

**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:

Monday, September 30, 2024

Public Notice Ending Date:

Monday, October 21, 2024

Agency Log No.: C-0006-24

Federal Permit Information: Federal permit/license no. CEMVR-RD-2008-0942 is under the jurisdiction of Rock Island District, Regulatory Branch U.S. Army Corps of Engineers

Name and Address of Discharger: Candlewick Lake Association, Theresa Balk - Candlewick lake, Poplar Grove, IL 61065

Discharge Location: In Section 22 of Township 45-North and Range 3-East of the East 3rd Principal Meridian in Boone County. Additional project location information includes the following: Candlewick lake, Poplar Grove, IL 61065

Name of Receiving Water: Candlewick Lake

Project Name/Description: Candlewick Lake Maintenance Dredging Project - proposed removal of silty lake sediment from three bays of Candlewick Lake by means of Hydraulic dredging

Construction Schedule: Beginning Aug 2024 and ending Nov 2024

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 must 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 hearing requests and comments that pertain to Clean Water Act Section 401 authority will be considered. This authority provides consideration of whether the permit or license would be consistent with Sections 301, 302, 303, 306, or 307 of the CWA, as well as "any other appropriate requirement of State [or tribal] law". Requests for additional comment period must provide a demonstration of need. The final day of comment acceptance will be on the Public Notice Ending date shown above, 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-0006-24-09302024-PublicNoticeAndFactSheet.pdf

The Candlewick Lake Association has applied for 401 water quality certification for maintenance dredging of Candlewick Lake in Fisherman's Cove/North Bay, Whiting Park Bay, and Dip Bay.

The dredging activities would increase the depth for safe recreational boating by removing a total of approximately 11,500 Cubic Yards (CY) of silty lake sediment and placing the dredged materials into two separate existing sediment storage ponds. The project area is located in Township 45 North, Range 3 East, Sections 22 and 27, near Poplar Grove, Boone County, Illinois.

Candlewick Lake is a 210 Acre (Ac) lake that is part of a gated community offering recreational activities and affordable housing. Sediment deposition into the upper ends of the three main bays of Candlewick Lake is beginning to impact navigational access and water quality. The goal of the project is to dredge to the hard lake bottom at a maximum depth of 7 feet to ensure a more uniform and navigable depth across the bays. The project will consist of hydraulic dredging to remove approximately 4844 CY from Dip Bay, approximately 4009 CY from Fisherman's Cove/North Bay, and approximately 2647 CY from Whiting Park Bay. The dredged sediment will be placed into existing sediment storage ponds referred to as North Sediment Basin and South Sediment Basin. Once settling has occurred in the storage ponds, the water will be returned to Candlewick Lake.

The impacts of this project are expected to be temporary, and because of this, no mitigation is proposed.

Information used in this review was obtained from the application documents dated August 17, 2023, December 12, 2023, July 26, 2024, and August 21, 2024.

Identification and Characterization of the Affected Water Body.

Candlewick Lake (IL_RPV) 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. Candlewick Lake, Waterbody Segment, IL_RPV, is not listed on the 2020/2022 Illinois Integrated Water Quality Report and Section 303(d) List as it has not been assessed. Candlewick Lake is not subject to enhanced dissolved oxygen standards.

The dredged sediment will be placed into the North Sediment Basin which returns water to a tributary of Candlewick Lake, and the South Sediment Basin which returns water to Spring Brook, a tributary to the Kishwaukee River. South Sediment Basin return water does not enter the lake. Additionally, Inflows 1-3 and Outflow 4 were identified in the project area but will not be included as part of the dredging project.

Candlewick Lake is primarily used for recreational boating and fishing, swimming, and other water sports, as a habitat for aquatic flora and fauna, and aesthetic and environmental value for the surrounding community. Within the three bays targeted for dredging activities, lake depth and targeted dredging levels vary. Current depth profiles show that these areas are from 1.5 to 4 feet, heavily impacted by soft sediment accumulation. The sediment thickness varies as well, with Dip Bay showing depths of 1.5 to 3 feet, Fisherman's Cove/North Bay 1 to 2 feet, and Whiting Park Bay 1 to 3 feet. The lake has an abundance of diverse aquatic flora and fauna, supporting various fish species, aquatic plants, and other wildlife.

Water quality in the lake was analyzed through sampling at 2 different sites in each of the three bays. TSS ranged from 110 mg/L to 270 mg/L, total volatile solids (TVS) ranged from 130 mg/L to 230 mg/L (this indicated a high presence of organic matter, and ammonia nitrogen ranged from 0.42 mg/L to 8.2 mg/L. Lead concentrations were less than 0.01 mg/L at most of the 6 sample locations, and zinc ranged from 0.031 mg/L to 0.61 mg/L. The highest concentrations of ammonia nitrogen and TSS were found to be at one of the sampling locations at Fisherman's Cove/North Bay (Site #6), and the highest zinc levels were at Whiting Park Bay (Site #1).

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

Dredge materials are estimated to be approximately 11,500 CY of silty lake sediment. The dredged sediment will be placed into two separate existing sediment storage and dewatering ponds known as the North Sediment Basin, which will receive

sediment dredged from Fisherman's Cove/North Bay, and the South Sediment Basin, which will receive sediment dredged from Dip Bay and Whiting Bay.

The primary pollutants of concern for the proposed project are TSS, TVS, ammonia nitrogen, Lead, and Zinc. Depositing the dredge spoils into the two sedimentation basins would result in particles settling. The settling of particles is expected to significantly reduce the concentrations of these pollutants in water before water is returned to the lake.

Pollutant load increases that would occur from this project include some increases in suspended solids during the dredging of the spoil material. Resuspension of the sediment also affects turbidity and dissolved oxygen levels as well as a temporary increase in TVS, ammonia nitrogen, lead and zinc. The sedimentation basins are expected to significantly reduce these pollutants before the water is reintroduced to the lake, improving the overall lake water quality. The effects of the cutterhead dredge are expected to be temporary and localized to the immediate dredge cutting area. The benthic habitat to be dredged will be disturbed but should revert to its previous condition of aquatic life support soon after dredging. Since the returned water is expected to have less sediment, the dissolved oxygen levels are also expected to improve.

The TSS, TVS, ammonia nitrogen, lead and zinc parameters sampled were analyzed for 4, 8, 12, and 24-hour supernatant. Testing showed that over the 24-hour period, the pollutant levels decreased significantly. The sedimentation basins will facilitate settling suspended particles from the dredged water before it is returned to the lake, reducing pollutant loads. However, due to limitations on the dewatering pond storage capacities and retention times for settling, an approved polymer is proposed for use to meet effluent requirements for TSS.

Fate and Effect of Parameters Proposed for Increased Loading.

Total suspended solids, total volatile solids, ammonia nitrogen, lead and zinc will meet the water quality standards at the discharge points. Use of hydraulic dredging as compared to mechanical dredging is proposed in order to minimize lakebed disturbance, reduce turbidity and minimize impacts on aquatic habitats. Adaptive management through monitoring the water quality is expected to mitigate the impact.

Minimization efforts include use of the sedimentation basin to reduce pollutant loading and minimize environmental degradation. Monitoring during dredging is proposed to allow for adaptive management to adjust for minimization of environmental impacts. Erosion and sediment control measures will be implemented throughout the dredging process to minimize environmental degradation. Proper handling and storage of dredged materials and other prevention protocols will be implemented.

A comprehensive monitoring plan will be implemented to ensure the proposed project maintains the water quality in Candlewick Lake and minimizes environmental impacts. This plan involves 15 weekly on-site visits to observe and collect water samples. The samples collected will be analyzed for TSS, TVS, ammonia nitrogen, lead, and zinc, with additional monitoring for pH and temperature to ensure comprehensive water quality assessment. The data gathered will be used to determine the effectiveness of the sedimentation basins in reducing the pollutant loads before water is returned to the lake.

Purpose and Anticipated Benefits of the Proposed Activity.

This project will restore safe navigational access and reduce nutrient cycling in the lake. Restoring depth to the lake and improving water quality is expected to improve recreational activities and support more diverse balanced aquatic life. Overall lake aesthetics are expected as a result of removal of accumulated sediment leading to cleaner and less turbid water.

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

The applicant considered the following alternatives:

No Action – This alternative would involve leaving the lake in its current condition. This would result in further deterioration of aquatic habitats and a decline in biodiversity due to increased silty sediment, turbidity, and nutrient cycling. A no action alternative would hinder recreational activities and in turn, negatively impact property value and overall community well-

being. The no-action alternative fails to address the current and ongoing water quality issues in the lake that are leading to further environmental and socio-economic degradation. Because of these factors, this alternative was not considered further.

Mechanical Dredging Alternative – This alternative involves the use of heavy equipment or physical removal of sediment from the lake. This would employ using clamshell dredges or backhoes mounted on barges. This alternative would significantly disturb the lakebed and surrounding habitats, increase turbidity, and potentially release sediment contamination. Mechanical dredging would require heavy and potentially substantial equipment and labor costs. This could possibly disrupt recreation and disturb nearby residents with the increased noise and activity. Although mechanical dredging would remove sediment in the lake, it is not the most environmentally sensitive or cost-effective solution. Because of this, the potential habitat disturbance, and high costs, this alternative was not considered further.

Enhanced Sediment Management Alternative – This alternative involves the implementation of sediment management practices to reduce sediment accumulation. This would be achieved through the construction of sediment traps and performing regular maintenance dredging. This option would prevent sediment accumulation; however, it does not address the existing high sediment levels and nutrient cycling issues in Candlewick Lake. Relying on sediment management practices may be a less costly alternative to dredging; however, it does not immediately and significantly improve the community's water quality and navigational access. This alternative could be considered a viable long-term preventive strategy, but it may not be a viable standalone option to address the lake's existing sediment issues. This alternative was not considered further.

Hydraulic Dredging Alternative (Preferred Alternative) – This alternative involves using a cutter head suction dredge to remove sediment and pump it to a sedimentation basin where sediment settles out of the water before it's discharged back to the lake and its tributaries. Hydraulic dredging is less disruptive to the lakebed than mechanical dredging. The sediment basins remove suspended solids and other pollutants before the water is returned to the lake and its tributaries. A hydraulic dredging option is more efficient, as well as cost-effective. Large volumes of sediment can be removed with a minimal amount of lakebed disruption, resulting in increased lake depth, improved water quality, and improved recreation. Because of this, this alternative was chosen as the preferred alternative.

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

An EcoCAT consultation (Project # 2501142) was initiated on June 24, 2024. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. On July 26, 2024, the Department evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 is terminated.

A USFWS IPaC report was initiated on April 4, 2024, to provide a potential list of threatened and endangered species that may be in the proposed project area or may be affected by the proposed project.

The USFWS IPaC system provided the following list of potential species present in the proposed project area:

- Indiana bat (*Myotis sodalis*) - Endangered
- Northern long-eared bat (*Myotis septentrionalis*) – Endangered
- Whooping Crane (*Grus americana*) – Experimental Population, Non-Essential
- Monarch Butterfly (*Danaus plexippus*) – Candidate
- Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)- Threatened
- Prairie Bush-clover (*Lespedeza leptostachya*) – Threatened

There were no critical habitats at the proposed 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 will benefit the community at large by improving safety and access for recreational activities and improving water quality within the project area. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.