

IEPA Log No.: **C-0268-16**  
CoE appl. #: **2016-00502**

Public Notice Beginning Date: **October 18, 2018**  
Public Notice Ending Date: **November 7, 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:** Dr. Nader Bozorgi, 1351 E. Westleigh Road, Lake Forest, IL 60045

**Discharge Location:** Section 3, T43N, R12E of the 3<sup>rd</sup> P.M. in Lake County within Lake Forest

**Name of Receiving Water:** Lake Michigan.

**Project Description:** Shoreline Protection.

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  
Dr. Nader Bozorgi – Lake Michigan – Lake County  
IEPA Log No. C-0268-16  
COE Log No. 2016-00502  
Contact: Abby Brokaw 217/782-3362  
October 18, 2018

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Dr. Nader Bozorgi (“Applicant”) has applied for a 401 Water Quality Certification for impacts associated with the construction of a shoreline protection system in Lake Michigan at 1351 East Westleigh Road in Lake Forest, Lake County, Illinois. The site currently includes two steel groins; a revetment along part of the northern shoreline segment; and a beach that tapers from the south to no beach to the north. The existing shoreline system provides minimal shore protection from toe erosion and continued lakebed downcutting. The proposed system is designed to provide a higher level of shore protection, reduce lakebed downcutting, and ensure longevity of the existing steel groins. The proposed project includes installation of two quarystone breakwaters, revetment maintenance, groin protection, and sand mitigation.

An 80-foot-long quarystone breakwater island would be constructed in the north segment of the property and 80 feet east from the bluff toe. This breakwater would have a crest elevation of 582 feet (IGLD-1985) with slopes of 1:1.5. The breakwater would allow for the formation of a small beach to protect the revetment from waves and scouring at the toe. The existing quarystone revetment in the northern shoreline segment would be maintained within the existing profile by filling voids with stone.

A 38-foot-long quarystone breakwater is proposed to straddle the lakeward end of the existing central steel groin. This breakwater would have a crest elevation of 583 feet (ILGD-1985), would be located 125 feet from the bluff toe, and would have slopes of 1:1.5. This breakwater would help stabilize the groin and retain more sand to protect the shoreline from waves.

A 24-foot quarystone “gumball” is proposed at the lakeward end of the southern steel groin for scour protection. The quarystone would be located 250 feet from the toe of the bluff with a crest elevation of 580 feet (ILGD-1985), crest width of 12 feet, and slopes of 1:1.5.

The proposed fill of 1,725 tons of quarystone for the construction of the two breakwaters and groin protection would be 0.096 acres. In addition, 1,310 tons of clean sand would be placed to reduce the potential of sand capture from the littoral drift.

### **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. The proposed project does not occur within a Beach Protection Area identified by the “Shoreline Segments in Suburban Cook County, Illinois” report dated May 15, 2013.

### **Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses**

Pollutant load increases of total suspended solids may occur at the point of construction activity and are a normal and unavoidable result of the placement of clean sand and crushed stone. All fill material would be clean and from inland quarries. A total of 1,725 tons of quarried quartzite would be placed in the proposed structures and 1,310 tons of clean sand would be placed on the existing beach. All clay displaced from the lakebed for installation of the breakwater toe stone would be removed from the site by barge for proper disposal. Acreage of stone placed on the lakebed east of the OHWM is approximately 0.096 acres.

Benthic habitat would also be disturbed in the construction area but impacts to aquatic life uses are not anticipated. Due to the heavily eroded conditions of the project area, water quality and habitat for aquatic species may improve. The sandy beach would provide an improved transitional environment for flora and fauna.

Although the project site is not within a Beach Protection Area in the Illinois Lake Michigan shoreline TMDL, supplemental information provided by the Applicant regarding strategies to reduce *E. Coli* loading indicate that the project is likely to comply with the TMDL's water quality concentration limit load allocation of 126 cfu/100ml. Alteration of beach slope, orientation, embayment and/or substrate composition would be applied to reduce *E. coli* loading potential. Surface runoff to the beach would be minimized with improvements to a vegetated buffer strip on the adjacent tableland and bluff. Project improvements may contribute to an overall reduction of *E. Coli* loading from the segment of Lake Michigan shoreline impacted by this project.

### **Fate and Effect of Parameters Proposed for Increased Loading**

The increase in suspended solids would be local and temporary. Although the benthic habitat would be disturbed by construction activities, it is anticipated to recover and improve over time.

Total fill for the project is 0.096 acres. Mitigation for impact is not proposed.

### **Purpose and Social & Economic Benefits of the Proposed Activity**

Failure to protect the shoreline could lead to the loss of residential property and infrastructure. The proposed project would protect and stabilize the shoreline.

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

The site has been inspected and options for shore protection were determined using desktop coastal engineering, bathymetric surveys, and shoreline observations.

#### *Option 1: Do nothing*

- Leaves the site vulnerable to lakebed downcutting, bluff toe erosion, steel groin failure, and narrowing of the beach

#### *Option 2: Revetment Maintenance*

- Continued erosion of the lakebed resulting in destabilization of the revetment toe and deterioration of the existing steel groins
- Would allow complete erosion of the current beach

#### *Option 3: Encapsulate the Central Groin in Quarystone*

- Minimal aid in retaining sand in the beach cell, but not as well as the preferred option
- Does stabilize the existing steel groins

#### *Option 4: Preferred Option: Design a Small Breakwater Protected Beach System (80 to 125 feet offshore)*

- Protects and enhances shoreline beaches
- Enhances the failing steel groin structures
- Likely to provide protection for 30 plus years

#### *Option 5: Multiple Breakwater Shore Protection System*

- Covers more of the lakebed and provides larger, more stable beaches
- Cost prohibitive for the homeowner

Conclusion: The Applicant has selected Option 4 (Design a Small Breakwater Protected Beach System) 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 lakebed downcutting, erosion and sand loss at the site. Completion of the proposed project would allow for protection of the Lake Michigan shoreline and nearby residential structures.

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

An IDNR EcoCAT endangered species consultation, Project #1808756, identified protected resources that may be in the vicinity of the proposed project. After further evaluation, IDNR concluded that adverse effects are unlikely and terminated the consultation on April 18, 2018. The project was also reviewed for cultural resource impacts and was determined to be in compliance with the Illinois State Agency Historic Resources Preservation Act.

**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 would benefit the Lake Michigan shoreline by providing a system that reduces the impacts of wave energy, protects benthic habitat, retains a sandy beach, and provides adequate shoreline protection to the property owner. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.