DRAFT ENVIRONMENTAL ASSESSMENT

MISSISSIPPI RIVER MAINLINE LEVEE
ISLAND 8 PARCEL 2
SEEPAGE CONTROL MEASURES
FULTON COUNTY, KENTUCKY

April 2020

U.S. Army Corps of Engineers
Regional Planning and Environment Division South
Memphis District

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1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Mississippi River Valley Division, Regional Planning and Environmental Division South, has prepared this environmental assessment (EA) for the Memphis District (MVM) to evaluate the potential impacts associated with the proposed seepage control measures at Island 8, Parcel 2, along the Mississippi River mainline levee (MRL) portion of the Mississippi River and Tributaries (MRT) system, located near Hickman, Fulton County, Kentucky (Figure 1).

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation ER 200-2-2. This EA provides sufficient information on the potential adverse and beneficial environmental effects to allow the MVM District Commander to make an informed decision on the appropriateness of an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI).

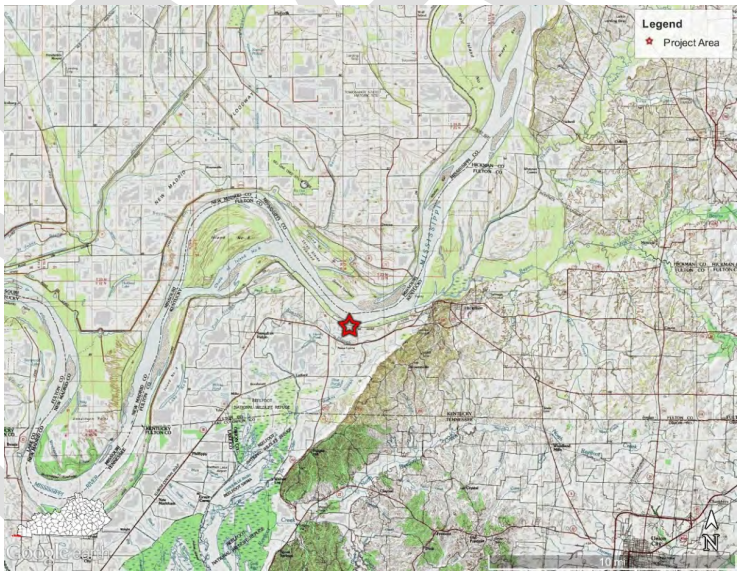

Figure 1. Location of proposed seepage control measures, Fulton County, Kentucky.

A 1998 final Supplemental EIS (SEIS), *Mississippi River Mainline Levees Enlargement and Seepage Control*, addressed seepage control measures to be implemented along the MRL at selected sections from levee stations 5/13+00 – 15/15+00. Additionally, in 2007, an EA, *Mississippi River Levee Construction Project, Seepage Control Measures*, was completed to address additional seepage issues, via relief wells from levee stations 3/76+70 – 16/37+82, which were not identified when the July 1998 final SEIS was completed. Furthermore, in 2012, an EA, *Mississippi River Mainline Levee, Island 8 Seepage Control Project*, was completed to address additional seepage issues, via relief wells and channel work from levee stations 5/17+00 – 7/35+00 and 10/30+00 – 14/0+00. However, during the winter flood of 2015-16, further seepage issues were noted from levee stations 2/0+00 – 3/76+70 (Parcel 2), locations not described in the 1998 SEIS, or 2007 and 2012 EAs (Figure 2).

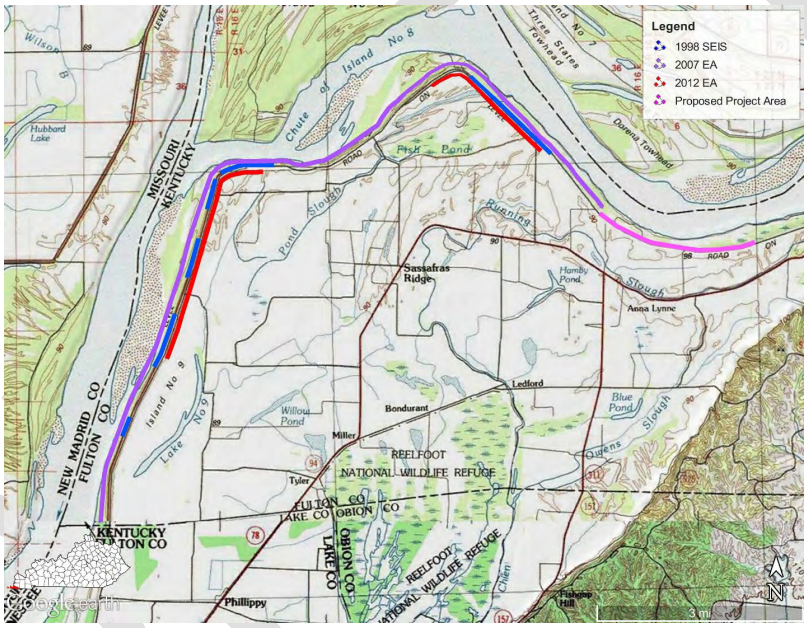

Figure 2. Island 8 seepage control projects and associated National Environmental Policy Act documentation, Fulton County, Kentucky.

1.1 Proposed Action

The proposed project involves implementing seepage control measures along the MRL in Fulton County, Kentucky. Project features for the proposed seepage control action include installing 79 relief wells and associated underground piping to carry seep water, creation of new drainage ditches, modification of existing drainage ditches, culvert replacement at four locations with associated adjacent rip-rap placement to prevent scour, and removal of large snags and debris from Running Slough. The location of each proposed action is presented in Figure 3. Access to the project areas would be from State Highway 94, County Road 311, as well as Sutton, Sutton East, John Wright, and Sycamore roads. Specialized drill rigs would be used to drill the holes along the levee, and cranes would be used to install the relief wells. Bulldozers and excavators would be used to construct the new drainage ditches and widen the existing field ditch. Spoil material from the ditch creation and enlargement would be placed and spread onto adjacent agricultural fields currently in production. The proposed action is not anticipated to result in significant impacts to the natural or human environment and any temporary disturbances occurring during the construction period would be expected to return to existing conditions after completion of the project action. Therefore, compensatory mitigation would not be required for the proposed action.

1.2 Purpose and Need for the Proposed Action

The purpose of the proposed action is to control seepage under the MRL that occurs during flood conditions on the Mississippi River to ensure that the levee system does not fail in a flood event. Continued seepage could eventually lead to a levee failure, which could result in property damage and cause human injuries and/or loss of life.

1.3 Authority for the Proposed Action

The proposed action is authorized as part of the Flood Control Act of 1928, as amended.

1.4 Prior Reports

This EA has been prepared because seepage problems at the proposed locations were not anticipated when the 1998 SEIS or 2007 and 2012 EAs were completed. Since the publication of the aforementioned documents, additional seepage control measures need to be installed along the MRL to prevent continued seepage and potential degradation of the levee. The 1998 SEIS and 2007 and 2012 EAs are incorporated herein by reference.

1.5 Public Concerns

Public concerns exist regarding the ability of the MRL to contain floodwaters during a flood event. Seepage could undermine the levee causing it to breach if unabated, thus posing a threat of flooding. A levee breach could flood the surrounding lands and residential areas, and threaten the lives and property of residents within the flooded areas. The record level flooding of the Mississippi River in May 2011 has heightened public concerns.

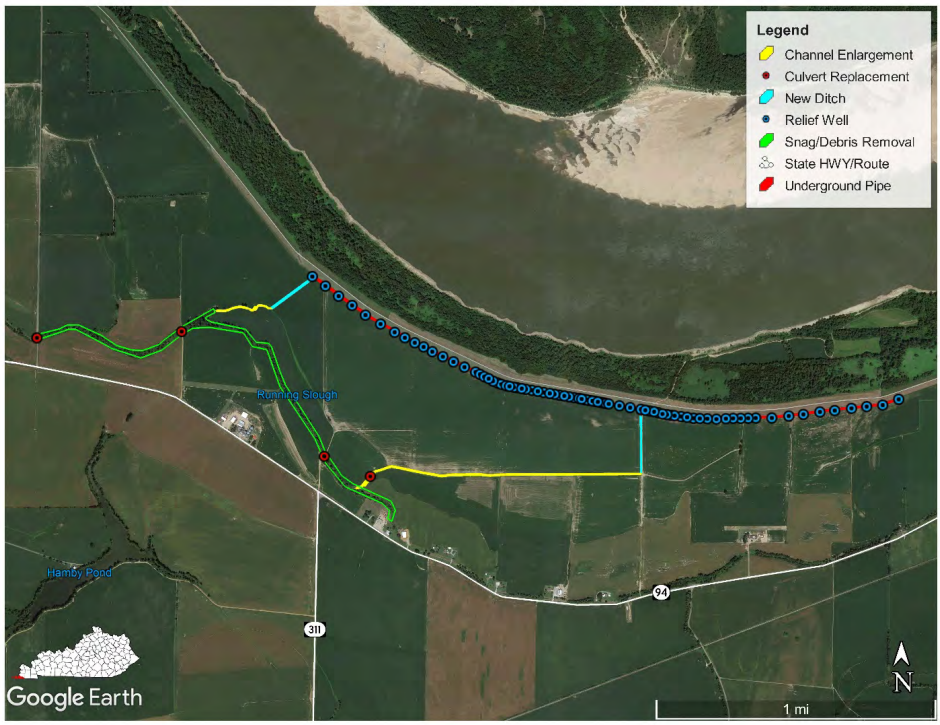

Figure 3. Proposed seepage control measures along the Mississippi River mainline levee at the Island 8 Parcel 2 project area, Fulton County, Kentucky.

2.0 ALTERNATIVES

Three alternatives were considered: Alternative 1 (No Action); Alternative 2 (Install Relief Wells with Associated Drainage Work); and Alternative 3 (Construct a Landside Seepage Berm).

2.1 Alternative 1 – Future without Project Condition (No-Action)

In the future without project condition (no-action), the proposed action would not be constructed. The no-action alternative would result in continued seepage during flood conditions. Sands and silts would be carried under the levee, potentially causing sand boils. This could eventually lead to levee failure during a major flood event. Failure of the levee could result in property damage, human injuries and/or loss of life.

2.2 Alternative 2 – Install Relief Wells with Associated Drainage Work

This alternative would involve implementing seepage control measures along the MRL. Project features would include installing 79 relief wells, creation of new drainage ditches and modifying existing drainage systems to accommodate additional seep water, culvert replacement at four locations with associated adjacent rip-rap placement to prevent scour, and removal of large snags and debris from Running Slough. Spoil material from the ditch creation and modification would be placed and spread onto adjacent agricultural fields currently in production.

2.3 Alternative 3 – Construct a Landside Berm

This alternative would involve implementing seepage control measures along the MRL by constructing a berm along the landside toe of the MRL. However, as opposed to relief wells, borrow material would be needed to construct a seepage berm. Suitable soils would need to be obtained from borrow areas located at the project site or hauled in from an off-site location. A suitable site would first need to be located, landowner access for rights-of-entry obtained, and soil borings conducted to determine if sufficient quantities are available. Once a suitable site is located, the land or borrow rights would need to be purchased. Although a sufficient means of addressing seepage risk, additional time would be required to locate suitable borrow sources. Additionally, if the borrow areas were to be located in wooded or farmed wetlands, adverse environmental impacts could result and may require compensatory mitigation.

2.4 Preferred Alternative for the Proposed Project

After careful consideration of all alternatives, it was determined that alternative 1 (no-action) was unacceptable because of risks to human life and property. If a seepage problem is not addressed, levee failure resulting in catastrophic impacts could ultimately result. Due to the potential of increased adverse environmental effects and time delay associated with locating suitable borrow areas, it was determined that alternative 3 (landside berms) is not practicable or reasonable. Alternative 2 (relief wells and associated drainage work) has higher maintenance costs than the other alternatives, but has fewer adverse environmental impacts. All factors considered, alternative 2 is the most practical solution for seepage control, the least environmentally damaging practicable alternative, and is the preferred alternative for the proposed project assessed in this draft EA.

3.0 AFFECTED ENVIRONMENT

3.0.1 Environmental Setting

The proposed seepage control items are located in Fulton County, Kentucky. During the summer of 2019, USACE personnel performed site assessments of the proposed project area. Throughout the proposed project reach, property on the landside of the levee is dominated by large, row crop agricultural production. However, riverside of the levee, land is primarily occupied by bottomland hardwood forest, occasional agricultural fields, and borrow pits previously used in levee construction. Tree species in the batture adjacent to the project areas generally consist of cottonwood, American elm, sugarberry, silver maple, hickory, sycamore,

cypress, black willow and various types of oaks. The proposed alignment for the relief wells and underground piping lies adjacent to agricultural fields and is located at the levee toe in land planted in pasture grass and subjected to routine mowing (Figure 4). The areas proposed for new ditch creation transects agricultural fields currently in production (Figure 4). The existing ditch proposed to be modified is dry throughout most of the year, covered in various grasses and forb species, and farmed to top bank on both sides (Figure 4). Running Slough is dominated by mature cypress trees with a minor constituency of sycamore, cottonwood, and to a lesser extent, oak and hickory (Figure 4).

Figure 4. Clockwise from upper left - Existing condition of: 1) relief well location, 2) ditch to be modified, 3) area for new drainage ditch, and 4) Running Slough.

3.0.2 Climate

Fulton County, Kentucky has a humid, warm-temperate climate characterized by moderately cold winters, warm or hot summers, and generally abundant rainfall. Maximum daily temperatures average 92 degrees (°) Fahrenheit (F) in July and 41 °F in January. Yearly precipitation averages 35 inches, while normal annual snowfall is less than 14 inches.

3.0.3 Geology

The proposed project area is located in the Mississippi River alluvial plain. Soils in the project area are predominantly Bardwell silt loam and Commerce silt loam. Bardwell soils consist of very deep, well drained, moderately permeable soils that formed in alluvium on flood plains. Commerce soils consist of deep, somewhat poorly drained, moderately slowly permeable soils.

3.1 Relevant Resources

This section contains a description of relevant resources that could be impacted by the project. The relevant resources (Table 1) described in this section are those recognized by laws; executive orders; regulations; and other standards of National, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. The following resources have been considered and found to not be affected by the alternative under consideration: agricultural lands, freshwater marshes, freshwater lakes, state-designated scenic streams, fisheries, municipal facilities, municipal utilities, roadways, recreation, and aesthetics. Additionally, proposed alternatives would not be expected to have disproportionate adverse environmental or health effects on minority or low-income populations, as the reduction in flood risk provided would be beneficial to all area residents. Therefore, the proposed project is in full compliance with Executive Order 12898, Environmental Justice in Minority and Low-Income Populations.

Table 1. Relevant Resources.

Resource	Institutionally Important	Technically Important	Publicly Important
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968., EO 11988, and Fish and Wildlife Coordination Act.	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The high value the public places on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes.
Wildlife	Fish and Wildlife Coordination Act of 1958, as amended and the Migratory Bird Treaty Act of 1918.	They are a critical element of many valuable aquatic and terrestrial habitats; they are an indicator of the health of various aquatic and terrestrial habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended; the Marine Mammal Protection Act of 1972; and the Bald Eagle Protection Act of 1940.	USACE, U.S. Fish and Wildlife Service, NRCS, U.S. Environmental Protection Agency, and state agencies cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.
Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979	State and Federal agencies document and protect sites. Their association or linkage to past events, to historically important persons, and to design and construction values; and for their ability to yield important information about prehistory and history.	Preservation groups and private individuals support protection and enhancement of historical resources.
Air Quality	Clean Air Act of 1963.	State and Federal agencies recognize the status of ambient air quality in relation to the National Ambient Air Quality Standards.	Virtually all citizens express a desire for clean air.
Hydrology and Water Quality	Clean Water Act of 1977, Fish and Wildlife Coordination Act.	State and federal agencies recognize value of fisheries and good water quality. The National and state standards are established to assess water quality.	Environmental organizations and the public support the preservation of water quality and fishery resources and the desire for clean drinking water.

3.1.1 Wetlands

Existing Conditions

Within the proposed construction footprint, the area landside of the MRL consists predominantly of agricultural land in row crop production and does not exhibit wetland characteristics. However, Running Slough (Figure 3) is considered Waters of the U.S., as determined through vegetative, soil, and hydrologic properties.

3.1.2 Wildlife

Existing Conditions

Wildlife species that could be expected to be found within the project area include coyotes, deer, raccoons, opossums, rabbits, gray and fox squirrels, muskrats, mice, rats, shrews, songbirds, turtles, snakes, amphibians, and other small animals typically found along the Mississippi River levees.

3.1.3 Threatened and Endangered Species

Existing Conditions

According to results obtained from USFWS Information, Planning, and Conservation (IPaC) conservation planning tool, there are a total of six threatened, endangered, or candidate species that could potentially inhabit the immediate project area. These species are the gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), least tern (*Sterna antillarum*), pallid sturgeon (*Scaphirhynchus albus*), and fat pocketbook mussel (*Potamilus capax*). Of these six species, only the gray bat, Indiana bat, and northern long-eared bat could potentially utilize the habitat within the project area. In the lower Mississippi River (LMR), interior least terns typically nest on large isolated sandbars from late May to August, depending on timing and duration of low river stages, and are not found within the proposed project area. As sturgeon and the fat pocketbook mussel are limited to the nearby Mississippi River, they are not found within the proposed project area. Additionally, habitat within the project areas is not considered critical habitat for any potential species.

In September 2019, USACE biologists conducted a site assessment of the project area to determine the presence of suitable/potential habitat for the aforementioned bat species. The area proposed for relief well placement, piping and channel widening are subject to routine disturbance and is not representative of suitable bat habitat. However, as previously noted, Running Slough is dominated by mature cypress trees with a minor constituency of sycamore, cottonwood, oak, and hickory.

3.1.4 Cultural Resources

Existing Conditions

An archaeological, architectural, and historical resources survey of the project area was conducting in 1983 by American Resources Group, Inc. One prehistoric and nine historic site(s) were located along the Island No. 8 levee, although not within the proposed project footprint. Of the nine historic sites, none were considered architecturally or archaeologically significant, and none were determined eligible for inclusion in the National Register of Historic Places (NRHP). Additionally, the MVM staff conducted a site visit on 10 September 2019 and observed no cultural material within the project area's Area-of-Potential-Effect (APE).

3.1.5 Air Quality

Existing Conditions

The proposed project area is in attainment for all air quality standards. As equipment to be used during construction is a mobile source, best management practices shall be used throughout the construction to minimize air pollution.

3.1.6 Hydrology and Water Quality

Existing Conditions

Water flow within the existing ditches and waterways within the proposed project area is dependent on heavy rainfall and seepage under the MRL from the adjacent Mississippi River. Therefore, the existing drainage ditches are normally dry and only have flowing water during periods of heavy rain and high river stages.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Wetlands

Future Conditions with No Action

Without implementation of the proposed action, wetland habitats within the project area are expected to remain as noted in Existing Conditions, provided that the adjacent levee remains stable. However, continued seepage could lead to a levee failure during a major flood event. Floodwaters could negatively impact the existing wetlands through erosion and excess deposition of sand and gravel.

Future Conditions with the Proposed Action

With implementation of the proposed action, the placement of fill material from channel modifications are not proposed within areas providing wetland function or determined to be Waters of the U.S. Additionally, the proposed culvert replacements within Running Slough

(Figure 3) meet criteria set forth in Nationwide Permit 3, Maintenance. Therefore, a Section 404(b)(1) Evaluation is not required for Clean Water Act compliance. As fill from channel modifications would not be placed in wetlands and proposed work in Running Slough consists of culvert replacements, it is anticipated that wetland conditions within the project area would return to existing conditions upon project completion.

4.2 Wildlife

Future Conditions with No Action

Without implementation of the proposed action, the wildlife resources within the project area are expected to remain as noted in Existing Conditions.

Future Conditions with the Proposed Action

With implementation of the proposed action, temporary impacts to wildlife resources would include disruption during snag and debris removal within Running Slough. Additionally, disturbance and noise from the construction equipment would temporarily disperse wildlife species from the project area. However, once the project is completed, wildlife species would be expected to return to the project area. The habitat disruption and temporary disturbance would not adversely impact the general populations of wildlife species within the region, as extensive forested areas and suitable habitat is readily available within the vicinity of the project area, specifically riverside of the levee.

4.3 Threatened and Endangered Species

Future Conditions with No Action

Without implementation of the proposed action, threatened and endangered species within the project area are expected to remain as noted in existing conditions.

Future Conditions with the Proposed Action

Pursuant to Section 7 of the Endangered Species Act, as amended, USACE has determined that the proposed project would have no effect on the gray bat, Indiana bat, northern long-eared bat, least tern, pallid sturgeon, or fat pocketbook mussel. Additionally, although records indicate the presence of historic bald eagle nests in the project vicinity, none were observed, nor historically documented, within 660 feet of the proposed project rights-of-way. Although the bald eagle is no longer listed as a threatened species, protection is still provided via the Bald and Golden Eagle Act and the Migratory Bird Treaty Act.

4.4 Cultural Resources

Future Conditions with No Action

Without implementation of the proposed action, cultural resources are expected to remain as noted in Existing Conditions. However, continued seepage could lead to a levee failure during a major flood event, potentially impacting cultural resources.

Future Conditions with the Proposed Action

With implementation of the proposed action, USACE has determined that the project would have no effect on historic properties or cultural resources. As previously noted, the project area was surveyed in September of 1982 resulting in the location of nine historic and one prehistoric sites, although none of these sites were determined eligible for inclusion in the NRHP. However, none of the sites fall with the proposed project area footprint. Therefore, no additional cultural resources investigations are recommended prior to project implementation. However, should an inadvertent discovery be made during construction, the resource would be evaluated, assessed for effects, avoided if possible, and mitigated in accordance with Federal statutes and regulations (36 CFR, Part 800).

4.5 Air Quality

Future Conditions with No Action

Without implementation of the proposed action, no change in air quality would occur.

Future Conditions with the Proposed Action

With implementation of the proposed action, project-related equipment would produce small amounts of engine exhaust during construction activities. The temporary, minor impacts to air quality would be localized to the project area, and would not affect area residents. The project area would still be in attainment for all air quality standards. Additionally, best management practices would be used throughout the construction to minimize air pollution.

4.6 Hydrology and Water Quality

Future Conditions with No-Action

Without implementation of the proposed action, hydrology and water quality within the project area would be as noted in Existing Conditions. However, in the event of a levee failure, due to seepage or overtopping, the impacts to water quality could be significant.

Future Conditions with the Proposed Action

The Kentucky Department of Environmental Protection issued a general state water quality certification in March 2017 for the re-issuance of the Nationwide Permits as is applies to water

within the state. The proposed project meets the conditions set forth in the re-issuance. With implementation of the proposed action, hydrology riverside of the levee would be as noted in Existing Conditions. Impacts to water quality within the Mississippi River would be minimal or have no effect, as the river normally carries a heavy sediment load and that the project action would be conducted during dry or low water periods. Installation of the relief wells would affect the existing hydrology landside of the levees by transporting seepage waters from the wells to the existing drainage ditches. In addition, modification and creation of drainage ditches would facilitate water flow through Running Slough, which connects to other drainage ditches. However, water provided through seepage occurs only during high water periods and a majority of the area landside of the levee is in active agricultural production during dry conditions. Furthermore, best management practices (*e.g.*, silt fences, seeding) would be employed throughout construction to minimize impacts. Any temporary impacts to water quality would be anticipated to return to normal shortly after construction ceases. Thus, no significant impacts to water quality would occur as a result of the proposed project.

4.7 Hazardous, Toxic, and Radioactive Waste

USACE is obligated under Engineer Regulation (ER) 1165-2-132 to assume responsibility for the reasonable identification and evaluation of all Hazardous, Toxic, and Radioactive Waste (HTRW) contamination within the vicinity of proposed actions. ER 1165-2-132 identifies that HTRW policy is to avoid the use of project funds for HTRW removal and remediation activities. A record search has been conducted of the Environmental Protection Agency's (EPA) EnviroMapper for Envirofacts web site (https://www.epa.gov/emefdata/em4ef.home). The web site was checked for any superfund sites, toxic releases, or hazardous waste sites within the vicinity of the proposed project area. Additionally, a site inspection of the proposed project was conducted by USACE personnel during the summer of 2019. The environmental record search and site survey conducted did not identify the presence of any hazardous or suspected hazardous wastes in the project area. As a result of these assessments, it was concluded that the probability of encountering HTRW is low. If any hazardous waste/substance is encountered during construction activities, the proper handling and disposal of these materials would be coordinated with the EPA and applicable state agencies.

4.8 Cumulative Impacts

The Council on Environmental Quality's (CEQ) regulations (40 CFR 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.) define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7)". Cumulative Effects can result from individually minor but collectively significant actions taking place over a period of time."

The cumulative impacts of the MR&T projects were discussed in the July 1998 supplemental EIS, *Mississippi River Mainline Levees Enlargement and Seepage Control*. Impacts of the proposed project action were evaluated during the preparation of this draft EA on the natural and human environment. Besides USACE authorized projects, other activities in the vicinity,

including agriculture and recreation, have not increased and are not projected to increase in the future. Therefore, the temporary impacts associated with the proposed project activities should not have any significant adverse cumulative effects on the environment in addition to those reported in the 1998 supplemental EIS.

5.0 COORDINATION

The proposed action, draft EA, and Finding of No Significant Impact (FONSI) have been coordinated with members of the project interagency environmental team (IAT) through distribution of the draft EA. The IAT is comprised of representatives from USACE, USFWS, EPA, and Kentucky Department of Fish and Wildlife Resources. In addition, this EA is being coordinated with these agencies: Kentucky Heritage Council, federally recognized tribes, and other interested parties.

6.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action would be achieved upon: coordination of this draft EA and draft FONSI with appropriate agencies, organizations, and individuals for their review and comments; and Kentucky Heritage Council cultural resources effect determination concurrence. The draft FONSI would not be signed until the proposed action achieves environmental compliance with applicable laws and regulations, as described above.

7.0 CONCLUSION

The proposed action involves implementing seepage control measures along the MRL. This office has assessed the environmental impacts of the proposed action and has determined that the proposed work is expected to have only minor impacts on agricultural lands, wildlife, air quality, and hydrology. Impacts to wildlife and air quality would be temporary, and are expected to return to existing conditions after completion of the project action. The proposed project would have no impacts upon freshwater marshes, freshwater lakes, state designated scenic streams, prime and unique farmlands, cultural resources, municipal facilities, municipal utilities, roadways, recreation, aesthetics, socio-economic, or environmental justice. Also, no significant adverse impacts would occur to wetlands, aquatic resources/fisheries, wildlife, threatened and endangered species, hydrology/water quality, air quality, or the human environment. Therefore, a supplemental EIS is not required.

8.0 PREPARED BY

This draft EA and draft FONSI were prepared by Mr. Joshua M. Koontz, USACE biologist, with cultural resources information provided by Ms. Pam Lieb, USACE archeologist. For additional information, contact Mr. Joshua M. Koontz at (901) 544-3975, or by email at joshua.m.koontz@usace.army.mil, or by mail at USACE Memphis District, Attn: Joshua M. Koontz, 167 North Main St., RM-B202, Memphis, TN 38103-1894.