

IEPA Log No.: **C-0404-15**  
CoE appl. #: **2015-968**

Public Notice Beginning Date: **November 16, 2015**  
Public Notice Ending Date: **December 7, 2015**

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:** U.S. Army Corps of Engineers, Rock Island District, Post Office Box 2004, Clock Tower Building, Rock Island, IL 61204-2004

**Discharge Location:** Along the Mississippi River between river miles 343.2 and 345.9 near Lock 20.

**Name of Receiving Water:** Mississippi River

**Project Description:** Maintenance dredging of the navigational channel.

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 an application received from 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.

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Fact Sheet for Antidegradation Assessment  
U.S. Army Corps of Engineers – Mississippi River – Adams County  
IEPA Log # C-0404-15  
COE # CEMVR-OD-P-2015-968  
Contact: Diane Shasteen (217) 558-2012  
November 16, 2015

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The U.S. Army Corps of Engineers (Corps), Rock Island District (District), (“Applicant”) has applied for a 401 Water Quality Certification for impacts associated with maintenance dredging of the navigational channel on the Mississippi River from River Mile (RM) 343.2 to 345.9 immediately upstream of Lock 20. The affected reach of the river is located in Lewis County, Missouri and in Adams County, Illinois in Sections 11, 12, 13, and 24, Township 2 North, Range 10 West. The District is responsible for maintaining the 9’ navigation channel on the Mississippi River to allow for the transport of commodities in accordance with the River and Harbor Act of 1930. The Applicant has projected a channel maintenance dredging need of 1,000,000 CY for the next 40 years at the Lock 20 Upper cut based on historic dredging and current site conditions. There is an immediate need to dredge up to 500,000 CY of material that impacts the upstream lock approach and has shifted the navigation channel from the right descending bank in response to extreme shoaling. This initial dredging is estimated to begin in late October 2015 due to ongoing imminent risk to navigational structures; a large sand bar is building just above the Lock 20 approach that requires considerable maneuvering by down bound towboats to access the Lock chamber. The remaining 500,000 CY of material is projected to be dredged during 8 events of 62,500 CY over the 40-year project life. Five new (non-historic) dredged material placement sites are proposed for the dredged material which may be removed by either hydraulic or mechanical methods. The five new sites proposed include White Island at RM 344.9 (Site 344.7R), between Wing Dams (WD) #25, #26, and #27 (RM 344.0-344.5; Site 344.1L), below WD #27 (RM 344.1-343.6; Site 343.8L), in the thalweg upstream of Lock and Dam 20 (RM 343.2-343.5; Site 343.4T), and in a Canton, MO agricultural field (RM 343.4; Site 343.4R). Dredging would be kept to the minimum to maintain the 9’ channel. The Applicant coordinated the Dredged Material Management Plan (DMMP) with federal, state, and local partners including representatives from U.S. Fish and Wildlife Service, Illinois Department of Natural Resources, Missouri Department of Conservation, and Missouri Department of Natural Resources. The purpose of this project is to identify the most suitable placement sites for the dredged material, to provide placement capacity of 1 million CY of dredged material over the 40 year life of the DMMP, and maintain the 9’ navigational channel to allow for the transport of commodities, avoid disruption to the transportation of those commodities, and to avoid channel closures and subsequent groundings of barges.

### **Identification and Characterization of the Affected Water Body.**

The Mississippi River (IL\_ K-17) is a General Use Water with estimated 7Q10 flows of 15,890 cfs at this location. According to the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List, the Mississippi River at the above location has been assessed by Illinois EPA and is listed as fully supporting Aquatic Life, Public and Food Processing Water Supplies, and Aesthetic Quality uses and not supporting Primary Contact Recreation and Fish Consumption uses. Causes of impairment include Fecal Coliform (Primary Contact) and Mercury and Polychlorinated biphenyls (Fish Consumption). The Mississippi River, in the project area, 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. The Mississippi River between approximately RM 343.2 and 344.3 is not designated as an enhanced water pursuant to the dissolved oxygen water quality standard.

A mussel survey was conducted by the Applicant within the proposed bankline and wing dam placement areas during the summer of 2015. Results from these surveys identified two state threatened species, *Ellipsaria lineolata*, butterfly, and *Ligumia recta*, black sandshell along with 14 additional species. Fourteen species were collected at Site 344.1L Between Wing Dams and eleven species were collected at Site 344.7R White Island; nearly all live mussels were encountered within approximately 60 meters of the bank. Outside of this area, habitat was extremely limited as substrates transitioned from stable cobble, gravel, sands, silts, and clays to shifting sands with increased water velocities.

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

Pollutant load increases that would occur from this project include some increases in suspended solids during the dredging and placement of the spoil material. Return water from aquatic disposal sites would be immediately discharged back into the river. The dredge's pipeline and return water from placement operations at Site 343.4R Canton Ag Field, located on the Missouri side of the river, will pass under a railroad bridge that crosses a small unnamed creek and return water will enter Buck Run and flow back to the Mississippi River below Lock and Dam 20. Potential dredge material was sampled in April 2015 and was classified as medium to fine sand with the amount of fines in the sediment very low. The percent of material passing through the No. 200 sieve ranged from 0.0 to 1.0 with an average of 0.4 percent.

The benthic habitat to be dredged and covered will be disturbed but should revert to its previous condition of aquatic life support soon after dredging and the placement of dredged material. All placement sites will have boundaries delineated or marked before placement activities commence and dredged material will be placed within the designed construction limits. Efforts will be made to avoid the mussel beds detected during the surveys; dredged materials will be placed a minimum of 250' from the Illinois bank line at Site 344.1L Between Wing Dams and Site 343.8L Below Wing Dam. Mussels will be relocated before dredge material placement if necessary. Due to the size of the river, impacts to aquatic communities should be negligible.

### **Fate and Effect of Parameters Proposed for Increased Loading.**

The increase in suspended solids will be local and temporary. Dredging quantities would be kept to the minimum required to maintain safe navigation. Low berms will be constructed at Site 343.4R Canton Ag Field in Missouri to contain the dredged material and direct the return water back to the river near the placement site. These berms would be constructed of resident soils from the placement site by stripping the topsoil, stockpiling the topsoil for capping at a later date, and forming the berm using the soils just below the topsoil. Removal of the dredged material from the terrestrial site for beneficial uses will be encouraged and supported. The stockpiled dredged material will be given away free for the hauling and/or donated to eligible agencies or groups in certain circumstances. Maximum utilization of the terrestrial site and division of the dredged material placement between more than one aquatic placement site will reduce the adverse effects to the benthic community at any one location.

Hydrologic modeling of the proposed aquatic placement sites indicated that the sites will provide a stable location for the dredged material. There would be no-rise in the water surface elevations at these sites or upstream of these sites based on hydraulic assessments that compared water surface profiles before and after placement of dredged material for the 50% and 1% annual chance of exceedance (ACE) flow. Direct impacts to existing mussel communities will be avoided by placing

dredged materials a minimum of 250' from the Illinois bank line. However, since it is unknown whether the dredged material may be carried into the mussel bed during high flow events, the areas at Site 344.1L Between Wing Dams and Site 343.8L Below Wing Dam will be monitored through bathymetric surveys and sediment grab samples to determine if the dredged material is migrating towards the shore and impacting mussel beds. If monitoring reveals material moving into the mussel bed, near-shore mussel surveys would be conducted to determine impacts; if negative impacts are revealed coordination with State and Federal natural resource agencies would take place and potential compensatory action would commence.

### **Purpose and Social & Economic Benefits of the Proposed Activity.**

This project is necessary in order to maintain the navigational channel of not less than 9' in depth as set forth by the River and Harbor Act of 1930. Maintaining the navigational channel allows for the transport of commodities, avoids disruption to the transportation of those commodities, avoids channel closures and subsequent groundings of barges, and maintains the river for recreational uses including boating and fishing.

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

The Applicant performed a preliminary search of existing databases, maps, and other sources to identify sixteen potential placement sites. These sites were further evaluated using factors including cost effectiveness, environmental acceptability, and operational feasibility by the District's Product Delivery Team and applicable members from the State and Federal natural resource and regulatory agencies. Several sites determined to be operationally infeasible or have environmental or cultural resource concerns were eliminated from further consideration. Reasons for sites being considered operationally infeasible include but are not limited to unsuitable site access for equipment to deliver and unload dredged material, site dimensions inadequate for material containment and/or drainage capabilities, and locations too far from the dredge cut to allow for hydraulic or manageable mechanical dredging operations. Preference was given to sites having the least adverse impacts to natural and cultural resources and/or impacting the smallest area. Five potential placement sites (capacity) that met overall criteria and project objectives for further study included Site 344.7R White Island (340,000 CY), Site 344.1L between Wing Dams (360,000 CY), Site 343.8L below Wing Dam (200,000 CY), Site 343.4T Thalweg (50,000 CY), and Site 343.4R Canton Ag Field (440,000 CY). Site 344.7R White Island has previously been used for dredged material placement in 1964; the other four placement sites have not been previously utilized. Site 343.4R Canton Ag Field has been exclusively used in private agricultural production and contains no known critical wildlife habitats. Six alternatives, listed below, including a No Action Alternative and different combinations of the five potential placement sites were researched further.

#### **Alternative 1: No Action**

- Includes two interpretations-No Project and No Change
- No Project-No dredging is conducted at all
  - Shoaling of the main channel would be probable resulting in the closure of the channel to commercial navigation
  - Alternative is contrary to the congressional mandate to maintain a commercial navigation channel

- No Change-Placement of dredged material on historic placement sites
  - Only small amounts of dredged material could be removed
  - Historic placement sites not able to accept the anticipated amount of future dredged material without causing impacts to aquatic natural resources
  - Would continue the high-risk conditions present to navigation and infrastructure

Alternative 2: Combination of Sites 344.7R White Island, 343.8L Below Wing Dam, 343.4T Thalweg, and 343.4R Canton Ag Field

- Meets all screening criteria
- Provides over 40 years of placement capacity and adaptive management
- Provides for future flexibility
- Total capacity-1.03 million CY

Alternative 3: Combination of Sites 344.7R White Island, 344.1L Between Wing Dams, 343.8L Below Wing Dam, and Site 343.4T Thalweg

- Meets all screening criteria except beneficial use of the material
- Provides over 40 years of placement capacity and adaptive management
- Provides for future flexibility
- Total capacity-950,000 CY

Alternative 4: Combination of 344.7R White Island, 344.1L Between Wing Dams, Site 343.4T Thalweg, and 343.4R Canton Ag Field

- Meets all screening criteria
- Provides over 40 years of placement capacity and adaptive management
- Provides for future flexibility
- Total capacity-1.19 million CY

Alternative 5: Combination of 344.1L Between Wing Dams, 343.8L Below Wing Dam, Site 343.4T Thalweg, and 343.4R Canton Ag Field

- Meets all screening criteria
- Provides over 40 years of placement capacity and adaptive management
- Provides for future flexibility
- Total capacity-1.05 million CY

#### **Alternative 6: All Potential Sites-Preferred Option**

- Meets all screening criteria
- Provides over 40 years of placement capacity and adaptive management
- Provides for future flexibility
- Total capacity-1.39 million CY

Alternative 6 which utilizes all potential sites is the preferred option for the Lock 20 Upper DMMP. This alternative provides the greatest flexibility in placement locations and exceeds the minimum placement capacity which will safeguard against the possibility of increased dredging volumes or should a site become unusable due to changed site conditions over the life of the plan. Priority of site use would be 1) 343.4R Canton Ag Field, 2) 343.4T Thalweg, 3) 344.7R White Island, 4) 343.8L Below Wing Dam, 5) 344.1L Between Wing Dams. Site 343.4R Canton Ag Field in Missouri allows for potential heavy beneficial use by commercial, government, and private concerns.

The implementation of the Lock 20 Upper DMMP will follow conditions set forth by the Agency. The least intrusive alternative would be to not allow dredging on the Mississippi River. However, this is not an acceptable alternative given the Applicant's need to maintain a navigable channel in the river in accordance with the River and Harbor Act of 1930. The placement sites selected will have the least overall impacts to the environment, will not result in significant adverse effects on human health and welfare, and will be operationally and economically feasible for the District.

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

The Illinois Department of Natural Resources reviewed Project #1601098 and responded on July 29, 2015 with the following in regards to Sites 343.4R Canton Ag Field, 344.7R White Island, and 344.1L Between Wing Dams. The department recommended the placement of material in the terrestrial agricultural field as the primary option to mitigate impacts to aquatic resources. If this site is not feasible it recommended utilizing Site 344.7R White Island over Site 344.1L Between Wing Dams to mitigate impacts to mussel resources and state-listed species. IDNR also recommended that mussels be relocated before dredge material placement if Site 344.1L Between Wing Dams is utilized. The Applicant has agreed to these requests and has also indicated that dredged material will be placed a minimum of 250' from the Illinois bank line to avoid impacts to existing mussel beds at site 344.1L Between Wing Dams.

### **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 this activity will benefit the District and the community at large by maintaining the navigational channel, allow for the movement of commerce, avoid channel closures, reduce the risk of subsequent groundings of barges, and maintain commercial and recreational uses of the river system. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.