

**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, August 5, 2024

Public Notice Ending Date:

Monday, August 26, 2024

Agency Log No.: C-0102-24

Federal Permit Information: Federal permit/license no. CEMVR-RD-2024-0685 is under the jurisdiction of Rock Island District, Regulatory Branch U.S. Army Corps of Engineers

Name and Address of Discharger: US Army Corps of Engineers, Roger Perk - Clocktower Bldg., PO Box 2004, Rock Island, IL 61204

Discharge Location: In Section 20 of Township 35-North and Range 10-East of the East 3rd Principal Meridian in Will County. Additional project location information includes the following: 1211 Brandon Road, Rockdale, IL 60433

Name of Receiving Water: Des Plaines River

Project Name/Description: Brandon Road Interbasin Project - proposed construction of a layered system of structural and non-structural measures to prevent the movement of invasive carp and other nuisance species into the Great Lakes

Construction Schedule: Immediate (Planned project duration is approximately 1455 days)

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-0102-24-08052024-PublicNoticeAndFactSheet.pdf

The USACE has applied for a 401 Water Quality Certification for impacts associated with a proposed Multi layered deterrent system aimed at restricting the movement of Asian carp and other invasive species upstream beyond the Brandon Road Lock and Dam (L&D). The proposed project area is located in Township 35 North, Range 10 East, Section 20, Will County, Illinois. The project will consist of construction of the deterrent system which will include a bubble curtain deterrent, an acoustic deterrent, and an automated barge clearing deterrent. Associated support facilities will be located at the downstream approach channel to the Brandon Road L&D. This application will cover the work that occurs under Increments I-A and I-B. Increment I-A includes construction of the bubble curtain, acoustic, and automated barge clearing deterrents, associated support facilities at the downstream approach channel entrance, and a boat ramp in the upper pool off the face of the existing earthen dam adjacent to the I&M canal. The deterrents will be installed within incised trenches cut across the approach channel and will include concrete work to stabilize and protect the installation. Increment I-B will include excavation of the channel bedrock within the approach channel in preparation for future construction of the engineered channel that will be constructed under Increment II. There are no wetlands within the project area, however 3 Acres (Ac) of water will be permanently converted to land. Boat ramp construction will require placement of 16 cubic yards (CY) of permanent fill for each, totaling 32 CY, and the peninsula widening activities will use rock placed in the waterway. The peninsula widening activity will involve permanently converting 3 Ac of water to land. Excavated rock may be used as fill material for backfilling behind the engineered channel walls, requiring approximately 69,500 CY of material. Excavated rock may also be used to widen the peninsula, requiring approximately 78,800 CY of material. Temporary impacts will involve 1 Ac of placement of excavated bedrock for a construction pad which will be removed after construction is completed. Compensatory mitigation will involve the addition of a trap and transport measure to assist with native fish and mussel recovery, an implementation of project performance monitoring.

Information used in this review was obtained from the application documents dated September 13, 2018, November 2018, April 2019, March 11, 2023, and April 23, 2024, July 16, 2024, and July 27, 2024.

Identification and Characterization of the Affected Water Body.

The subject facility discharges to the Des Plaines River at a point where 1493 cfs of flow exists upstream of the outfall during critical 7Q10 low-flow conditions. The Des Plaines River is classified as Upper Dresden Island Pool Aquatic Life Use Waters. The Des Plaines River 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 are they given integrity ratings in that document. The Des Plaines River, Waterbody Segment IL_G-12, is listed on the 2020/2022 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for fish consumption with potential causes given as mercury and polychlorinated biphenyls (PCBs). Indigenous aquatic life uses are fully supported. The Des Plaines River is not subject to enhanced dissolved oxygen standards.

The downstream approach channel is an open river area, but with little habitat value since the current approach channel as well as the proposed updated approach channel are manmade features. The sediment staging site is a previously disturbed upland area that is adjacent to the river at Brandon Road Lock. The habitat within the project area is characteristic of an urban/industrial area that has been modified by the addition of large-scale hydrologic features.

A wetland delineation was conducted on May 11, 2023. It was determined that the surrounding area is highly urbanized with low-lying areas abutting the river that consisted primarily of reed canary grass. Data points

were taken in the low-lying areas recording vegetation, soils, and hydrology. None of the wetland criteria were identified and therefore no wetlands were found in the project area.

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

The pollutant load increases that would occur from this project include some possible local increases in total suspended solids. These increases are a normal and unavoidable result of construction and grading that may occur in the waterway and in and around the area of construction. The boat launches will be constructed using clean, inert gravel from a commercial supplier. The material used for expanding the width of the peninsula will be rock excavated from construction of the engineered channel. The excavated rock will be cleaned, processed, and reused as fill material behind the engineered channel walls as well as for widening the peninsula. Due to the nature of the sediment, no sediment or water will be directly returned untreated to the river. Total suspended solids increases would be temporary, short-term, and localized. The final sediment placement site for dredged materials will be a commercial landfill. Entrained water will be treated prior to discharge or will be discharged upland such as to a municipal sewer system. The applicant expects that the project will comply with all applicable water quality standards with no anticipated violations.

Existing benthos and habitat within the downstream approach channel of Brandon Road Lock would be destroyed during ripping and blasting of the rock, and construction of the engineered channel. The final engineered channel area would provide little habitat for benthic organisms. Peninsula widening activities would result in the smothering of any benthos within the immediate vicinity where fill material is placed. Boat launch construction would also affect existing benthos and habitat within these localized areas. Invertebrates could be buried or smothered by the placement of the gravel for the two boat launches. However due to the size and quality of the existing habitat here, the proposed activities are not expected to cause a detrimental loss of benthic organisms and habitat within the larger river.

Fate and Effect of Parameters Proposed for Increased Loading.

Construction of the engineered channel, boat launches, and widening of the peninsula will use best management practices to prevent material spills or uncontrolled discharges into the river. Upland work areas will be subject to erosion control and will be permanently stabilized when work is completed. Dredging activities will also use best management practices to minimize solid suspension and may use turbidity monitoring and silt curtains if needed. Sediment disposal will occur upland with return water treatment and/or controls to prevent the release of anthropogenic compounds to the river. In order to minimize the adverse effects of blasting on native fish populations, the proposed construction and dredging activities could be specifically scheduled to avoid time periods when native fish are typically spawning or migrating.

A special mitigation exemption waiver was obtained during the planning phase to address the impacts on native species. This waiver allows for stocking native species above the lock to mitigate for the disruption of connectivity caused by the lock. The plan is currently being developed and will be implemented when the Project transitions to the construction phase. It will be upheld throughout the 50-year lifespan of the Project.

The mitigation plan describes a species-specific model for evaluating alternative measures to accomplish the project objective of fish passage improvements on the Des Plaines River and tributaries to mitigate potential losses in longitudinal connectivity from the Great Lakes and Mississippi River Interbasin Study – Brandon Road (GLMRIS-BR) ecosystem restoration project. The obstruction of upstream movement of native fish and mussels is an unintended consequence of this project and is the focus of this mitigation plan.

Six mitigation alternatives were evaluated and the trap and transport plan was selected. This mitigation alternative involves the manual capture of fish below the Brandon Road Dam; sorting of target species and

transfer to a location upstream of the Brandon Road Dam for release. Wild caught fish have the potential to carry early life stages (i.e., glochidia) of mussels, which would also enhance upstream mussel populations.

Purpose and Social & Economic Benefits of the Proposed Activity.

The Brandon Road Interbasin Project is a complex ecosystem protection effort designed to prevent upstream movement of Invasive carp and other aquatic nuisance species into the Great Lakes from the Illinois Waterway. While an environmentally funded project, project features are designed to serve and improve navigation. If invasive carp were to establish within the Great Lakes, significant and irreversible impacts will occur to the existing food web and dependent species. Brandon Road Lock and Dam near Joliet, Illinois, has been identified as the critical pinch point where layered technologies are to be installed to prevent movement of invasive carp populations into the Great Lakes.

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

The Applicant evaluated design alternatives, as well as looked at working in the dry versus out of the dry. In-the-dry construction was considered, however because there was a lack of real estate that would be required to dewater the site, this option was eliminated. In-the-wet construction is intended and will include channel excavation with excavated material transported by barge to the shoreline for further processing and temporary storage.

For the design alternatives, each level of design was evaluated separately. Those designs considered were the flushing lock, engineered channel design, permanent lock closure, electric barrier and water jet, complex noise, and boat launches, as well as operation and maintenance.

Flushing Lock: Five flushing lock design types were studied. The flushing lock measure was developed to reduce the risk of the upstream transfer of floaters by displacing the ANS contaminated tailwater with pool water within the lock chamber. The flushing lock design was constrained by navigation safety, water supply, and navigation delays due to operational duration.

Type 1 – This option looked at existing filling and emptying system with operational changes to facilitate flushing. This alternative is the existing conditions scenario and is not efficient in flushing. This alternative was not chosen.

Type 2 – This option looked at a lateral flushing manifold downstream of the upper gates. A second valve would be needed with tight configuration and moderate closure time for construction. Due to these factors, this alternative was not chosen.

Type 3 – This option looked at a secondary system of pipes and valves that would be constructed through the upper miter gate sill to discharge into the lock chamber. It was determined that this alternative did not have sufficient room to construct the necessary features. Coupled with construction costs and lock closure times, this alternative was screened from further consideration.

Type 4 – This option looked at flushing manifold added downstream of the lower miter gates to flush ANS out of the engineered channel or during barge entrance to the lock chamber. An extra system of pipes and valve would be needed. This alternative was screened early in the study because it does not provide ANS risk reduction in the lock chamber.

Type 5 – This option looked at redesign of the filling and emptying system by reconfiguring the port size and spacing and adding an additional port upstream near the upper miter gate, to facilitate mixing and flushing of ANS in the upper part of the chamber. This alternative has straightforward construction methods and a relatively short closure period. This alternative results in a more efficient and less turbulent lockage producing a time savings in the lock process which helps to offset the delays as a result of lock flushing. This alternative has been selected as the preferred design.

Engineered Channel Design: This measure creates an engineered structure that completely lines the lower approach channel with concrete. Reinforced concrete walls will be constructed along the existing channel bank, along with a concrete floor. The structure would house various ANS barrier measures identified in the selected plan and provide opportunities for future adaptive management such as the electric barrier, water jets, and complex noise. The construction method assumed is in-the-wet construction; however, channel dewatering methods were evaluated and included the following:

1. Closure to provide for the dewatering capabilities of the channel.
2. Closure to provide for water separation between the channel and the rest of the river with no head differential between the bodies of water.

Permanent Lock Closure: This measure removes the upper gates from the Brandon Road Lock and replaces them with a permanent concrete wall that ties into the existing concrete gate sill and existing lock walls. This structurally separates the upper pool from the lower pool which would terminate navigation below Brandon Road and ultimately to and from the Gulf of Mexico. Operation of the lock would end but gate operation throughout the dam would continue. This would require navigation mission changes by congress. The mission requires maintenance of a 9-foot-deep channel throughout the waterway.

Electric Barrier and Water Jet: The Electric Barrier measure will be incorporated with the engineered channel and water guns. The design is based off of Permanent Barrier I (PB1), located in Romeoville, IL. The Brandon Road Barrier differs from PB1 in that it will have three narrow arrays instead of two in order to have the ability to run two narrow arrays concurrently while the third one is for redundancy. The purpose of running two narrow arrays concurrently is to better fortify the electric field, specifically to better deter fish that are three inches or smaller. Operations and support buildings will be constructed on land adjacent to the engineered channel walls. This engineering measure considered channel depth, water conductivity, operating parameters, and channel insulation.

Water jets will be incorporated along with the electric barrier to help remove fish entrained between the barges. Multiple longitudinal rows of jets will be installed in the engineered channel, each with approximately 8 to 10, 12-inch diameter jets evenly spaced. there will be several of these rows across the bottom of engineered channel, to cover all flotillas crossing through the electrical barrier. The jets will face towards the lock end of the channel, at an approximately 22-degree angle from the vertical. Trials were performed using forward facing, rear facing, and vertical jets. The most effective at removing fish were the forward-facing jets placed at a slight 22.5 angle off of the vertical.

Jets and their associated piping will be constructed of non-conductive material, due to their proximity to the electric barrier. Water intakes for the jets will be placed in the downstream pool, either across the peninsula from the approach channel or further downriver, pending outcomes of hydraulic modeling. Pumps will be installed in a pump station at the intake. Several alternatives for running the pumps have been considered, such as including a water tank adjacent to the engineered channel to store water for jets. These options will be considered further in more detailed design, to optimize the operation of the water jet system.

Complex Noise: This measure will be installed within the engineered channel and require an incoming power system and a control building on the west bank of the channel. Power requirements are conventional as the speakers are off-the-shelf items already in use in other aquatic environments with standard power systems. The speakers would be installed "in the wet" after the engineered channel is constructed.

Boat Launches: In order to facilitate effective monitoring and emergency response in the area of Brandon Road, new boat launches are proposed near the Lock in Brandon Road and Dresden Island Pools. The upstream launch into Brandon Road pool will be built on the land owned by USACE for lock operations and will include a new

roadway up to the water's edge, as the current slope is not easily traversable. The launch itself will be a gravel ramp into the water with a floating wooden dock. The downstream launch into Dresden Island pool will be built at one of two locations, depending on the alternative.

1. Non-Structural - The launch will be constructed on the strip of land adjacent to the approach channel. A gravel road with secure gate access will lead from Brandon Road to a parking area, and a boat launch into the approach channel.
2. Technology Alternative - The boat launch will be built further downstream, just south of the approach channel outlet. The access road to the electric barrier and/or complex noise control buildings will extend to a parking and launch area.

The Recommended Plan includes the following measures: (1) nonstructural activities, (2) acoustic fish deterrent, (3) air bubble curtain, (4) engineered channel, (5) electric barrier, (6) flushing lock, and (7) boat launches. Based on the results of a field demonstration conducted in the summer of 2017, the water jets have been replaced with an air bubble curtain. The combination of air bubble curtain and strobe lights was screened out as a potential measure to deter the passage of swimming ANS. In the Tentatively Selected Plan (TSP), water jets were the ANS control measure to address fish entrainment between barges, not to deter swimming ANS.

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

On June 6, 2024 (Project #2416155), the IDNR EcoCAT review was initiated for the project area. The consultation is currently under review.

The Final Fish and Wildlife Coordination Act Report on the GLMRIS – Brandon Road Project dated September 13, 2018, is included in Appendix A of the application documents available online at: <https://www.mvr.usace.army.mil/Missions/Environmental-Stewardship/BR-Interbasin-Project/Documents/>. The report concluded that “The Service, ILDNR, Corps, and other Great Lakes states agree there are losses of fish and mussel resources as a result of the selected GLMRIS-BR Project alternative. Preliminary results from a recent U.S. Geological Survey and Southern Illinois University study using microchemical signatures of fish confirms the loss exists, and that it may be substantial with the project, even for non-migratory fish. Therefore, some level and form of mitigation is warranted. Policy/permitting, biological, and other uncertainties that will be addressed in the future will help to identify which is the most appropriate and practicable form of mitigation. This may include consideration of additional GLMRIS-BR Project elements, outside of “mitigation,” if it is a more appropriate path forward for the project. Given the development of multiple approaches that are currently irreconcilable and the outstanding issues that cannot be fully addressed at this time, the Service provides the above assessment (including perspectives from affected states) along with the TF-FWCAR. Together, they provide as much information as possible for the Corps to consider fish and wildlife resources along with other project purposes, as directed in the FWCA.”

The Revised April 2019 Final Integrated Feasibility Study and Environmental Impact Statement found that the GLMRIS-BR project (Recommended Plan) would result in loss of longitudinal connectivity between the upper and lower Des Plaines River for native fish and mussel species and change the original fabric of the BRLD Historic District, which is listed in the *National Register of Historic Places*. In regard to loss of longitudinal connectivity and mitigation for this unavoidable adverse impact, USACE would trap and transport native fish species around the Brandon Road Dam and monitor to ensure that fish are responding as expected after the first year of transfer.

The Recommended Plan reduces the risk of Mississippi River Basin ANS establishment in the Great Lakes Basin to the maximum extent possible, while minimizing navigational impacts. Additionally, it addresses both

swimming and floating ANS transport modes and creates a second structural control point downstream of the Chicago Sanitary and Ship Canal Electric Barriers within the Illinois Waterway.

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 the waterway by prevention of upstream movement of Invasive carp and other aquatic nuisance species into the Great Lakes from the Illinois Waterway. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.