

Illinois Environmental Protection Agency
Bureau of Water, Permit Section
(IEPA)

1021 North Grand Avenue East, Post Office Box 19276, Springfield, Illinois 62794-9276, 217/782-3362

The IEPA has issued a Public Notice of a request for a Clean Water Act Section 401 water quality certification that would allow the issuance of a federal permit for the discharge of pollutants to waters of the State.

Public Notice Beginning Date:

Friday, October 22, 2021

Public Notice Ending Date:

Friday, November 5, 2021

Agency Log No.:C-0201-21

Federal Permit Information: Federal permit/license no. LRC-2021-00149 is under the jurisdiction of Chicago District, Regulatory Branch U.S. Army Corps of Engineers

Name and Address of Discharger: Illinois Department of Natural Resources, Dale Brockamp - One Natural Resources Way, Springfield, IL 62702

Discharge Location: In Sections 26 and 35 of Township 46-North and Range 12-East of the 3rd Principal Meridian in Lake County. Additional project location information includes the following: 300 Lake Front Drive, Zion, IL 60099

Name of Receiving Water: Lake Michigan

Project Description: The construction of a new shoreline protection and stabilization system that includes 5 offshore breakwaters and sand nourishment to protect critical infrastructure and reduce natural shoreline transitory processes in Illinois Beach State Park near the main swimming beach and the Illinois Beach Resort and Conference Center.

Construction Schedule: Unknown at this time

The Public Notice period will begin and end on the dates indicated in the heading of this Public Notice. Interested persons are invited to submit written comments on the project to the IEPA at the above address. Commenters shall provide their name and address along with comments on the certification request. The IEPA Log number must appear on each comment page. Commenters may include a request for public hearing. Only comments that pertain to Clean Water Act Section 401 authority as defined under 40 CFR part 121.3 will be considered. Part 121.3 defines the "scope of a Clean Water Act section 401 certification is limited to assuring that a discharge from a Federally licensed or permitted activity will comply with water quality requirements". Requests for additional comment period must provide a demonstration of need. The last day when comments will be received will be on the Public Notice period ending date unless the IEPA grants an extended notice period.

The attached Fact Sheet provides a detailed description of the project and the findings of the IEPA's antidegradation assessment.

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 see the contact information below.

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Post Document. No. C-0201-21-10222021-PublicNoticeAndFactSheet.pdf

Antidegradation Assessment Review for a 401 Water Quality Certification for Illinois
Department of Natural Resources (IDNR)
IEPA Log No. C-0201-21
Lake County
Contact: Angie Sutton 217-782-9864

The Illinois Department of Natural Resources (IDNR) has applied for a 401 Water Quality Certification for impacts associated with the construction of a new shoreline protection and stabilization system in Lake Michigan at Illinois Beach State Park in Zion, Lake County, Illinois. The project site known as Area 3 – Swimming Beach, can be found in Township 46N, Range 12E, Sections 26 and 35. The proposed project would allow for construction of a combination of five emergent and partially submerged breakwater structures in 3.5 acres of open water, consisting of either filter and armor layers (2-layer stone design) or core, filter and armor layers (3-layer stone design) using approximately 48,800 cubic yards (CY) of rock. The breakwater lengths vary from 350 to 620 feet with crest elevations of approximately 578 feet IGLD-85 (International Great Lakes Datum – 1985 adjusted). Width of the breakwaters will range from 60 to 70 feet overall and 12 to 35 feet at the crest. Construction of the structures will be completed by placement of materials from barge mounted construction cranes, excavators, front end loaders and other various equipment. Sand nourishment at Area 3 will consist of using approximately 226,000 CY of sand similar to the native sand, to fill 23 acres of onshore and near shore areas (0.78 miles of shoreline) by pumping from offshore barge. Additionally, sand will be placed from a truck on the land and earthmovers will grade the placed sand. Currently, the 4500-ft project site is experiencing a high rate of shoreline erosion that has necessitated the installation of a riprap revetment north of the recreational beaches to protect the beach walkway. Beach nourishment has been placed periodically at the swimming beach to provide protection to the parking lot and provide a wider recreational space for visitors. A sheetpile wall has been installed along the back of northern beach to protect the walkway and parking lot from being undermined and a rubble revetment has been installed at the water line of the tee shoreline south of the swimming beach. Further south the park office sand has eroded and exposed the concrete deck foundations requiring installation of riprap to slow down the erosion there. A sheetpile wall has been installed across the beach at the convention center and along the rest of convention center property where rip rap is placed beachside. The remainder of the park south of the sheetpile wall is natural shoreline with sandy beaches which protect the nature preserve. The two beaches in the project area are the most attended in the park. This makes the need for shoreline protection very high. If no measures are taken, erosion is expected to occur adjacent to the end of the sheetpile wall. The improvements to Area 3 – Swimming Beach will protect existing uses and provide additional habitat for various aquatic and avian species therefore no compensatory mitigation is expected to be required.

Information used in this review was obtained from the application documents dated July 2, 2018, September 6, 2019, September 13, 2019, February 26, 2021, April 9, 2021, April 22, 2021, April 29, 2021, May 5, 2021 and September 13, 2021.

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 State Beach Park South, Waterbody Segment IL_QH-09, is listed on the 2018 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 recreation 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.

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 the 5 quarystone breakwaters and quarry sand beach fill. The fill material will consist of clean quarried stone and sand that will be placed using a combination of marine and land-based access and is expected to fill 26.5 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 disturbed, but will recover over time. The proposed project will consist of building structures designed to address the shoreline erosion and stabilize the shoreline by protecting critical infrastructure and habitat for aquatic and avian species as well as provide new habitat features that will attract native and desired species. The breakwater and sand nourishment designs reflect modeling studies that determined the minimum size and dimensions of the breakwaters and sand placement that would still meet the project goals. Additionally, the sand nourishment was designed to work with native sediments and provide environmental benefits while limiting the shoreline erosion but not holding it in a static position. A mitigation of pre-fill of 4,375 CY of sand was proposed for impacts to alongshore littoral transport based on littoral analysis. During sand discharge from barge and pumping, training berms will be used to limit the turbidity of the water that would re-enter Lake Michigan. Turbidity curtains will be used if the levels re-entering the Lake are considered potentially detrimental. The improvements to Area 3 – Swimming Beach will protect existing uses and provide additional habitat for various aquatic and avian species therefore no compensatory mitigation is expected to be required.

Purpose and Social & Economic Benefits of the Proposed Activity.

Illinois Beach State Park consists of the northernmost reach at North Point Marina to the southernmost reach at Waukegan Generating Station. The State Park provides many recreational opportunities as well as provides invaluable habitat to a range of threatened and endangered species. It is the last remaining natural shoreline in Illinois and due to its transitory nature, will continue to erode inland without intervention as sand migrates south. The purpose of the project is to develop shoreline protection that addresses erosion and provides stability to the shoreline protecting critical infrastructure and habitat for the many endangered species that inhabit the park.

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

Alternatives evaluated considered minimization of impacts to Lake Michigan while still meeting project goals for shoreline stabilization, and infrastructure and habitat creation. Design changes in order to reduce breakwater sizes and sand placement to the minimum required were also identified. The Applicant has considered different sizes, alignments, shapes and numbers of breakwaters using a coastal evolution model. Shorelines resulting are after five representative years of wave conditions.

Alternative 3.1:

This alternative consists of prefilling the nearshore, a continuous U-shaped, submerged breakwater, and a groin. The submerged breakwater would extend in three directions to protect the beach from all incoming waves and the groin would be constructed in front of the Illinois Beach Resort and Conference Center. This would provide beach stabilization in front of the parking lot and a smaller beach in front of the Conference Center north of the groin. This alternative was shown to have similar results as Alternative 3.2 and was not chosen as the preferred alternative.

Alternative 3.2:

This alternative consists of prefilling the nearshore, 4 smaller submerged breakwaters, and an L-shaped groin. The submerged breakwaters would be also constructed offshore to protect the beach from all incoming waves and the groin would also be constructed in front of the Illinois Beach Resort and Conference Center. This would provide beach stabilization in front of the parking lot and a smaller beach in front of the Conference Center north of the groin. This alternative was shown to have similar results as Alternative 3.1 and was not chosen as the preferred alternative.

Results for Alternatives 3.1 and 3.2 showed that the effect is similar and there is no need for the south L-Shaped groin outlined in Alternative 3.2.

Alternative 3.3:

This alternative consists of prefilling the nearshore, 3 smaller submerged breakwaters and reconfiguring the south groin. The outermost breakwater is rotated, and the number of submerged structures has been reduced in order to lower costs. Modeling showed this configuration to be effective in protecting the area in front of the recreational beach and the reconfigured groin helped to avoid potential downdrift effects.

Alternative 3.4:

This alternative utilizes two angled shore-attached breakwaters north and south of the area and two submerged breakwaters in front of the main swimming beach. This configuration was enhanced and widened after modeling showed that the areas to the south still required stabilization. However, the structures did achieve the goal of stabilizing the coastline in between them.

Alternative 3.5 (Preferred Alternative):

This alternative consists of two offshore submerged breakwaters however, low water conditions may lead to them becoming somewhat emergent. The structures will cause waves to break and therefore reduce transport potential. The updrift and downdrift structures will create closed cells causing sand to be trapped within them. The northern structure is attached to the existing revetment allowing southerly transported sediment to enter and become contained, unable to be pushed out by southerly waves. The structure at the southern end of the area is a nearshore breakwater and will promote formation of a tombolo behind it. This structure will be surrounded by sand at low water but will function as an offshore structure during high water situations deterring down shore drift. The location of this was chosen due to the ability to provide the most protection for the valuable panne wetland in the area.

This option was updated to configure a total of 5 structures. The northernmost structure will no longer be attached to the existing marina breakwater, the two offshore breakwaters will be reshaped with a smaller structure in between them. Additionally, the southernmost structure will be moved further offshore no longer functioning as a tombolo. Sand nourishment will also be employed in this preferred alternative.

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

On September 13, 2021, the IDNR EcoCAT review was initiated for the project area (Project #2204887). and indicated that protected resources (listed below) may be in the vicinity of the project. IDNR will be terminating the consultation since the review will be completed through IDNRs Internal Comprehensive Environmental Review Process (CERP).

An initial review identified the following protected resources that may be in the vicinity of the project:

- Illinois Beach INAI
- Illinois Beach Nature Preserve
- American Bittern (*Botaurus lentiginosus*)
- Bearberry (*Arctostaphylos uva-ursi*)
- Black-Crowned Night Heron (*Nycticorax nycticorax*)
- Blanding's Turtle (*Emydoidea blandingii*)
- Common Bog Arrow Grass (*Triglochin maritima*)
- Downy Yellow Painted Cup (*Castilleja sessiliflora*)
- Dune Willow (*Salix syrticola*)
- False Aspidel (*Tofieldia glutinosa*)
- Few-Flowered Spikerush (*Eleocharis pauciflora*)
- Flat-Leaved Bladderwort (*Utricularia intermedia*)
- Golden Sedge (*Carex aurea*)
- Grass Pink Orchid (*Calopogon tuberosus*)
- Hoary Elf (*Insisalia polios*)
- Horned Bladderwort (*Utricularia cornuta*)
- Kalm's St. John's Wort (*Hypericum kalmianum*)
- Karner Blue Butterfly (*Lycaeides Melissa samuelis*)
- Least Bittern (*Ixobrychus exilis*)
- Little Green Sedge (*Carex viridula*)
- Marram Grass (*Ammophila breviligulata*)
- Pale False Foxglove (*Agalinis skinneriana*)
- Purple Fringed Orchid (*Platanthera psycodes*)
- Redroot (*Ceanothus herbaceous*)
- Redveined Prairie Leafhopper (*Aflexia rubranura*)
- Richardson's Rush (*Juncus alpinoarticulatus*)
- Round-Leaved Sundew (*Drosera rotundifolia*)
- Rusty Patched Bumble Bee (*Bombus affinis*)
- Sea Rocket (*Cakile edentula* var. *lacustris*)
- Seaside Spurge (*Chamaesyce polygonifolia*)
- Sedge (*Carex garberi*)
- Trailing Juniper (*Juniperus horizontalis*)
- Tubercled Orchid (*Platanthera flava*)
- Upland Sandpiper (*Bartramia longicauda*)
- Wood Orchid (*Platanthera clavellata*)

The Illinois Wetlands Inventory shows wetlands within 250 feet of the project location.

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 providing shoreline stabilization to protect critical infrastructure and reduce natural shoreline transitory processes. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.