IEPA Log No.: **C-0218-15**
CoE appl. #: **LRC-2015-324**

Public Notice Beginning Date: **May 13, 2016**
Public Notice Ending Date: **June 13, 2016**

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: Kenneth and Lucy G Lehman – 2715 Sheridan Road, Evanston, IL 60201

Discharge Location: Near Evanston in SE 1/4 of Section 6 of Township 42N, Range 14E of the 3rd P.M. in Cook County.

Name of Receiving Water: Lake Michigan

Project Description: Proposed construction of a steel and stone breakwater beach protection project.

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 Kenneth and Lucy G Lehman
IEPA Log No. C-0218-15
COE Log No. LRC-2015-324
Contact: Diane Shasteen (217) 558-2012
Public Notice Start Date: May 13, 2016

Kenneth and Lucy Lehman ("Applicant") have applied for a 401 Water Quality Certification for impacts associated with the construction of a new steel groin, two quarrystone breakwaters, and reconstruction of the existing quarrystone revetment along Lake Michigan in Section 6, Township 42 North, Range 14 East, Cook County, Illinois. The project site is located at 2715, 2719, and 2729 Sheridan Road in Evanston. The proposed project will rebuild an existing quarry stone revetment to a crest of 586' utilizing existing and new stone and remove the existing deteriorated concrete pier at 2729 Sheridan Road. Granular material from the existing pier will be recycled and used in the core of the new breakwater; all timber and other undesirable materials will be removed from site and disposed of properly. This proposed breakwater would be constructed 6' south of the existing concrete pier, begin on the 2719 Sheridan Road property, extend onto the adjacent 2729 property, curve south about 25' at the end, and have a crest elevation of 586' landward tapering to 583' International Great Lakes Datum 1985 adjusted (IGLD-85) lakeward. The southern portion of the proposed project will include a 70' steel groin extending from the existing steel jetty. The groin's 586' landward crest elevation would taper to 583' lakeward. A 90' quarrystone breakwater curving to the north, crest elevation 583' tapering to 582', will be constructed at the lakeward end of the steel groin. Stone stair access will be constructed over the breakwaters to provide pedestrian access. The project shall also construct a submerged living reef, 30' X 60'; 1.2 miles offshore, by placing a mix of 2 to 5 ton armor stone and 4" to 12" cobble to provide interstitial space for aquatic life. The purpose of the project is to provide long term shoreline, bluff, and site protection. The breakwater system will protect the property during all lake levels, reduce wave action energy, and move the locus of wave action further offshore to reduce lakebed downcutting. Construction of the proposed project will be conducted via land except for the offshore aquatic habitat construction which will utilize a barge using a crane. The proposed project will use approximately 2,490 tons of clean quarried stone for construction of the groin structures (1,990) and the offshore aquatic reef (500) and place approximately 2,600 tons of clean sand to help the beach reach a safe equilibrium and for the installation of native dune grasses. These clean sand totals include the IDNR required 20% sand mitigation.

Information used in this review was obtained from the Applicant in a document entitled, Joint Application Form for Illinois dated April 21, 2015, revised September 4, 2015 and supplemental information dated May 5, 2016.

Identification and Characterization of the Affected Water Body.

Lake Michigan is a large oligotrophic lake subject to the Lake Michigan Basin water quality standards of 35 Ill. Adm. Code 302 Subpart E. Lake Michigan Nearshore (QLM-01) is listed as not supporting Fish Consumption and Aesthetic Quality uses according to the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List. The causes listed for impairment are Mercury and Polychlorinated biphenyls for Fish Consumption Use and Phosphorus (Total) for Aesthetic Quality Use. Lake Michigan Nearshore is listed as fully supporting Aquatic Life, Public and Food Processing Water Supplies, Primary Contact Recreation, and Secondary Contact uses. 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 report "Shoreline Segments in Suburban Cook County, Illinois" 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 some possible increases in total suspended solids. These increases, a normal and unavoidable result of the placement of the quarrystone breakwater, may occur in the lake at the point of construction activity. Benthic habitat will also be disturbed in the vicinity of the construction area. In accordance with IDNR requirements, all fill material will be clean and from inland quarries. The fill includes clean quarried stone for construction of the breakwater and submerged reef and clean sand to be placed on the subject beach and on the beach to the north and south as sand mitigation. Supplemental information provided by the applicant regarding strategies to reduce E. coli loading as a result of beach modification indicate that the project will 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.

Fate and Effect of Parameters Proposed for Increased Loading.

The increase in suspended solids will be local and temporary. Lakebed downcutting has resulted in the loss of sand in this section of the coastline. Although the benthic habitat will be disturbed by the construction activities, it is anticipated to recover and improve over time due to the placement of sand over the downcut clay substrates. The proposed pocket beach created with clean sand fill will feature greater slope and a smaller swash zone. Additional improvements include a buffer strip, dune plantings and beach grooming. These improvements are expected to improve the water quality impairments related to excess bacteria as well as meet the TMDL's goals.

Purpose and Social & Economic Benefits of the Proposed Activity.

The proposed breakwater system will help retain and improve the sandy beach area, reduce the impacts of wave energy on the shoreline, protect benthic habitats by reducing lakebed downcutting, prevent the destabilization of the bluff face which could lead to the loss of land and infrastructure, and provide access for landowners and their watercraft to Lake Michigan. The proposed submerged reef will provide additional aquatic species habitat.

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

The Applicant has inspected the site and options for shoreline protection were determined using desktop coastal engineering, site conditions from 2004 and 2013 bathymetric surveys, and several years of observations of the deteriorating shoreline conditions at the site. Six design options were considered for the proposed project.

<u>Option 1:</u>
Do nothing:

- Leaves currently eroding beach in existing state, which has frequently been a non-existent sand beach comprised of large cobble with exposed lakebed clay
- Storm waves will continue to overtop revetment during average lake levels
- Existing stone revetment will continue to deteriorate
- Will lead to increased erosion of bluff during high lake levels
- Limits safe access to lake

<u>Option 2:</u>

Beach Sand Nourishment:

- Sand placed in open system susceptible to the lake level fluctuations and storm waves
- Environmental impacts with ongoing beach nourishment include increased sedimentation
- May lead to changes in wave action
- Non sustainable option-inability to enhance or sustain stable coastal habitat

Option 3:
Enhance revetment only:

- Provides protection of the bluff
- Does not prevent erosion of the lakebed which will ultimately destabilization the revetment toe
- Raises the elevation of the revetment crest to adequately protect the toe of the bluff and modifies the lower bluff to maintain the area's functionality-these changes will reduce views of the lake from Applicant's property
- Nearshore water depths would continue to increase with lakebed downcutting

Option 4: Preferred Option
Design a Small Pocket Breakwater System Extending 125 Feet Offshore

- Removes failing concrete structure
- Dissipates wave energy and prevents lakebed erosion
- Stabilizes the revetment toe and provides groin toe protection
- Reduced gap between breakwater structures helps maintain a stable beach cell system
- Stabilizes sand on adjacent beaches
- Allows landowners safe access to Lake Michigan; stairs allow access across breakwater structures

Option 5:
Design a Smaller Pocket Breakwater System Extending 110 Feet Offshore

- Would not adequately provide shore protection
- Storm waves would overtop the seawall elevation during average to high lake levels
- Would not dissipate enough wave energy to maintain a stable beach

Option 6:
Design a Larger Beach System

- Does not meet current IDNR regulations that structures cannot extend further than 125' off shore
- Higher elevation breakwater structures and/or narrower gaps between breakwaters are not in line with existing shoreline structures

Conclusion:
The construction of the proposed project will 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 bluff and lakebed from additional erosion during storm surges. Below average lake levels over the past few years has led to extreme beach erosion and greater lakebed downcutting. Completion of the proposed project will allow for protection of the Lake Michigan shoreline and nearby infrastructure and provide residents safe access to the lake.

The Applicant will follow a 5 year monitoring plan to assure that the proposed project does not impact the natural coastal processes including the migration of sand through the system. The monitoring plan will assure that a sand equilibrium is met and that the new project is gaining and losing sand at a similar rate to neighboring properties.

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

An EcoCAT endangered species consultation submitted on January 19, 2016 to the Illinois Department of Natural Resources resulted in no record of State-listed threatened or endangered species or natural areas in the vicinity of the project location. Consultation for IDNR Project #1606374 was immediately terminated.

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 and TMDL load allocations; 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 benefit the Lake Michigan shoreline by providing a breakwater system that reduces the impacts of wave energy, protects benthic habitats by reducing lakebed downcutting, prevents the destabilization of the bluff toe which could lead to the loss of land and infrastructure, retains the sandy beach area, and provides access for landowners and their watercraft 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.