

IEPA Log No.: **C-0290-16**
CoE appl. #: **LRC-2016-523**

Public Notice Beginning Date: **September 27, 2017**
Public Notice Ending Date: **October 27, 2017**

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
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
217/782-3362

Name and Address of Discharger: Jeff and Marianne Silver – 760 Forest Cove Road, Lake Bluff, IL
60044

Discharge Location: Near Lake Bluff in SE 1/4 of Section 21 of Township 44N, Range 12E of the 3rd
P.M. in Lake County.

Name of Receiving Water: Lake Michigan

Project Description: Proposed construction of quarystone breakwater beach protection system.

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 Darren Gove at 217/782-3362.

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Fact Sheet for Antidegradation Assessment
For Jeff and Marianne Silver
IEPA Log No. C-0290-16
COE Log No. LRC-2016-523
Contact: Brian Koch 217/558-2012
Public Notice Start Date: September 27, 2017

Marianne Silver (“Applicant”) has applied for a 401 Water Quality Certification for impacts associated with the construction of a new shore-parallel quarrystone breakwater island, installation of a pier, maintenance to an existing quarrystone revetment, and sand-fill in Lake Michigan in Section 21, Township 44 North, Range 12 East, Lake County, Illinois. The project site is located at 760 Forest Cove Road in Lake Bluff. The proposed shore-parallel breakwater island would be approximately 170 feet in length and would be situated with the lakeward toe no greater than 125 feet from the bluff toe. An existing steel groin which would intersect the proposed breakwater at its approximate mid-point would remain between the shoreline and the proposed breakwater and would have a steel plate attached to provide an additional 2.5 feet of height. Above the modified steel groin, a 5-foot-wide pier would be constructed on piers driven adjacent to the groin. An additional stone revetment with a crest elevation of 580 feet would be placed south of and adjacent to the steel groin. Approximately 90 feet of steel groin which continues lakeward of the proposed shore-parallel breakwater would be removed. The shore-parallel breakwater would have a crest elevation of 584 feet with slopes of 1:1.5 (V:H). Existing shoreline revetment along the entire property shoreline would be enhanced using existing revetment stone and new quarrystone. The proposed activity also includes construction of a Hybrid Reef Habitat (HRH) to provide mitigation for the project’s impacts to Lake Michigan. The HRH is a wedge-shaped area consisting of submerged 6”-14” rounded cobble. The habitat area would be bounded by a stacked line of block shaped armor stone (4-6 ton) and by the low crested revetment placed adjacent to the south of the steel groin and to the west of the quarrystone breakwater. The purpose of the proposed activities is to provide enhanced protection to the property against bluff erosion by reducing lakebed downcutting. The Applicant would place approximately 1,100 cu. yards of clean quarried stone for construction of the breakwater and revetments and approximately 1,686 cu. yards of clean sand for beach fill. The area of Lake Michigan beneath the ordinary high water mark that would be filled for the proposed shoreline protection project is approximately 0.167 acres. Approximately 45 cu. yards of stone would be placed within the 0.012 acre area proposed for the construction of the HRH mitigation area.

Information used in this review was obtained from the application documents dated August 11 2017, July 18, 2017, January 23, 2017, October 5, 2016, and July 19, 2016.

Identification and Characterization of the Affected Water Body.

Lake Michigan has 0 cfs of flow during critical 7Q10 low-flow conditions. Lake Michigan is classified as a Lake Michigan Basin Use Water. 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*, nor is it given an integrity rating in that document. 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 potential cause given as phosphorus. Aquatic life, public and food processing water supply, primary recreational contact, and secondary contact uses are fully supported. A Total Maximum Daily Load (TMDL) Report has been prepared and approved by the USEPA for 51 beaches along 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 May 15, 2013 report “Shoreline Segments in Suburban Lake County, Illinois” as a Beach Protection Area and is therefore subject to this TMDL.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

The pollutant load increases that would occur from this project include some possible increases in total suspended solids. These increases, a normal and unavoidable result of the placement of the quarrystone breakwater and revetment, may occur in the lake near the area of construction. The quarrystone and sand would be obtained from uncontaminated inland sources. The existing benthic habitat would be permanently removed by fill activities, but impacts to the aquatic life uses of this area are not anticipated. Due to the heavily eroded conditions of the project area and the exposure of lakebed clay and loss of sand, the quarrystone structure would improve water quality by minimizing erosion and may provide a more diverse aquatic habitat compared to the existing heavily eroded conditions.

According to the U.S. EPA approved TMDL for *E. coli* within Lake Michigan along shoreline segments in Lake County, bacteria may be harbored at higher levels within embayment structures designed to catch and retain littoral sand. The small pocket beach such as the one that is proposed at 760 Forest Cove Road may exhibit similar characteristics due to its general orientation with respect to lake currents. However, the recreational uses of the waters within the project area are expected to be fully supported.

Fate and Effect of Parameters Proposed for Increased Loading.

The increase in total suspended solids would be local and temporary. Although the existing benthic habitat would be permanently filled by the construction activities, it is anticipated to recover and improve over time due to the placement of sand over the downcut clay substrates. Supplemental information provided by the Applicant regarding strategies to reduce *E. coli* loading as a result of beach modification indicates that the project would comply with the TMDL’s water quality concentration limit load allocation of 126 cfu/100ml. Project improvements may contribute to an overall reduction of *E. coli* loading from the particular segment of Lake Michigan shoreline impacted by this project.

Purpose and Social & Economic Benefits of the Proposed Activity.

The proposed breakwater system would help retain a sandy beach area, reduce the impacts of wave energy on the shoreline revetment and bluff erosion, and protect benthic habitat by reducing lakebed downcutting. The project would also remove approximately 90 feet of lakeward protruding steel groin thereby improving recreational uses along this stretch of shoreline.

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

The Applicant has provided the following alternatives that have been developed based on site inspection, site conditions from a 2015 bathymetric survey, study of local prototypes, and desktop coastal engineering.

Option 1 – Do Nothing:

This option results in leaving the currently eroding shoreline in its existing state. This option would allow for the lakebed erosion to continue allowing larger storm-waves to impact the coastline. The existing steel groin is failing and would continue to fail and would fall by sections onto the lakebed.

Option 2 – Reinforce the Existing Quarrystone Revetment:

This option provides enhanced storm-wave protection for the bluff. This option would not prevent or reduce continued erosion of the lakebed causing destabilization of the revetment toe. This option would not prevent continued deterioration of the steel groin. This option would not prevent full erosion of the existing narrow ephemeral beach.

Option 3 – Design a Breakwater Protected Beach System Extending 125 Feet Offshore:

This option would produce a pocket beach breakwater system to protect the shoreline property. According to the Applicant, research of prototype shoreline protection structures along the Illinois North Shore shows that structures that extend less than 125 feet offshore do not dissipate enough wave energy to hold a stable beach during average to high lake levels. The proposed plan would help protect the lakebed and the bluff while it also allows safe access to Lake Michigan via stairs and beach. Based on the assessment of this option compared to other alternatives, Option 3 was selected as the preferred alternative.

Option 4 – Encapsulate the Groin in Quarrystone:

This option would minimally help to hold sand by softening the steel face of the groin but at a much reduced rate compared to the preferred option. This option would also stabilize the failing steel groin but would not serve as sufficient shoreline protection.

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

An EcoCAT endangered species consultation submitted on December 6, 2016 to the Illinois Department of Natural Resources resulted in identification of the Blodgett Bluff and Lake Bluff Woods INAI Sites, Ground Juniper (*Juniperis communis*), and Sea Rocket (*Cakile edentula*) as being in the vicinity of the proposed activity. IDNR evaluated this information and concluded that adverse effects are unlikely. Consultation was terminated on August 24, 2017.

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 would 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 would benefit the Lake Michigan shoreline by providing a breakwater system that reduces the impacts of wave energy on the eroding coastal bluff and lakebed, retains a sandy beach area, and removes the lakeward sections of an existing steel groin. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.