IEPA Log No.: **C-0029-18**
CoE appl. #: **LRC-2018-86**

Public Notice Beginning Date: **June 6, 2019**
Public Notice Ending Date: **June 27, 2019**

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

Section 401 Water Quality Certification for Discharge of Dredged or Fill Material

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: William Sick – 565 Sheridan Road, Winnetka, IL 60093

Discharge Location: Near Winnetka in NW 1/4 of Section 21 of Township 42N, Range 13E of the 3rd P.M. in Cook County.

Name of Receiving Water: Lake Michigan

Project Description: Proposed quarrystone breakwater with new steel groin and beach sand fill.

The Illinois Environmental Protection Agency (IEPA) has received an application for a Section 401 water quality certification to discharge dredged or fill material 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 contact Darren Gove at email darren.gove@illinois.gov or phone no. 217/782-3362.

DRG:C-0029-18_401 PN and FS_29Jan18.docx

Fact Sheet for Antidegradation Assessment
For William Sick
IEPA Log No. C-0029-18
COE Log No. LRC-2018-86
Contact: Brian Koch 217/558-2012
Public Notice Start Date: June 6, 2019

William Sick ("Applicant") has applied for a 401 Water Quality Certification for impacts associated with the construction of a quarrystone breakwater extending north from an existing steel groin and a quarrystone revetment along the shoreline in Lake Michigan at 565 Sheridan Road in Winnetka, Cook County, Illinois.

The project site is within a fully-engineered section of urban lakeshore and beaches 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. While the exposed gabion wall and narrow beach held by the steel groin at the project site temporarily provide shore protection for the bluff, the current shoreline system is not likely to survive wave action and icing from Lake Michigan, as evidenced at the adjacent site (575 Sheridan Road). Current high lake levels and associated stormwaves are impacting the bluff toe causing deflation of the beach and loss of land (bluff toe and trees), as well as causing deeper water in the nearshore.

The proposed shoreline stabilization project includes construction of a new quarrystone breakwater and a quarrystone revetment, as well as raising the existing steel groin. The new quarrystone breakwater would extend 82 ft. north from an existing steel groin on the project site. The breakwater would be installed extending to 125 ft. offshore from the bluff toe with a crest elevation of 584 ft. and a crest 7 ft. wide. The breakwater slopes would be 1.5:1. A quarrystone revetment would be constructed along the bluff toe with a crest elevation of 590 ft., crest width of 10.4 ft., layer thickness of 5.8 ft., and a slope of 1:1.5. The quarrystone revetment would extend along the width of the property, approximately 130 ft. Approximately 2,000 yd^3 of new clean quarried stone would be placed to construct the breakwater and revetment system. The existing steel groin would be raised by approximately 1.5 ft. to accommodate the proposed beach elevation of 587 ft. landward tapering to 584 ft. lakeward. The groin elevation would be raised to hold more sand north of the groin and allow for a more stable beach slope of 11:1. The proposed project would use 1,000 tons of clean sand to create a larger beach and prevent the capture of sand from the littoral drift. The total fill below the Ordinary High Water Mark (OHWM) is 0.06 acres.

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 delivering all materials and equipment to the site. Information used in this review was obtained from the USACE Public Notice dated March 28, 2018; Joint Application Form signed November 6, 2017; and "Design of Shoreline Erosion Protection Report" and cover letter dated March 1, 2018.

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 water 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 south and north, but not within, areas identified by the report "Shoreline Segments in Suburban Cook County, Illinois" dated May 15, 2013, as Beach Protection Areas subject to that TMDL.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses

Total suspended solids loading would increase in the lake at the point of construction activity. Benthic habitat would also be disturbed in the area of construction but impact 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 enhance habitat for aquatic species.

Approximately 2,000 cubic yards of new clean quarried stone and 1,000 tons of clean sand would be used for the construction of the shoreline system. The area of fill to be placed below the OHWM is 0.06 acres. Mitigation for impact is not required.

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.

Purpose and Social & Economic Benefits of the Proposed Activity

The proposed system is designed to protect the bluff toe and beach from further erosion, move the focus of wave energy further offshore, help reduce lakebed downcutting in the nearshore, and provide safe access for pedestrians and swimmers to and from Lake Michigan.

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

The site at 565 Sheridan Road, Winnetka, has been inspected and options for shore protection were determined using desktop coastal engineering, bathymetric surveys, and more than 3 decades of observations of the shoreline conditions at this site.

Alternative 1 - Do nothing: The 'do nothing' alternative would leave the eroding beach in its existing state, which would lead to lakebed downcutting, bluff toe erosion at the gabion retaining wall, and instability of the bluff toe. Continued downcutting of the lakebed allows larger stormwaves to impact and overtop the existing gabion bluff toe protection, causing increased vulnerability and the potential failure of the wall in the near future. This alternative also does not protect the older steel groin from scour.

Alternative 2 - Revetment Only: The 'revetment only' alternative would not provide enough protection for the bluff toe when considering current water depths and the existing ineffective steel groin. This alternative also does not protect the older steel groin from scour.

Alternative 3 - Revetment along the Existing Steel Groin: The 'revetment along the existing steel groin' alternative includes encapsulating the north side of the existing steel groin with quarrystone and installing a larger revetment along the bluff toe. This alternative would not protect the bluff and lakebed. During high lake levels, lakebed downcutting would continue in the nearshore area which would lead to the toe erosion of the revetment.

Alternative 4 - Spur Breakwater and Tapering Revetment: The 'spur breakwater and tapering revetment' alternative includes encapsulating the north side of the existing steel groin with quarrystone, the installation of a small 25 ft. breakwater spur extension at the lakeward end of the steel groin and installing a large quarrystone revetment along the bluff toe. This alternative would not protect the bluff and lakebed. During high lake levels, lakebed downcutting would continue in the nearshore area which would lead to the toe erosion of the revetment.

Alternative 5 - Quarrystone Breakwater Beach System (Proposed Alternative): The shoreline stabilization would be comprised of the installation of an 82 ft. (steel groin to structure toe) quarrystone breakwater extending north from the existing steel groin; the installation of a quarrystone revetment along the bluff toe; and raising the existing steel groin. The proposed plan would protect the glacial clay lakebed, as well as the beach and bluff, while allowing safe access to Lake Michigan and stabilizes the beach sand by reducing wave energy.

The Applicant has selected Alternative 5 (Quarrystone Breakwater 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 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 30, 2018, the IDNR Impact Assessment Section provided comment to the USACE public notice for the proposed project at 565 Sheridan Rd, Winnetka, IL (LRC-2018-00086). An IDNR EcoCAT consultation and evaluation, Project #1809484, found the Hubbard Woods Site, an Illinois Natural Area Inventory site, in the vicinity of the project location. Upon further review of the Natural Heritage Database, IDNR determined impacts to the INAI site are unlikely from this project.

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, and retains a sandy beach area. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.