IEPA Log No.: **C-0217-20**
CoE appl. #: **PD-C**

Public Notice Beginning Date: **October 1, 2020**
Public Notice Ending Date: **October 22, 2020**

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: U.S. Army Corps of Engineers – 1222 Spruce Street, St. Louis, MO 63103-2833

Discharge Location: Near St. Louis in Section 13 and 24 Range 10-West Township 5-North, Section 19 Range 9-West Township 5-North of the 3rd P.M. in Madison County.

Name of Receiving Water: Mississippi River and unnamed wetlands

Project Description: Proposed measures to control underseepage and reduce risk of levee failure including installation of 100 new relief wells, modification of 20 existing relief wells, approximately 5,000 linear ft. access road, a new drainage collection ditch, excavation of sediment deposited in existing ditch, and closure of 104 existing stave relief wells.

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 contact Darren Gove at email darren.gove@illinois.gov or phone no. 217/782-3362.

DRG:C-0217-20_401 PN and FS_10Aug20.docx

Fact Sheet for Antidegradation Assessment
For U.S. Army Corps of Engineers
IEPA Log No. C-0217-20
COE Log No. PD-C
Contact: Angie Sutton 217/558-2012
Public Notice Start Date: October 1, 2020

U.S. Army Corps of Engineers ("Applicant") has applied for a 401 Water Quality Certification for impacts associated with repairs to the Wood River levee adjacent to the Melvin Price Locks and Dam. The project site is located in Madison County approximately 2 miles below Alton IL at Mississippi River mile 200.78 between the mouth of the Illinois and Missouri rivers. The Area in question is landside of the levee berm in wetlands adjacent to the Melvin Price Locks and Dam. Many large, flowing seeps have been observed during a time when the Melvin Price pool was at or near its normal elevation. An Interim Operations Plan (IOP) was implemented in 2 phases to control underseepage as the river rises. This project consists of plans for final risk reduction measures and components of the phase include the following:

New Relief Wells: 100 new wells will be installed and will discharge at elevation 409.

Modify Existing Wells: 20 wells were awarded for installation to replace the minimum needed for operation of the IOP. These wells will be installed and modified to discharge to elevation 409 when the drainage and discharge channel excavation is completed. 9 wells that have already been installed will be modified due to their proximity to the access road.

New Access/Maintenance Road: Route 143 is located landside of the levee berm and because of its proximity and topography, access roads would be needed for installation of the new relief wells. Reach 1 would be 2,400 feet and Reach 2 would be 5,000 feet, both along or against Route 143 with storm drains extended along both reaches.

Relief Well Discharges: The proposed wells rest within the access road section and for the portion upriver of Cpl. Belchik Expressway (toward Alton), flows would be allowed to dissipate by flowing across rip rap splash pads adjacent to the relief well outlet. These flows would sheetflow across the detention basin to the main ditch which leads to the East Alton pump station. 4 areas would require grading down to elevation 409 totaling 0.5 acres. For the project area toward the lock and dam, a 4600-foot collector channel would capture flows from new relief wells in that area. The flows would then be carried to the main ditch by 2 discharge channels that total about 1,000 feet in length.
Grout Shut Existing Wood-Stave Wells: The existing 104 wood-stave relief wells will be grouted shut.

Main Ditch Modifications: Accumulated sediment would be excavated from approximately 3,425 feet of the existing main ditch that leads to the East Alton pump station. This would result in onsite placement of approximately 27,600 cubic yards (CY) of excavated sediments totaling about 18 acres. The excavated ditch bottom would be lined with filter sand, gravel and rock ditch liner to counteract underseepage in the ditch. In the reach upriver of Cpl. Belchik Expressway, excavated sediment would be spread in

3 separate disposal sites totaling about 11 acres in which living woody vegetation would be avoided.

Dewatering: The East Alton pump station will be operated to keep water levels in the detention basin at elevation 406 and pumps will drop water levels as low as possible at Cpl. Belchik Expressway. A well-point system would be used to reduce groundwater levels. Existing Dikes A, B and C as well as new temporary dikes would be required in the main ditch to hydraulically separate the project into three separate reaches. Additional pumps would be required to dewater the main ditch at each dike location to supplement the well-point system. Well-point pumps will discharge downstream of the dikes where needed when possible.

The IOP has temporarily impacted 0.85 acres of wetlands with permanent impacts totaling approximately 0.66 acres of wetlands. Additional direct impacts are anticipated upon full development of the IOP. The final project impacts are expected to be 21.8 acres of temporary wetland impacts and 9.15 acres of permanent wetland impacts. Mitigation proposed for the final project will consist of compensation for unavoidable impacts to 9.15 acres of various habitats resulting in a total of 23.7 acres of mitigation.

The underseepage is conveying earthen materials from the foundation of the levee because of improperly designed relief wells. Underseepage in the levee is inadequately controlled, putting the structure at risk of failure. This project will reduce the risk of levee failure.

Information used in this review was obtained from the application documents dated October 2017, and August 10, 2020.

Identification and Characterization of the Affected Water Body.

The Mississippi River has 21,330 cfs of flow during critical 7Q10 low-flow conditions and is classified as General Use Water. The Mississippi 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 is it given an integrity rating in that document. The Mississippi River, Waterbody Segment IL_J-05, is listed on the draft 2016 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for primary contact recreation with a potential cause given as fecal coliform, and fish consumption with potential causes given as mercury and polychlorinated biphenyls (PCBs). Aesthetic quality, aquatic life use and public and food processing water supplies use are fully supported.
The area of concern within the levee district is specifically the low, marshy area located landside of the levee extending approximately 3,500 feet upstream from the centerline of the Melvin Price Locks and Dam. An area of ponding in the detention basin makes up approximately 250 acres and captures rainfall and runoff from a 6 square mile watershed. Nonwoody or herbaceous wetlands in the detention basin include wet meadows made up of diverse herbaceous habitat, and unvegetated marsh habitat. These habitats occur at a higher elevation mainly in a narrow band along the landside toe of the levee/highway area. Wet meadow wetlands consist of dense growth of smartweeds (*Polygonm* spp.), grasses and sedges (*Carex* spp.). Woody species observed were

green ash (*Fraximus pennsylvanica*) and silver maple (*Acer saccharinum*). Formerly vegetated marshes occupy the lower zone bordering the wet meadow wetlands and occur in large areas on the highway side of the main ditch leading to the pump station. The dominant plant species in shallow marsh areas was cattail (*Typha latifolia*) prior to the mid to late 2000s. Deep marshes existed at one time but due to flooding over a maintenance road that has acted as a berm, surface waters have ponded in the marsh areas and underseepage has saturated the ground to a point where rivulets have formed within the existing mudflats. Little to no cattail vegetation currently exists in these areas. Scrub-shrub wetlands occur in areas within former marsh habitat and area made up of buttonbush (*Cephalanthus occidentalis*) and indigo bush (*Amorpha fruticosa*). The detention basin includes two subtypes of forested wetlands, wet-mesic forested and wet forested. Dominant vegetation in the wet-mesic forested wetland consists of silver maple, green ash, cottonwood (*Populus deltoides*), red mulberry (*Morus rubra*), and dogwood (*Cornus* sp.), various sedges, forbs and grasses. Wet forested wetland vegetation consists of willow (*Salix* sp.), silver maple and green ash with sparse groundcover. Lacustrine habitats occupy low areas bordering the north side of the main ditch leading to the pump station and are long narrow areas of standing shallow water with no submergent or emergent vegetation. Riverine habitat is made of the ditch leading to the pump station and is permanently flooded with depths of less than five feet. No vegetation occurs due to poor water quality from runoff and sewer outflows. Terrestrial habitats are made up of bottomland hardwood forest consisting of hackberry (*Celtis* spp.), black locust (*Robinia pseudoacacia*), and aster (*Aster* spp.). This habitat occurs in the vicinity of the East Alton pump station. Old fields, grassy and developed areas also make up terrestrial habitats. Old fields are areas cleared of trees or formerly developed sites. Most of this type of habitat occurs on the north side of the main ditch. Grassy areas are noted along the side slopes of the levee and Highway 143 or in the pump station vicinity and developed areas within the detention basin are uncommon.

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

The pollutant load increases that would occur from this project include some possible increases in total suspended solids. These increases are a normal and unavoidable result of mechanical dredging and fill placement activities. Fill material and dredged materials are expected to be discharged as a result of road embankment construction, road cover and side slope, and leveling the top of the road surface. Additionally, the proposed drainage system is expected to result in discharges of fill material resulting from site excavation and placement of construction materials needed to construct collector ditch and discharge channel. Excavated sediments and excess material from the main ditch will be placed into disposal sites. Fill materials not obtained onsite or from excavated sediments, will be obtained from commercial suppliers and no dredging of sand from the river is required.

Feature	Fill Type	Fill Quantity in Cubic Yards (CY) or Square Yards (SY)
Road	Sand	28,662 CY
	Local Borrow	11,709 CY
	Rock Ditch Liner	13,269 CY
	CA-6 Leveling Material	2,278 CY
Drainage System	Reinforced Concrete	980 CY
	Articulated Concrete Mat	7,663 SY
	Bedding Material	3,614 CY
	Rock Ditch Liner	Qty included above
	Filter Sand	1,793 CY
	Filter Gravel	1,709 CY
	CA-6 Leveling Material	Qty included above
Other	Geofabric	49,728 SY
	Excavated Sediments	27,591 CY

Direct permanent impacts are expected to occur in 9.15 acres of various habitats within the detention basin, including 8.65 acres of various wetlands and 0.50 acres of terrestrial habitats. Temporary direct impacts would occur in about 21.8 acres of various habitats. The table below outlines acres of waters filled. This does not include the impacted 0.5 acres of terrestrial habitats. Temporary impacts are expected to occur in a total of 27.3 acres including terrestrial impacts not outlined in the table below.

Activity	Impact area in acres (A)	Habitat	Permanent or Temp loss (P or T)
Road and Drainage System	7.15 A	Herbaceous wetland	P
	0.25 A	Shrub-scrub wetland	P
	1.25 A	Forested wetland	P
Excavated Sediments Disposal Sites	18.1 A	Herbaceous wetland	T
Removal of Sediments from Main Ditch, and Temporary Dike Placement for Dewatering	3.7 A	Riverine	T

Additionally, turbidity and suspended solids are expected locally at the construction sites and downstream for short distances. Water quality in these areas are poor so adverse effects are expected to be minor during removal of sediment from the main ditch.

Fate and Effect of Parameters Proposed for Increased Loading.

Increases in suspended solids will be local and temporary for some deposits of fill materials while some will cause permanent impacts. Materials placed on the protected side of the levee would be subject to erosion and all materials would have the potential to migrate with the land slope. Benthic organisms would be temporarily displaced due to construction activity but are expected to recolonize over time. Stable slopes will be developed, silt fences or hay bales placed, and revegetation implemented to minimize erosion or migration of fill materials. Additionally, temporary use of portable pumps will be employed in order to move water around temporary dikes. To minimize the impacts of suspended solids from dredging, dewatering and hydraulic segregation of the work areas will be implemented. No spoils will be placed within 10 feet of existing trees.

Mitigation proposed includes a plan developed to offset loss of wetlands due to both the IOP and permanent project features. The combined mitigation requirement for impacts to both project features is expected to be about 23.7 acres. Mitigation acres are estimated based upon creation of habitat in a 97 acre parcel along Piasa Creek. This parcel is currently owned by the Great Rivers Land Trust and is within the same watershed as the proposed project (Peruque-Piasa Watershed). The USACE purchased mitigation lands immediately south of the 97 acre parcel so the proposed mitigation would be adjacent to federally owned and USACE managed properties. Additionally, the northern portion of the parcel has poorly drained soils that are suitable for wetland establishment.

The table below outlines direct permanent acres lost to habitats and associated mitigation acres for the IOP and Final Plan.

Habitat Type	IOP	Final Plan
Aquatic – Herbaceous Wetland	1.0	7.15
Aquatic – Forested Wetland	0	1.25
Aquatic – Shrub-scrub Wetland	0	0.25
Terrestrial – Bottomland Forest	0.5	0.5
Total Impact (Acres)	1.5	9.15
Total Mitigation (Acres)	0.2	23.5

Purpose and Social & Economic Benefits of the Proposed Activity.

The proposed project will construct project features that are designed to reduce the risk of levee failure by controlling underseepage. Current relief wells are improperly designed and inadequately control underseepage, and earthen materials are being conveyed from the levee foundation. The low marshy areas 3500 feet upstream from the centerline of the Melvin Price Locks and Dam exhibit heavy seepage of ground water under the levee and the ground has become very soft. Large 3-5 inch wide and 6 foot deep flowing seeps were first observed in 2009 while the pool was at its normal elevation. All of these continued problems put the levee at risk of failure.

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

The applicant has provided the following alternatives:

Option 1- No Action: This option would allow for continuation of the IOP. There is a temporary risk reduction, but this option is not sustainable and does not meet technical criteria or tolerability of life safety. Operation and maintenance cost increase vary as well. Environmental impacts consist of higher ponding, with temporary features and 0.2 acres of mitigation. This option does not meet criteria for completeness, effectiveness, efficiency or acceptability and was not selected for these reasons.

Option 2 – Relief Well Plan (Preferred Alternative): This option involves installation of 88 new relief wells, modification of 21 existing relief wells, construction of a new access and maintenance road and construction of new drainage collection and discharge channels. 104 existing wood-stave relief wells will be grouted shut and the main ditch will be modified and excavated with sediments places onsite. Dewatering of the project area during construction will be provided by the East Alton Pump Station and three separate reaches will be hydraulically separated. This plan reduces risk to a tolerable level. It does not meet standard technical criteria but was assessed to meet tolerability guidelines for life safety risks. Operation and maintenance cost increases are estimated to be around $38,000 per year (not including mitigation management costs) and would be the responsibility of the levee district. Mitigation requirements are 23.5 acres, plus the 0.2 acres of requirements as a result of the IOP. This plan meets all criteria for completeness, effectiveness, efficiency and acceptability. This plan was chosen as the preferred option for the final plan.

Option 3 – Cutoff Wall Plan: This option would construct a fully penetrating slurry trench cutoff wall. The cutoff wall would consist of a three foot wide trench extending from the riverside surface of the levee near the toe down to the top of bedrock. A cement-bentonite slurry would be pumped into the trench to make the wall. This plan comes with a high level of risk reduction. It does meet standard technical criterial and was assessed to meet tolerability guidelines for life safety risks and there is no increase in operation and maintenance costs expected. Mitigation requirements are 22.7 acres in addition to the 0.2 acres of requirements as a result of the IOP. This plan meets criteria for completeness, effectiveness and acceptability, but does not meet efficiency criteria. This option was not selected as the preferred option.

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

On September 4, 2020, the IDNR EcoCAT review was initiated for the project area. The review identified protected resources that may be in the vicinity of the project area. IDNR concluded that adverse effects are unlikely and terminated the consultation request on September 8, 2020.

There is one active bald eagle nest on the protected side of the levee in the detention basin. U.S. Fish and Wildlife Services provide recommendations to minimize potential project impacts. These recommendations include maintaining a specified distance, or buffer area, between the activity and the nest, maintaining natural areas between the activity and nest trees, and avoiding specific activities during the breeding season. Specifically, construction activity is prohibited within 660 feet of an active nest during the nesting season from late January through late July. An email dated August 31, 2015 from the U.S. Fish and Wildlife Service agrees that no additional permitting is necessary if seasonal restriction recommendations are followed and no work is done within the 660 foot buffer. This email chain is included in the application documents.

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 Mississippi River and associated area by providing underseepage control in order to prevent failure of the Melvin Price reach of the Wood River Levee. Comments received during the 401 Water Quality Certification public notice period will be evaluated before a final decision is made by the Agency.