IEPA Log No.: **C-0001-20**
CoE appl. #: **LRC-2020-00075**

Public Notice Beginning Date: **March 26, 2020**
Public Notice Ending Date: **April 10, 2020**

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: Illinois Department of Natural Resources – 2050 W. Stearns Road, Bartlett, IL 60103

Discharge Location: Near Zion in N 1/2 of Section 23 of Township 46-North, Range 12-East of the 3rd P.M. in Lake County.

Name of Receiving Water: Lake Michigan

Project Description: Construction of multiple low, submerged rubble ridges placed offshore of Illinois Beach State Park.

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 Francisco J. Herrera at email francisco.herrera@illinois.gov or phone no. 217/782-3362.

FJH:C-0001-20_401 PN and FS_22Jan20.docx

Fact Sheet for Antidegradation Assessment
For Illinois Department of Natural Resources
IEPA Log No. C-0001-20
COE Log No. LRC-2020-00075
Contact: Angie Sutton 217/558-2012
Public Notice Start Date: March 26, 2020

Illinois Department of Natural Resources ("Applicant") has applied for a 401 Water Quality Certification for impacts associated with the construction of rubble ridges placed offshore of Illinois Beach State Park in Zion, Lake County, Illinois. The site can be found in Section 23, Range 12E of Township 46N. The proposed project would allow for construction of four submerged rubble ridges that will be between 660 and 1000 feet long. The minimum length of the rubble ridges will be 660-feet long and will result in an impact of 1.21 acres with 3400 cubic yards of fill, and the maximum length will be 1000-feet long and will result in impact of 1.84 acres with 7400 cubic yards of fill. Available funding will determine the final length of the rubble ridges. Four rubble ridges will be placed parallel to the shoreline, 60 feet on center, between the 570 and 575' contours in Lake Michigan. They will range in heights from 5' at the deepest elevation to 1.5' at the shallowest elevation with heights decreasing as they get closer to the shore. This project is being proposed in order to protect and improve habitat with minimal to no negative effects. Construction of the rubble ridges will protect high-quality wetlands and dunes in Illinois Beach State Park from wave erosion. The Park is valuable to the public and is home to numerous rare and uncommon species that are not found anywhere else in Illinois and no action would result in losing a globally rare panne wetland. Other pannes have already been lost to erosion. The proposed project is expected to provide habitat for small fish and benthic invertebrates as well as protect beach and critical upland ecosystems by reducing wave energy in the nearshore environment without trapping sand from longshore drift. Larger, deeper waves will be affected more than the smaller daily waves which will allow for beach creation and longshore transport while reducing erosion from larger waves. Construction will take place on a floating plant provided by the USACE Chicago District. This project is a pilot program that will be studied and monitored in order to provide similar protection areas to other sites that may be at risk of erosion.

Information used in this review was obtained from the application documents dated January 22, 2020, February 7, 2020 and February 14, 2020.

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. Illinois Beach State Park, Waterbody Segment IL_QH-03, 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 for primary contact use with potential cause given as E-coli.

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.

A Total Maximum Daily Load (TMDL) Report has been prepared and approved by the USEPA for 56 beaches along Illinois' Lake Michigan shoreline to address PCB impairments located in the Illinois Lake Michigan nearshore. The proposed activity occurs within an area identified by the April 2019 report "Illinois Lake Michigan (nearshore) PCB Final TMDL Report" as an impaired waterbody segment, therefore subject to this TMDL.

A Total Maximum Daily Load (TMDL) Report has been prepared and approved by the USEPA for 56 beaches along Illinois' Lake Michigan shoreline to address Mercury impairments located in the Illinois Lake Michigan nearshore. The proposed activity occurs within an area identified by the April 2019 report "Illinois Lake Michigan (nearshore) Mercury Final TMDL Report" as an impaired waterbody segment, 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 are a normal and unavoidable result of the placement of 4 rubble ridges and impact of wave activity on the newly placed fill material. The fill material will consist of IDOT size RR7, d50 18" limestone rocks. The project area will be 300 feet wide by 600 to 1000 feet long. Within the project area, individual ridges are proposed to be 20 feet wide. The resulting fill is proposed to be 3400 to 1400 cubic yards (CY) based on the final length of the structures (660 -1000 feet). The maximum area impacted will be 1.84 acres.

Fate and Effect of Parameters Proposed for Increased Loading.

The increase in total suspended solids would be local and temporary, and existing aquatic life use in the shallow, nearshore zone will be temporarily be disturbed, but will recover over time. The project will protect high-quality, critically rare panne wetland and other shoreline habitat with no negative effects on terrestrial or aquatic habitat. Mitigation is provided as part of the proposed structure by providing interstitial spaces for small fish and benthic invertebrates whereas there is currently little diversity in aquatic life due to vast majority of habitat consisting primarily of fine sand. The design incorporates the use of small boulders and cobbles, specific features suggested by IDNR fisheries biologists. Great Lakes research has shown that the variable-sized rocky habitat will increase numbers and diversity of benthic invertebrates while keeping sediment from being trapped. Past studies have also shown that similar artificial habitats surrounded by sand, led to high yellow perch catch rates during spawning. Other structures have also been utilized by species that include alewife, rock bass, smallmouth bass, white sucker, Johnny darters, sculpin, crayfish and amphipods. The proposed project will also provide development a monitoring plan in order to assess the value of the structure to fish and invertebrates and for shoreline changes and project effectiveness in slowing the erosion rate. The plan will allow for studies that could lead to possible design replication in order to protect other threatened areas and to provide habitat where needed. This plan is included in the application as Exhibit A. The rubble ridge

will be constructed using a USACE Chicago District provided floating plant with no interruption in adjacent beach or park usage. The structure will also be marked so as not to affect recreational marine use and will remain below water even during low water levels.

Purpose and Social & Economic Benefits of the Proposed Activity.

The purpose of this project is to provide a rubble ridge structure that will decrease erosion and protect beach and critical upland ecosystems by reducing wave energy in the nearshore environment without trapping sand from longshore drift. Larger waves will be affected more than smaller daily waves to allow for natural beach creation and decrease longshore transport while reducing erosion from larger, deeper waves. The project will also allow for studies and monitoring in order to provide valuable information to possible future projects with a similar purpose. Introduction of the rubble ridge will provide habitat to attract species that currently are not found in the area.

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

The Applicant has provided the following alternatives:

Option 1 – Shoreline Rip Rap Revetment:
This option would avoid direct impact in the nearshore and prevent significant continued erosion. However coastal habitats would be cut off from dynamic coastal processes that define the shoreline. These are processes that they depend on. Heavy revetment would also result in significant flanking erosion and potentially cause other unexpected negative effects. This option was not chosen as the preferred option.

Option 2 – Sheet Pile Seawall:
This option minimizes nearshore disturbance, but directly damages shoreline habitat, cuts off coastal habitat from dynamic coastal processes and causes an increase in flanking erosion. A seawall would also cause an increase in potential for nearshore scouring. This option was not chosen as the preferred option.

Option 3 – Beach Renourishment:
This option would be costly and repeating. The logistics for beach renourishment funding are also challenging. Sand for beach renourishment would require it to be piled on top of habitats that are being protected or would need to be extended lakeward where it would be washed away. This option was not chosen as the preferred option.

Option 4 – Offshore Breakwater:
This option was not chosen due to the high cost and the length of time it would take to be completed. By the time an offshore breakwater could be completed, the rare panne wetland would be completely eroded away. This option was not chosen as the preferred option.

Option 5 – Rubble Ridge Pilot Project:

IDNR received Great Lakes Restoration Initiative Funding to develop and initiate a pilot project to protect Illinois Beach State Park resources. Due to various limitations of shoreline protection measures, IDNR worked with ISGS, NOAA, Corps of Engineers and landscape architects and engineers to develop this project. The design is based on a passive sediment management strategy, and offshore reduction in significant wave energy. ISGS has researched and monitored the site and therefore has based the design on collected data from both the site and in-lab structural design testing. If this project is successful in dissipating wave energy and slowing erosion, the design will provide coastal protection that decreases shoreline erosion, protects nearshore and onshore habitats and provides nearshore habitats for small fish and invertebrates. This is a pilot program that will be monitored and studied that will lead to other shoreline protection projects in the future. This is the best alternative and was chosen as the preferred option.

Option 6 – No Action:
A no action option is the only default option due to the nature of this shoreline. Other cost-effective options are not available. However, this option will lead to continued erosion in the area of Illinois Beach State Park. The increased erosion rate over the last 2-3 years and recent storm events show that this option would lead to the loss of a high-quality panne wetland and adjacent dune areas. This is not a feasible option and was not chosen.

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

On February 24, 2020, the IDNR EcoCAT review was initiated for the project area. The review has not yet been finalized, but an initial review using the USFWS IPAC website identified 6 species know to occur within the project site. These species and expected impacts are as follows:

Northern Long-eared Bat: This species winters in caves and uses cavities or crevices of trees for summer roosting. This project will have no impact on this species.

Piping Plover: This species is known to occur on the shore of Illinois Beach during migration and occasional nests at the site. Because the project goal is to protect shoreline habitat, this project is expected to have a positive impact.

Red Knot: This species only occurs on the shore of Illinois Beach during migration. Because the project goal is to protect shoreline habitat, this project is expected to have a positive impact.

Karner Blue Butterfly: This species is found in sandy habitat and depends on the Blue Lupine flower as a larval host plant. The proposed project will have no impact on this species and because the goal is to protect shoreline habitat, the project is expected to protect some of its potential habitat.

Eastern Prairie Fringed Orchid: This species is found in terrestrial wetland habitat at Illinois Beach. There will be no negative impact to this species while the project should protect some of its potential habitat.

Pitcher's Thistle: This species is found in grassland and dune habitat with sandy soils. There will be no negative impact to this species while the project should protect some of its potential habitat.

IDNR cultural resources program staff recommend a finding that "Historic Properties are not affected" by the project. There are 2 shipwrecks in the general vicinity of the project, but neither are less than 500 feet from the preferred or alternative locations.

Similar review results are expected from the EcoCAT project number 2006925 currently in "under review" status.

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 Illinois Beach State Park by protecting critical shoreline and creating offshore habitat for fish and benthic invertebrates. The project will also provide a pilot program in which to monitor the structure in order to gain useful information that will help inform future shoreline protection practices and provide guidance for similar projects. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.