IEPA Log No.: **C-0033-17**
CoE appl. #: **2011-00527**

Public Notice Beginning Date: **October 17, 2018**
Public Notice Ending Date: **November 14, 2018**

Section 401 of the Federal Water Pollution Control Act
Amendments of 1972

Section 401 Water Quality Certification to Discharge into Waters of the State

Public Notice/Fact Sheet Issued By:

Illinois Environmental Protection Agency
Bureau of Water
Division of Water Pollution Control
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
217/782-3362

Name and Address of Discharger: Mr. & Mrs. Andrew Bluhm, 703 Sheridan Road, Winnetka, IL 60093

Discharge Location: Section 16, T42N, R13E of the 3rd P.M. in Cook County within Winnetka

Name of Receiving Water: Lake Michigan.

Project Description: Breakwater protected beach.

The Illinois Environmental Protection Agency (IEPA) has received an application for a Section 401 water quality certification to discharge into the waters of the state associated with a Section 404 permit application received by the U.S. Army Corps of Engineers. The Public Notice period will begin and end on the dates indicated in the heading of this Public Notice. The last day comments will be received will be on the Public Notice period ending date unless a commenter demonstrating the need for additional time requests an extension to this comment period and the request is granted by the IEPA. Interested persons are invited to submit written comments on the project to the IEPA at the above address. Commenters shall provide their names and addresses along with comments on the certification application. Commenters may include a request for public hearing. The certification and notice number(s) must appear on each comment page.

The attached Fact Sheet provides a description of the project and the antidegradation assessment.

The application, Public Notice/Fact Sheet, comments received, and other documents are available for inspection and may be copied at the IEPA at the address shown above between 9:30 a.m. and 3:30 p.m. Monday through Friday when scheduled by the interested person.

If written comments or requests indicate a significant degree of public interest in the certification application, the IEPA may, at its discretion, hold a public hearing. Public notice will be given 30 days before any public hearing. If a Section 401 water quality certification is issued, response to relevant comments will be provided at the time of the certification. For further information, please call Thaddeus Faught at 217/782-3362.

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Fact Sheet for Antidegradation Assessment
Andrew & Amy Bluhm – Lake Michigan – Cook County
IEPA Log No. C-0033-17
COE Log No. LRC-2011-00527
Contact: Abby Brokaw 217/782-3362
October 17, 2018

Andrew & Amy Bluhm ("Applicant") have applied for a 401 Water Quality Certification for impacts associated with the removal of two piers, construction of one new pier, and modification of the existing boat ramp and existing shoreline protection system in Lake Michigan at 695 and 703 Sheridan Road in Winnetka, Cook County, Illinois.

The site is within a fully-engineered section of urban lakeshore and beaches that are typically protected with steel sheetpile groins, revetments and breakwaters. Municipal littoral barriers constructed over the last 100 years have starved the coast of sand and structures constructed to hold beach sand have deteriorated. The shoreline at 695 Sheridan Road experienced a 9-foot vertical loss of sand during a storm in October 2014; and beach has not recovered. At the 703 Sheridan Road shoreline, waves caused by increases in water levels are overtopping the existing quarrystone revetment.

Along the south boundary of 695 Sheridan Road, the deteriorated concrete pier would be removed, and the existing steel groin would be retained as the southern wall of a new steel and concrete crib pier. The new pier would be built by driving a new row of steel sheetpile 6 foot north of the existing steel groin creating a crib pier structure with a concrete cap extending to 98 feet east of the concrete seawall and tapering from a landward crest elevation of 587 feet to 584 feet. A quarrystone revetment would be constructed along the shoreline at 695 Sheridan Road with a crest elevation of 589 feet, extending east along the north side of the new pier, and tapering to 584 feet. Quarrystone breakwater spurs would extend north and south from the end of the new pier and have crest elevations of 584 feet with side slopes at 1.5h:1v. These spurs would extend 115 feet from the toe of the bluff, with the pier extending approximately 10 feet beyond the toe of the breakwater spurs for safe access for boarding boats. The remaining portion of the 140 feet existing steel groin would be removed.

The existing steel and concrete pier on the south boundary of 703 Sheridan Road would be removed and a new shore connected quarrystone breakwater would be constructed in the center of the site. The stone breakwater at the end of the existing structure would be disassembled and the stone would be reused on the new quarystone breakwater. This breakwater would have a crest elevation of 584 feet, with side slopes of 1.5h:1v and 83 feet in length. The shore connected arm would have a crest elevation of 582 feet.

The existing concrete pier along the north property line of 703 Sheridan Road would be retained as well as the existing quarrystone breakwater. This breakwater would have a crest elevation of 584 feet with side slopes of 1.5h:1v and would be extended south an additional 30 feet to shorten the gap to the central breakwater.

Stairs are proposed to be constructed of quarrystone for access over the southern revetment and pier and the central breakwater arm. The existing boat launch ramp would be modified on the existing piles. The proposed work also includes the placement of 3,330 tons of sand to pre-fill areas within the created cells. The total fill for the existing and proposed shoreline protection structures would be 0.22 acres. The Applicant proposes to purchase 0.44 acres of certified wetland mitigation credits to compensate for the impacts.

The purpose of the project is to construct a coastal system that protects the bluff and the beach at the project site. This project would be completed via marine construction with a barge and crane or backhoe delivering all materials and equipment to the site.

Identification and Characterization of the Affected Water Body

Lake Michigan is classified as a Lake Michigan Basin Use Water and has 0 cfs of flow during critical 7Q10 low-flow conditions. Lake Michigan, Waterbody Segment IL_QLM-01, is listed on the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for fish consumption use with potential causes given as mercury and polychlorinated biphenyls and aesthetic quality use with a potential cause given as phosphorus. Aquatic life, public and food processing water supply, primary recreational contact, and secondary contact uses are fully supported. Lake Michigan is not listed as a biologically significant stream in the 2008 Illinois Department of Natural Resources Publication *Integrating Multiple Taxa in a Biological Stream Rating System* or given an integrity rating in that document. A Total Maximum Daily Load (TMDL) Report was prepared and approved by USEPA for 51 beaches along the Illinois Lake Michigan shoreline to address Primary Contact Use Recreation impairments due to excess bacteria. The proposed activity occurs within an area identified by the report "Shoreline Segments in Suburban Cook County, Illinois" dated May 15, 2013, as a Beach Protection Area subject to that TMDL.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses

The pollutant load increases that would occur from this project include possible increases in total suspended solids. These increases are a normal and unavoidable result of the proposed work and may occur in the lake at the point of construction activity. Benthic habitat would also be disturbed in the area of construction but impacts to aquatic life use is not anticipated. Due to the heavily eroded conditions of the project area, the reduction of wave energy impacts may improve water quality and may provide an enhanced habitat for aquatic species.

Approximately 1,300 cubic yards of new clean quarried stone would be placed along with existing stone to construct the breakwaters and revetment and approximately 2,662 cubic yards of clean medium to coarse sand would be placed as fill in and around the system. The amount of fill to be placed below the OHWM is +/- 0.22 acres.

Supplemental information provided by the Applicant regarding strategies to reduce E. Coli loading from beach modification indicates the project would comply with the TMDL's water quality concentration limit load allocation of 126 cfu/100ml. At this site, the existing coastal environment, a low and ephemeral wet beach, would be greatly improved with a higher, more robust (and dryer) new sand beach system. To prevent the pocket beach from becoming a sink for contaminants from the upland, surface runoff directly to the beach would be minimized by improvements to a vegetated buffer strip on the adjacent tableland and bluff.

Fate and Effect of Parameters Proposed for Increased Loading

The increase in suspended solids would be local and temporary. Historic shoreline modifications and lakebed downcutting has resulted in severe erosion and loss of sand in this section of the coastline. Although the benthic habitat would be disturbed by the construction activities, it is anticipated to recover and improve over time**.**

Wetland mitigation banking credits would be purchased to mitigate for the +/- 0.22 acres of coverage with fill. The applicant proposes purchasing 0.44 acres of certified credits from the Squaw Creek wetland mitigation bank.

Purpose and Social & Economic Benefits of the Proposed Activity

The proposed shoreline stabilization system would retain a sandy beach area and reduce the impact of storm wave energy on lakebed downcutting. Failure to protect the shoreline could lead to the loss of residential property and infrastructure.

Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation

The project site at 695 and 703 Sheridan Road has been inspected and options for shore protection were determined using desktop coastal engineering, bathymetric surveys and more than 2 decades of observations of the shoreline conditions at this site.

Option 1: Do nothing

- Leaves currently eroding beach in existing state
- Lakefront remains vulnerable to storm waves causing downcutting and difficult for beach walkers to navigate
- Existing steal groins remains approximately 140 feet east of the seawall

Option 2: Construction and Enhancement of Revetment

- Includes an installed quarrystone revetment at the 695 Sheridan Rd. property, with stair access to traverse the property and an enhanced revetment to withstand current lake levels and storm waves
- Does not help retain sand, reduce lakebed downcutting and create a unified shoreline between the properties
- Leaves the existing steel groin extending 140 feet east of the seawall

Option 3: Quarrystone headland at 695 Sheridan Road

- Construction of a breakwater spur extending north from the existing concrete groin to retain sand in the bay with 0.028 acres of coverage
- Existing steel groin and concrete structures continue to deteriorate
- Leaves the steel groin extending approximately 140 feet east of the seawall and does not address issues at the 703 Sheridan Rd. property

Option 4: *Originally Proposed Option* - Steel and quarrystone breakwater beach system with island

- Installs a new steel sheetpile wall north of the existing steel groin to construct a crib pier, construct short breakwater spurs north and south from the pier; breakwater island in the center of the property allowing access for two boat launch ramps; and the existing quarrystone breakwater on the north would be minimally extended south
- Helps protect the glacial clay lakebed, beach and bluff
- USACE commented on this option which led to the development of Option 5

Option 5: *Modified Proposed Option* - Steel and Quarrystone Breakwater Beach System

- Install new sheetpile wall north of the existing steel groin to construct a crib pier; construct short breakwater spurs north and south from the pier; construct a shore connected breakwater in the center of the property; the north breakwater would be extended to the south; and covers 0.22 acres of lakebed below the OHWM
- Center breakwater length was reduced from the original plan and the north breakwater was extended
- Helps stabilize the sand on the adjacent beaches and protects the glacial clay lakebed and bluff

Option 6: Steel and quarrystone breakwater beach system without island

- Feasible option for shore protection but requires that the two properties become consolidated, which is not the intent of the landowner

Conclusion: The Applicant has selected Option 5 (Modified Proposed Option) for implementation. The construction of the proposed project would follow conditions set forth by the Agency and USACE. The least intrusive alternative would be to not complete the project. This is not an acceptable alternative given the need to protect the shoreline from additional erosion during storm surges. Completion of the proposed project would allow for protection of the Lake Michigan shoreline and nearby residential structure.

Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities

On March 22, 2017, an IDNR EcoCAT consultation, Project #1708481, was initiated and found the following protected resources in the vicinity of the project location: Hubbard Woods Site INAI Site; Sea Rocket (*Cakile edentula)*, and Seaside Spurge (*Chamaesyce polygonifolia*). IDNR further evaluated the project and concluded that adverse effects on the protected resources are unlikely. The consultation was terminated on September 19, 2018.

Agency Conclusion

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time this assessment was written. We tentatively find that the proposed activity will result in the attainment of water quality standards; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity will provide a stable shoreline system that reduces the impacts of wave energy, protects benthic habitats, prevents the further bluff destabilization, retains a sandy beach area, and provides access for landowners to the lake. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.