

IEPA Log No.: **C-0640-14**  
CoE appl. #: **LRC-2014-771**

Public Notice Beginning Date: **January 16, 2015**  
Public Notice Ending Date: **February 16, 2015**

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:** Mark Gerstein – 57 S. Deere Park Drive, Highland Park, IL 60035

**Discharge Location:** Near Highland Park in SE 1/4 of Section 31 of Township 43N, Range 13E of the 3rd P.M. in Lake County.

**Name of Receiving Water:** Lake Michigan

**Project Description:** Proposed 60 foot long island quarystone breakwater and a 28 foot long shore-connected breakwater spur with mitigational sand fill.

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 Mark Gerstein  
IEPA Log No. C-0640-14  
COE Log No. LRC-2014-771  
Contact: Diane Shasteen (217) 558-2012  
Public Notice Start Date: January 16, 2015

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Mark Gerstein (“Applicant”) has applied for a 401 Water Quality Certification for impacts associated with the construction of a breakwater-protected beach system along Lake Michigan in Section 31, Township 43 North, Range 13 East, Lake County, Illinois. The project site is located at 57 South Deere Park Drive, Highland, along the Lake Michigan shoreline. The proposed breakwater-protected beach system will include the construction of a 60’ disconnected quarystone breakwater (slope 1v:1.5h) extending 116’ east of the bluff toe and approximately 50’ north of the existing steel groin located at the Applicant’s south property line. Quarystone breakwater toe stone will be placed at the lakeward end of the existing steel groin. A short breakwater spur is being proposed by the property owner to the south (permit to be applied for) that will connect to the toe stone and the existing steel groin on this property. The crest elevation of these breakwaters will be 583’ IGLD-1985 (International Great Lakes Datum – 1985 adjusted). A quarystone spur breakwater (584’; 1v:1h) will extend 28’ east of the bluff toe at the north end of the property. Clean sand fill totaling 600 tons will be placed along the shoreline. The purpose of the breakwater beach system is to provide shoreline protection and beach stabilization to be accomplished through the reduction of rip currents and wave energy. The beach system will reduce the effects of lakebed erosion and wave impacts to the bluff toe and existing steel groin during high lake levels. The breakwater project will require 850 tons of clean, quarried stone and will cover approximately 0.058 acres. Approximately 600 tons of clean sand will be placed along the shoreline in accordance to sand mitigation (20% overfill) required by the Illinois Department of Natural Resources (IDNR). Project monitoring, including topographic and hydrographic surveys within the property lines, will be completed as required by IDNR guidelines post-construction.

Information used in this review was obtained from the applicant in a document entitled; Joint Application Form for Illinois dated September 25, 2014.

### **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 for Fish Consumption and Aesthetic Quality uses according to the draft 2014 Illinois Integrated Water Quality Report and Section 303(d) List. The causes listed for impairment are Mercury and Polychlorinated biphenyls for Fish Consumption 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 Recreational, and Secondary Contact uses.

### **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 quarystone 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 clean sand to be placed along the beach as sand mitigation.

### **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 and the additional habitat provided by the breakwater structures. Proposed work will be completed via marine access. A backhoe, delivered by barge to land, will place the materials along the shoreline and in the lake. Trucks will deliver sand and a barge will deliver stone to the site. This project creates a beach protection system that will protect the shoreline of the property. New IDNR regulations will require surveys at one and five-year intervals to assure that a sand equilibrium is met and that the property is gaining and losing sand at a similar rate to neighboring properties.

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

The proposed breakwater system will help create a sandy beach area, reduce the impacts of wave energy on the shoreline and existing steel groin, 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 safe access to Lake Michigan for landowners.

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

Options for shoreline protection were determined using desktop coastal engineering, studying local prototypes, site conditions from a 2014 bathymetric survey, and several years of deteriorating shoreline observations. Four design options were considered for the proposed project.

#### Option 1:

Do nothing:

- Leaves currently eroding beach in existing state, which continues to narrow even with lower than average lake levels
- Storm waves will continue to impact the seawall
- Lake bed erosion leads to destabilization of the exiting steel groin and the bluff toe
- Limits safe access to lake

#### Option 2:

Construct a Revetment:

- Provides protection for the seawall

- Does not prevent erosion of the lakebed which will ultimately destabilization the steel groin and bluff toe
- Does not maintain sand in the landward section of the lake

### **Option 3: Preferred Option**

#### Design an Open Breakwater Beach System

- Dissipates wave energy
- Prevents lakebed erosion
- Stabilizes and protects the existing steel groin
- Provides protection to lakebed, beach and bluff
- Stabilizes sand on adjacent beaches
- Maintains landowners access across beach with no obstruction

### **Option 4:**

#### Encapsulate the groin in quarrystone

- Would hold a sandy beach at a much reduced rate
- Bluff toe would remain at risk with limited shoreline protection
- Similar cost to preferred option
- Unsustainable coastline

### **Option 5:**

#### Larger Bay Beach System

- Cost preventative to landowner

### **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, lakebed, and existing steel groin 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.

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

An EcoCAT endangered species consultation submitted on November 18, 2014 to the IDNR resulted in the identification of Ravinia Bluff INAI Site, Buffaloberry (*Shepherdia canadensis*), and Ground Juniper (*Juniperus communis*) as protected resources; IDNR has evaluated the EcoCAT information, concluded that adverse effects are unlikely, and terminated consultation for IDNR Project #1506616 on November 19, 2014.

**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 the draft 401 Water Quality Certification 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 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 and the existing steel groin which could lead to the loss of land and infrastructure, retains the sandy beach area, and provides residential access 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.