The drive line for new sheet pile and the placement site for any armor/toe stone is currently Lake Michigan bottom and is directly adjacent to the existing breakwater bounding Algoma Harbor. It is anticipated that the Recommended Plan would have no adverse direct or indirect, long-term effects to geologic resources since all stone placements would be surficial.

## 4.1 Compliance with Environmental Statutes

The proposed breakwater repair and maintenance project at Algoma Harbor has been reviewed pursuant to the following Acts and Executive Orders: Fish and Wildlife Coordination Act of 1958; National Historic Preservation Act of 1966; National Environmental Policy Act of 1969; Clean Air Act of 1970; Farmland Protection Policy Act (Subtitle I of Title XV of the Agriculture and Food Act of 1981); Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 1971; Coastal Zone Management Act of 1972; Endangered Species Act of 1973; Clean Water Act of 1977; Executive Order 11988, *Floodplain Management*, May 1977; Executive Order 11990, *Wetland Protection*, May 1977; Executive Order 12898, *Environmental Justice*, February 1994. The proposed action has been found to be in compliance with these Acts and Executive Orders as described below.

- Fish and Wildlife Coordination Act of 1958: Coordination was commenced with USFWS and WDNR with the provision of a scoping letter sent May 13, 2022. No response was received from USFWS during the scoping or the EA public comment periods. It is assume that coordination under the Fish and Wildlife Coordination Act is completed with no comment.

- Executive Order 13186 – *Responsibilities of Federal Agencies to Protect Migratory Birds* – Federal agencies shall restore or enhance the habitat of migratory birds and prevent or abate pollution or detrimental alteration of the environment for migratory birds. This project lies within a significant portion of the Mississippi Flyway along the western shoreline of Lake Michigan that particularly favors both ecological and economically valuable species including neo-tropic migrants and waterfowl. The short duration of the project work would have no long-term detrimental impacts to migratory birds

- National Historic Preservation Act of 1966: Section 106 of the National Historic Preservation Act (16 USC 470) requires federal agencies to consider the effects of proposed federal undertakings on historic properties included or eligible for the National Register of Historic Places. The implementing regulations for Section 106 (36 CFR § 800) requires Federal agencies to consult with various parties, including the Advisory Council on Historic Preservation, the SHPO, and Indian tribes, to identify and evaluate historic properties, and to assess and resolve effects to historic properties. The USACE has consulted with the Wisconsin SHPO, the Citizen Potawatomi of Oklahoma, the Forest County Potawatomi Community of Wisconsin, the Fort Belknap Indian Community of the Belknap Reservation of Montana, the Hannahville Indian Community of Michigan, the Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin, the Little Traverse Bay Bands of Odawa Indians of

Michigan, the Menominee Indian Tribe of Wisconsin, the Miami Tribe of Oklahoma, and the Prairie Band Potawatomi Nation to assist in identifying properties which may be of religious and cultural significance. The Miami Tribe of Oklahoma responded on June 28, 2022 with no objections to the proposed project. A finding of "No Adverse Effect to Historic Properties" was submitted to the Wisconsin SHPO on January 24, 2023. Consultation with the Wisconsin SHPO has concluded with their concurrence of the No Adverse Effect to Historic Properties finding as stated in an email dated June 20, 2023.

- National Environmental Policy Act of 1969: This EA has been prepared in accordance with NEPA; the CEQ *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR Parts 1500-1508); and the Corps of Engineers Policy and Procedure for Implementing NEPA (33 CFR Part 230).

- Clean Air Act of 1970: The proposed Algoma Harbor breakwater repair location is within an air quality attainment area. Due to the small scale, short duration and nature of the breakwater repair project, emissions will be limited to temporary vehicle/equipment emissions. Temporary vehicle emission impacts would meet current federal regulations. Greenhouse gas emissions are expected to be negligible. Overall, the project is *de minimis* in terms of emissions.

- Farmland Protection Policy Act: Project exempt as it is located entirely within Lake Michigan.

- Coastal Zone Management Act of 1972: The project site is within the Wisconsin Coastal Zone which is defined as all counties bordering the Great Lakes. The project will protect the public interest by helping to preserve harbor safety and access. The USACE has determined that the proposed activities would be "consistent to the maximum extent practicable" (as defined in 16 USC 1456, Coastal Zone Management Act, approved 1978) with the enforceable policies of the Wisconsin Coastal Management Program (WCPM). A determination of consistency with the Wisconsin Coastal Zone Management Program pursuant to the Coastal Zone Management Act of 1972 has been sought from the State of Wisconsin Department of Administration in a letter dated October 21, 2022. The 60-day statutory review window has closed without comment from the Coastal Zone office. It assumed that concurrence is granted. The U.S. Army Corps of Engineers believes that the Recommended Plan is consistent with state Coastal Zone Management plans and shall be implemented to minimize adverse impacts to the coastal zone. In an email dated October 27, 2022 Wisconsin stated that the Recommended Plan will be fully reviewed for CZM Act compliance as part of the Section 401 Water Quality Certification process for this proposed action.

- Endangered Species Act of 1973: The USACE determined that the Recommended Plan would have 'no effect' on Northern Long-eared Bat, Hine's Emerald Dragonfly, Monarch Butterfly, and Dwarf Lake Iris. Documentation of the analysis for the 'no effect' determination is included in the threatened and endangered species section of chapter 3 of the EA and in a memo located in Appendix 2.

- Clean Water Act of 1977: Pursuant to the Clean Water Act (CWA), a Section 404(b)(1) evaluation of the environmental effects of the fill material into the waters of the United States has been prepared and is an appendix to this document. The Section 404(b)(1) Evaluation concludes that the proposed action is in compliance with Section 404 of the Clean Water Act. Pursuant to Section 404, compliance with State water quality standards has been completed through an application for a 401 Water Quality Certification from the state. The Water Quality Certification has been obtained in a permit dated August 8, 2023.

- Executive Order 11988, *Floodplain Management*, May 1977: The project site is within Lake Michigan and does not impact floodplains.

- Executive Order 11990, *Wetland Protection*, May 1977: The project does not impact coastal or terrestrial wetlands as there are none present within the project area. The proposed breakwater repair results in disturbance of an area of Lake Michigan bottom that is already disturbed by the current structure. A small increase to the disturbed area will take place as the footprint of the structure will be increased by a few feet. However, given the uniformity of the lake bottom habitat, this project is not expected to have a more than minimal impact on existing ecosystem functions.

- Executive Order 12898, *Environmental Justice*, February 1994: The project does not disproportionately impact low-income or minority communities.

- Executive Order 13653, *Preparing the United States for the Impacts of Climate Change*, November 2013: The project does not affect the climate. Additional fossil fuels would be needed during the breakwater repair process for the operation of associated construction vehicles. However, there would be no measurable impact on climate, even though there may be localized increases in greenhouse gas emissions during construction.

This EA concludes that the proposed Algoma Harbor breakwater maintenance and repair project: 1) would not have significant cumulative or long-term adverse environmental impacts; 2) would have benefits that outweigh the minor and mostly temporary impacts that may result; and 3) does not constitute a major federal action significantly affecting the quality of the human environment.

### 4.3 Areas of Known or Expected Controversy

The primary issue of known controversy is the inadvertent collection of algae, along with other detritus and floating materials in the southwest corner of the harbor where the breakwater meets the shore. Under certain conditions, the wind will push floating materials into this corner on both the lake and harbor sides of the breakwater. Any organic material will then decompose and produce a noxious odor that residents have described as being, at minimum, unpleasant. Residents have asked that this condition be examined and a determination be made if the presence of noxious odor causing materials can be reduced or eliminated. An example of material collection along the breakwater is shown in Photo 3 below and in the water quality section of this report.

**Photo 3:** Evidence of collection of detritus as the point where the south breakwater meets the shore. Left - Lakeward side. Right - Harbor side. Photos taken July 2022.

The Chicago District has requested research and development support from the ERDC WOTS Program. This program offers support for environmental and water quality operational studies to address a wide range of resource management problems. The Chicago District has also submitted a separate statement of need request to ERDC. Statements of need are intended to specifically address issues presenting an impediment to efficient and effective mission execution and inform the necessary research, practice, policy, and guidance development needed for resolution. The WOTS program and statement of need are separate processes from both each other and any potential solution(s) derived from those programs would be independent of the breakwater repair work outlined in this EA.

A secondary issue that was brought up during both the scoping and public comment periods was the perceived issue of the current breakwater design causing water quality and sedimentation issues within the harbor. During the comment period, the prevailing question asked by residents was would moving the southern breakwater further away from shore reduce the amount of sedimentation in the harbor and would that be a feasible option. In 2013 the USACE Detroit District conducted a sedimentation study in and around Algoma Harbor. It was determined that modification to the break water would not significantly impact the currents experienced in the harbor and would likely not appreciably reduce the sedimentation rate of the harbor.

### 4.4 Finding of No Significant Impact (FONSI)

This EA, which describes and discusses the Algoma Harbor breakwater repair and maintenance project, has found that there would be no direct or indirect, short term or long term, significant adverse impacts resulting from implementation of any of the proposed activities. An initial 30-day Agency and Public Scoping period was held from May 13, 2022, to June 13, 2022. A 30-day Agency and Public Review period of the EA and accompanying materials was held from February 22, 2023 to March 24, 2023. This includes a public meeting held in Algoma on March 2, 2023 where residents were invited to give verbal testimony to the proposed project. All pertinent comments received were considered and incorporated into the document, as appropriate. The announcement for public review of the EA and the accompanying materials were sent to parties that had expressed interest and were posted to the Chicago District's civil works webpage at https://www.lrc.usace.army.mil/Missions/Civil-Works-Projects/. The FONSI has been posted at the front of this EA and the 404(b)(1) analysis is located in Appendix 1.

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# Appendix 1:
# Section 404(b)(1) Evaluation
# Algoma Harbor Breakwater Repair
# Operations and Maintenance
# Kewaunee County, Wisconsin

**U.S. Army Corps of Engineers**
**Chicago District**

**August 2023**

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# 1.0 Project Description

## 1.1 Location

Algoma Harbor is a recreational harbor located in Algoma, Wisconsin on the western shore of Lake Michigan at the mouth of the Ahnapee River (Figure 1). The federal project consists of an outer basin enclosed by a 1,102-foot-long north pier and a 1,530-foot-long south breakwater. The harbor also has a 2,100-foot-long entrance channel with the channel extending about 1,000-feet upriver. The harbor is located 30 miles east of Green Bay and 115 miles north of Milwaukee. The harbor supports mainly recreational navigation and serves as a harbor of refuge (i.e., a port, inlet, or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and safely moor). The project was authorized by the River and Harbor Acts of March 3, 1871, March 2, 1907, August 30, 1935, and July 3, 1958.

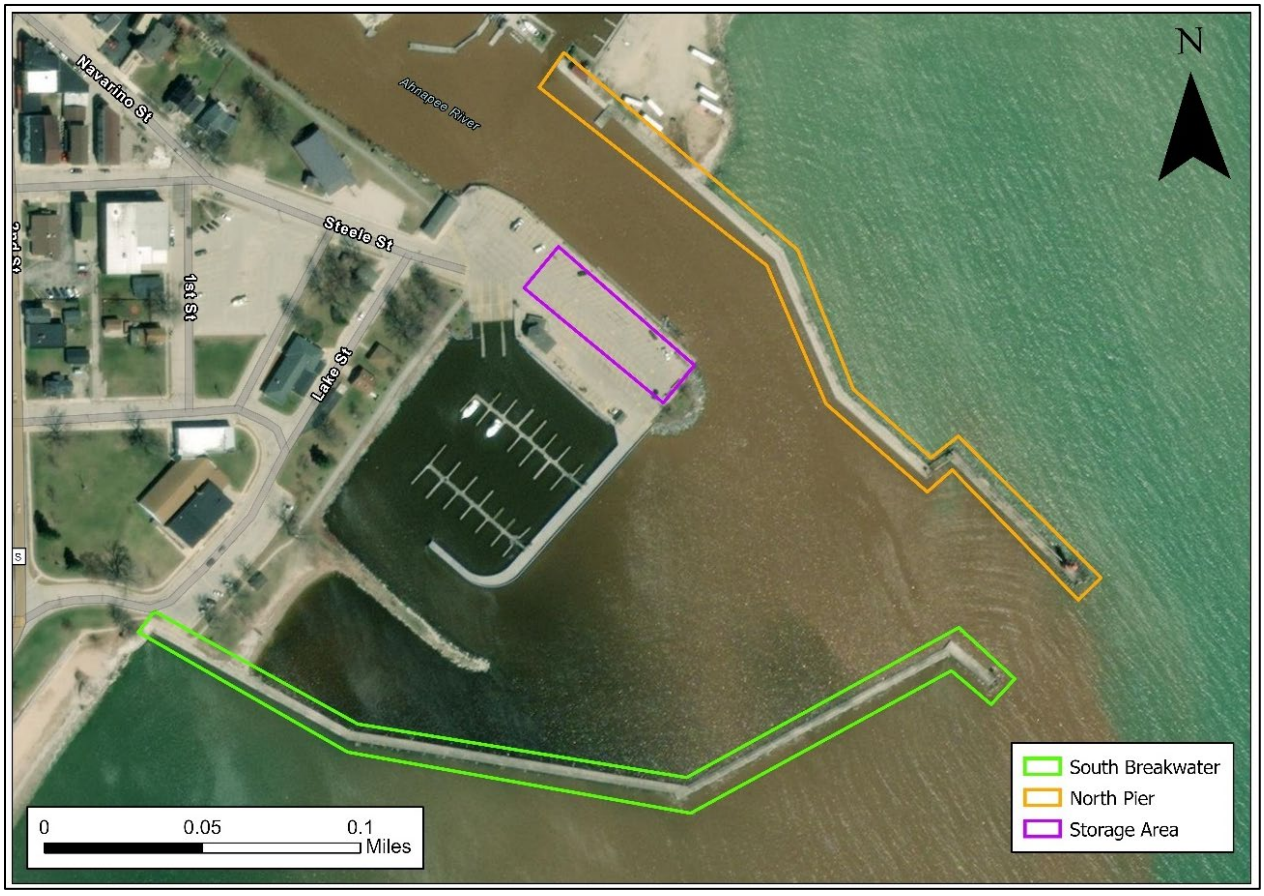


**Figure 1**: Vicinity Map of the Algoma Harbor Area.

## 1.2 General Description

The Algoma Harbor south breakwater and north pier (hereafter breakwater), constructed in 1871, currently requires stabilization. The structure has not been repaired since the 1930s when the superstructure was constructed and now needs significant repair. USACE proposes to encapsulate the full length of the breakwater within steel sheet pile and a new concrete cap will be installed along the entire length. The interior timber crib has deteriorated and much of the interior fill has been lost. This has created voids within the breakwater and as a result has increased sedimentation within the channel. Sections A, B, D, and E will have an increased footprint of 4-feet (2-feet on either side), section C will

increase by 5-feet, and section F by 7-feet. The section locations are shown in Figure 2. Existing cross sections of the breakwater and north pier are shown in Figure 3 and an example cross section of the proposed project is shown in Figure 4. Toe stone will be placed along the new sheet pile as needed and may contribute to the increased footprint size where armor/toe stone is not currently located. The recommended plan would provide a more stable and long-lasting structure, better maintaining safe passage for vessels entering and exiting the port. The majority of repairs would be conducted by barge with the work in the nearshore areas being conducted from land due to the shallow waters of the lake.

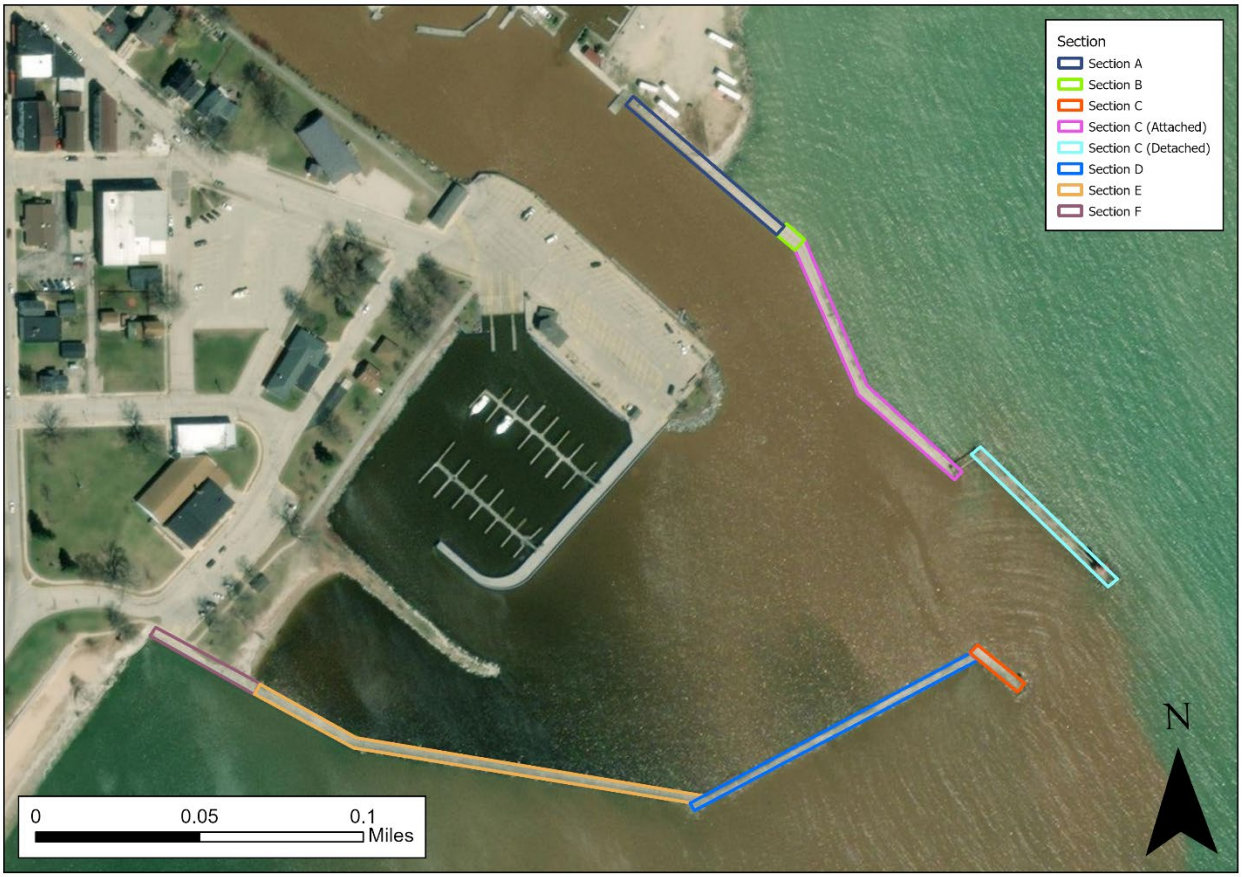


**Figure 2**: Aerial view of Algoma Harbor showing Sections A through F of the North Pier and South Breakwater.

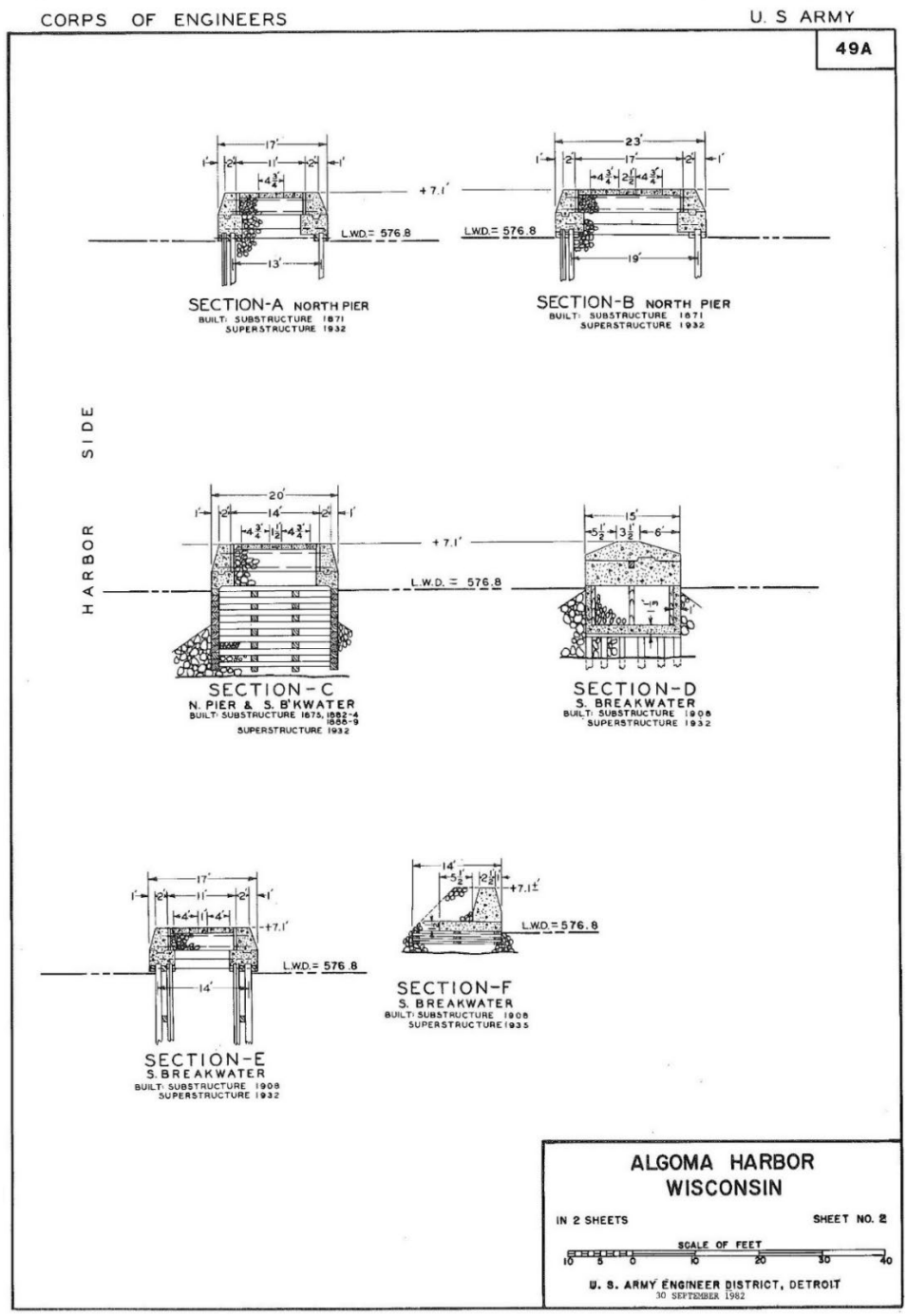


**Figure 3**: Existing Breakwater Cross Section

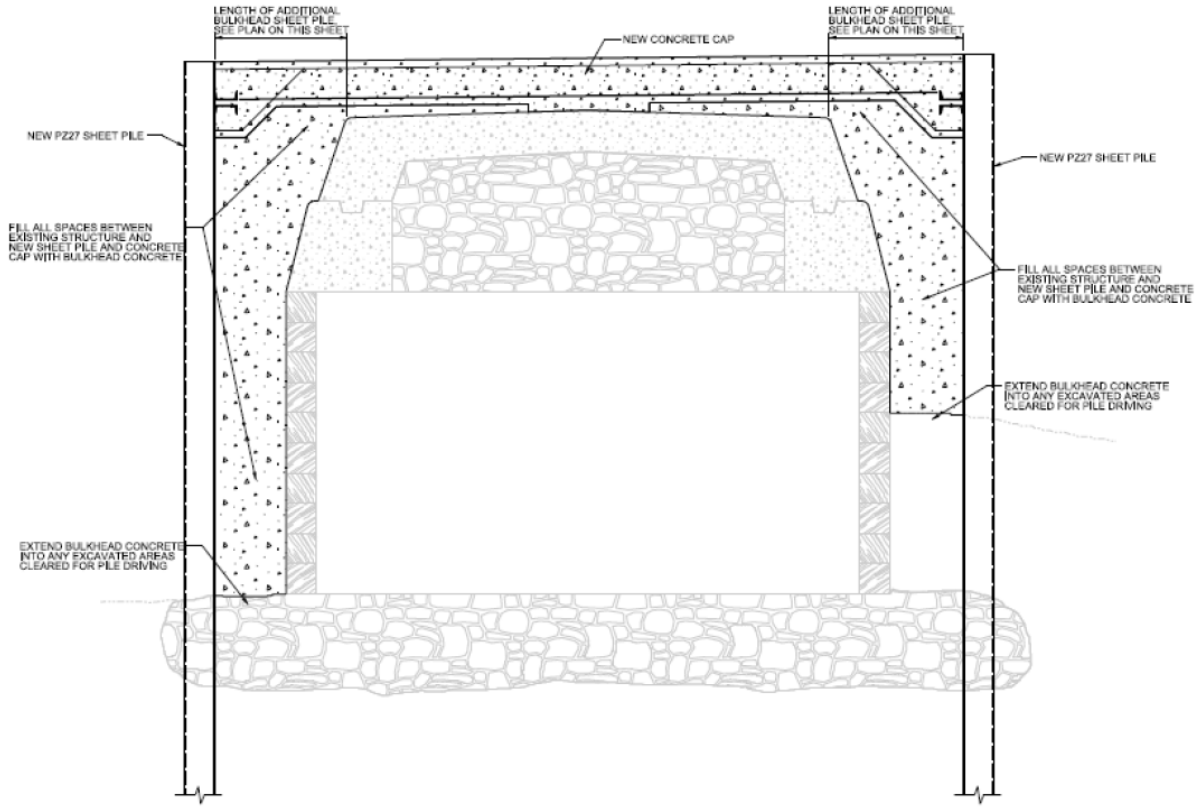


**Figure 4**: Proposed New Breakwater Cross Section

The recommended plan may require the construction of temporary upland structures. There will be a staging area located within the harbor on Christmas Tree Point used for equipment storage and temporary placement. Additional types and locations of temporary structures and/or construction materials cannot be determined at this time, since they would be incidental to the contractor's methods for the work being performed. Potential examples are work and storage areas, access roads, and office facilities. Any necessary temporary structures would be at USACE-approved locations within project boundaries or rights-of-way, outside of any wetlands, areas containing federal or state protected species or their critical habitat, or properties listed on or eligible for listing on the National Register of Historic Places, or state-listed properties. Temporary activities will include appropriate precautionary measures to prevent erosion and sedimentation or other undesirable environmental impacts. These construction aids would be removed when no longer needed and their sites would be restored to pre-project conditions upon project completion.

## 1.3 Authority and Purpose

The Algoma Harbor was authorized by the River and Harbor Acts of March 3, 1871, March 2, 1907, August 30, 1935, and July 3, 1958. The existing project provides for a federal navigation channel with authorized depths of 14-feet for the 2000-feet long and 200-feet wide entrance channel and a depth of 14-feet for the channel within the Ahnapee River that extends from the harbor to the Second Street bridge. The sediment is not dredged regularly and sediment removal in the federal navigation channel last took place in 1993.

The proposed project would support the navigability of Algoma Harbor by encapsulating the existing breakwater that is currently in a deteriorated state with crumbling surfaces and interior voids along the entire length. Encapsulation will restore the structural integrity of the breakwater and extend the useful lifetime of the structure and harbor by using a more stable and long-lasting material, and better maintaining safe passage for vessels entering and exiting the port.

## 1.4 Regulatory Considerations

Section 404 of the Clean Water Act contains the permit requirements for the discharge of dredged or fill material into the navigable waters of the United States. Although Section 404 authorizes USACE to issue permits for the discharge of dredged or fill material, 33 Code of Federal Regulation [CFR] 336.1(a) explains that the USACE does not process and issue permits for its own activities. The USACE authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including public notice, opportunity for public hearing, and application of the Section 404(b)(1) guidelines, which are described in 40 CFR 230.

Under Section 401 of the Clean Water Act, a federal agency, such as the USACE, may not conduct any activity that may result in any discharge into waters of the United States unless a certifying authority issues a Section 401 water quality certification verifying compliance with existing water quality requirements or waives the certification requirement. An individual water quality certification or waiver is required for activities that would result in the discharge of dredged or fill material, unless the discharge is for an activity where a general water quality certification has already been issued, often under a nationwide or regional permit.

The Chicago District has obtained an individual 401 water quality certification with the State of Wisconsin and has completing the 404(b)(1) analysis included in this document to determine the environmental impacts on aquatic resources associated with the proposed placement of fill material.

## 1.5 General Description of Fill Materials

### 1.5.1 General Characteristics and Purpose of Material

Fill material would consist of existing armor stone that was removed from the current breakwater in order to drive sheet pile and/or new armor stone that would be used to replace armor stone that has been dislodged and moved by wave action. Armor stone would be placed along approximately 1,102 linear feet of the north pier and 1,530 linear feet of the south breakwater in order to maintain operational integrity of the structure and prevent scouring.

### 1.5.2 Quantity of Material

To the extent practicable, existing armor stone that has been dislodged will be reset back in position to provide sufficient protection. It is unknown if any new armor stone will be needed for this project because the quantity of usable existing stone is not fully known. If any new stone is needed, it will be of the same relative size as the existing stone (approximately 2-10 tons).

### 1.5.3 Source of Material

Optimally, the maximum amount practical of existing armor stone will be used. Any new stone will be purchased from a commercial supplier. USACE armor stone specifications require stone to be clean and free of contaminants and organic debris. Sources can be newly quarried stone, to be approved by USACE assessment and inspection, or reuse of the stone that is currently in use as toe stone along the breakwater. The specifications do not identify required sources, however all armor stone for projects on the west side of Lake Michigan in the last 10 years has come from one of seven established and licensed commercial quarries, all of which are located in Wisconsin.

#### 1.5.4 Material Quality

The stone will be clean, inert materials free from fines and free of surface pollution.

### 1.6 Description of Proposed Discharge Site

#### 1.6.1 Location

The proposed discharge site for placement of fill is the existing Algoma Harbor south breakwater and north pier.

#### 1.6.2 Size

The size of the proposed discharge site is approximately 1,102 linear feet of both sides of the north pier and 1,530 linear feet of both sides of the south breakwater for a total of 5,300 linear feet. The approximate extent of lakebed that will be occupied by this discharge will be 15-25-feet from either side of the breakwater for a total approx. acreage of up to 8.8 acres.

#### 1.6.3 Type of Site

The proposed discharge site is Lake Michigan on either side of the breakwater.

#### 1.6.4 Type of Habitat

The type of habitat within the proposed discharge site is freshwater lacustrine.

#### 1.6.5 Timing and Duration of Discharge

The proposed placement will occur during the 2023-2024 construction season. Work will begin after the fish window closes on July 1 and, once commenced, will take approximately a month to complete.

### 1.7 Description of Placement Method

Armor stone will be delivered by barge and moved into place via barge-mounted crane, as necessary. In shallower habitats, stone will be delivered by truck and moved into place via terrestrially mounted crane.

## 2.0 Factual Determinations

### 2.1 Physical Substrate Determinations

#### 2.1.1 Substrate Elevation and Slope

Elevation of the project area is approximately 585 feet North American Vertical Datum (NAVD) 88 to the top of the breakwater. The surrounding lake bottom extends from shore to as deep as 564 feet NAVD where the existing lighthouse is located.

#### 2.1.2 Substrate Type

On the lakeward side of the breakwater, the placement site was previously Lake Michigan bottom (sand). On the harbor side of the breakwater is a mix of organic material and sediment deposited by the Ahnapee River. The placement area is currently an existing breakwater (armor stone) adjacent to Algoma Harbor and Lake Michigan bottom.

### 2.1.3 Fill Material Movement

There would be no significant movement of the armor stone once placed. Armor stone would be sized appropriately to remain where placed along the breakwater. The sheet pile encapsulation will be driven into the sediment and will not move once placed.

### 2.1.4 Physical Effects on Benthos

The proposed fill activity would cover currently exposed Lake Michigan bottom as the footprint of the existing breakwater would be expanded. Below details the impacts of the proposed work on the climate, geology, and sediment quality of the project area.

**Climate**

The proposed fill activity would have no significant short-term or long-term impacts to climate. Additional fossil fuels would be needed during the breakwater repair process for the operation of associated construction vehicles. However, there would be no measurable impact on climate, even though there may be localized increases in greenhouse gas emissions during construction. Once construction is complete, additional fossil fuels would not be needed for operation of the breakwater.

**Geology**

The sheet pile would be driven into the Lake Michigan sediment with toe stone being placed as a scour prevention method in several locations. This would result in short term impacts in the form of a small amount of sediment displacement. There will be a long-term impact in that the breakwater will be expanded by several feet along some sections where there is no current armor stone. The amount of Lake Michigan near shore bottom that is lost due to the expanded footprint is insignificant compared to the larger available habitat as the bottom is relatively uniform and vast. While there is a long-term direct impact, it is anticipated that the recommended plan would have no direct or indirect long-term adverse impacts to geologic resources.

**Sediment Quality**

The existing toe stone would need to be removed in order encapsulate the existing structure. It would then be replaced along the toe of the new structure as a means of erosion control. Removal and replacement may temporarily cause a short-term direct disturbance of the sediment in the area, but it is anticipated that this alternative would have no direct or indirect long-term impacts on sediment quality.

### 2.1.5 Water Circulation, Fluctuation, and Salinity Determinations

**Water**

The proposed fill activity would have no significant long-term negative impacts to water chemistry, water clarity, color, odor, taste, dissolved gas levels, nutrients, or increased eutrophication as a result. Only clean, quarried stone, free of surficial pollutants would be placed. Sheet pile is relatively inert and should not react with the lake water in such a way as to negatively impact Lake Michigan water quality.

**Salinity**

The proposed fill activity is occurring in a freshwater environment so no impacts to salinity are expected.

**Water Chemistry**

The activity associated with the construction of the proposed breakwater repair is not expected to have any short-term or long-term impacts to water chemistry.

**Clarity**

The proposed activity associated with construction of the proposed breakwater repair is expected to have minor temporary impacts to water clarity. Turbidity of the water is expected to increase during placement activities. The minor increase in turbidity, however, would be temporary in duration. Overall, the proposed activity would have less than significant short-term impacts to water clarity and no long-term impacts to water clarity.

**Color**

The proposed activity associated with construction of the proposed breakwater repair is not expected to have short-term or long-term impacts to the water's color.

**Odor**

The proposed activity associated with construction of the proposed breakwater repair is not expected to have any short-term or long-term impacts to water odor.

**Taste**

The proposed activity associated with construction of the proposed breakwater repair is not expected to have any short-term or long-term impacts to water taste.

**Dissolved Gas Levels**

The proposed activity associated with construction of the proposed breakwater repair is not expected to have any short-term or long-term impacts to dissolved gas concentrations within the water.

**Nutrients**

The proposed activity associated with construction of the proposed breakwater repair is not expected to have any short-term or long-term effects to nutrient concentrations within the water.

**Eutrophication**

The proposed activity associated with construction of the proposed breakwater repair is not expected to cause any short-term or long-term increase in eutrophication.

### 2.1.6 Current Patterns and Circulation

**Current Patterns and Flow**

No changes are expected to current patterns or flow as a result of project implementation.

**Velocity**

No changes are expected to velocity as a result of project implementation.

**Stratification**

No changes are expected to stratification as a result of project implementation.

**Hydrologic Regime**

No changes are expected to the current hydrologic regime as a result of project implementation.

### 2.1.7 Normal Water Level Fluctuations

No changes are expected to normal water level fluctuations as a result of project implementation.

### 2.1.8 Salinity Gradients

No changes are expected to current salinity gradients as a result of project implementation.

### 2.1.9 Other

The proposed activity associated with construction of the proposed breakwater repair is not expected to have any short-term or long-term effects to other known system components not specifically defined above.

### 2.1.10 Actions that will be Taken to Minimize Impacts

No specific actions are included to minimize impacts to the physical substrate based on the findings outlined in this section.

## 2.2 Suspended Particulate/Turbidity Determinations

### 2.2.1 Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Fill Site

There would be minor increases in suspended particulates and turbidity levels in the immediate area of the proposed placement activity during construction of the breakwater repair, which would likely be less than a typical summer thunderstorm that generates adverse weather conditions such as high winds and waves as well as strong currents. The increase in turbidity is expected to be temporary and no long-term changes to turbidity are expected because of the proposed activity.

### 2.2.2 Effects on Chemical and Physical Properties of the Water Column

It is expected that there would be negligible effects to light penetration or dissolved oxygen levels during construction. The placement of armor stone and driving of sheet pile will not introduce organic toxins, significant amounts of metals, or other pathogens into the project area.

**Light Penetration**

The proposed activity associated with construction of the proposed breakwater repair is expected to have localized and temporary impacts to light penetration due to the temporary increase in turbidity during construction. However, these effects are expected to be temporary in duration. Overall, no significant long-term negative effects to light penetration are expected with the proposed construction activities.

**Dissolved Oxygen**

The proposed activity associated with construction of the proposed breakwater repair is not expected to have any significant long-term negative effects to dissolved oxygen concentrations within the water column.

**Toxic Metals and Organics**

The proposed activity associated with construction of the proposed breakwater repair is not expected to introduce any toxic metals or organics to the project area.

**Pathogens**

The proposed activity associated with construction of the proposed breakwater repair is not expected to introduce any pathogens into the project area.

**Aesthetics**

The proposed activity associated with construction of the breakwater repair is not expected to have any significant long-term negative effects to aesthetics. Localized and temporary effects to aesthetics are expected during the construction period of the project, but these impacts are expected to be temporary in duration. Repairs to the breakwater are likely to improve the aesthetics of the area as the breakwater is currently severely deteriorated. The proposed breakwater repair will not obstruct or otherwise diminish the visual quality of the adjacent lighthouse.

**Other**

No additional long-term negative impacts to known system components not listed above are expected as a result of the proposed activity.

### 2.2.3 Effects on Biota

The Algoma Harbor breakwater is located in Lake Michigan. Natural lacustrine functions and structure of the harbor are affected by the construction of manmade coastal structures; however, the project does not alter the habitat type(s) beyond what the current breakwater already provides. It does however take a small amount of lake bottom as the sheet pile would be placed adjacent to the breakwater and not within the current footprint in some areas. Manmade structures, such as the breakwaters, can provide shelter for various aquatic organisms. The proposed action would continue to provide a manmade rocky habitat, it would not significantly change the fish and macro-invertebrate assemblages presently encountered at the project area. The sandy lake bottom habitat that would be lost because of the expanded footprint is a negligible amount as this type of habitat is vast within Lake Michigan.

**Primary Production, Photosynthesis**

The proposed activity associated with construction of the proposed breakwater repair is expected to have localized and temporary impacts to light penetration due to the temporary increase in turbidity during construction. This could in turn temporarily impact primary production and photosynthesis by submergent aquatic vegetation within the area. Submergent aquatic vegetation has been identified as currently existing near the project area within the harbor and smaller marina. Some short-term effects will be present on the aquatic vegetation in the area during the construction phase of the project. No long-term negative effects to primary production or photosynthesis are expected with the proposed construction activities.

**Suspension/Filter Feeders**

The proposed activity associated with breakwater repair is expected to have localized and temporary increases to turbidity which could potentially impact suspension/filter feeders. These impacts are expected to be temporary in duration. In addition, the placement of the armor stone could smother any benthic suspension/filter feeders in the project area. Overall, there would be a short-term insignificant impact to suspension/filter feeders and no long-term impact as these species would be expected to recolonize the area from adjacent habitat once construction is complete.

**Sight Feeders**

The proposed activity associated with construction of the proposed breakwater repair is expected to have localized and temporary increases in turbidity that could potentially impact sight feeders. However, the impacts are expected to be temporary in duration and, since any fish/macroinvertebrate species present would likely be tolerant of poor water quality, no significant long-term negative effects to sight feeders are expected.

**Actions Taken to Minimize Impacts**

Environmental windows have been coordinated with the state through the 401 water quality certification process to prevent impacts to any sensitive biota that could be impacted by the stone placement or driving of sheet pile. The state has asked that no in water work take place between October 1 and December 1 and between February 1 and June 15 to avoid impacts to fish species during the annual spawning season. Floating containment booms may be used to control spills, if necessary; the Contractor will maintain a spill plan and response materials on site.

### 2.2.4 Contaminant Determinations

The proposed fill material and sheet pile is not expected to introduce any new contaminants into Lake Michigan nor release existing contaminants (if any are present) through bottom disturbance within the construction zone. The stone will be placed on top of the existing sediment and minimal disturbance is expected.

### 2.2.5 Aquatic Ecosystem and Organism Determinations

**Effects on Plankton**

No long-term detrimental effects to planktonic organisms are expected.

**Effects on Benthos**

The placement area is currently covered by the existing breakwater and any armor stone that is present. The footprint of the existing breakwater would be expanded by several feet in the various sections of the structure. The breakwater area is relatively small in comparison to the wide expanse of natural lake bottom on which it sits. As such, it would have insignificant effects on the greater macro-invertebrate population of the area. There are no significant adverse effects expected.

**Effects on Nekton**

Fish eggs and larvae would not be smothered by the proposed fill activity since the anticipated construction activities will not occur during reproductive or rearing seasons. Fish and other free-swimming organisms should tend to avoid the construction area. The construction area will be used again by those organisms soon after construction ends, so overall species presence is not expected to decrease. A fish window will be observed from October 1 and December 1 and between February 1 and June 15 as coordinated with the state through the 401 water quality certification process, to prevent impacts.

**Effects on Aquatic Food Web**

No adverse food web effects are expected as a result of the proposed breakwater repair.

**Effects on Special Aquatic Sites**

#### Sanctuaries and Refuges

The City of Algoma is not located near any aquatic sanctuaries or refuges. Therefore, the proposed activity associated with construction of the proposed breakwater repair is not expected to have a significant impact on these special aquatic sites.

#### Wetlands

No wetlands have been identified within the project area, so the proposed activity associated with construction of the proposed breakwater repair is not expected to have a significant impact on this habitat type.

### Mud Flats

No mudflats have been identified within the study area, so the proposed activity associated with construction of the proposed breakwater repair is not expected to have a significant impact on this habitat type.

### Vegetated Shallows

No vegetated shallows have been identified within the study area, so the proposed activity associated with construction of the proposed breakwater repair is not expected to have a significant impact on this habitat type.

### Coral Reefs

Not applicable to freshwater environments.

### Riffle and Pool Complexes

No riffle and pool complexes have been identified within the study area, so the proposed activity associated with construction of the breakwater repair is not expected to have a significant impact on this habitat type.

## Effects on Threatened and Endangered Species

Federally listed species for the Algoma Harbor vicinity include the Northern Long-Eared Bat (threatened), Hine's Emerald Dragonfly (endangered), the Monarch Butterfly (candidate), and Dwarf Lake Iris (threatened). There are no designated critical habitats in the project vicinity.

The project (transportation and placement of breakwater armor stone and sheet pile) would have no effect on these species. This is because construction activities are planned to take place along the harbor's existing breakwater away from coastal wetlands, prairies, and woodlands, which are the preferred habitats for these species, and would not directly impact any established terrestrial habitats.

State-listed endangered species were reviewed for the project area by the Chicago District. Wisconsin listed species and their critical habitats are identified by Wisconsin DNR as occurring within Kewaunee County include: Lake Sturgeon (*Acipenser fulvescens*), Upland Sandpiper (*Bartramia longicauda*), Indiscriminate Cuckoo Bumble Bee (*Bombus insularis*), Confusing Bumble Bee, (*Bombus perplexus*), American Sea-Rocket (*Cakile edentula var. lacustris*), Sand Reedgrass (*Calamovifa longifolia var. magna*), Black Tern (*Chlidonias niger*), Harbinger-of-Spring (*Erigenia bulbosa*), Seaside Spurge (*Euphorbia polygonifolia*), Forked Aster (*Eurybia furcate*), Perigrine Falcon (*Falco peregrinus*), Cherrystone Drop (*Hendersonia occulta*), Hydroporus Diving Beetle (*Heterosternuta wickhami*), Caspian Tern (*Hydroprogne caspia*), Least Bittern (*Ixobrychus exilis*), Twinleaf (*Jefersonia diphylla*), Longear Sunfish (*Lepomis megalotis*), Pugnose Shiner (*Notropis anogenus*), Black-crowned Night-Heron (*Nycticorax nycticorax*), Dentate Supercoil (*Paravitrea multidentate*), Wilson's Phalarope (*Phalaropus tricolor*), Christmas Fern (*Polystichum acrostichoides*), Hine's Emerald Dragonfly (*Somatochlora hineana*), Ribbed Striate (*Striatura exigua*), Western Meadowlark (*Sturnella neglecta*), Deep-throated Vertigo (*Vertigo nylanderi*), Long-spurred Violet (*Viola rostrata*), Transparent Vitrine Snail (*Vitrina angelicae*), Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*). Due to the minor footprint and short window of disturbance during construction, the preferred plan would potentially have a short-term less than significant impact to fish species in the project area. Long-term, it is anticipated that fish species could utilize the newly placed stone as shelter, therefore, there would be no long-term impacts to the surf zone fish community.

## Effects on Other Wildlife

No other wildlife would be significantly impacted by the proposed activity.

**Actions to Minimize Impacts**

General construction scheduling and sequencing would minimize impacts to any reproducing macroinvertebrates and fishes present. Floating containment booms would be used to control spills, as necessary.

### 2.2.6 Proposed Disposal/Discharge Site Determinations

**Mixing Zone Determination**

A mixing zone is not applicable to this project since no violation of applicable water quality standards is expected during construction.

**Determination of Compliance with Applicable Water Quality Standards**

The proposed activity is not expected to cause significant or long-term degradation of water quality within lake Michigan and would comply with all applicable water quality standards.

**Potential Effects on Human use Characteristic**

Overall, no significant impacts to municipal and private water supplies, water-related recreation, aesthetics, or recreational or commercial fisheries are expected. No significant adverse effects are expected.

#### Municipal and Private Water Supply

The proposed activity associated with construction of the proposed breakwater repair is not expected to have any significant short-term or long-term negative impacts on municipal or private water supply.

#### Recreational and Commercial Fisheries

The proposed activity associated with construction of the proposed breakwater repair is not expected to have any significant long-term negative impacts on recreational or commercial fisheries in the area. Recreational fishing, should it occur within the proximity of the project site, could potentially be impacted in the short term due to construction activities that would likely scare fish from the area and construction would limit access to the breakwater where anglers would typically fish. These impacts are expected to be temporary.

#### Water Related Recreation

Recreation near the project site could potentially be impacted in the short-term due to construction related noise and temporary increases in turbidity. The proposed activity associated with construction of the breakwater repair is not expected to have any significant long-term negative impacts on water related recreation in the area.

#### Aesthetics

The proposed activity would have short-term less than significant impacts to aesthetics in the project area due to the presence of construction equipment. Once construction is complete, the aesthetics of the project area would return and no long-term effects to aesthetics would occur.

#### Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites and Similar Preserves

Algoma harbor is located one mile from the Ice Age National Scenic Trail. The proposed activity associated with construction of the proposed breakwater repair is located entirely within the harbor and is not expected to have a significant impact on this or other special sites.

### 2.2.7 Determination of Cumulative Effects on Aquatic Ecosystem

No cumulative adverse impacts to the aquatic ecosystem or to aquatic organisms are expected to result from the construction of the proposed breakwater repair. The proposed action is on the site of the existing Algoma breakwater which has been present in the aquatic environment since 1871.

### 2.2.8 Determination of Secondary Effects on the Aquatic Ecosystem

No significant secondary effects on the aquatic ecosystem are expected as a result of the proposed breakwater repair.

## 3.0 Findings of Compliance or Non-Compliance with the Restrictions on Discharge

a. No significant adaptations of the Section 404(b)(1) guidelines were made relative to this evaluation.

b. No practical alternatives are available that produce fewer adverse aquatic impacts than the proposed plan.

c. The proposed construction activity at the site of the existing Algoma breakwater would not violate any applicable water quality standards.

d. The project is in compliance with applicable Toxic Effluent Standards under Section 307 of the Clean Water Act; with the Endangered Species Act of 1973; with Section 106 of the National Historic Preservation Act of 1966; and with the Fish and Wildlife Coordination Act of 1958.

e. The proposed fill activity would not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife communities (including community diversity, productivity, and stability), or special aquatic sites. The life stages of aquatic life and other wildlife would not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic and economic values would not occur.

f. Appropriate erosion control measures will be taken to minimize potential adverse impacts of the fill activity on aquatic ecosystems. General construction scheduling and sequencing would minimize impacts to any reproducing macro-invertebrates and fishes present. Erosion control fabric, silt fencing and containment booms would be implemented as needed to minimize any temporary turbidity, spill or debris impacts associated with the proposed activity.

g. Based on the Guidelines, the proposed site for the discharge of fill material is specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse impacts to the aquatic ecosystem.

### 3.1 Compensatory Mitigation

The purpose of compensatory mitigation is to offset losses of waters of the United States and ensure that the net adverse effects are no more than minimal. The proposed breakwater repair does result in a potential loss of waters of the United States. Additionally, certain fill actions similar to the proposed action in Lake Michigan are often not required to implement compensatory mitigation if it can be demonstrated that the affected environment has low functional value and that no additional mitigation would be required to result in minimal impacts.

In this instance, the affected environment is not entirely within the footprint of the existing rubble mound dikes and breakwater, and is a highly disturbed, man-made environment that lacks structural diversity. There will be a small increase in the structure's footprint due to the installation of sheet pile. While this minimally productive ecosystem supports a small amount of flora and fauna, the proposed action will continue to provide structural diversity in the form of a rubble mound habitat and may have minor habitat benefits in the future. The proposed action is not expected to have a more than minimal impact on existing ecosystem functions (as described previously in Section 2.0 Factual Determinations) and therefore no compensatory mitigation is being considered as part of the proposed project.

## 3.2 Conclusions

Based upon this evaluation, the construction of the proposed breakwater repair, subject to appropriate and reasonable conditions, determined to comply with Section 404(b)(1) Guidelines, and is determined to protect the public interest.

# Appendix 2: Coordination

**DEPARTMENT OF THE ARMY**
**U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT**
**231 SOUTH LASALLE STREET, SUITE 1500**
**CHICAGO IL 60604**

May 13, 2022

SUBJECT: NEPA Scoping Coordination, Algoma Harbor Breakwater Repair and Maintenance, Kewaunee County, Wisconsin.

Dear Recipient:

The U.S Army Corps of Engineers, Chicago District will be preparing a National Environmental Policy Act (NEPA) document on the potential impacts associated with a repair and maintenance project at the Algoma Harbor which is located on the western shore of Lake Michigan in Algoma, Wisconsin (Figure 1). The harbor breakwater consists of a 1,102-foot long North Pier and a 1,530-foot long South Breakwater. The purpose of the proposed project is to stabilize the North Pier and South Breakwater by encapsulating them.

The Algoma Harbor North Pier and South Breakwater are man-made structures that were initially built in 1871 and since then have been subject to occasional repairs as part of ongoing routine operation and maintenance. Though the structure has not undergone maintenance for several years. Currently, the interior timber crib is deteriorating and there has been a loss of stone fill from within and around the structures. This has led to voids in the structures and increased sedimentation within the channel. The proposed project would provide more stable and long-lasting structures, better maintaining safe passage for vessels entering and exiting the harbor.

An Environmental Assessment will be prepared to address any potential environmental impacts of the proposed repairs at Algoma Harbor. The U.S. Army Corps of Engineers would appreciate any comments, concerns, or modifications you might have about any potential environmental or social impacts from this proposed project. We request that you provide your comments by June 13, 2022. Please direct any questions you may have to John Belcik of my staff at John.T.Belcik@usace.army.mil or 312-846-5595.

Sincerely,

Susanne J. Davis

Susanne J. Davis P.E.
Chief, Planning Branch

Enclosures:
Figure 1: Project Area Map
Figure 2: Existing Breakwater Dimensions
Figure 3: Proposed Breakwater Cross Section


**Figure 1:** Project Area Map. Green lines indicate the extent of the South Breakwater and orange lines indicate the extend of the North Pier.

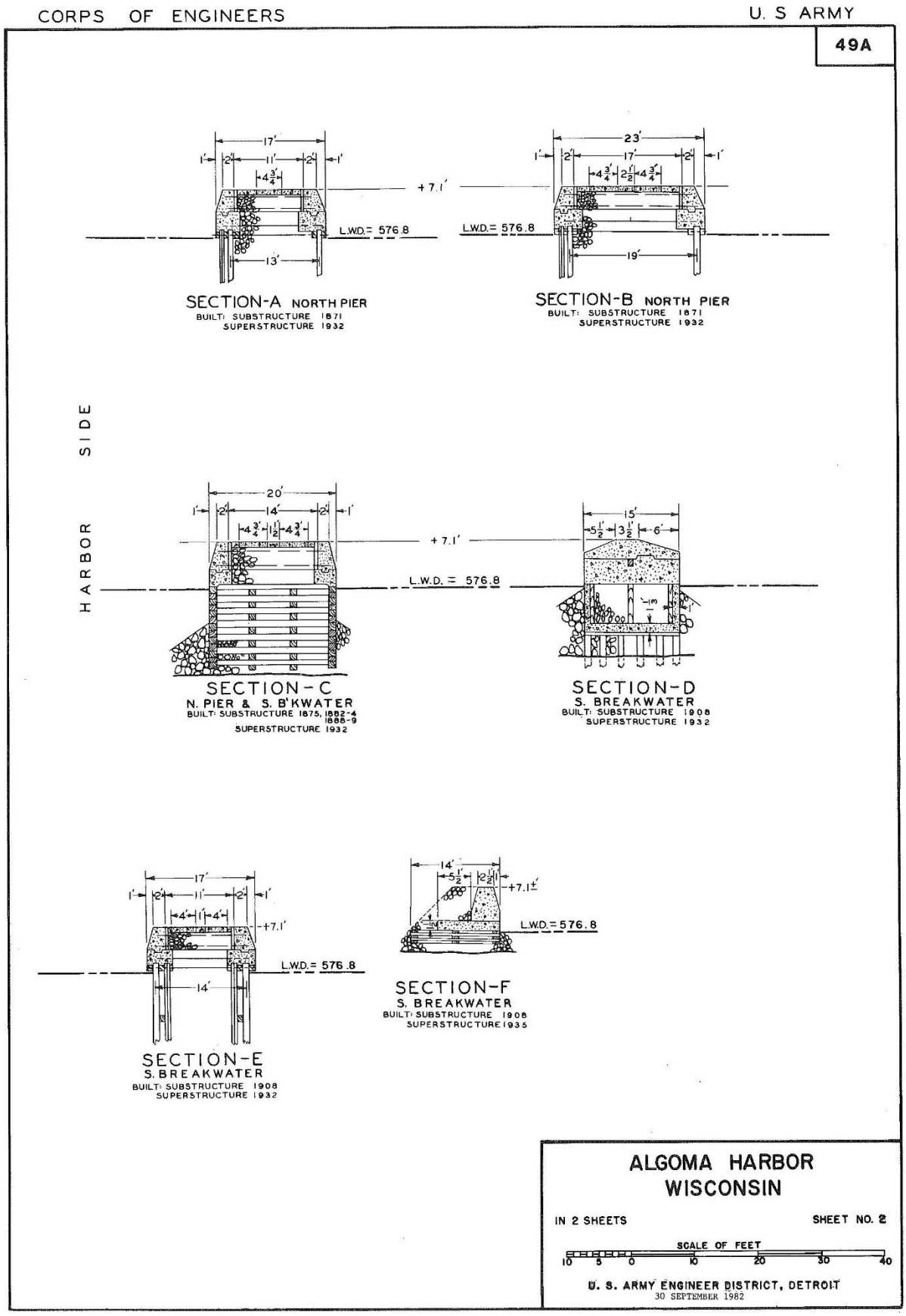


**Figure 2:** Existing Breakwater Dimensions.

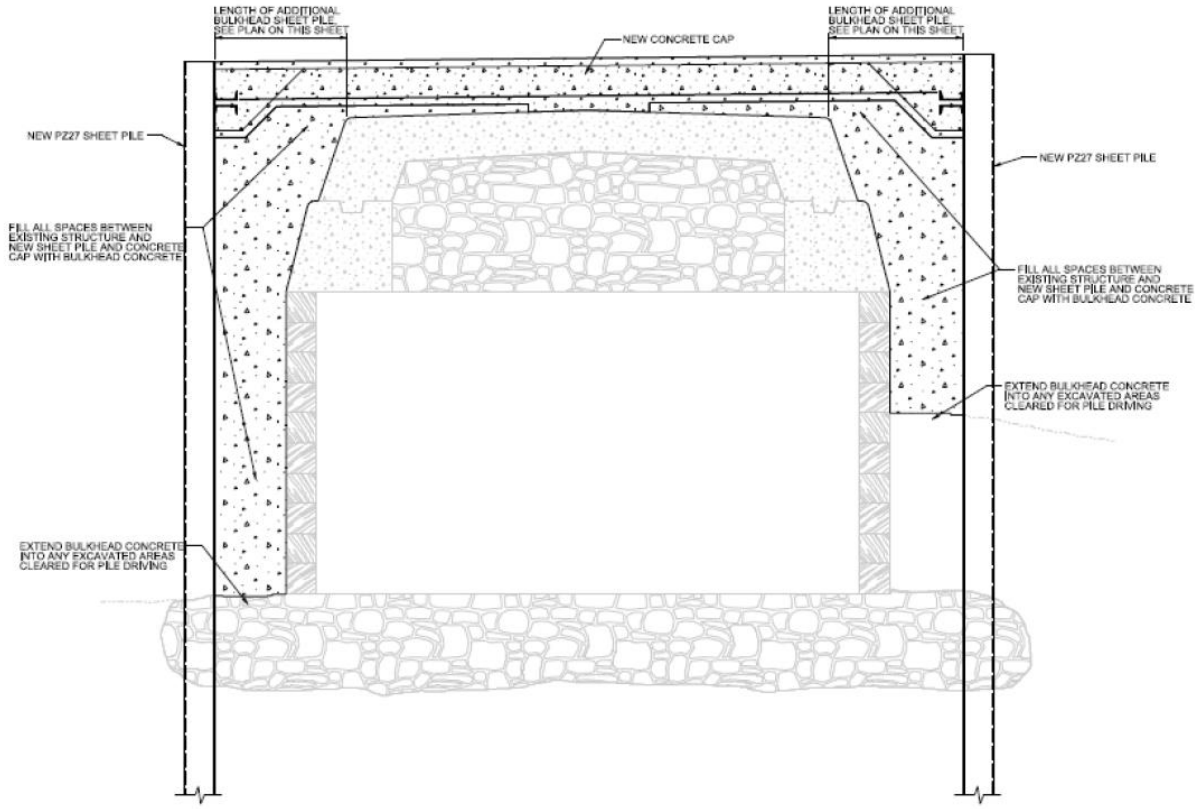


**Figure 3:** Proposed Breakwater Repair cross section.

Mr. Wayne Schmidt
City Council
805 Alpine Rd.
Algoma, Wisconsin 54201

Mr. Kevin Schmidt
City Council
1920Mueller St.
Algoma, Wisconsin 54201

Mr. John Pabich
City Council
305 Fremont St.
Algoma, Wisconsin 54201

Mr. Scott Meverden
City Council
1780 Fremont St
Algoma, Wisconsin 54201

Ms. Leah Pierquet
City Council
316 Frank Ave
Algoma, Wisconsin 54201

Mr. Casey Buhr
City Council
121 Vernon St.
Algoma, Wisconsin 54201

Mr. Steve Lautenbach
City Council
260 Buchanan St.
Algoma, Wisconsin 54201

Mr. Jake Maring
City Council
619 Buchanan St
Algoma, Wisconsin 54201

Mr. Lee Dachelet
City Council
725 Division St
Algoma, Wisconsin 54201

Mrs. Tammy Baldwin
U.S. Senator for Wisconsin
633 West Wisconsin Ave. Suite 1300
Milwaukee, Wisconsin 53203

Mr. Ron Johnson
U.S. Senator for Wisconsin
517 East Wisconsin Ave Suite 408
Milwaukee, Wisconsin 53202

Mr. Mike Gallagher
U.S. House of Representatives
1702 Scheuring Rd. Suite E.
De Pere, Wisconsin 54115

Mr. Joel Kitchens
State Legislature
Room 220 North State Capitol PO Box 8952
Madison, Wisconsin 53708

Mr. Andre Jacque
State Senate
Room 7 South State Capitol PO Box 7882
Madison, Wisconsin 53707

Ms. Shauna Marquardt
U.S. Fish and Wildlife Service
4101 American Boulevard East
Bloomington, Minnesota 55425

Ms. Kathleen Angel
WI Coastal Mangement Program
101 E Wilson Street, 9th Floor P.O. Box 8944
Madison, Wisconsin 53708

Mr. Tony Evers
Wisconsin State Governor
819 N 6th St
Milwaukee, Wisconsin 53203

Ms. Cindy Wojtczak
Bay Lake RPC
1861 Nimitz Drive
De Pere, Wisconsin 54115

Mr. Nick Legler
Wisconsin DNR
110 S Neenah Ave
Sturgeon Bay, Wisconsin 54235

Mr. Scott Hansen
Wisconsin DNR
110 S Neenah Ave
Sturgeon Bay, Wisconsin 54235

Ms. Ann Schoenborn
Algoma Public Library
406 Fremont Street
Algoma, Wisconsin 54201

City ofAlgoma
416 Fremont Street
Algoma, Wisconsin 54201

Mr. Thomas Ackerman
City of Algoma
416 Fremont Street
Algoma, Wisconsin 54201

Mr. Matt Murphy
City of Algoma
416 Fremont Street
Algoma, Wisconsin 54201

Ms. Davina Burgess
Kewaunee County
Land & Water Conservation 625 Third Street
Luxemburg, Wisconsin 54217

Mr. Scott Feldt
Kewaunee County
County Administrator's Office 810 Lincoln Stree
Kewaunee, Wisconsin 54216

Ms. Sydney Swan
Bay Lake Regional Planning Commission
1861 Nimitz Drive
De Pere, Wisconsin 54115

Mr. Adam Christensen
Bay Lake Regional Planning Commission
1861 Nimitz Drive
De Pere, Wisconsin 54115

Mr. Pete Haack
Algoma Utilities
1407 Flora Avenue
Algoma, Wisconsin 54201

Mr. Ryan Pichler
DNR Green Bay Service Center
2984 Shawano Ave
Green Bay, Wisconsin 54313

Mr. Jared Jeyn
City of Algoma
416 Fremont Street
Algoma, Wisconsin 54201

Ms. Erin Carviou
Wisconsin DNR
2984 Shawano Ave
Green Bay, Wisconsin 0

Friends of Crescent Beach
PO Box 344
Algoma, Wisconsin 54201

Algoma Marina
416 Freemont Street
Algoma, Wisconsin 54201

Miami Tribe of Oklahoma
3410 P St. NW, Miami, OK 74354 ● P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 ● Fax: (918) 542-7260
www.miamination.com

Via email: john.t.belcik@usace.army.mil

June 28, 2022

John Belcik
US Army Corps of Engineers
Chicago District
231 South La Salle St.
Suite 1500
Chicago, IL 60604

Re: Algoma Harbor Breakwater Repair & Maintenance, Kewaunee County, Wisconsin – Comments of the Miami Tribe of Oklahoma

Dear Mr. Belcik:

Aya, kikwehsitoole – I show you respect. The Miami Tribe of Oklahoma, a federally recognized Indian tribe with a Constitution ratified in 1939 under the Oklahoma Indian Welfare Act of 1936, respectfully submits the following comments regarding Algoma Harbor Breakwater Repair & Maintenance in Kewaunee County, Wisconsin.

The Miami Tribe offers no objection to the above-referenced project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within present-day Wisconsin, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case, please contact me at 918-541-8966 or by email at THPO@miamination.com to initiate consultation.

The Miami Tribe accepts the invitation to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer I am the point of contact for consultation.

Respectfully,

Diane Hunter

Diane Hunter
Tribal Historic Preservation Officer

**From:** Richard Swanson
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Subject:** [Non-DoD Source] Algoma breakwater/pier
**Date:** Thursday, May 26, 2022 2:41:37 PM

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Thank you for starting on this project...I have lived in Algoma for almost 10 years...right across the street from the beach and the river. I remember the City having a study done on the Ahanapee River a few years ago...I think they still have it...could be of some interest to you. This beach is what drew us here...and...still does. Protecting it should be job #1. We have a huge problem with what is happening upstream and the pollution issues...I'm not sure you can help with liquid manure and runoff...wish you could..! If you have any questions, just ask.

Thank you
Dick Swanson

**From:** Louis Jacobucci
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Subject:** [Non-DoD Source] Algoma harbor breakwater repair
**Date:** Friday, June 10, 2022 2:51:37 PM

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Mr. Belcik,
I would like to see a modification in the plans for the south side of the breakwater to prevent the accumulation of algae and other debris at the North end of the beach. There has been a lot of effort to clean up the beach area to provide an environmentally safe place for people to enjoy Crescent Beach and dealing with this issue will help in continuing with this effort.

Sincerely,
Lou Jacobucci

**From:** Gurmit Kaur
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Subject:** [Non-DoD Source] Algoma Harbor Breakwater Repair and Maintenance, Kewaunee County, Wisconsin
**Date:** Monday, June 6, 2022 10:28:21 AM

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Mr. Belcik,

As you prepare the Environmental Assessment for the subject project, please consider the sandy area directly below the breakwater pier. Wind and waves bring biological matter into the corner where the pier meets the beach. The matter becomes trapped. The aroma in that part of the pier can only be described as a stench with possible negative impacts to humans and the environment.

We will appreciate that your team investigates the site and considers remediation of the problem.

Gurmit Kaur
Maritime Pointe
Algoma, Wisconsin

**From:** Michael Dovichi
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Subject:** [Non-DoD Source] Algoma Harbor Breakwater Repair
**Date:** Wednesday, June 1, 2022 10:09:25 AM

---

Mr Belcik I am writing to recommend that the design of the south breakwater be tweaked to remove the dogleg at the landward end of the breakwater. I am a retired environmental geologist living by Algoma who has sailed out of the harbor and walked the pier and shoreline for 50 years. As constructed, the pier has created a health and aesthetic problem by the beach. South winds trap nutrients in this corner as shown by aerial photos. The COE engineers should agree that eliminating this “dead” spot would have a positive effect on the littoral current and therefore improve near shore water quality.
In another couple weeks, a visit to the harbor will clearly show that part of the $14 million available for this project should be used to improve the location of the south pier.
Sincerely,
Michael Dovichi
mdovichi@ gmail.com
920-621-9204
N8598 County Road M
Algoma Wi 54201

**From:** Joann Wiesner
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Subject:** [Non-DoD Source] Algoma Harbor BreakwaterRepair and Maintenance, Kewaunee County, Wisconsin
**Date:** Monday, June 6, 2022 10:46:15 AM

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Mr. Belcik,
Please consider the sandy area directly below the breakwater pier as you prepare the Environmental Assessment for the subject project. As a permanent Algoma resident living on Lake Michigan, it is of great concern to me that Crescent Beach be protected and improved. Wind and waves bring biological matter into the corner where the pier meets the beach. As the matter becomes trapped and becomes stagnant, the stench becomes unbearable, negatively impacting humans and the environment.

I will appreciate that this site is investigated and remediation of the problem is sought..

Joann Wiesner
2024 Lake Street
Algoms, WI. 54201

Joannwiesner@yahoo.com

**From:** B. Cook
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Subject:** [Non-DoD Source] Crescent beach Algoma
**Date:** Monday, June 6, 2022 4:25:35 PM

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Dear Mr Belcik

I live at just down the lake from the crescent beach in Algoma and have learned about the upcoming improvements to breakwall at the north end of same. The smell gets very bad there when debris is deposited after a north wind. I hope this issue is being addressed as the improvements are made, such as increasing the angle at the intersection of beach and pier so that debris is not trapped there.
Thank you for your time and consideration,

Brian Cook

**From:** edward lemke
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Subject:** [URL Verdict: Neutral][Non-DoD Source] Algoma Harbor Breakwater Repair and Maintenance, Kewaunee County, Wisconsin
**Date:** Monday, June 6, 2022 9:44:56 AM

Mr. Belcik,

As you prepare the Environmental Assessment for the subject project, please consider the sandy area directly below the breakwater pier. Wind and waves bring biological matter into the corner where the pier meets the beach. The matter becomes trapped. The aroma in that part of the pier can only be described as a stench with possible negative impacts to humans and the environment.

We will appreciate that your team investigates the site and considers remediation of the problem.

...

[

Algoma Harbor Breakwater Repair and…

**From:** Penny Lemberger
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Subject:** [URL Verdict: Neutral][Non-DoD Source] Repairs to Algoma Harbor Breakwater
**Date:** Friday, June 10, 2022 7:23:19 AM

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Dear Mr. Belcik,

I am writing this letter in regards to concerns that I have about the Algoma Harbor Breakwater repairs. I have been a middle/high school educator in the Algoma School District for the past 19 years and have seen the effects of the "dead" zone that is created. It not only affects our tourism in the area, but the health of our young local residents (youth) who might not pay attention to the "beach closing" days as well as the residential and migratory wildlife.

On a good day, Algoma may appear to be a "Quaint little town on the beautiful Lakeshore of Lake Michigan". The tourism the lake attracts is vital to our struggling businesses. The youth in Algoma do not come from wealthy homes (with a median family income of $51,250) Students are always excited about doing their part to take care of Crescent Beach and are very proud of it. However, it seems that nearly every time I have had my students go down for a Beach Clean-up, the portion by the pier and youth club is absolutely disgusting and NOT something to be proud of.

Please help us by considering some alternative engineering designs that might help to eliminate the problems that the South Breakwater forms.

Thank you for your time and efforts,

Penny Lemberger
plemberger@algomaschools.org
920-227-3665
E4999 Washington Road
Algoma, WI. 54201

Catherine Pabich
305 Fremont Street
Algoma WI 54201
Email: pabichc@gmail.com

June 2, 2022

Dear Mr. Belcik:

I am sending this letter in response to the Corps of Engineers request for comment on the potential environmental and social impacts of the Algoma Harbor breakwater repair and maintenance project. I urge you to consider the impact on Crescent Beach when determining the best strategy for the repair and maintenance of our vital harbor infrastructure.

The south breakwater forms the northern border of Crescent Beach. Crescent Beach and Boardwalk is an important tourist attraction and a prime recreation and leisure destination for Algoma area residents and visitors. During the summer months it is common to see hundreds of people enjoying the beach or strolling the boardwalk daily. Algoma's Shanty Days celebration features beach volleyball and the annual Soar on the Shore kite fly and beach party attracts thousands. The Friends of Crescent Beach group provides support for the maintenance and improvement of the beach by recruiting volunteers, including Algoma School District students, to participate in that effort, learn about the importance of the beach and appreciate our community's associated stewardship responsibilities. The local economy benefits from the growing awareness of Algoma as a destination Lake Michigan shoreline community that is a great place to visit, do business and call home. Algoma is a community that values and cares about its lake front.

Unfortunately, where the south breakwater intersects the beach, a problem exists that impacts aesthetics, the environment and public health. As currently configured, wind and waves carry algae and other debris into this corner of the beach where it becomes trapped and accumulates. The result is a stagnant, smelly mess of organic matter and debris. The odor can sometimes extend to blocks away. The only beach adjacent parking lot is located at this end of the beach, one of only two handicap accessible boardwalk access points, so when this problem exists it provides an unpleasant and potentially unhealthy experience at a location where beach visitors are encouraged to enter. Shore birds also frequent this area adding to, as well as, being exposed to the pollution.

As a strategy is developed for the repair and maintenance of Algoma's breakwater, please consider this problem area at Crescent Beach and investigate if adjustments to the configuration of the breakwater could eliminate or mitigate this issue. The substantial investment this project represents offers a unique opportunity to incorporate changes that could successfully address this issue and impact Crescent Beach in environmentally and socially positive ways.

Sincerely,
Catherine Pabich

Karen Newquist
628 Fremont Street
Algoma WI, 54201
karennewquist8@gmail.com

June 7,2022

Dear Mr. Belcik,

I am sending this letter in hopes of reconsideration of the decision by the Army Corps of Engineers to put a sleeve over the rotting structure that is the Algoma pier/ break wall.

Along with the decomposition of this obsolete fabrication the problem of the poor design of water flow now has a chance to be addressed, and with the amount of money available, and I am hoping with your in person view of the situation this can be resolved with a sturdy structure and an end to stinky dead pooled water.

I thank you for your attention,
Sincerely,
Karen Newquist
Karen Newquist

John H. Pabich
305 Fremont Street
Algoma WI 54201
Email:
pabichjohn@gmail.com

June 6, 2022

**DEPARTMENT OF THE ARMY**
**U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT**
**231 SOUTH LASALLE STREET, SUITE 1500**
**CHICAGO IL 60604**

Attn: Susanne J. Davis P.E. Chief, Planning Branch

Dear Ms. Davis:

I am sending this letter in response to the Corps of Engineers request for comment on the potential environmental and social impacts of the Algoma Harbor breakwater repair and maintenance project. I urge you to consider the impact on Crescent Beach when determining the best strategy for the repair and maintenance of our vital harbor infrastructure.

The south breakwater forms the northern border of Crescent Beach. It also creates a flow path directly to Crescent Beach for the all too familiar algal blooms coming in from deeper waters. The beach is an important tourist attraction and a prime recreation and leisure destination for Algoma area residents and visitors. During the summer months it is common to see hundreds of people enjoying the beach or strolling the boardwalk daily. Algoma's Shanty Days celebration features beach volleyball and the annual Soar on the Shore kite fly and beach party attracts thousands. The local economy benefits from the growing awareness of Algoma as a destination Lake Michigan shoreline community that is a great place to visit, do business and call home. Algoma is a community that values and cares about its lake front.

I have already provided to the USACOE office in Chicago a copy of a presentation on alternative designs that work with nature, reduce the algal bloom impact and efficiently reduce shore erosion. These would be 3rd and 4th generation barriers that work with nature and not just the 1st generation brute strength of concrete and steel that was part of the 1871 design. While we still have the erosion concerns and harbor protection need, we also have different problems today. These were never a consideration when the original breakwater was designed. A well-designed barrier will provide erosion control, harbor protection, a healthier beach. That will mean healthier flora, fauna and residents. That step begins with a redesign of the south breakwater that doesn't steer everything from algal blooms, to timber, to snow tires to the public beach. Algal blooms will continue, but they don't have to become rotting beach mats through breakwater steerage and concentration where it meets the beach.

This project is an opportunity to make a meaningful, creative, change for the future. Doing the same thing over and over, without considering how the environment itself has change, does no one any good and would be a waste of our precious taxpayer dollars.

Sincerely,

John H Pabich

**DEPARTMENT OF THE ARMY**
U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT
231 SOUTH LA SALLE STREET, SUITE 1500
CHICAGO IL 60604

October 21, 2022

Planning Branch
Planning, Programs, Project Management Division

SUBJECT: Coastal Zone Management Act Federal Consistency Determination for Algoma Harbor Breakwater and Pier Repair, Kewaunee County, Wisconsin

Ms. Kathleen Angel
Wisconsin Coastal Management Program
DOA/DIR 9th Floor Admin. Bldg.
101 East Wilson Street
Madison, WI 53708

Dear Ms. Angel:

The U.S. Army Corps of Engineers (USACE), Chicago District is planning to conduct maintenance on the South Breakwater and North Pier of the Algoma Harbor federal navigation project in Algoma, Kewaunee County, Wisconsin (Enclosure 1). The purpose of the proposed maintenance is to stabilize the North Pier and South Breakwater by encapsulating them in sheet pile and filling voids within the structure. This would provide more stable and long-lasting structures better maintaining safe passage for vessels entering and exiting the harbor.

PROJECT DESCRIPTION

The Algoma Harbor North Pier and South Breakwater are man-made structures that were initially built in 1871. Since then, they have been subject to occasional repairs as part of ongoing routine operation and maintenance. However, the structures have not undergone maintenance for several years. Currently, the interior timber crib is deteriorating and there has been a loss of stone fill from within and around the structures. This has led to voids forming within the structures and increased sedimentation within the channel.

Pursuant to Section 7 of the Endangered Species Act, USACE has analyzed the potential impacts to threatened and endangered species in the area and has determined that the proposed action would have “no effect” on listed species (IPAC Project Code: 2022-0045007). No work will be conducted between March 15 and July 1 in accordance with a fish spawning window established by Wisconsin Department of Natural Resources.

COASTAL ZONE MANAGEMENT ACT (CZMA of 1972)

Since the proposed work is within the state boundary, on the waterward side, of Wisconsin's coastal zone boundary established under the State of Wisconsin's Coastal Management Program, USACE is required to evaluate whether the activity will affect any coastal use or resource under the Coastal Zone Management Act. The proposed action is the repair of an existing breakwater by encapsulating it with full steel sheet pile and installing new reinforced concrete caps. This will have minimal change to the breakwater footprint. Since the proposed action ensures safe conditions within the federally authorized navigation channel with no water quality impacts, the determination is that the proposed action will have beneficial effects on coastal resources. However, 15 CFR 930.33(a)(1) states "Federal agencies shall, in making determination of effects, review relevant management program enforceable policies as part of determining effects on any coastal use or resources." Therefore, in addition to making the above determination, applicable specific state coastal policies were reviewed for consistency.
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SPECIFIC STATE COASTAL POLICIES

USACE reviewed the list of coastal policies from Appendix C "Specific State Coastal Policies, "Wisconsin Coastal Management Program: A Strategic Vision for the Great Lakes"", dated October 2007. Below is a list of the policies that appear to be applicable to the proposed breakwater repair. In addition, each identified policy includes an evaluation of the proposed habitat management action for consistency with the State of Wisconsin Coastal Management Program.
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*Coastal Water Quality and Quantity and Coastal Air Quality*

Policy 1.2: An interim goal is the protection and propagation of fish and wildlife and the maintenance of water quality to allow recreation in and on the water to be achieved. (See Wis. Stats. § 283.001(1)(b))

Consistency of Project: USACE will not conduct breakwater work during the established environmental windows (01 March – 15 June, of any year).

Policy 1.4: Disposal in the waters of the state of the following defined pollutants shall be restricted: dredged spoil, solid waste, incinerator residue, sewage, garbage, refuse, oil, sewage sludge, munitions, chemical wastes, biological materials, radioactive substance, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal and agricultural waste discharged into water. (See Wis. Stats. §§ 283.02(13). 283.31(1) and 29.601. See also managed uses #8 and #9).

Consistency of Project: The project involves the placement of sheet pile and reinforced concrete caps. There is no return water associated with the placement of sheet pile and filling voids**.** The current breakwater is flanked by a layer of armor and toe stone. This stone will be temporarily removed and stored while the new sheet pile is installed. Once sheet pile is installed, the previously used stone

will be placed back along the breakwater assuming it is suitable. New, appropriately sized stone will be used as necessary to fill in any additional locations along the breakwater. The current footprint of the breakwater will not be expanded as a result of this project.

Policy 1.15.1: No person may conduct an activity for which the Wisconsin Department of Natural Resources denies a required water quality certification. No person may violate a condition imposed by the department in a water quality certification. (See Wis. Stats. § 281.17(10)).

Consistency of Project: Coordination with WDNR for a 401-water quality certification will begin when the 100% project designs are received from the contractor. This is anticipated to occur before January 1, 2023. A construction contract will be awarded after a 401 Water Quality Certification is received from WDNR for this project.

*Coastal Natural Areas, Wildlife Habitat and Fisheries*

Policy 2.15: The Wisconsin Department of Natural Resources shall preserve, protect, restore, and manage the state's wetland communities to be sustainable, diverse, and interspersed with healthy aquatic and terrestrial communities. Department actions must be consistent with the goal of maintaining, protecting, and improving water quality. The administrative rules regarding wetlands shall be applied in such a manner as to avoid or minimize the adverse effects on wetlands due to actions over which the department has regulatory or management authority and to maintain, enhance and restore wetland functions and values. (See Wis. Stats. §§ 281.12(1) and 281.11, and Wis. Admin. Code NR 1.95, NR 299, NR 103 and NR 353. See also managed use #1, 2, 3, 4, 5, 6, 7, 8, 9, 17, 18, 19, 21, 22.)

Consistency of Project: The proposed breakwater repair area does not provide habitat for threatened or endangered species. Fish windows would be observed to protect local fish populations. The operation does not include direct return water, such that the operation is expected to have *de minimis* water quality impacts.

*Community Development*

Policy 4.11: Unless an individual or a general permit has been issued or authorization has been granted by the legislature, no person may deposit any material or place any structure upon the bed of any navigable water where no bulkhead line has been established or beyond a lawfully established bulkhead line. Exemptions from permit requirements for the placement of a structure or the deposit of material only apply where the structure or material is in an area other than an area of special natural resource interest and does not interfere with the riparian rights of any other riparian owners. (See Wis. Stats. §§ 30.12 and 30.11. See also SCA #2, and managed use #1, 2, 6, and 7)

Consistency of Projects: In lieu of applying for a Chapter 30 permit, USACE will be coordinating a Section 401 Water Quality Certification with WDNR. However, consistent with the CZMA, USACE will comply with the substantive requirements of the Chapter 30 permit.

CZMA FEDERAL CONSISTENCY DETERMINATION

In accordance with 15 CFR Part 930.36(a), based on the evaluation of the applicable enforceable policies contained in Appendix C of the State of Wisconsin Coastal Management Program, USACE has determined that the proposed breakwater and pier repair project at Algoma Harbor complies with the enforceable policies of Wisconsin's approved Coastal Management Program and will be conducted in a manner consistent to the maximum extent practicable with such policies.

We request your concurrence with this determination within 60 days in accordance with the Coastal Zone Management Act. Wisconsin's concurrence will be assumed if its response is not received by USACE within 60 days plus any extension, as applicable pursuant to 15 CFR 940.41(b). Please contact John Belcik at john.t.belcik@usace.army.mil or 312-846-5595 if you have any questions or need any additional information regarding the proposed project.

Sincerely,

Susanne J. Davis

Susanne J. Davis, PE
Chief, Planning Branch
Chicago District

Enclosure
1) Harbor and Channel Map

**From:** Angel, Kathleen - DOA
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Cc:** Davis, Susanne J CIV USARMY CELRC (USA)
**Subject:** [URL Verdict: Neutral][Non-DoD Source] RE: Algoma Harbor Breakwater Repair CZM review
**Date:** Thursday, October 27, 2022 4:13:45 PM
**Attachments:** image001.png

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Hello John,

Thank you for reaching out about the project. I very much appreciate it!

I don't think that Wisconsin Coastal Management Program can completely sign off on federal consistency at this point, since the EA isn't complete and WDNR hasn't had a chance to review for water quality certification. But with the information you provided, I can say that once you receive water quality certification (and/or any other permitting required by WDNR), you can presume federal consistency. All of WCMP's concerns will be addressed through that process.

Please do keep us in the loop and let me know if you need anything else.

Best,
Kate


Kathleen Angel
Wisconsin Coastal Management Program
Division of Intergovernmental Relations
101 East Wilson Street, 9th Floor
PO Box 8944
Madison, WI 53708-8944
Phone: (608) 267-7988
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**From:** Belcik, John T CIV USARMY CELRC (USA) <John.T.Belcik@usace.army.mil>
**Sent:** Friday, October 21, 2022 11:09 AM
**To:** Angel, Kathleen - DOA <Kathleen.Angel@wisconsin.gov>
**Cc:** Davis, Susanne J CIV USARMY CELRC (USA) <Susanne.J.Davis@usace.army.mil>
**Subject:** Algoma Harbor Breakwater Repair CZM review



Good Morning Kate,

The Chicago District will be undertaking a large repair project on Algoma Harbor's breakwater. We're

currently in the process of drafting the EA, 404(b)(1), and FONSI for public review and anticipate it being ready in the next few weeks. We'll be sending out letters (including your office) asking for public review of the documents once the draft is completed. In the interim, here is our letter requesting official CZM review of the project as well as the accompanying enclosure. If you have any questions about the project or need additional information please let me know.

Thanks and have a good weekend!

Best Fishes,

John T. Belcik

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# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793 Fax: (952) 646-2873

In Reply Refer To:
Project Code: 2022-0045007
Project Name: Algoma Breakwater Repair

February 06, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

**Threatened and Endangered Species**
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS IPaC system by completing the same process used to receive the enclosed list.

**Consultation Technical Assistance**
Please refer to refer to our Section 7 website for guidance and technical assistance, including step-by-step instructions for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

**Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species**

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

**Northern Long-Eared Bats**
Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

This species hibernates in caves or mines only during the winter. In Minnesota and Wisconsin, the hibernation season is considered to be November 1 to March 31. During the active season (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),

- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

*If none of the above activities are proposed*, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

*If any of the above activities are proposed*, please use the northern long-eared bat determination key in IPaC. This tool streamlines consultation under the 2016 rangewide programmatic biological opinion for the 4(d) rule. The key helps to determine if prohibited take might occur and, if not, will generate an automated verification letter. No further review by us is necessary.

*Please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the bat by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of northern long-eared bats after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.*

**Whooping Crane**

Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "Establishment of a Nonessential Experimental Population of

Whooping Cranes in the Eastern United States."

**Other Trust Resources and Activities**
*Bald and Golden Eagles* - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

*Migratory Birds* - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

*Communication Towers* - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

*Transmission Lines* - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

*Wind Energy* - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

**State Department of Natural Resources Coordination**
While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.

*Minnesota*
Minnesota Department of Natural Resources - Endangered Resources Review Homepage
Email: Review.NHIS@state.mn.us

*Wisconsin*
Wisconsin Department of Natural Resources - Endangered Resources Review Homepage
Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Minnesota-Wisconsin Ecological Services Field Office**
3815 American Blvd East
Bloomington, MN 55425-1659
(952) 858-0793

# Project Summary

Project Code: 2022-0045007
Project Name: Algoma Breakwater Repair
Project Type: Breakwaters - Maintenance/Modification
Project Description: The north pier and south breakwater around Algoma Harbor is in need of repair. The breakwater will be encapsulated within a layer of new sheet pile. A new concrete cap will also be installed. The footprint of the structures will not be increased and there will be no taking of lake bottom in the process of repairing the structures.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.60696815,-87.43216682588393,14z


Counties: Kewaunee County, Wisconsin

# Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

| NAME | STATUS |
|---|---|
| Northern Long-eared Bat *Myotis septentrionalis*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/9045 | Threatened |
| Tricolored Bat *Perimyotis subflavus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/10515 | Proposed Endangered |

## Insects

| NAME | STATUS |
|---|---|
| Hine's Emerald Dragonfly *Somatochlora hineana*<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/7877 | Endangered |
| Monarch Butterfly *Danaus plexippus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/9743 | Candidate |

## Flowering Plants

| NAME | STATUS |
|---|---|
| Dwarf Lake Iris *Iris lacustris*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/598 | Threatened |

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

# Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

**The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location.** To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|
| American Golden-plover *Pluvialis dominica*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds elsewhere |
| Bald Eagle *Haliaeetus leucocephalus*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. | Breeds Dec 1 to Aug 31 |

| NAME | BREEDING SEASON |
|---|---|
| Black Tern *Chlidonias niger*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/3093 | Breeds May 15 to Aug 20 |
| Black-billed Cuckoo *Coccyzus erythropthalmus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9399 | Breeds May 15 to Oct 10 |
| Bobolink *Dolichonyx oryzivorus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds May 20 to Jul 31 |
| Chimney Swift *Chaetura pelagica*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Mar 15 to Aug 25 |
| Golden-winged Warbler *Vermivora chrysoptera*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/8745 | Breeds May 1 to Jul 20 |
| Lesser Yellowlegs *Tringa flavipes*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9679 | Breeds elsewhere |
| Red-headed Woodpecker *Melanerpes erythrocephalus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds May 10 to Sep 10 |
| Ruddy Turnstone *Arenaria interpres morinella*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds elsewhere |
| Rusty Blackbird *Euphagus carolinus*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds elsewhere |
| Short-billed Dowitcher *Limnodromus griseus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9480 | Breeds elsewhere |
| Wood Thrush *Hylocichla mustelina*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds May 10 to Aug 31 |

# Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence (■)**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

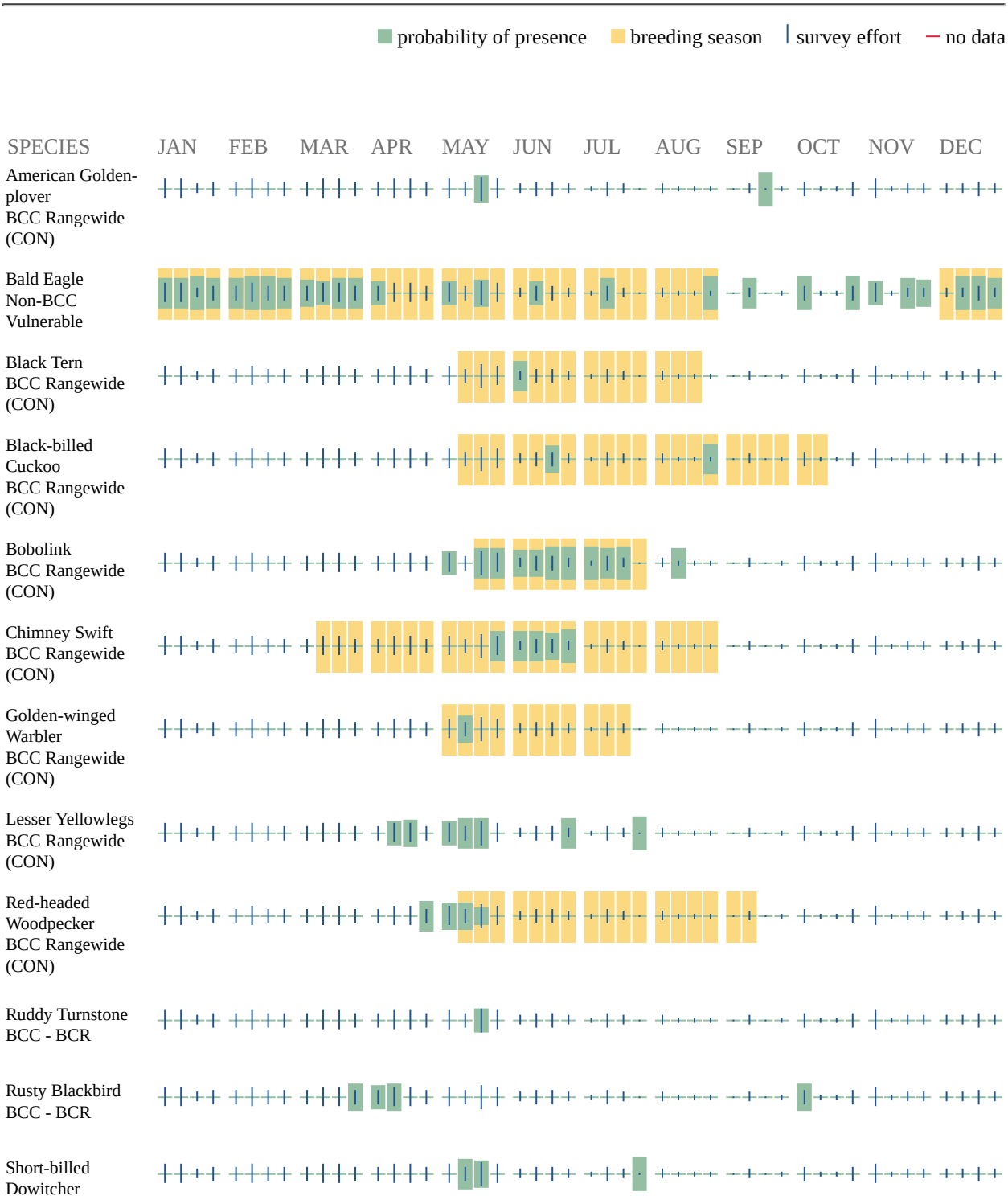
**Breeding Season (■)**
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort (|)**
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

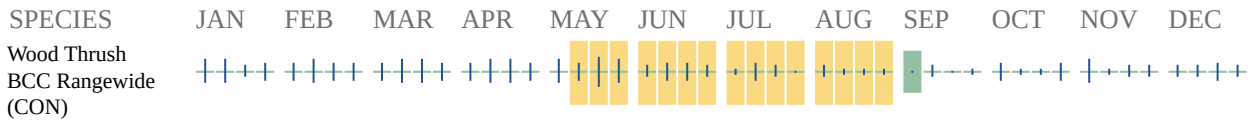
**No Data (–)**
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



BCC Rangewide (CON)




Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

## Migratory Birds FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering or migrating in my area?**
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

**Details about birds that are potentially affected by offshore projects**
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

**What if I have eagles on my list?**
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

**Proper Interpretation and Use of Your Migratory Bird Report**
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

# Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R2UBH

LAKE

- L1UBH

# IPaC User Contact Information

Agency: Army Corps of Engineers
Name: John Belcik
Address: 231 S. LaSalle St, Suite 1500
City: Chicago
State: IL
Zip: 60604
Email john.t.belcik@usace.army.mil
Phone: 3128465595

**DEPARTMENT OF THE ARMY**
**U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT**
**231 SOUTH LASALLE STREET, SUITE 1500**
**CHICAGO IL 60604**

CELRC-PDL-E (1105) 21 June 2023

MEMORANDUM FOR RECORD

SUBJECT: Section 7 of the Endangered Species Act (ESA) – Finding of "No Effect" on Federally Listed Species for Algoma Harbor Breakwater Repair FY23

1. References.
    a. 33 C.F.R. § 230.9.
    b. Section 7 of the Endangered Species Act.

2. The North Pier and South Breakwater (hereafter breakwater) are experiencing settling and erosion of the breakwater cap, voids within the timber crib structure, and a loss of armor stone along the base. The proposed repair is to stabilize the existing structure by encapsulating it in steel sheet pile along its entirety. The internal voids would then be filled, a new concrete cap would be installed, and placement of armor stone would take place along the breakwater.

3. The USFWS Information, Planning and Conservation (IPaC) system was used to identify federally listed threatened, endangered, proposed, and candidate species, as well as critical habitat for those species, that could be affect by the maintenance and repair activities. An official species list dated February 6, 2023 was generated through IPaC (Project Code: 2022-0045007). The species list identifies five federally listed species as potentially occurring within the defined project area: the threatened northern long-eared bat (*Myotis septentrionalis*), the proposed endangered tricolored bat (*Perimyotis subflavus*), the endangered Hine's emerald dragonfly (*Somatochlora hineana*), the candidate monarch butterfly (*Danaus plexippus*), and the threatened dwarf lake iris (*Iris lacustris*). There is no listed critical habitat in the area for these species.

4. Section 7 Determination: There is no habitat for any of the above-listed species within the project area. Therefore, a "No Effect" determination is appropriate for these five species.

Alex Hoxsie
Digitally signed by HOXSIE.ALEX.RUSSELL.1523187410
Date: 2023.06.21 15:29:11 -05'00'

ALEX HOXSIE
Chief, Environmental & Cultural Resources

Enclosures:
1) Project Maps
2) IPaC Consultation Materials

**DEPARTMENT OF THE ARMY**
**U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT**
**231 SOUTH LASALLE STREET, SUITE 1500**
**CHICAGO IL 60604**

January 24, 2023

Environmental & Cultural Resources Section
Planning Branch

Ms. Daina Penkiunas
State Historic Preservation Officer
Wisconsin Historical Society
816 State Street
Madison, WI 53706

SUBJECT: FY23 Algoma Harbor Breakwater Maintenance Repair Project, Kewaunee County, Wisconsin

Dear Ms. Penkiunas:

The U.S. Army Corps of Engineers (Corps) proposes to conduct maintenance repairs on the south breakwater and north pier of the Algoma Harbor in Kewaunee County, Wisconsin (Figure 1). The purpose of the repairs is to stabilize the breakwater and pier by encapsulating them in sheet pile and filling the voids within the structure (undertaking). As part of our review under Section 106 of the National Historic Preservation Act, the Corps has determined that the proposed federal action is an undertaking that has the potential to affect historic properties. This letter provides a brief project description, documents the area of potential effect (APE), summarizes the efforts to identify historic properties, and provides agency findings as provided at 36 C.F.R. § 800.4. We request your agreement with our finding that there will be no adverse effect to historic properties by the proposed undertaking.

The Algoma Harbor North Pier and South Breakwater are man-made structures that were initially built in 1871 and since then have been subject to occasional repairs as part of ongoing routine operation and maintenance (Figure 2). Currently, the interior timber crib is deteriorating and there has been a loss of stone fill from within and around the structures. This has led to voids in the structures and increased sedimentation within the channel. The proposed project would include the installation of a sheet pile encapsulation and a new concrete cap along the entirety of the breakwater and pier. This includes approximately 1,102 linear feet of the north pier and 1,530 linear feet of the south breakwater (Figures 3-4). Construction would also include erosion protection through placement of toe stone on the existing structures and the filling of voids with gravel and stone fill. The footprint of the pier and breakwater would increase as a result of these repairs (Figure 5). The footprints of sections A, B, D, and E would increase by four feet while section C would expand by five feet and Section F would expand by seven feet. To complete the repairs, the catwalk on the easternmost portion of the north pier (which is also connected to the Algoma Pierhead

Light) would need to be removed. Currently the catwalk is defunct and can no longer be safely accessed as multiple components of the catwalk are structurally unsound and no longer compliant with Occupational Safety and Health Standards 1910.23(b)(2) (Enclosure 1). The condition of the catwalk structure would not allow for temporary removal and reinstallation based on its level of deterioration. Therefore, it would be permanently removed in preparation for the repairs. The majority of repairs would be conducted by barge with the work in the nearshore areas completed from land due to the shallow waters of the lake. The staging area is currently a parking lot and would primarily be used to hold materials (e.g., sheet pile), and any stone that is able to be reused from the current breakwater would be stored either in the staging area or on the barge.

The undertaking is in Section 26, Township 25 North, Range 25 East in Algoma, Kewaunee County, Wisconsin (Figure 6). The APE for the undertaking encompasses the project area, including staging and access routes, and totals approximately 50.5 acres. The Corps believes that the APE is sufficient to identify and consider potential effects of the proposed project.

The Corps has conducted a records search and literature review of the project APE on the Wisconsin Historic Preservation Database and the National Register of Historic Places (NRHP). The Algoma Pierhead Light (AHI # 26537) sits within the project APE on the Algoma North Pier and is eligible for the NRHP and listed on the Wisconsin Architecture and History Inventory. The Algoma Harbor North Pier and South Breakwater are not listed on the NRHP but given their age, importance to the region, and the fact that other similar structures have been listed, they are considered potentially eligible for listing on the NRHP. While the removal of the catwalk would alter the appearance of the Algoma Harbor North Pier and the Algoma Pierhead Light, it would not diminish the historic significance of these structures or alter their primary purpose of providing a safe harbor and passage through the Algoma Harbor. In addition, removal of the catwalk would ensure that both the North Pier and Pierhead Light are safety compliant and therefore more publicly accessible (Enclosure 1). Removal of the catwalk and completion of these necessary repairs would ensure the preservation of the Algoma North Pier and the Pierhead Light which sits upon it. Given the information above, the Corps has determined that the project would not adversely impact the potential NRHP eligibility of the Algoma North Pier or the Algoma Pierhead Light. In addition to these historic structures, the shipwreck of the Abner Howes (47KE0069) sits adjacent to the APE in Lake Michigan to the northeast. The contractor would be provided a copy of the historic structures map (Figure 7) to ensure this area is avoided.

The Corps is making a good faith effort to gather information from affected Tribes identified pursuant to 36 C.F.R.§ 800.3(f). We have notified the Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community of Wisconsin; Fort Belknap Indian Community of the Fort Belknap Reservation of Montana; Hannahville Indian Community, Michigan; Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin; Little Traverse Bay Bands of Odawa Indians, Michigan; Menominee Indian Tribe of Wisconsin; Miami Tribe of Oklahoma; Ottawa Tribe of Oklahoma; and Prairie Band Potawatomi Nation to assist in identifying properties which may be of religious and cultural significance. The Tribes did not comment on the undertaking to date.

The Corps has made a reasonable and good faith effort to identify historic properties that may be affected by this undertaking. The proposed project is part of necessary routine maintenance of the Algoma North Pier and South Breakwater to ensure its continued

function. The in-kind repairs of the pier and breakwater would not significantly alter their form or function, or impact their NRHP eligibility nor that of the Algoma Pierhead Light. While the shipwreck of the Abner Howes is adjacent to the APE, it would not be impacted by the proposed undertaking and the contractor would be given a map of its approximate location and avoid transporting any materials near said location. Based on the information above, the Corps has determined that the proposed undertaking would result in no adverse effect to historic properties.

The Corps requests your review and agreement with our finding of No Adverse Effect to Historic Properties. If you have any questions or desire additional information, please contact the project archaeologist, Ms. Alexis Jordan, at alexis.m.jordan@usace.army.mil or (312) 846-5445.

Sincerely,

Alex Hoxsie
Chief, Environmental & Cultural Resources
Chicago District

Enclosures:

Enclosure 1- Algoma Catwalk Memo

Figure 1: Project Vicinity Map

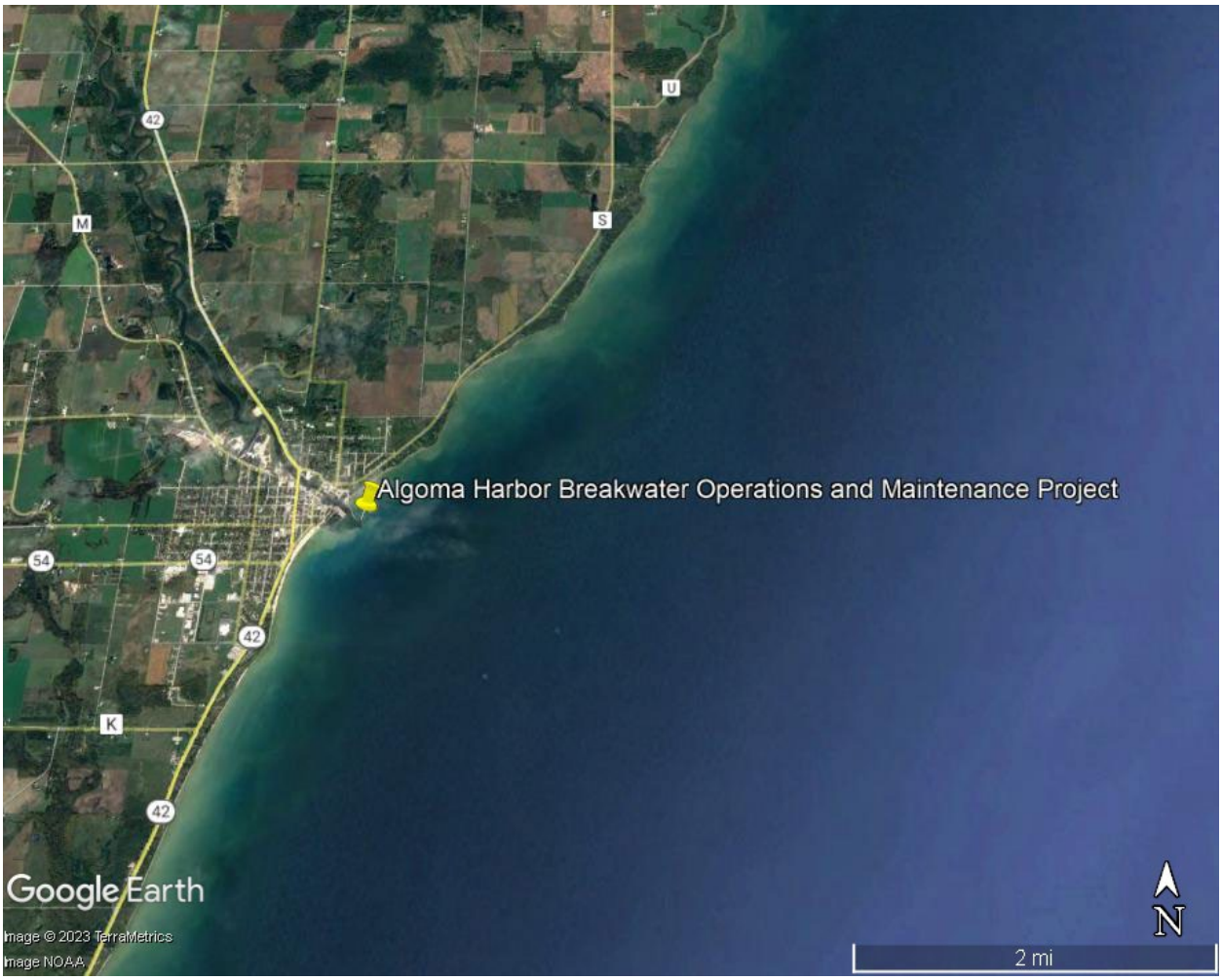


Figure 2: Algoma Harbor North Pier & South Breakwater Project Location

Figure 3: Existing Algoma North Pier and South Breakwater Dimensions

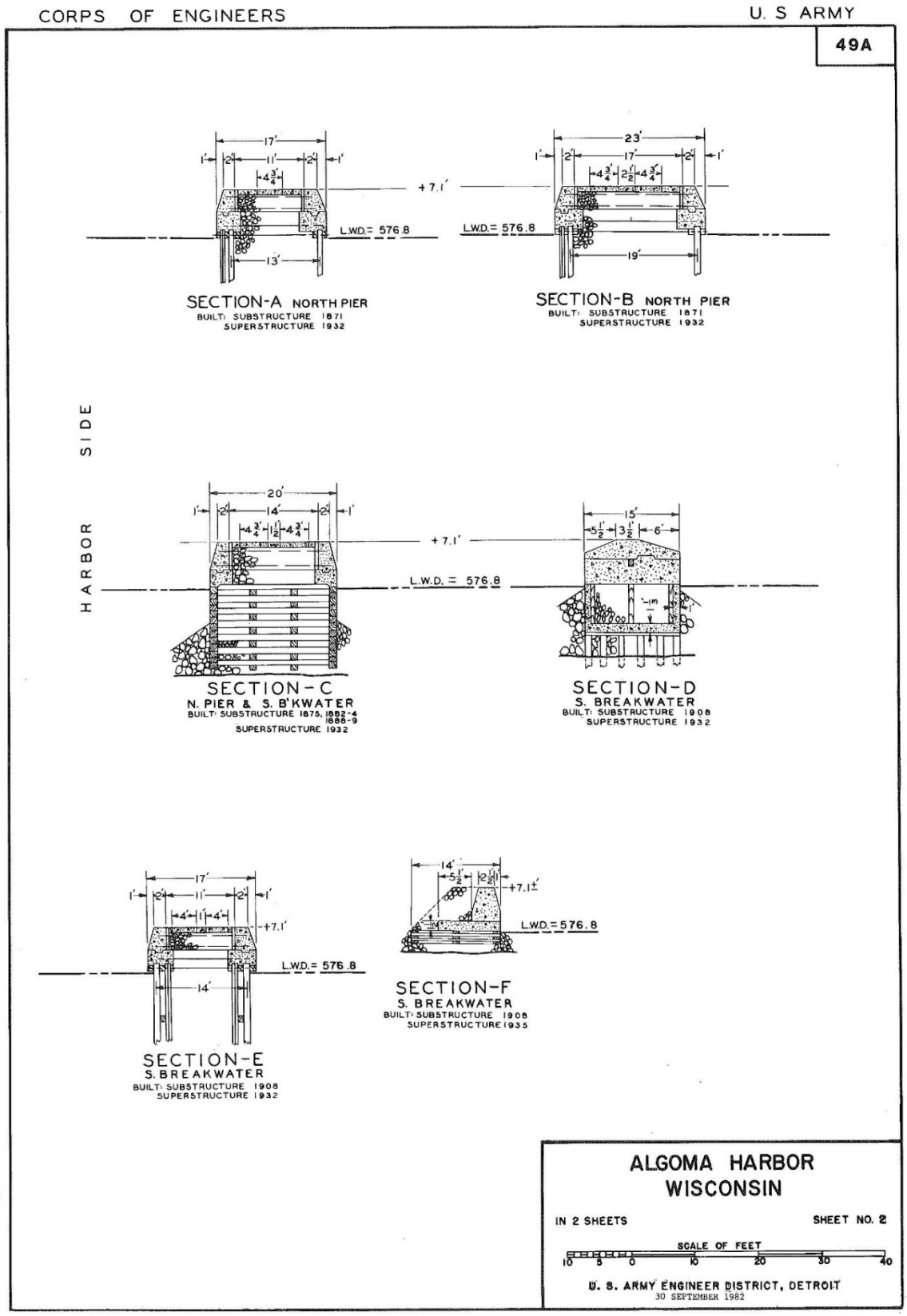


Figure 4: Cross Section of the Proposed Repairs

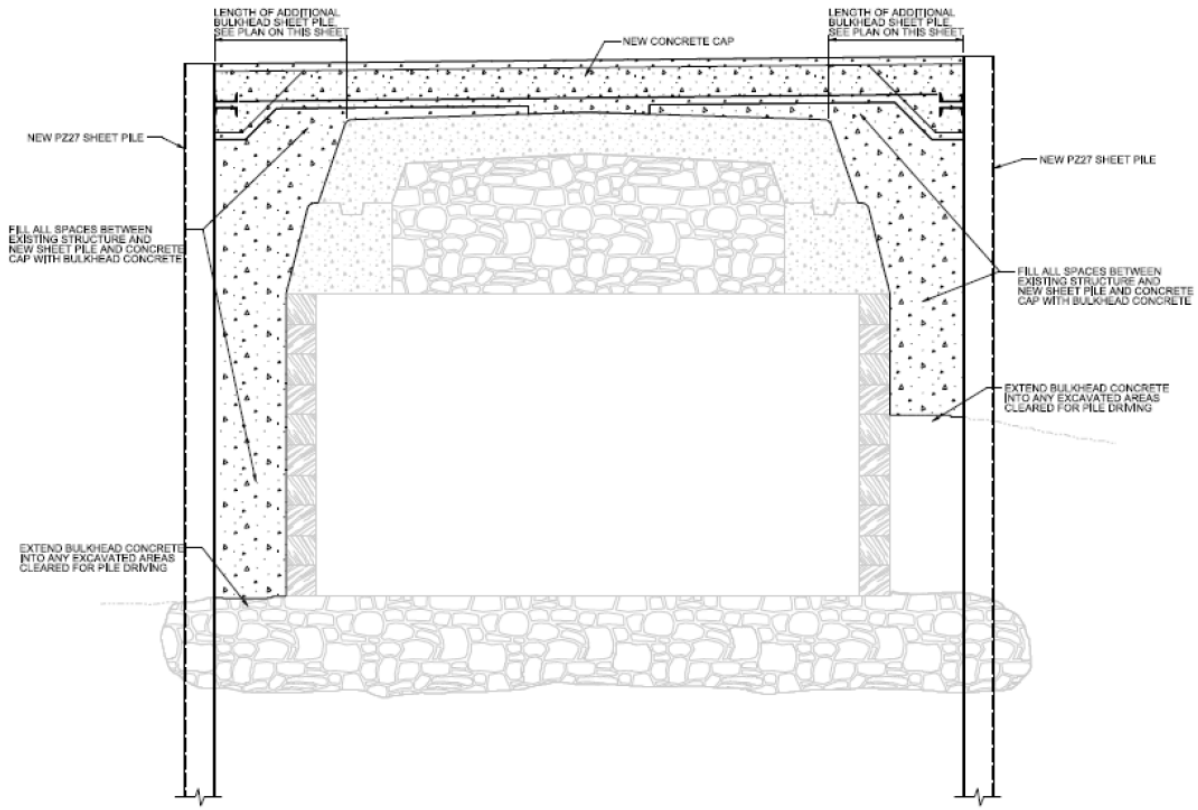


Figure 5: Sections A through F of the North Pier and South Breakwater

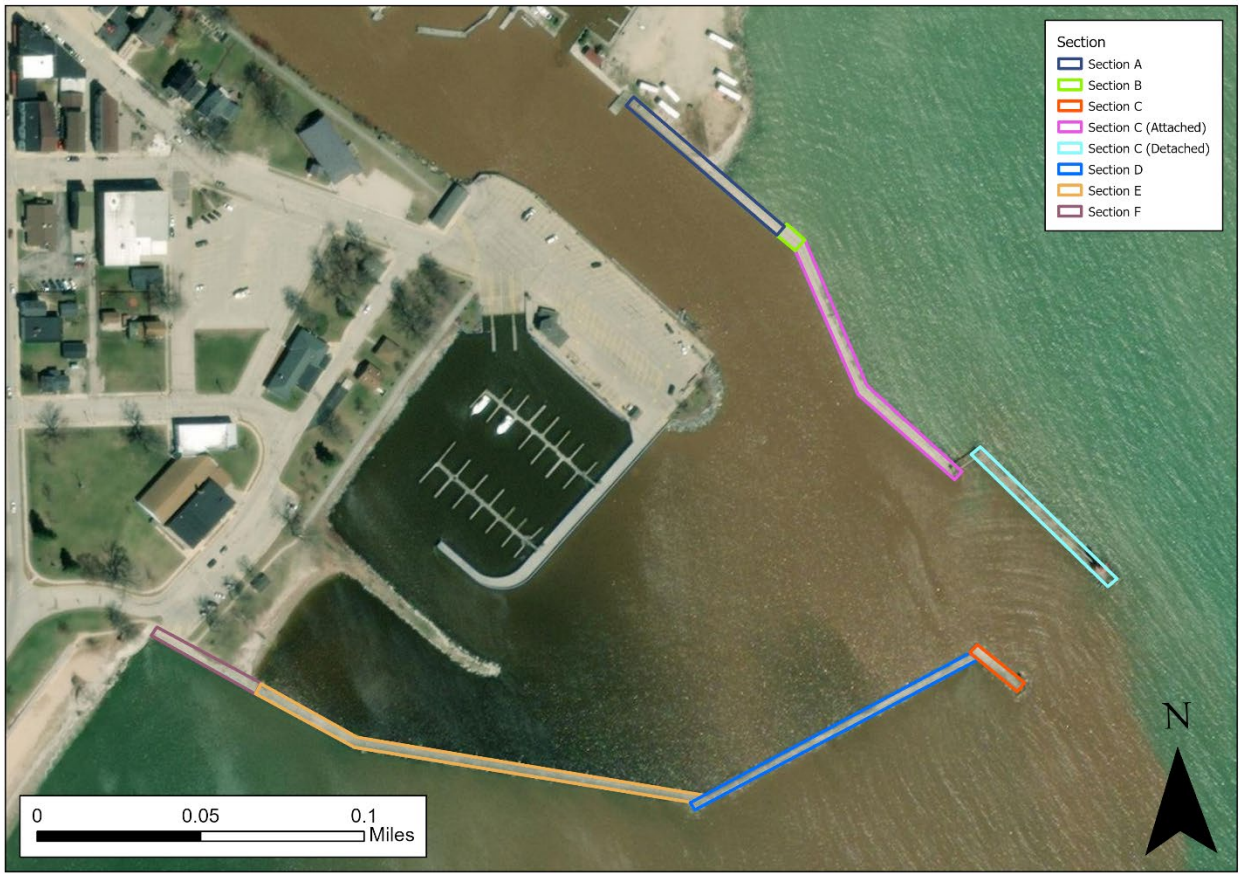


Figure 6: Project APE Map

Figure 7: Project APE and Adjacent Archaeological Sites and Historic Structures

Prairie-Hanson
SBA 8(a) Mentor-Protégé JV

**MEMORANDUM**

| |
|---|
| Date: 11/21/2022 |
| To: USACE |
| From: Prairie-Hanson |
| Project No.: 21G0046004 |
| Project Name: Algoma Breakwater Repair |
| Subject: North Breakwater Catwalk Condition |
| Copy to File, Others: |

The original intent was for the existing catwalk structure to be removed and reinstalled as required to allow for construction of the proposed breakwater repairs. Field observations of the existing catwalk structure by Prairie-Hanson personnel indicated that the catwalk framing is displaying extensive deterioration including:

- inadequate catwalk bent anchorage to the top of the breakwater,
- advanced corrosion of steel members,
- deficiencies of existing member connections, and
- compromised integrity of structural members.

Due to its condition, preserving the catwalk during removal would be difficult and potentially hazardous. Additionally, existing catwalk connections are composed of original rivets, which further complicates removal and replacement. Rivets were also observed to be absent in multiple bent locations along the length of the structure. The failure of the riveted connections was likely due to rust jacking of the bent lacing that has caused plastic deformation of the structural members. Plastic deformation of the affected members would be difficult to restore back to original condition.

There is a high likelihood that removal of the catwalk could result in damages beyond repair. The observed condition of several of the members indicate it is likely deficient to resist code loading in its current state. It should also be noted that there is no/limited access to the catwalk from the ladders that currently exist. These ladders are also not code compliant per current Occupational Safety and Health Standards 1910.23(b)(2).

Based on the field observations, maintaining the existing structure cannot be easily achieved. It does not appear that the condition of the catwalk structure will allow for temporary removal and reinstallation.

Photo 1 – Existing Catwalk Structure on the North Breakwater

Photo 2 – Compromised Anchorage to Breakwater

Photo 3 – Rust Jacking of Lacing Resulting in Plastic Deformation of Bent Members

Photo 4 – Advanced Corrosion and Significant Deterioration of Critical Members Consistent Along Structure Length

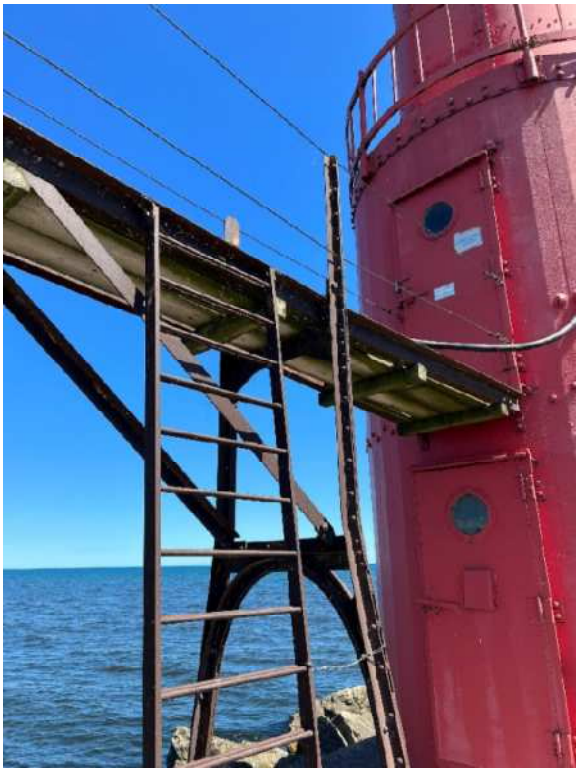


Photo 5/6 – Limited / No Access to Catwalk from Ladder; Ladder Rungs are Not Code Compliant

Photo 7/8 – Advanced Corrosion of Members Consistent Along Structure Length

Photo 9 – Decking and Associated Connections to Structure Could Not Be Observed Due to Limited Access

**DEPARTMENT OF THE ARMY**
**U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT**
**231 SOUTH LASALLE STREET, SUITE 1500**
**CHICAGO IL 60604**

February 22, 2023

Environmental & Cultural Resources Section
Planning Branch

SUBJECT: Request for more information on the Algoma Harbor Breakwater Repair Project, Kewaunee County, Wisconsin (WHS #23-0141)

Ms. Daina Penkiunas
State Historic Preservation Officer
Wisconsin Historical Society
816 State Street
Madison, WI 53706

Dear Ms. Penkiunas:

The U.S. Army Corps of Engineers (Corps) proposes to conduct maintenance repairs on the south breakwater and north pier of the Algoma Harbor in Kewaunee County, Wisconsin. The Corps previously consulted with your office under Section 106 as provided at 36 C.F.R.§ 800.4 on January 24, 2023. Your office requested additional detailed plans of the project and photos of all structures involved on February 13, 2023. The Corps responses to these requests are below.

Request #1 for Detailed Plans

Response: Since the submission of the Corps' initial Section 106 request, project plans for the Algoma Harbor Breakwater repairs have further developed. The project option selected involves the temporary relocation of the armor stone and temporary support of the Algoma Pierhead Light (AHI # 26537) via load jacking (see Algoma_90%_Plans_Overall.pdf and Algoma_90%_Plans_Load Jacking Alternative.pdf). The following steps would be undertaken.

1. Temporarily relocate the armor stone of the south breakwater and north pier.
2. Install permanent steel sheet pile (SSP) walls.
3. Install temporary dimensionally square steel structural beams (steel H-Piles) outside the limits of the SSP walls.
4. Install a temporary steel bracing system.
5. Detach the Algoma Pierhead Light from existing breakwater cap, jack the Pierhead Light up from the north pier breakwater cap, and attach the Pierhead Light to a temporary bracing system.
6. Partially demolish the existing breakwater cap.
7. Construct the proposed SSP encapsulated south breakwater and north pier including the cast-in-place top slab. Allow the cast-in-place top slab concrete to fully cure.

8. Transfer the Pierhead Light from the bracing system to the load jacking system, lower Pierhead Light on to new top slab, and permanently attached the Pierhead Light to the new SSP structure.
    a. Permanent attachment of the Pierhead Light to the new top slab would consist of hooked dowels from the new top slab within the footprint of the Pierhead Light base.
    b. Inside the base of the lighthouse, a new infill concrete slab would be cast on top of the top slab along with a step on the exterior of the Pierhead Light at the door.
9. Remove the temporary bracing system including the removal of temporary steel H-Piles.
10. Reposition the armor stone as indicated on the 90% plans.

Request #2 for Photographs of Project Structures

Response: In addition to the photos included in the original Section 106 submission (see Enclosure 1- Algoma Catwalk Memo), photos of the Algoma North Pier, Pierhead Light, and South Breakwater are included below (Figures 1-10).

If you have any questions, comments or desire additional information, please contact Ms. Alexis Jordan, Project Archaeologist at alexis.m.jordan@usace.army.mil or (312) 846-5445.

Sincerely,

Alex Hoxsie
Chief, Environmental & Cultural Resources
Chicago District

Enclosures

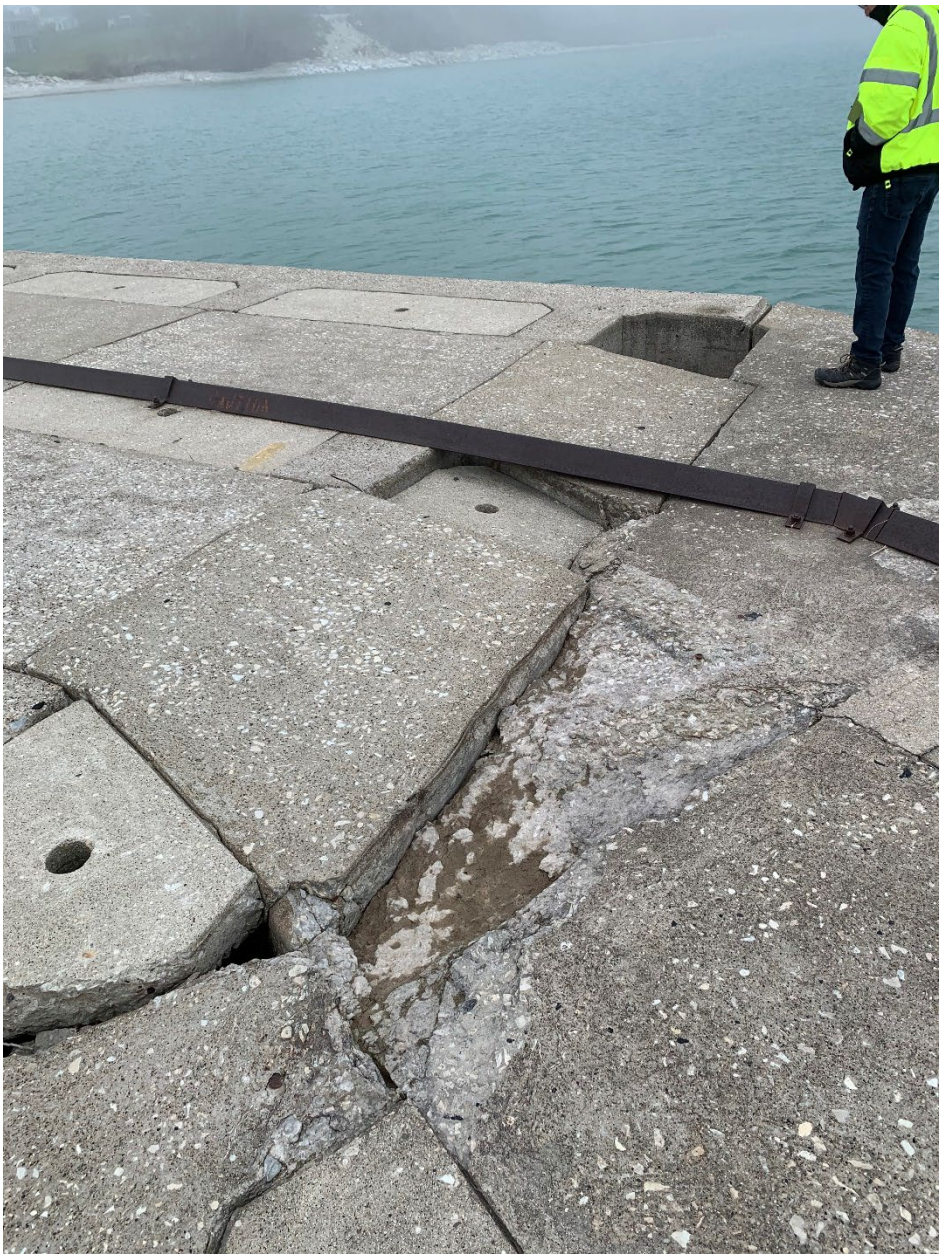
**North Pier**

Figure 1: Facing West

Figure 2: Facing Northeast

Figure 3: Facing Northeast

Figure 4: Facing Northwest



**Pierhead Light**

Figure 5: Facing East

Figure 6: Facing Northwest

**South Breakwater**

Figure 7: Facing East

Figure 8: Facing Southwest

Figure 9: Facing East

Figure 19: Facing East

**DEPARTMENT OF THE ARMY**
**U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT**
**231 SOUTH LASALLE STREET, SUITE 1500**
**CHICAGO IL 60604**

May 22, 2023

Environmental & Cultural Resources Section
Planning Branch

Ms. Daina Penkiunas
State Historic Preservation Officer
Wisconsin Historical Society
816 State Street
Madison, WI 53706

SUBJECT: Request for more information on the Algoma Harbor Breakwater Repair Project, Kewaunee County, Wisconsin (WHS #23-0141)

Dear Ms. Penkiunas:

The U.S. Army Corps of Engineers (Corps) proposes to conduct maintenance repairs on the south breakwater and north pier of the Algoma Harbor in Kewaunee County, Wisconsin. The Corps previously consulted with your office under Section 106 as provided at 36 C.F.R.§ 800.4 on January 24, February 21, and March 22, 2023. Your office requested additional information regarding the potential effects on the lighthouse. The Corps' responses to these requests are below.

1. **Temporary Support of Lighthouse**

**Response:** The temporary support system consists of H-Piles driven to refusal at bedrock with steel wide flange framing and angle bracing around the lighthouse. A rolled steel collar plate around the base and mid-height of the lighthouse would be bolted to the lighthouse at the existing bolt locations. Once attached, the steel collar plates would be lifted to the support framing to support the load of the lighthouse while the existing breakwater cap is removed below. The lighthouse would remain supported by the temporary framing throughout the encapsulation operations. Once the encapsulated breakwater construction is finished, the lighthouse would be lowered, and its load would be transferred back to the breakwater structure.

The temporary support system would connect to the lighthouse at the current location of existing bolts for minimal impacts to the structure. Once removed, the impacts will be filled and repainted. The contractor shall be required to perform an assessment of pre-existing and post-construction conditions and perform any repairs necessary to preserve the original appearance and functionality of the lighthouse. Based on the restoration of the lighthouse to its original appearance and function, there will be no adverse effect from this activity.

2. **Monitoring of Construction**

**Response**: The contractor would provide continuous stability and movement monitoring of the existing breakwater, the existing lighthouse, and the new work. The monitoring is especially critical during the load transferring operations. The contractor would monitor the vibrations produced by all pile driving operations and these operations would be performed in accordance with its approved vibration monitoring plan and be supervised by individual(s) trained in the use of vibration monitoring equipment and experienced in the interpretation of construction vibration measurements. This activity would prevent any adverse effects to the lighthouse.

3. **Expanded Archival Research on the Lighthouse**

**Response:** The Algoma Pierhead Light was listed on the National Register of Historic Places (NRHP) on July 25, 2014 under Criteria A and C due to its reflection on the maritime heritage and commercial transportation infrastructure of this locale on the Great Lakes and as an example of early 20th century pier-type lighthouse construction. The lighthouse marks the entry to the port of Algoma and is identified as number 20975 on the Great Lakes regional light list. It includes a 20-foot-tall red cylindrical steel tower that supports a 16-foot-tall tapering cylindrical cast iron tower topped with a decagonal lantern. The 20-foot tower was erected in 1932 and the 1908 tower and lantern were mounted atop it. The lighthouse has been fully automated and outfitted with an LED beacon. The Fresnel lens was removed from the tower in 2019, which has not been reflected in the NRHP documentation. The north pier is listed as a contributing resource and will be repaired in-kind for the proposed undertaking.

The elevated catwalk was originally listed as a contributing resource and was deemed to retain structural integrity at the time of the NRHP listing in 2014. Since the time of listing, the catwalk was modified by the City (replacing the wooden boards with modern materials) and has lost structural integrity through corrosion and is no longer safe for continued use (see previously submitted condition report for more information). The decision to remove the catwalk, based on safety considerations and the fact that it no longer serves its intended purpose, was coordinated with the City of Algoma. The lighthouse is not open to the general public and is only accessed by City personnel for maintenance and repairs. While originally the catwalk extended down the entire breakwater to meet with the land, only 300 feet currently remain. Due to these changes, the Corps has determined that the catwalk no longer retains structural integrity and should not be considered a contributing element to the overall lighthouse NRHP eligibility.

4. **Public Outreach and Local Input**

**Response:** The Corps has integrated its responsibility for public outreach with our NEPA process. Scoping letters were sent out in May 2022; public and agency review occurred between February 22 and March 24, 2023; and a public meeting was held in Algoma on March 2, 2023. No concerns from the public or the City of Algoma were raised regarding impacts to cultural resources associated with the proposed project.

The Corps maintains that it has made a reasonable and good faith effort to identify historic properties within the project APE. While the Algoma Pierhead Light was listed on the NRHP in 2014, a number of changes have been made since then, including the removal of the Fresnel lens and the degradation of the elevated catwalk's structural integrity. Given these factors and the repair-in-kind nature of the breakwater repairs, the Corps finds that the proposed project will result in no adverse effect to historic properties.

If you have any questions, comments or desire additional information, please contact Ms. Ashley Dailide, Project Archaeologist at ashley.m.dailide@usace.army.mil or (312) 846-5581.

Sincerely,

Alex Hoxsie

Alex Hoxsie
Chief, Environmental & Cultural Resources
Chicago District

**From:** Leslie Eisenberg
**To:** Dailide, Ashley M CIV USARMY CELRC (USA)
**Cc:** Compliance WHS
**Subject:** Re: [Non-DoD Source] Further Coordination: 23-0141/KE, UL - Manitowoc Harbor Breakwater Repair Project- Algoma
**Date:** Tuesday, June 20, 2023 12:19:50 PM

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Good afternoon, Ashley,

Thank you for closing the loop on this. Yes, I would agree to a conditional no adverse effect pending receipt and review of the monitoring plan.

Thank you,

Leslie

Leslie E. Eisenberg, Ph.D., R.P.A.
Compliance Archaeologist
State Historic Preservation Office
Wisconsin Historical Society
816 State Street
Madison, WI. 53706
E-mail: leslie.eisenberg@wisconsinhistory.org
Tel.: 608.264.6507

---

**From:** Dailide, Ashley M CIV USARMY CELRC (USA) <Ashley.M.Dailide@usace.army.mil>
**Sent:** Tuesday, June 20, 2023 12:16 PM
**To:** Leslie Eisenberg <leslie.eisenberg@wisconsinhistory.org>; Lindeen, Matthew D CIV USARMY CELRC (USA) <Matthew.D.Lindeen@usace.army.mil>
**Cc:** Hoxsie, Alex R CIV USARMY CELRC (USA) <Alex.R.Hoxsie@usace.army.mil>; Compliance WHS <compliance@wisconsinhistory.org>
**Subject:** RE: [Non-DoD Source] Further Coordination: 23-0141/KE, UL - Manitowoc Harbor Breakwater Repair Project- Algoma

Hi Leslie,

Just to confirm for our internal records, would you agree to a conditional no adverse effect finding pending receipt and review of the monitoring plan?

Thanks,
Ashley

**From:** Leslie Eisenberg <leslie.eisenberg@wisconsinhistory.org>
**Sent:** Thursday, June 15, 2023 2:08 PM
**To:** Lindeen, Matthew D CIV USARMY CELRC (USA) <Matthew.D.Lindeen@usace.army.mil>; Dailide, Ashley M CIV USARMY CELRC (USA) <Ashley.M.Dailide@usace.army.mil>
**Cc:** Hoxsie, Alex R CIV USARMY CELRC (USA) <Alex.R.Hoxsie@usace.army.mil>; Compliance WHS <compliance@wisconsinhistory.org>
**Subject:** Re: [Non-DoD Source] Further Coordination: 23-0141/KE, UL - Manitowoc Harbor Breakwater Repair Project- Algoma

Good afternoon, Matt,

Many thanks for responding so quickly and in so much detail. It is much appreciated. In addition to the Corps' approval prior to construction, I would appreciate (thank you, Ashley) receiving a copy of the plans prior to the start of construction. They can be sent directly to: compliance@wisconsinhistory.org.

With best wishes,

Leslie

Leslie E. Eisenberg, Ph.D., R.P.A.
Compliance Archaeologist
State Historic Preservation Office
Wisconsin Historical Society
816 State Street
Madison, WI. 53706
E-mail: leslie.eisenberg@wisconsinhistory.org
Tel.: 608.264.6507

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**From:** Lindeen, Matthew D CIV USARMY CELRC (USA) <Matthew.D.Lindeen@usace.army.mil>
**Sent:** Thursday, June 15, 2023 1:44 PM
**To:** Leslie Eisenberg <leslie.eisenberg@wisconsinhistory.org>; Dailide, Ashley M CIV USARMY CELRC (USA) <Ashley.M.Dailide@usace.army.mil>
**Cc:** Hoxsie, Alex R CIV USARMY CELRC (USA) <Alex.R.Hoxsie@usace.army.mil>
**Subject:** RE: [Non-DoD Source] Further Coordination: 23-0141/KE, UL - Manitowoc Harbor Breakwater Repair Project- Algoma

Hi Leslie,

Similarly to the one project at Underwood Creek, we are anticipating that a sensor will be attached to the lighthouse structure to accurately monitor the movement of the lighthouse. The trigger level for automatic recording will be set a 0.2 inches per second and the Contractor shall immediately notify the Corp of any particle velocity measurements taken at any of the structures which exceed 1.0 inch per second. For the critical work around the lighthouse, such as the load transferring operations, the Corp will have additional personnel on site overseeing those operations.

The vibratory thresholds of recording and notification are in the specifications. The actually locations of where the monitors need to be placed is not in the specifications, just that the contractor will need to submit monitoring plans, similar to what Ashely sent, and that will show the locations and the notification procedures. These plans will require the Corp's approval prior to construction beginning. For the additional personnel that is not listed on the specifications, but being tracked in our internal documents.

Please let us know if you have any additional questions and/or need anything else.

Thank you,
Matt

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**From:** Leslie Eisenberg <leslie.eisenberg@wisconsinhistory.org>
**Sent:** Thursday, June 15, 2023 9:31 AM
**To:** Dailide, Ashley M CIV USARMY CELRC (USA) <Ashley.M.Dailide@usace.army.mil>
**Cc:** Lindeen, Matthew D CIV USARMY CELRC (USA) <Matthew.D.Lindeen@usace.army.mil>; Hoxsie, Alex R CIV USARMY CELRC (USA) <Alex.R.Hoxsie@usace.army.mil>
**Subject:** Re: [Non-DoD Source] Further Coordination: 23-0141/KE, UL - Manitowoc Harbor Breakwater Repair Project- Algoma

Good morning, Ashley,

Thank you for taking the time to forward two examples of vibration monitoring plans developed specifically for urban and suburban contexts. I found the work fascinating and have the following questions for Matt:

1. Where in proximity to the Harbor Breakwater light will the sensor(s) be placed?
2. What is the threshold for an alert for this project and what is the protocol for Corps notification (and a possible work stoppage) if and when the vibration may exceed that threshold?
3. Do the contract specifications address these questions?

In thanks to you all,

Leslie

Leslie E. Eisenberg, Ph.D., R.P.A.
Compliance Archaeologist
State Historic Preservation Office
Wisconsin Historical Society
816 State Street
Madison, WI. 53706
E-mail: leslie.eisenberg@wisconsinhistory.org
Tel.: 608.264.6507

---

**From:** Dailide, Ashley M CIV USARMY CELRC (USA) <Ashley.M.Dailide@usace.army.mil>
**Sent:** Tuesday, June 13, 2023 11:27 AM

**To:** Leslie Eisenberg <leslie.eisenberg@wisconsinhistory.org>
**Cc:** Lindeen, Matthew D CIV USARMY CELRC (USA) <Matthew.D.Lindeen@usace.army.mil>; Hoxsie, Alex R CIV USARMY CELRC (USA) <Alex.R.Hoxsie@usace.army.mil>
**Subject:** RE: [Non-DoD Source] Further Coordination: 23-0141/KE, UL - Manitowoc Harbor Breakwater Repair Project- Algoma

Hi Leslie,

Thank you for your response. The vibration monitoring plan is a deliverable that we will be getting from our contractor prior to construction. I have included two examples from previous projects, but have cc'd our civil engineer Mat Lindeen to discuss the specifics for this project if you'd like more information. He has the specs for the contract if you would like to review or request something specific be added. We can also forward you the plan from the contractor once it is received. Let us know if you have any other questions or would like to discuss further.

Thanks,
Ashley

---

**From:** leslie.eisenberg@wisconsinhistory.org <leslie.eisenberg@wisconsinhistory.org>
**Sent:** Tuesday, June 13, 2023 10:17 AM
**To:** Dailide, Ashley M CIV USARMY CELRC (USA) <Ashley.M.Dailide@usace.army.mil>
**Subject:** [Non-DoD Source] Further Coordination: 23-0141/KE, UL - Manitowoc Harbor Breakwater Repair Project- Algoma

Good morning, Ashley,

Thank you for your most recent correspondence that provides a much fuller picture of the project actions.I would like to review the vibration monitoring plan referenced in your letter but it was not included. Once I have reviewed a copy, and if there are no questions, I will be happy to sign your project out as "no adverse effect."

In thanks,

Leslie

Leslie Eisenberg
Compliance Archaeologist & Interim NAGPRA Representative
State Historic Preservation Office

Wisconsin Historical Society
816 State Street, Madison, WI 53706
608.264.6507
leslie.eisenberg@wisconsinhistory.org

**Wisconsin Historical Society**

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**DEPARTMENT OF THE ARMY**
**U.S. ARMY CORPS OF ENGINEERS, CHICAGO DISTRICT**
**231 SOUTH LASALLE STREET, SUITE 1500**
**CHICAGO IL 60604**

February 22, 2023

Planning Branch
Planning, Programs and Project Management

Dear Recipient:

The U.S. Army Corps of Engineers, Chicago District (Corps) is releasing for public comment a draft Environmental Assessment (EA) under the National Environmental Policy Act for a proposed breakwater repair and maintenance project at Algoma Harbor, located on the western shore of Lake Michigan in the City of Algoma, Kewaunee County, Wisconsin (See Enclosure 1).

The harbor structures consist of a 1,102-foot long North Pier and a 1,530-foot long South Breakwater. The purpose of the proposed project is to stabilize these structures to maintain the operational integrity of the existing structures, which provide safe navigation.

The draft EA documents the consideration of alternatives for addressing the deterioration of the existing structure, including a No Action alternative. The tentatively selected plan includes the demolition and replacement of the existing concrete cap along the structures, filling of void spaces, encapsulation using vertical steel sheet piling on both sides of the structures, and the replacement of armor stone along the toe of the structures. This plan would provide for more stable and long-lasting harbor structures enabling the continued safe passage for vessels entering and exiting the harbor.

The draft EA is available at https://www.lrc.usace.army.mil/Missions/Civil-Works-Projects/Public-Review-Documents/. The Corps is seeking public input and would appreciate any comments or concerns regarding potential environmental or social impacts associated with the proposed plan. We kindly request that you provide your comments by March 24, 2023.

A public meeting regarding this project is scheduled for March 2, 2023 at 6:30 PM at the Algoma City Hall located at 416 Fremont Street. Comments and questions can be directed to Mr. John Belcik at John.T.Belcik@usace.army.mil or (312) 846-5595.

Sincerely,

BUCARO.DAVID.F.1245178677
Digitally signed by BUCARO.DAVID.F.1245178677
Date: 2023.02.21 13:19:12 -06'00'

David F. Bucaro, P.E., PMP, WRCP
Chief, Planning Branch
Chicago District

Enclosures:
1 – Project Map
2 – Existing Breakwater Dimensions
3 – Proposed Breakwater Cross Section


**Figure 1:** Project Map
Note: green lines indicate the extent of the South Breakwater and orange lines indicate the extent of the North Pier.

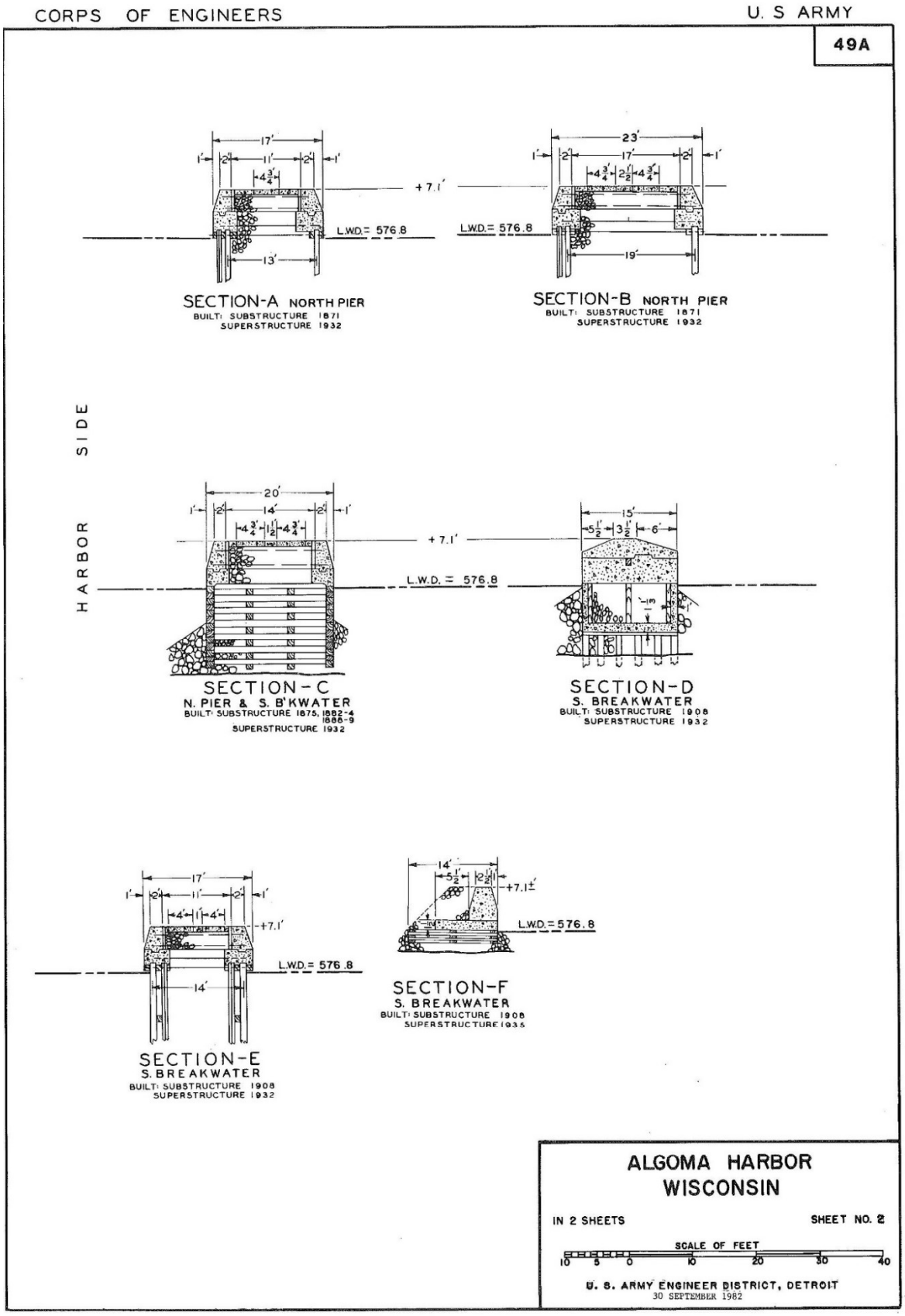


**Figure 2:** Existing Breakwater Dimensions

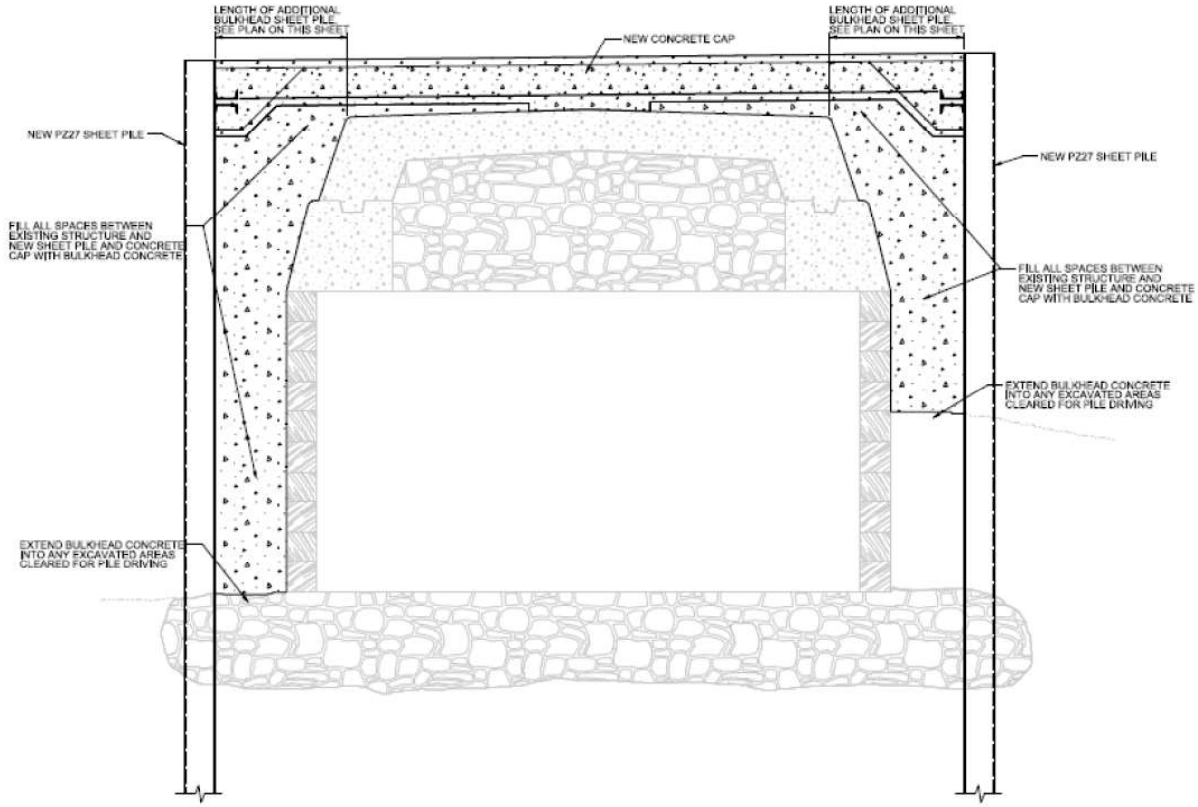


**Figure 3:** Proposed Breakwater Repair Cross Section

US Army Corps of Engineers
Chicago District

# Algoma Harbor, Algoma, Wis.
# Breakwater Repair and Maintenance Project

## Public Meeting Sign-in

| Name | Resident/Organization represented | Zip Code | Contact Information (e-mail/phone for future correspondence) |
|---|---|---|---|
| Ryan Trzinski | REL | 54303 | rtrzinski@releeinc.com |
| Lee Dachelet | Algoma City Alderman | 54201 | ldachelet@sbcglobal.net |
| Casey Groessl | City of Algoma Public Services Manager | 54201 | Casey.groessl@algomacity.org |
| Sharon Buckley | resident | 54201 | |
| JAKE MARING | CITY OF ALGOMA COUNCILMAN | 54201 | J.MARING@ALGOMACITY.ORG |
| DAVE MEYER | RESIDENT | 54201 | XCHIEFNME@CHARTIER.COM |
| Peter Huber | Roen Salvage | 54235 | huber@roensalvage.com |

US Army Corps of Engineers
Chicago District

# Algoma Harbor, Algoma, Wis.
# Breakwater Repair and Maintenance Project

## Public Meeting Sign-in

| Name | Resident/Organization represented | Zip Code | Contact Information (e-mail/phone for future correspondence) |
|---|---|---|---|
| WAYNE SCHMIDT | RESIDENT | 54201 | 920-362-2433 |
| RICK DELO (AO) | RESIDENT | 54201 | 920-487-5107 |
| Virginia Hasker | Mayor City of Algoma | 54201 | 920 304-3289 |
| Gareth Gridley<br>Donna Gridley | Resident | 54201 | 920-818-0411 |
| Sue Hass | resident | 54201 | 920-495-8440 |
| Midge Swedberg | resident/Alderman City of Algoma | 54201 | M.swedberg27@gmail.com |
| Deb Kiedrowski | Algoma business owner | 54201 | dkiedrowski@atihospitality.com |

US Army Corps of Engineers
Chicago District

# Algoma Harbor, Algoma, Wis.
# Breakwater Repair and Maintenance Project

## Public Meeting Sign-in

| Name | Resident/Organization represented | Zip Code | Contact Information (e-mail/phone for future correspondence) |
|---|---|---|---|
| DICK SWANSON | RESIDENT | 54201 | SWANSON29035@GMAIL.COM |
| Cathy Pabich | Resident | 54201 | pabichc@gmail.com |
| JOHN PABICH | " " | " " | pabichjohn@gmail.com |
| Joanne Smits | Resident | 54201 | jrsmits14e gmail.com |
| [illegible] | Resid. | 54209 | |
| Louis Jacobucci | Resident | 54201 | |
| KAREN NEWQUIST | Resident | 54201 | |

US Army Corps of Engineers
Chicago District

# Algoma Harbor, Algoma, Wis.
# Breakwater Repair and Maintenance Project

## Public Meeting Sign-in

| Name | Resident/Organization represented | Zip Code | Contact Information (e-mail/phone for future correspondence) |
|---|---|---|---|
| Doug Brown | Resident | 54201 | 715. 338 - 1702 |
| Shelly Brown | Resident | 54201 | dwntwnsrb@yahoo.com |
| Pauline Meyer | US Congressman Mike Gallagher | 54115 | pauline.meyer@mail.house.gov |
| Matt Murphy | City of Algoma | 54216 | Matt.murphy@algomacity.org |
| Scott Meverden | City of Algoma | 54201 | Scott.meverden@algomacity.org |
| Joe Wilke | city of Algoma | 54201 | 920-255-3217 |
| Pete Haack | Algoma | 54201 | phaack@algomautilities.com |

| | | | |
|---|---|---|---|
| Amy Johnson | Algoma | 54201 | johnson-amy@att.net |
| JACOB M. BLAZKOVEC | resident & City Atty | 54201 | blazkovec@blazkovec.com |
| Jeremy Schultz | resident | 54201 | 9204950559 |
| Erin Mueller | City of Algoma | 54201 | erin.mueller@algomacity.org |

**Algoma Harbor**
**Breakwater Repair and Maintenance Project**

**Comment Form**

DREDGING REQUIRED TO REPAIR SOUTH PIER?

**From:** Robert and Joanne Smits
**To:** Belcik, John T CIV USARMY CELRC (USA)
**Subject:** [Non-DoD Source] Algoma Harbor Breakwater Repair Project
**Date:** Friday, March 10, 2023 1:02:11 PM

---

Good afternoon,
We recently attended the public info meeting on the Algoma Breakwater Project and would like to offer a comment for your consideration.
WE understand that the current catwalk on the North Pier is unsafe and needs to be removed and cannot be replaced. However, access to the lighthouse must be maintained for maintenance purposes, and currently the electricity to the lighthouse runs along the catwalk. It seems under those circumstances that the most logical solution is to connect up the two sections of the North Pier and make it one continuous breakwater. It would seem that this could certainly be deemed as a repair, not new construction. You are removing current access to the lighthouse and need to replace it with something. It makes no sense to jury rig up some kind of walkway across the open water to connect the two. Thank you for your consideration.

Robert and Joanne Smits
1320 7th Street
Algoma, WI 54201

| | |
|---|---|
| **From:** | Michael Dovichi |
| **To:** | Belcik, John T CIV USARMY CELRC (USA) |
| **Cc:** | matt.murphy@algomacity.org |
| **Subject:** | [Non-DoD Source] Algoma Harbor Breakwater Repairs project Comment |
| **Date:** | Thursday, March 16, 2023 3:47:52 PM |

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John, I am writing in regards to the Algoma Wisconsin breakwater project. I was unable to attend the recent meeting so I will take this opportunity to make some comments for the COE's consideration. I understand that there was discussion for the need to provide access to the lighthouse over the breakwater. I want to point out that the photo showing the project scope clearly shows that the breakwater connects the two sections of the north breakwater. Secondly, the same photo shows that the construction will include sheet piling and other construction along the western end of the south breakwater. A close examination of the existing breakwater shows that this portion consists of riprap and fill from the stormwater pond constructed a couple years ago. There should be no need to install sheet piling on the north side of the first 100-200' of the wall. My suggestion would be to take the monies saved and apply it to reconfigure and fill in at least part of the "dead" corner.

I'm not sure how the COE will deal with the rip rap previously installed along the toe of the south breakwater. Will the rock be removed and replaced along the wall or will it have to be disposed of? If any of the rip rap is not reused, could it also be used to fill in the "dead" corner  It should be apparent that its my opinion that this is the time to fix that corner to eliminate, or at least mitigate, the health and aesthetic issues that currently exist.

Thanks for the opportunity to comment on this project. The citizens of Algoma look forward to the completion of the improvements to the two  breakwaters. Please feel free to contact me if you have any questions or comments regarding this correspondence.

Sincerely,

Michael D. Dovichi
920-621-9204 (phone or text)
mdovichi@gmail.com

Sent from Mail for Windows 10

| | |
|---|---|
| **From:** | Jake Maring |
| **To:** | Belcik, John T CIV USARMY CELRC (USA) |
| **Cc:** | Matt Murphy; Virginia Haske; Erin Mueller; Amber Shallow; Lee Dachelet; Scott Meverden |
| **Subject:** | [URL Verdict: Neutral][Non-DoD Source] Re: Algoma Harbor Draft Environmental Assessment Public Comment |
| **Date:** | Thursday, February 23, 2023 11:08:58 AM |
| **Attachments:** | Algoma Harbor PR Letter_SIGNED.pdf |

Dear Mr Belcik,

Firstly, let me thank you for the work the Corps has done so far on the Algoma Breakwater problem. I believe your off to a decent start, however you have missed a great opportunity to correct almost 100 years of construction errors.

The existing breakwater and proposed repairs will not correct the gorilla sized issue in the harbor proper. That being the direction and control of the outflow of the Ahnnapee River. One only need look at an overhead picture of the harbor to realize that the existing breakwater acts as a giant cork to river outflow and a silting and odor problems both in the harbor and on crescent beach. This issue does need to be addressed along with the improvements you are proposing. Otherwise all we'll be doing is passing the problem down to those that follow in another 100 or so years.

The south breakwater is placed in the worst possible location to allow the river and the lake to outflow cleanly and reduce the slit and order. It needs to be moved so it lies directly into the prevailing SE winds and wave action and pierced underwater to allow wave action to flush the harbor.

The east side portion facing the lake also needs to be pierced underwater in multiple locations to allow river flow into the lake and allow the river and the lake to disperse the silt into the lake and allow wave and water action of both to spread the river outflows into the lake and its natural cleaning processes. With those changes, even the existing footprint would be enough to reduce the cork like nature of the current layout considerably.

Nevertheless, if re-laying the southern portion is considered possible, why not expand the whole breakwater incorporating outflow changes and increase the size and commercial viability of the harbor as well and move the lake facing wall outward by another 50-100 yards?

Beginning in 2023, Algoma will begin hosting Viking Cruise Great Lakes cruise ships in a planned long term future. This commercial venture, coupled with an expanded harbor may create other viable commercial opportunities for Algoma and allow the city to expand our already at capacity marina, and commercial recreational fishing fleet. (We host the largest charter fishing fleet at the northern end of the lake).

I also believe that expanding the harbor, will also allow the river to resume its natural flushing into the lake and reduce overall costs to both the Corps and the City in odors and silt abatement. This will have a positive effect on helping the river clean itself, improving fish and game habitat along side of expanded commercial viability.

In taking these measures with the generous almost $20 million grant for the government, we can truly create a new and more viable waterfront for our city and the Lake Michigan watershed in total.

Sincerely,

Jake Maring

Sent from my iPhone

M: 714.322.3335
E: Jake.maring@algomacity.org


City Hall, 416 Fremont Street, Algoma, WI 54201
Jake.maring@algomacity.org

On Feb 22, 2023, at 2:39 PM, Belcik, John T CIV USARMY CELRC (USA) <John.T.Belcik@usace.army.mil> wrote:

Good Afternoon,

The Chicago District is asking for public comment on the Algoma Harbor Breakwater Repair Draft Environmental Assessment (EA). Attached is the letter asking for public input. This letter contains information pertaining to the where this EA and its accompanying appendices can be found on our website and how to submit comment(s). It also contains information about the public meeting to be held in Algoma allowing for an additional public input opportunity and information sharing. This comment period will be 30-days. Please forward and share this letter with your network to help ensure the widest dissemination of these materials and ensure we gather all relevant comments and information.

Thank you!

John T. Belcik

United States Army Corps of Engineers
Fish Biologist and Planner, Chicago District
231 S. LaSalle St, Suite 1500

Chicago, IL 60604
Office: 312-846-5595
Mobile: 773-497-1279
Fax: 312-886-2891

PhD Candidate
University of IL at Chicago - Ashley Lab

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FACEBOOK: http://www.facebook.com/usacechicago
Twitter: @usacechicago

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

March 15, 2023

**VIA ELECTRONIC MAIL ONLY**
**(John.T.Belcik@usace.army.mil)**

John Belcik
U.S. Army Corps of Engineers
231 S. LaSalle St., Ste. 1500
Chicago, Illinois 60604

RE: EPA Comments – Draft Environmental Assessment for the Proposed Algoma Harbor Breakwater Repair and Maintenance Project; Algoma, Kewaunee County, Wisconsin

Dear Mr. Belcik:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Assessment (Draft EA) prepared for the proposed Algoma Harbor (Harbor) breakwater repair and maintenance project in Algoma, Wisconsin. This letter provides EPA's comments on the Draft EA, pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act.

Algoma Harbor is a recreational harbor located in Algoma, Wisconsin on the western shore of Lake Michigan at the mouth of the Ahnapee River. The federal project and Harbor structures consist of an outer basin enclosed by a 1,102-foot-long north pier and a 1,530-foot-long south breakwater. The Algoma Harbor structures, constructed in 1871, currently require stabilization. The structures have not been repaired since the 1930s and need significant renovation. The purpose of the proposed project is to stabilize these structures to maintain their operational integrity, allowing for safe Harbor navigation for entering and existing vessels.

Two alternatives were considered in the Draft EA to support navigability of Algoma Harbor. These include the No Action Alternative and the Proposed Action (Breakwater Repair). The Breakwater Repair alternative proposes to install a sheet pile encapsulation for the entirety of the breakwater. The current breakwater's internal timber crib has deteriorated to the point where stone fill has been lost, leading to voids and increased channel sedimentation. USACE proposes to encapsulate 1,102 linear feet of the north pier and 1,530 linear feet of the south breakwater. This sheet pile encapsulation will include scour protection, likely placement of toe stone. The majority of repairs would be conducted by barge with the work in the nearshore areas being conducted from land due to the shallow waters of the lake.

We have no comments on the Draft EA. Thank you for the opportunity to review this NEPA document. The National Archives and Records Administration and the Office of Management and Budget have mandated that Federal agencies transition business processes and recordkeeping to fully electronic environments. Please help achieve this goal by providing EPA with an electronic copy of future NEPA documents, including the decision document for this project. When the FONSI becomes available, please send an electronic copy to Liz Pelloso, the lead NEPA reviewer for this project, at pelloso.elizabeth@epa.gov. Ms. Pelloso is also available at 312-886-7425.

Sincerely,

DAVID OGULEI

Digitally signed by DAVID OGULEI
Date: 2023.03.15 12:42:39 -05'00'

David Ogulei, Acting NEPA Program Supervisor
Tribal and Multimedia Programs Office
Office of the Regional Administrator