IEPA Log No.: **C-0042-13**
CoE appl. #: **2011-00763**

Public Notice Beginning Date: **September 17, 2013**
Public Notice Ending Date: **October 8, 2013**

Section 401 of the Federal Water Pollution Control Act
Amendments of 1972

Section 401 Water Quality Certification to Discharge into Waters of the State

Public Notice/Fact Sheet Issued By:

Illinois Environmental Protection Agency
Bureau of Water
Division of Water Pollution Control
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, One Natural Resources Way, Springfield, IL 62702

Discharge Location: Section 12, T44N, R8E of the 3rd P.M. in McHenry County near McHenry

Name of Receiving Water: Fox River mile 97.7

Project Description: Stratton Lock and Dam life extension project.

The Illinois Environmental Protection Agency (IEPA) has received an application for a Section 401 water quality certification to discharge 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 Thaddeus Faught at 217/782-3362.

TJF:0042-13PN.docx

Fact Sheet for Antidegradation Assessment
Illinois Department of Natural Resources – Fox River – McHenry County
IEPA Log No. C-0042-13
COE Log# LRC-2011-00763
Contact: Eric Runkel (217) 558-2012
September 17, 2013

The Illinois Department of Natural Resources (Applicant) is applying for a 401 water quality certification for impacts associated with a construction project at the William G. Stratton Lock and Dam near McHenry, Illinois. The concrete and metal sluice gates were originally constructed in 1939. The sluice gates are no longer fully operative. The proposed project would consist of removing the existing sluice gates and replacing them with a new type of gate. The project also includes increasing the capacity of the existing lock by extending the current lock to help alleviate the 2-4 hour wait to clear this lock during high boating season and the rehabilitation of the berm along the west bank of the Fox River upstream of the lock and dam.

Antidegradation assessment material were received from the applicant under a May 21, 2013 dated cover letter, 401 Application Review Form, Stratton Life Extension Project, ACOE Permit LRC-2011-00763, IEPA Log # C-0042-13, received June 6, 2013.

Identification and Characterization of the Affected Water Body.

The Fox River has a 7Q10 flow of 94 cfs at this location and is a General Use water. The Fox River, Waterbody Segment IL_DT-23 is listed in the Illinois Integrated Water Quality Report and Section 305(b)/303(d) List 2012 as impaired for Aquatic Life: Alteration in Stream-side or Littoral Vegetation (non-pollutant), Aquatic Algae (non-pollutant), Cause Unknown and Other Flow Alteration (non-pollutant) are listed as the causes of this impairment and Fish Consumption use; polychlorinated biphenyls is given as the cause of this impairment. The river is fully supporting of Primary Contact Recreation and Secondary Contact. Aesthetic Quality has not been assessed. The river at this location is not an enhanced waterbody pursuant to the dissolved oxygen water quality standard. The river is not listed as biologically significant, but has been given an integrity rating of “B” in the 2008 Illinois Department of Natural Resources Publication Integrating Multiple Taxa in a Biological Stream Rating System.

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

No pollutant load increases would occur from this project other than some increases in suspended solids near the location of cofferdams and berm rehabilitation. Approximately 0.14 acres of Waters of the U.S. (WAUS) will be permanently filled by the construction of a new torque tube gate and 0.10 acres of WAUS will be permanently filled for the lock extension. Benthic organisms will be disturbed by construction activities and aquatic life in the area will be temporarily disturbed by use of the cofferdams. Approximately 1,370 linear feet of berm on the upstream west riverside slope is proposed to be improved by erosion protection material (geotextile and riprap) to the original 1945 cross-section, affecting 0.33 acres below the ordinary high water elevation of 738.5 feet (1.5 feet above the normal water line).

Fate and Effect of Parameters Proposed for Increased Loading.

Aquatic communities at least as diverse as currently inhabit the river will return upon construction completion. Sediment and soil erosion control plans will be utilized during construction. Silt fencing and straw bales will be properly located to minimize runoff to surface waters and wetland areas. Silt curtains will be used to reduce impacts to the Fox River from the areas of construction.

The existing sluice gates will be removed to the gate sill, thus returning 0.08 acres of fill to the WAUS. Approximately 0.57 acres will be required by the Corps to be mitigated through an approved wetland mitigation bank. It was stated in the Section 404 public notice, “If a permit is issued for the proposed project, the Corps will determine what is appropriate and practicable compensatory mitigation in accordance with 33 CFR Part 332. The amount of compensatory mitigation to be determined shall be commensurate with anticipated impacts of the project.” The scour hole created by the existing dam downstream of the sluice gate structure will not be filled. The potential for suspension of fine grain particles entering into the river during the filling process was too great; therefore the proposal to fill the scour hole was removed from the proposal.

The lock construction will extend the existing lock by 76 feet. The chosen lock extension poses the least disturbance to the Fox River of all the lock alternatives. By increasing the capacity of the lock, the boats will be idling in the channel for less time which should decrease the release of hot water from the boat engines and potential contaminants to the river. The lock extension will be constructed after the boating season which will allow for complete closure of the lock during construction. The construction will be isolated from the open water by installing the upstream stop logs and installing a cofferdam downstream of the construction. Filling behind the walls of the lock extension will be completed in the dry. The discharge of de-watering activities behind the cofferdam will be completed through filter bags adjacent to the Fox River. The new lock filling inlet pipe will be constructed in the dry. The expansion of the lock will not encroach on the public waters as the lock and dam restriction already exists.

The new gate structure being proposed is a torque tube design and will be in the same channel as the existing gate structure. The proposed gate structure includes a stilling basin which will minimize downstream erosion. The operation plan for the gates will remain the same, therefore no changes in flows or water surface elevations will occur. The area within the cofferdams will be dewatered to allow work within the cofferdam to be done in the dry. The discharge of de-watering activities behind the cofferdam will be completed through filter bags adjacent to the Fox River. The gate structure and the sluice gate removal will be constructed in two phases so the waterway will not be completely constricted.

The berm rehabilitation will be constructed behind a silt curtain. The silt curtain will tie into the bank upstream and downstream of the construction site. The berm rehabilitation will be completed in sections. No work is proposed within the adjacent wetlands.

No adverse impacts to the river would occur for this activity as all water quality standards are expected to be met.

Purpose and Social & Economic Benefits of the Proposed Activity.

Navigation will be enhanced by the extension of the lock which will encourage more people to boat between the Chain of Lakes and Fox River as the wait time is estimated to be shorter. The new gate structure will be operated remotely thus preventing potential problems when manipulating a frozen gate by hand during the winter. The new torque tube gate will also allow for easier operation during winter months because the design is meant to prevent potential fouling during freezing conditions. The berm rehabilitation will prevent the river from bypassing the dam and potentially flooding subdivisions downstream.

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

Rehabilitate Existing Gates

If the concrete structure is sound including no under-seepage, the gates and control works could be replaced. The hydraulic efficiency will be exactly the same as the current conditions. This option does little to address the ice management problems. Heaters could be added to the tracks but steam wands would be needed to thaw the ice off the gate face. This option was removed from further consideration because it would not significantly relieve the icing problems.

New Vertical Roller Gates

This proposal would consist of installing 4 new vertical roller gates, each 17 feet in length with a stilling basin. The existing vertical roller structure would be removed. Constructing the same gate design does little to improve the ice management issues. The land disturbance would be width of the gate channel for approximately 120 lineal feet, which would be approximately 0.10 acres. Additional disturbance would include the removal of the existing structure for width of the gate channel for approximately 41 lineal feet, which would be approximately 0.08 feet. This option was removed from further consideration because of the additional cost and it would not significantly relieve the icing problems.

Submersible Tainter Gates

This proposal is to build a new gate structure which utilizes submersible tainter gates with a stilling basin. Three new gates with a 24 feet length would pass the equivalent flow during flood events. The gate will not freeze because the water will be flowing over it. However, during below freezing temperatures the gate must be moved frequently (i.e., every 3 hours), so the hoisting system for the gate does not freeze. Moving the gate frequently is inconvenient since the facility is unmanned in the winter during weekday night-time hours and the weekend. The land disturbance would include the removal of the existing structure for the width of the gate channel for approximately 125 lineal feet, which would be approximately 0.12 acres. Additional disturbance would include the removal of the existing structure for width of the gate channel for approximately 41 lineal feet, which would be approximately 0.08 feet. This option was removed from further consideration.

Torque Tube Gates

This proposal is to build a new gate structure which utilizes torque tube gates, a hinged crest gate with a stilling basin. There will be three gates with a 28 foot length each which would pass the equivalent flows of the existing structure. The existing vertical roller gates would be removed. The torque tube gates would provide the best ice management option. Keeping water flowing over the gates in the winter along with the abutment heaters will prevent the ice from forming on the gates. The gates would be setup to have redundant gate operators so failure of one mechanical system would not hinder gate operations. The land disturbance would be the width of the gate channel for approximately 130 lineal feet, which would be approximately 0.14 acres. Additional disturbance would include the removal of the existing structure for width of the gate channel for approximately 41 lineal feet, which would be approximately 0.08 feet. This proposal is preferred and was chosen through a criteria ranking system used by IDNR to compare alternatives.

Additional Lock Riverward

A new lock would be constructed on the river side of the existing lock. Excavation on the island and the departure and approach reaches on the Fox River would be required. Approximately 0.18 acres of WAUS would be created. This option would double the existing lock capacity; however, two lock tenders would be required to operate the locks at peak times. Having two locks would enhance the lock system by having one lock functional for boat traffic if the other lock required maintenance. Utilities would need to be brought to the island. Because of additional construction cost and operating expenses this option was eliminated from consideration.

Additional Lock Landward

A new lock would be constructed on the land side of the existing lock. Excavation on the bank and the departure and approach reaches on the Fox River would be required. Approximately 0.14 acres of WAUS would be created. The gate house would be removed and a new gate control house would need to be constructed. A pilot house would be constructed between the locks so both locks could be viewed. This option would double the existing lock capacity; however, two lock tenders would be required to operate the locks at peak times. Having two locks would enhance the lock system by having one lock functional for boat traffic if the other lock required maintenance. Because of additional construction cost, operating expenses and greater land disturbance this option was eliminated from consideration.

Lock Extension

This proposal would extend the existing lock downstream by 76 feet which would double the size of the lock. The existing downstream miter gate will be removed, rehabilitated and utilized in the new lock. The water filling and empty system would be supplemented with an additional system for the lock extension. Filling of the lock channel behind the lock extension walls will be necessary; approximately 0.10 acres of WAUS will be filled. The existing lock appurtenances will be rehabilitated. The lock capacity would more than double. The land disturbance adjacent to the lock would be minimal. This proposal is preferred and was chosen through a criteria ranking system used by IDNR to compare alternatives.

Berm Rehabilitation

If no action is taken there is a possibility of water going around the dam and potentially entering the subdivision downstream of the dam. The berm is eroding on the riverside. Repairs to the berm are proposed to correct the erosion and restore the top grade.

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

The IDNR utilized a Comprehensive Environmental Review Process (CERP) to analyze this project. The CERP for this project was approved without restrictions on January 3, 2011. The CERP was renewed on May 23, 2013. The IDNR has been in contact with the McHenry County Soil and Water Conservation District (MCSWCD) and informed them that all activities will be on State of Illinois property and no impacts will occur to MCSWCD wetland. The IDNR agreed to comply with conditions requested by the MCSWCD including, but not limited to, notification of any pre-construction changes to design, invitation to pre-construction meetings, and notification of commencement of work. The Illinois Historic Preservation Agency (IPHA) concurred on October 14, 2010 that no adverse effects would occur at this site from the proposed work.

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 the antidegradation review summary was written. We tentatively find that the proposed activity would result in the attainment of water quality standards; that all existing uses of the receiving streams would be maintained; 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 community at large through enhanced navigation by increasing boat capacity at the lock and providing safer ice management for gate operations during winter months. Comments received during the 401 certification public notice period will be evaluated before a final decision is made by the Agency.