

IEPA Log No.: **C-0868-09**
CoE appl. #: **LRC-2009-00503**

Public Notice Beginning Date: **August 6, 2018**
Public Notice Ending Date: **September 5, 2018**

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: Fox Waterway Agency – 5 South Pistakee Lake Road, Fox Lake, IL
60020

Discharge Location: Near Pistakee Lake in NW 1/4 of Section 9 of Township 45 North, Range 9 East of
the 3rd P.M. in Lake County.

Name of Receiving Water: Chain O'Lakes

Project Description: Trinsky's Island sediment containment berm and habitat restoration project.

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 call Darren Gove at 217/782-3362.

DRG:C-0868-09_401 PN and FS_17Sep09(final2018).docx

Fact Sheet for Antidegradation Assessment
For Fox Waterway Agency
IEPA Log No. C-0868-09
COE Log No. LRC-2009-00503
Contact: Abby Brokaw 217/558-2012
Public Notice Start Date: August 6, 2018

Fox Waterway Agency (“Applicant”) has applied for 401 Water Quality Certification to construct a proposed in-lake sediment storage and dewatering facility (SDF) within the footprint of the original Trinski’s Island located in the Village of Fox Lake, Lake County, Illinois (NW ¼ Section 9, Township 45 North, Range 9 East). Trinski’s Island is a small island located south of the Route 12 Bridge in Pistakee Lake, which is one of the 15 interconnected Fox Chain O’Lakes in northeastern Illinois. The project boundary encompasses approximately 29 acres of open water south of the existing remnants of Trinski’s Island in Pistakee Lake.

Currently, Trinski’s Island is partially encased by a seawall constructed of steel sheet piles. The sheet piles provide some protection for the island shoreline from wind and boat induced wave action; however, significant portions of the sheet pile have failed over time. The Applicant proposes to restore the island, by initially creating an in-lake SDF for sediment recovered during maintenance dredging activities and then converting the site into a wetland with habitat enhancement areas. In response to comments from the initial joint application, the most recent application for the proposed project includes a reduction of the island size, elimination of public access, and increases water distance between the island and bordering residential properties to over 500 ft. The project is expected to be completed over a 5-year period.

The in-lake SDF would adjoin the remaining island with a small access channel to separate and avoid impacts to the existing island and wetland. The proposed in-lake SDF consists of two cells of 11.5 acres and 17.5 acres divided by a riprap berm. The riprap berm of each cell would include a stoplog operated water level control structure and equipment landing area. An outside bioengineered perimeter would be constructed using approximately 3,900 linear ft. of gradation 4 riprap (8 to 10-inch diameter) and on the north end of the SDF, 1,000 linear ft. of HESCO baskets filled with mechanically dredged sediment. The perimeter dike would have a crest elevation of 740.0 ft., approximately 2.8 ft. above normal summer pool, and typical crest width of 4 ft. with 3:1 outside slopes and 2:1 interior slopes. The perimeter berm riprap and HESCO baskets would be placed on a non-woven geotextile liner to restrict settlement into the soft lake bottom. Tree root wad embedment would selectively occur within the outer slope of the berm to facilitate aquatic habitat diversity. A nonwoven geotextile fabric would be placed within the interior slope of the riprap berm to prevent exfiltration of fine-grained particles resuspended within the SDF’s interior.

The in-lake SDF would have a final storage capacity of approximately 187,147 cubic yards at the design fill elevation of approximately 737.2 ft. (normal summer pool elevation). Final sediment heights would likely vary slightly (736.7-737.7 ft. mean sea level) to maintain a wetland environment with various water depths and vegetation densities that support plant and wildlife diversity. Hydraulically dredge sediments would first be placed in the 11.5-acre cell to facilitate a rapid establishment of emergent wetlands in the project site location. Dredged material would be obtained from locations within two miles of the proposed facility, including Nippersink, Fox, and Pistakee Lakes, as well as associated channels and marinas. The Applicant possesses the necessary equipment to conduct the dredging and proposes supplemental sampling in accordance with its Operations and Safety Manual. Additional sampling would investigate the project’s potential for contaminated sediment disturbance prior to initiating dredging operations.

The restored island would include numerous habitat features to benefit multiple species of wildlife, including: deep water fish refugia, imbedded root wads, vertical wood debris perches, habitat indentations and a fish spawning area. If sandy material is encountered during dredging, sand mounds may be selectively created to provide waterfowl nesting habitat.

The proposed deep-water fish refugia is approximately one acre in size and would provide approximately 10 ft. of water depth during normal summer pool levels and maintain an approximately 8 ft. depth during the winter drawdown period. Three 50 ft. by 100 ft. habitat indentations would provide approximately 0.4 acres of additional improved fish habitat along the perimeter of the island and a 0.5 acre protected fish spawning area is proposed for the north end of the island on existing sandy substrate.

Information used in this review was obtained from the Joint Permit Application dated August 15, 2012; Wetland Mitigation Plan updated October 2013; and revised plan sheets received on July 5, 2018.

Identification and Characterization of the Affected Water Body

Pistakee Lake is a General Use waterbody with 0 cfs of flow during 7Q10 low-flow conditions. Pistakee Lake, Waterbody Segment IL_RTU, 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 aesthetic quality use with potential causes given as phosphorus (total) and total suspended solids. Aquatic life use is fully supported. Pistakee Lake 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*, given an integrity rating in that document or subject to enhanced dissolved oxygen standards.

According to the Upper Fox River Watershed TMDL Final State 1 Report (2010) Pistakee Lake is the farthest downstream of the major hydraulically connected lakes in the Chain O'Lakes system. Pistakee Lake totals 1,700-acres with a mean depth of 5.2 ft. Hydraulic detention time of Pistakee Lake at full capacity, as calculated in Fox Chain O'Lakes Investigation and Water Quality Management Plan (Kothandaraman et. al, 1977), is approximately 10.6 days.

Pistakee Lake receives water from Nippersink and Redhead Lakes and respective watersheds, the Nippersink Creek watershed, and the surrounding lands, which makes it the largest watershed in the Chain O'Lakes with the Illinois portion of the watershed totaling 170,857 acres.

No wetlands would be impacted by the construction of the proposed Trinski's Island Restoration Project. Trinski's Island design plans have purposely avoided impacting the existing wetlands of the remaining landmass by adding a narrow channel between the existing island and the constructed berm. Access to the narrow channel would be restricted to FWA maintenance activities.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses

Pollutant load increases may include suspended solids during periods of dredging, placement of dredged material, and removal of soft materials below the berm location. Substantial resuspension of fine grained particles, including parameters identified with additional sampling, is expected to occur within the interior of the SDF during active dredging. There is potential for migration of those suspended pollutants through the riprap berm and into the water column. The facility would be equipped with water level control structures to contain total suspended solids from the dredging operations.

Three in-lake sediment core samples and lake background water from representative dredging areas were collected on March 19, 2009. The samples were analyzed for particle size, percent moisture and the required IEPA parameters (zinc, lead, ammonia-nitrogen, total volatile solids and total suspended solids) during the 4-hour supernatant test. In addition, a 24-hour settling test was conducted to determine the

retention time required to achieve an acceptable TSS concentration in the discharge effluent. The sediment cores were also tested for PCBs, priority RCRA metals and pesticides.

The four-hour supernatant analysis confirmed that dredged sediments from the sample areas do not contain elevated concentrations of the parameters listed above; however, additional settling and retention time would be needed to reduce TSS concentrations to satisfy IEPA compliance requirements. The 24-hour settling test indicated that TSS concentrations were above the allowable limit. Based on these results, it is anticipated that approximately 48-72 hours of settling time would be required to meet the IEPA's allowable limit of 15 mg/L TSS. The Applicant would base its releases on actual field data collected prior to discharges.

The three sediment core samples were used to gather preliminary information for design purposes. The Applicant recognizes that these samples do not fully characterize all the sediment that is proposed to be dredged. Additional sediment core samples would be obtained from specific locations and analyzed prior to commencing any dredging operations to ensure that concentrations of metals, PCBs and pesticides are within regulatory compliance. If contaminated sediment is identified in any area to be dredged, the Applicant would work with the IEPA to determine an acceptable placement location and obtain all necessary approvals prior to initiating any dredging activities.

The benthic habitat would be disturbed but should revert to its previous condition of aquatic life support soon after dredging and impacts to aquatic life uses are not anticipated.

Fate and Effect of Parameters Proposed for Increased Loading

The increase in suspended solids and associated pollutants resulting from construction and operation of the facility would be local and temporary. A geotextile fabric would be installed to minimize the migration of pollutants through the perimeter berm. Concentrations of the parameters are not expected to exceed those found in waters experiencing significant wave activity or turbulence from boat traffic. Total suspended solids would be minimized by careful construction practices and the use of a floating turbidity curtain. The Applicant would also operate the dredging program to accommodate longer sediment settling and retention times, as well as operate the proposed in-lake SDF to effectively meet the requirements of the TSS effluent standards. Discharges from the water level control structures would be limited to meet the effluent standards of 35 Ill. Adm. Code. Part 304.

The Applicant proposes to restore approximately 29.0 acres of freshwater marsh and wildlife habitat to replace the functions and values lost by placing dredged sediment within open water. The on-site mitigation plan uses a 1:1 ratio for replacing aquatic habitat losses; restoring emergent wetlands; restoring a remnant portion of Trinski's Island through selective tree thinning; providing habitat to a wide diversity of species; and planting native plant species that were once common in the Fox River Watershed. Wetland types would be restored as a function of final sediment elevations.

Disturbed benthic habitat located at the point of hydraulic dredging is expected to revert to its previous condition soon after dredging is completed. Approximately 29 acres of shallow, navigationally impaired open water would be displaced to create a new wetland island protected by a riprap shoreline. The proposed features of the project are expected to support and enhance aquatic and terrestrial diversity.

Purpose and Social & Economic Benefits of the Proposed Activity

This project is necessary to improve navigation, boat access, and reduce resuspension of sediment due to boat traffic. The Fox River Chain O' Lakes is a very popular recreation area in northeastern Illinois and plays an important role in the economic success of the area. The completion of the project supports other maintenance dredging work in the Chain O' Lakes that positively impacts boat access, navigability, local tourism, and recreational use.

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

No Action: The no action alternative includes continuing necessary maintenance dredging operations and utilizing previously constructed SDFs with available containment. However, none of the current disposal facilities (Cooper's Farm and Ackerman Island) operated by FWA are located in areas conducive to receiving material from the lower Chain O' Lakes. These facilities are too far north and are designed to manage dredged sediments in the upper Chain O' Lakes. With no existing facilities in the lower Chain O' Lakes, the project would require "Geotube" dewatering systems which are unsuitable, inefficient and/or cost prohibitive for disposal of the large volumes of accumulated sediment.

Upland and In-Lake Alternatives: Alternative locations, both upland and in-lake, for building a new SDF that could serve the lower Chain O' Lakes were considered. Approximately 20-30 acres of land would be required to construct an SDF in an upland location capable of storing 200,000 cubic yards of dredged sediment. The only acceptable 20 to 30-acre parcels identified were unavailable for acquisition. Even if the land was available for purchase, the cost in the subject area would be prohibitive. In-lake site alternatives are more numerous and six locations were considered in Grass, Fox, Pistakee and Nippersink Lakes. All in-lake alternatives involve construction of a confining berm and hydraulic placement of dredged sediment within the interior. The Trinski's Island site is more suitable in terms of size, location and existing bottom conditions, and the existing island is currently deeded to the Applicant for mitigation purposes.

Preferred Alternative: The Trinski's Island site was selected for the in-lake SDF because of its downstream location and its ability to store large volumes of dredged sediment (187,147 cubic yards). The project construction would also allow the Applicant to enhance and protect the existing landmass. The mitigation design is based on a combination of variables including: the existing lake bottom elevations, boat access lane consideration, and the historic extent of the former landmass. The project is designed to avoid and minimize impacts to wetlands and floodplains to the greatest extent possible. Several construction timeline alternatives were considered, with the Applicant agreeing a smaller island of 29-acres with separate cells within the island, filling one first to establish vegetation.

The construction of the in-lake SDF would follow guidelines set forth by the Agency and USACE. The least impactful alternative would be to not complete the project. This is not a feasible option because it would hinder the ability of the Applicant to complete dredging maintenance in the area needed to maintain the lake as a recreational resource. The preferred alternative is to construct the SDF at Trinski's Island. The Applicant would follow an approved Soil Erosion and Sediment Control Plan and a Storm Water Pollution Prevention Plan and use a floating turbidity curtain to confine any suspended solids to the construction area.

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

On October 4, 2017, an IDNR EcoCAT consultation, Project #1802777, was initiated and determined that the Illinois Natural Heritage Database shows the Blanding's Turtle (*Emydoidea blandingii*) may be in the

vicinity of the project location. On March 21, 2018, IDNR's further evaluation determined that the location of the proposed sediment storage and dewatering facility is a shallow area of Pistakee Lake that could potentially be used by adult and juvenile turtles for overwintering or active season. From initial development to completed wetland, this project would likely create situations where a Blanding's Turtle could be "taken." IDNR strongly advised the Applicant to seek State Incidental Take Authorization and the consultation was terminated.

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 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 the activity will benefit the community at large by providing safe navigation, enhanced aquatic and terrestrial habitat and potential improvements to in-lake water quality from increasing lake/river depth. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.