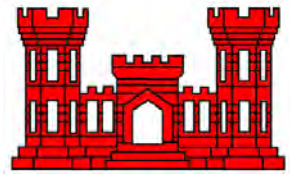
# ENVIRONMENTAL ASSESSMENT

## Mississippi River Mainline Levee
## Island 8 Seepage Control Project
## Fulton County, Kentucky





**U.S. Army Corps of Engineers**
**Mississippi Valley Division**
**Regional Planning and Environmental Division South**

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# DRAFT ENVIRONMENTAL ASSESSMENT

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**1.0 INTRODUCTION.** The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, Regional Planning and Environmental Division South, Memphis District (MVM), has prepared this environmental assessment (EA) to evaluate the potential impacts associated with seepage control measures along the Mississippi River mainline levee (MRL) at Island 8, located in Fulton County, Kentucky (Figures 1-3). This EA has been prepared in accordance with the National Environmental Policy Act 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).

A 1998 final Supplemental EIS (SEIS), *Mississippi River Mainline Levees Enlargement and Seepage Control*, addressed seepage control measures to be implemented along the MRL. Since publication of the 1998 SEIS, seepage problems have occurred along the MRL at Island 8. This EA was prepared to address the seepage control measures that need to be installed along the MRL at Island 8 to prevent continued seepage and potential degradation of the levee.

1.1 Proposed Action. The eastern limits of the proposed project are approximately 0.5 miles past the junction with Fish Pond Road along the MRL at Island 8 (Figure 1). The proposed work extends approximately 8.7 miles westerly along the levee (Figure 2), ending approximately 2.5 miles north of the Tennessee-Kentucky state line (Figure 3). The proposed project action includes installing 121 relief wells landside of the MRL, constructing new drainage ditches, clearing existing drainage ditches, and installing/replacing culverts as needed along roadways to ensure adequate drainage of the water from the relief wells.

Installation of relief wells in a portion of land currently enrolled in the Natural Resources Conservation Service (NRCS) Wetlands Reserve Program (WRP) permanent easement and shown in Figure 1 would require a 50-foot easement from the toe of the levee, extending for approximately 4,000 feet. This area would be cleared of trees; however, native grasses and forbs would be established once the proposed project construction is complete. This easement would impact approximately 4.6 acres of the WRP land, requiring appropriate compensatory mitigation discussed in detail in the Mitigation section of this draft EA. Maintaining (mowing) the easement strip is necessary to prevent tree roots from growing into the relief wells and levee and for monitoring of the wells and adjacent areas, as the area between the wells is where problems would occur if the wells do not capture the seepage adequately. A bulldozer or excavator would be used to construct new drainage ditches, clean out existing ditches, and to install/replace culverts as needed. Specialized drill rigs would be used to drill the holes along the levee, and cranes would be used to install the relief wells. Silt fences would be utilized to contain any

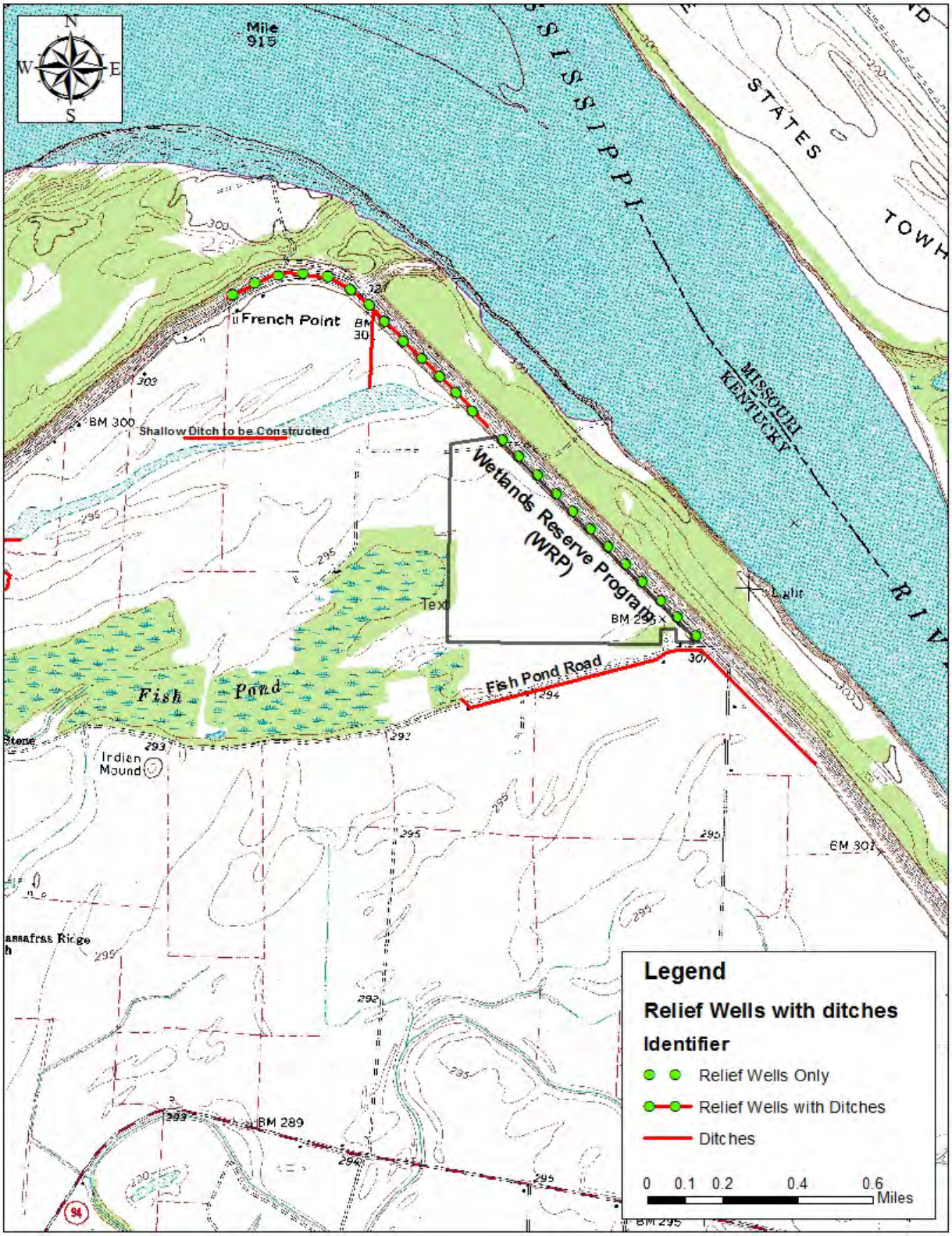


Figure 1. Project Location, Eastern End, Island 8 Seepage Control, Fulton County, Kentucky.

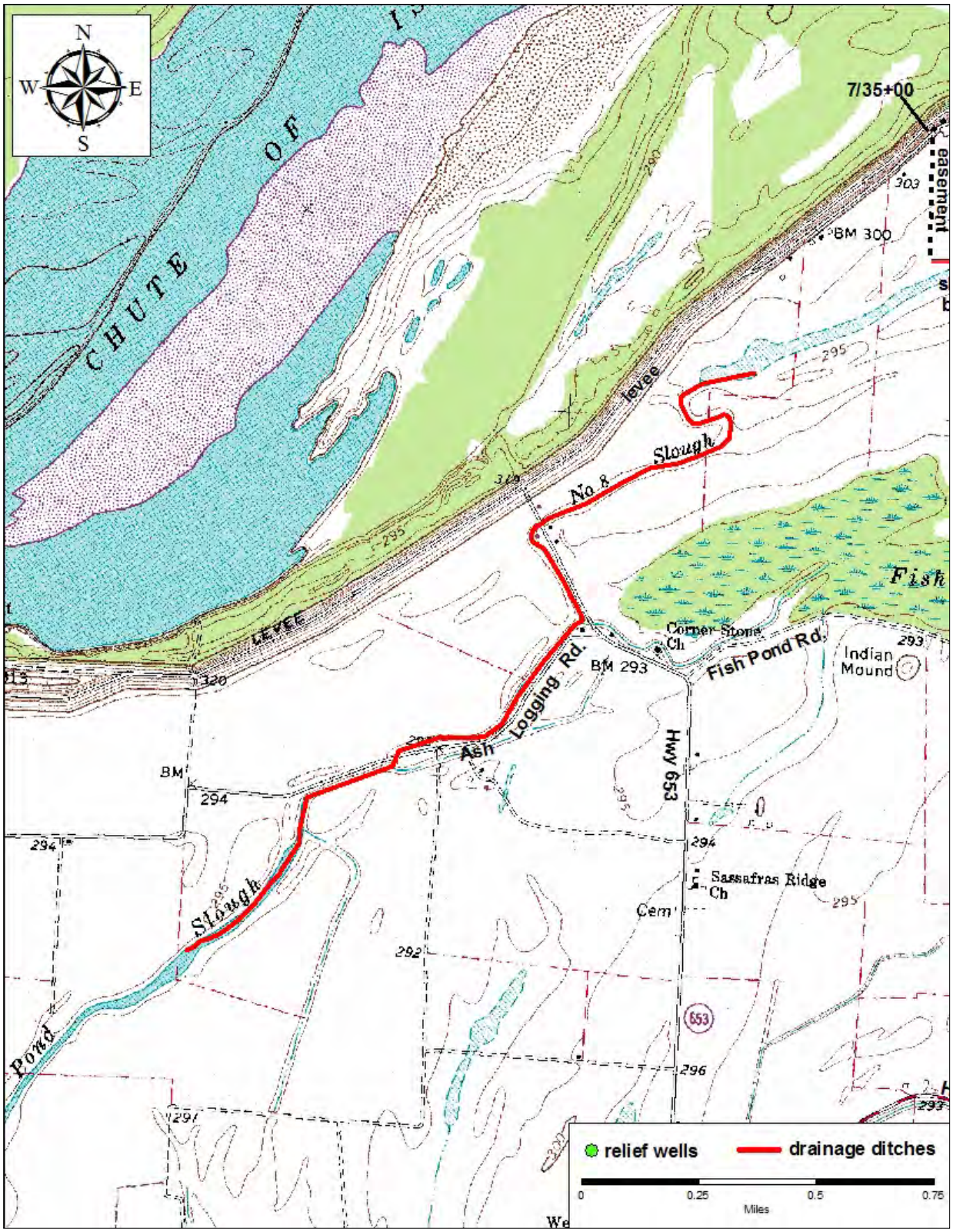


Figure 2. Project Location, Middle Area, Island 8 Seepage Control, Fulton County, Kentucky.

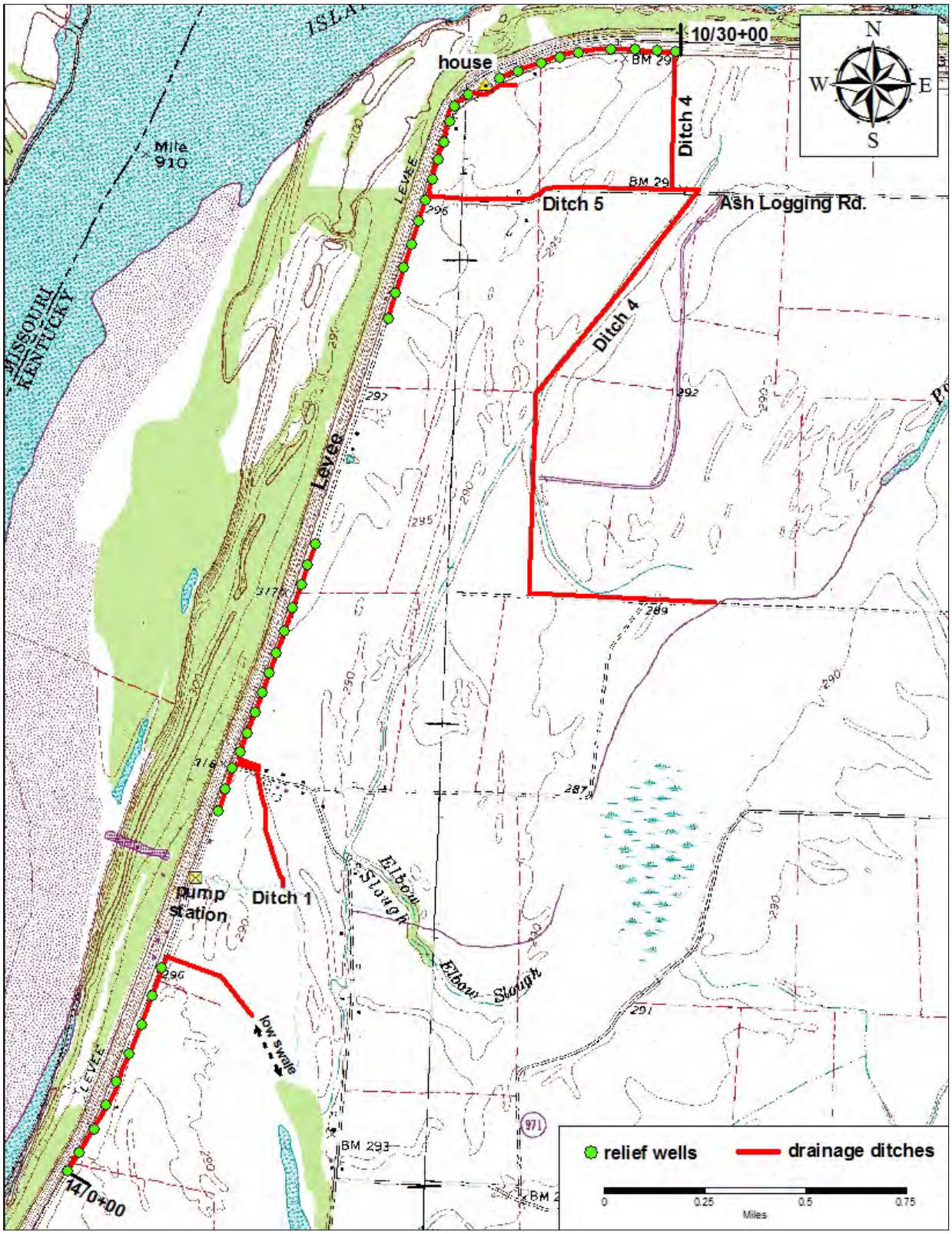


Figure 3. Project Location, Western End, Island 8 Seepage Control, Fulton County, Kentucky.

potential runoff. Vegetation cleared from existing ditches would be removed from the area. Earthen material would be spread on non-wet agricultural fields within a 300-foot right-of-way; no ditches or earthen material would be placed within the WRP acreage.

A total of approximately 73.1 acres would be impacted by the proposed project, including 45.9 acres of non-wet agricultural lands, 1.6 acres of existing ditches that are not classified as wetlands, 10.5 acres of farmed wetlands, 10.5 acres of wooded wetlands, and 4.6 acres of wetlands within the WRP easement. The 4.6 acres of wetlands within the WRP easement currently consist of bottomland hardwood (BLH) tree saplings and various wetland grasses and sedges, and would be impacted by mowing to prevent tree roots from growing into the relief wells and levee. The permanent loss of the current tree/shrub cover on the 4.6-acre easement would be mitigated according to guidance from NRCS discussed in detail in the Mitigation section of this draft EA.

1.2 Purpose And Need For The Proposed Action. Seepage occurring during flood conditions within the Mississippi River needs to be controlled in order to ensure that the levee system does not fail during a flood event. Continued seepage could eventually lead to a levee failure, which would result in human injuries and/or loss of life and property damage.

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

1.4 Prior Reports. A 2007 EA, *Mississippi River Levee Construction Project, Seepage Control Measures*, was completed to address additional seepage issues along the MRL that were not identified when the July 1998 final SEIS was completed. The 2007 EA addressed seepage control measures needed along the MRL, including Island 8. However, the project work at Island 8 was not initiated. The 1998 final SEIS and the 2007 EA are incorporated herein by reference.

1.5 Public Concerns. Public concerns exist regarding the ability of the MRL and connecting levee systems to contain floodwaters during a flood event. Seepage could undermine the levee causing it to breach if unabated, which would 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.

## 2.0 ALTERNATIVES TO THE PROPOSED ACTION

Four alternatives were considered for the proposed action: 1) no-action; 2) construct landside seepage berms, 3) construct riverside slurry trenches, and 4) install relief wells with associated drainage work.

2.1 Alternative 1 – Future without Project Condition. In the future without project condition (no-action alternative), the proposed project 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 from underseepage resulting in sand boils. This could lead to a levee failure during a major flood event, resulting in property damage and could cause human injuries and/or loss of life. Flood events also cause scouring that removes topsoil and existing vegetation such as agricultural crops. The Corps determined that this alternative is not practicable or reasonable because of the risks to the human environment. If the seepage problem is not addressed, levee failure resulting in catastrophic impacts could ultimately result.

2.2 Alternative 2 – Construct Landside Seepage Berms. This alternative would involve construction of landside berms along the toe of the MRL to control seepage. Sutton Road parallels the landside toe of the levee throughout the project area. To construct a landside berm along the toe of the levee, Sutton Road and some existing residential buildings/houses would have to be relocated. Construction of berms landside of the road would impact a large percentage of the existing wetlands within the WRP, resulting in a permanent loss of the wetlands impacted. This action would also impact existing farmlands which would remove valuable acreage from production and cause monetary loss for landowners. In addition, the existing pumping station at Ditch 1 would be negatively impacted, as the pumping station would need to be relocated or replaced. Due to the negative impacts that would result from constructing landside berms, the Corps determined this alternative is not practicable or reasonable.

2.3 Alternative 3 – Construct Riverside Slurry Trenches: This alternative would involve constructing slurry trenches along the riverside toe of the MRL where seepage occurs. To adequately form a seepage barrier, a typical slurry trench in this area is constructed 90-feet deep and 3-feet wide. As part of site preparation, all vegetation would be cleared from 200 to 300 feet from the levee toe to allow sufficient room to construct the trench and to spread out the excavated material in preparation for mixing the soil with bentonite. Site preparation would remove an estimated 100 to 150 acres of BLH and associated wetlands and wildlife habitat. A slurry trench would also effectively cut off water flow to landside wetlands and water bodies within the project area, including the WRP area, Lake No. 9, Elbow Slough, Pond Slough, No. 8 Slough, and Fish Pond. Due to the extensive negative environmental impacts, the Corps determined this alternative is not practicable or reasonable.

2.4 Alternative 4 – Install Relief Wells and Associated Drainage Work. This alternative would involve installing 121 relief wells landside of the MRL, constructing new drainage ditches, clearing existing drainage ditches, and installing/replacing culverts as needed along roadways to ensure adequate drainage of the water from the relief wells. Installation of relief wells along the WRP easement shown in Figure 1 would require an approximate 50-foot easement from the toe of the levee that would be cleared of trees and maintained (mowed) to prevent tree roots from growing into the relief wells and levee and for monitoring the wells and adjacent areas, to determine the effectiveness of the wells in adequately capturing the seepage water. Therefore, NRCS would need to subordinate their WRP easement interest and modify the warranty easement deed on 4.6 acres to allow the relief wells to be placed and maintained in this area and for this mowing to take place. Currently, natural flooding and overland flow from the Mississippi River is excluded from the WRP easement area by the existing levee. The objective

of the WRP is to restore hydrology, and restore altered wetlands and associated habitat to the fullest extent practical. While unstable sand boils currently exist on the WRP easement as a natural occurrence (the flood levels in the Mississippi river seek a route under the levee system via a sand vein), temporary sandbagging reduces the flow volume during flood events. Seepage via the relief wells would improve hydrology to the WRP by providing sheet-flow of water along the 4,000-foot boundary with the levee. NRCS has stated that increased flow onto the WRP easement area is desirable in that this discharge would better mimic flood flows that would have occurred if the levee was not in place and would help improve restoration of hydrology on the easement area.

A bulldozer or excavator would be used to construct new drainage ditches, clean out existing ditches, and to install/replace culverts as needed. Specialized drill rigs would be used to drill the holes along the levee, and cranes would be used to install the relief wells. Silt fences would be utilized to contain any potential runoff. Vegetation cleared from existing ditches would be removed from the area. Earthen material would be spread on non-wet agricultural fields within a 300-foot right-of-way; however, no ditches or earthen material would be placed within the WRP acreage.

A total of approximately 73.1 acres would be impacted by Alternative 4, including 45.9 acres of non-wet agricultural lands, 1.6 acres of existing drainage ditches overgrown with grass and weeds, and 25.6 acres of wetlands. The 1.6 acres of existing drainage ditches are not classified as wetlands, but are instead non-jurisdictional, as per Section 404 of the Clean Water Act. The 25.6 acres of wetlands impacted by the proposed project include 4.6 acres of wetlands within the WRP easement currently consist of BLH tree saplings and various wetland grasses and sedges, 10.5 acres of wooded wetlands, and 10.5 acres of farmed wetlands.

Mitigation for impacts in the easement through the WRP land would occur within the existing WRP boundaries. Mitigation for these impacts would include planting BLH and/or cypress tree species on up to 13.8 acres of existing WRP land adjacent to the project footprint at project expense and as per a restoration plan developed in cooperation with, and approved by NRCS. To mitigate for the loss of the 10.5 acres of wetlands and wildlife habitat within the wooded wetlands, approximately 31.5 acres of prior converted cropland would be restored to BLH, or a comparable amount of forested wetland mitigation credits would be purchased from an approved mitigation bank. To mitigate for the loss of the 10.5 acres of farmed wetlands, approximately 10.5 acres of prior converted cropland would be restored to BLH, or a comparable amount of forested wetland mitigation credits would be purchased from an approved mitigation bank. Although a total of approximately 25.6 acres of wetland habitat would be impacted by Alternative 4, no significant adverse environmental impacts are associated with this alternative. All factors considered, Alternative 4 is the most practical solution for seepage control and is the preferred alternative for the proposed project assessed in this draft EA.

## 3.0 AFFECTED ENVIRONMENT

3.0.1 Environmental Setting. MVM biologists conducted a site visit of the Island 8 proposed project area on October 25, 2011 with a second site assessment conducted on February 9, 2012. Most of the lands within the project work area are existing farmlands currently in production. The existing ditches are normally dry throughout most of the year and contain water only during periods of heavy rain or when high water levels in the Mississippi River cause seepage under the levee. The ditches are bordered by farmlands currently in production and existing roadways. Habitat within the ditches along Ditch 5 and the upper half of Ditch 4 (Figure 3) are overgrown with grasses and weeds (e.g., Johnson grass and ragweed).

Approximately 5,100 feet of the lower half of Ditch 4 and 9,750 feet within the ditch along Ash Logging Road and Hwy 653 are wooded. Mature trees including oaks, dogwood, maple, boxelder, sycamore, hackberry, and cottonwood can be found within a 1,100-foot section of Ditch 4. The remaining 4,000 feet is dominated by immature trees, sumac, greenbrier, wild grape, Johnson grass, and ragweed. The ditch along Ash Logging Road and Hwy 653 is crossed by roadways and farmland, fragmenting the wooded ditch into four sections. The fragmented sections are dominated by mature trees, including pecan, cypress, walnut, oak, maple, cottonwood, dogwood, elm, hackberry, and sycamore. Understory species included thick tangles of trumpet creeper and wild grape growing within the tree branches, button bush, lizard's tail, ragweed, and giant cane. The site assessment on February 9, 2012 found that flooding within the ditch along Ash Logging Road had realigned the water flow within the ditch into the adjacent farmed field. The realignment avoids the existing trees at this area, and so would not require removal of the trees to clear the ditch.

The 4.6 acres of mixed wetland habitat in the 50-foot easement within the WRP is comprised of bottomland hardwood saplings dominated by cottonwood, and interspersed with willow, persimmon, elm, and overcup oak. Ground cover within the easement includes various species of grasses, sedges, and weeds. Several sand boils have formed near the toe of the levee along a 300 to 400-foot reach within the boundary of the WRP.

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 in July and 41 degrees Fahrenheit in January. Yearly precipitation averages 35 inches, while normal annual snowfall is less than 14 inches.

3.0.3 Geology. The soils in the landside proposed project areas are primarily Fluvaquents, which are somewhat poorly drained and occur chiefly as narrow strips that parallel levees where soil material has been excavated for use in constructing the levee. The soil base within the project area is no longer frequently flooded, as the MRL separates the project area from river flooding. Water flow from river floodwaters does occur within the project area via seepage under the existing levee. During periods of high water, sands and silts are carried under the levee and cause sand boils to form landside of the levee toe.

## 3.1 RELEVANT RESOURCES

This section contains a description of those resources that could be impacted by the proposed project. The important resources described in this section (Table 1) 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 not to be affected by the alternative under consideration: freshwater marshes, freshwater lakes, state-designated scenic streams, prime and unique farmlands, aquatic resources/fisheries, cultural resources, municipal facilities, municipal utilities, roadways, recreation, aesthetics, socio-economic, and environmental justice.

**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; 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 public places a high value on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes and other wetlands. |
| **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; and the Bald Eagle Protection Act of 1940. | U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Environmental Protection Agency, and Kentucky Department of Fish and Wildlife Resources 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. |
| **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. |
| **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. |

### 3.1.1 Wetlands

Existing Conditions: Mature trees including oaks, dogwood, maple, boxelder, sycamore, hackberry, and cottonwood can be found within an approximately 1,100-foot section of Ditch 4, with an additional approximately 4,000 feet dominated by immature trees, sumac, greenbrier, wild grape, Johnson grass, and ragweed. The drainage ditch along Ash Logging Road and Hwy 653 is crossed by roadways and farmland, fragmenting the wooded ditch into four sections. The fragmented sections are dominated by mature trees, including pecan, cypress, walnut, oak, maple, cottonwood, dogwood, elm, hackberry, and sycamore. Understory species included thick tangles of trumpet creeper and wild grape growing within the tree branches, button bush, lizard's tail, ragweed, and giant cane. A total of approximately 10.5 acres of wooded wetlands would be impacted by the proposed project.

In 2005, the Kentucky NRCS, in agreement with the landowner, purchased a WRP easement within a 137-acre farmland north of Fish Pond Road (Figure 1). The WRP site was restored through the planting of various bottomland hardwood species, including oaks, hickory, and persimmon, establishment of native grasses on identified archeological sites, and the construction of shallow water areas to restore some wetland hydrology. Water flow to the WRP site is currently via rainfall and seepage under the levee from existing sand boils during high water periods. Installation of relief wells along the toe of the levee that borders the WRP site would impact approximately 4.6 acres of wetland habitat within the 50-foot easement.

### 3.1.2 Wildlife

Existing Conditions: Wildlife species that could be expected to be found within the landside project area include coyotes, deer, raccoons, opossums, rabbits, gray and fox squirrels, mice, rats, shrews, songbirds, raptors, beavers, rail, gallinule, neo-tropical migratory bird, quail, woodcock, migratory waterfowl, and snakes.

### 3.1.3 Threatened and Endangered Species

Existing Conditions: Discussions with Mr. James Gruhala, U.S. Fish and Wildlife Service (USFWS), Ecological Services, Frankfort, Kentucky, Sub-Office, indicated that six federally listed or candidate species are known to be found within Fulton County, Kentucky, and within the adjacent Mississippi River. These species are the Indiana bat (*Myotis sodalis*), grey bat (*Myotis grisescens*), least tern (*Sterna antillarum*), pallid sturgeon (*Scaphirhynchus albus*), rabbitsfoot mussel (*Quadrula cylindrica*), and sheepnose mussel (*Plethobasus cyphyus*). Of these six species, only the endangered Indiana bat would potentially utilize the wooded habitat within the project areas. Grey bats are cave-dependant species, and caves are not found within the project area. Least terns nest and roost along isolated river sandbars, and the sturgeon and mussels are fisheries that would be found within the river, not landside within the project area.

The endangered Indiana bat is known to roost under loose bark of trees such as sycamore, and in snags. MVM biologists conducted a site visit of the Island 8 proposed project area on October 25, 2011. Several snags and mature sycamore trees were found within the proposed

project area at Pond Slough and the connecting drainage ditch along Ash Logging Road, thus representing potential roosting trees for the endangered bat.

The USFWS has documented three bald eagle nests riverside of the levee along Island 8, and stated that new or previously unidentified nests may be located in closer proximity. Although the bald eagle (*Haliaeetus leucocephalus*) was removed from the List of Endangered and Threatened Species, they are still protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

### 3.1.4 Hydrology and Water Quality

Existing Conditions: Water flow within the existing ditches and waterways within the proposed project area is subject to heavy rainfall and seepage flooding from the adjacent Mississippi River via sand boils under the levee. The existing drainage ditches are normally dry and would only have flowing water during periods of heavy rain. To minimize impacts to water quality, the proposed project activities would be conducted during dry or low water periods.

### 3.1.5 Air Quality

Existing Conditions: The proposed project area is in attainment for all air quality standards.

## 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 the Existing Conditions section 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 existing wetlands by scouring vegetation within the WRP area. Deposition of sand and gravel could also negatively impact wetlands.

Future Conditions with the Proposed Action: A total of approximately 25.6 acres of wetlands would be impacted by the proposed project, including 4.6 acres of wetlands within the WRP easement consisting of BLH tree saplings and various wetland grasses and forbs, 10.5 acres of wooded wetlands, and 10.5 acres of farmed wetlands. Mitigation for impacts in the easement through the WRP land would occur within the existing WRP boundaries. Mitigation for these impacts would include planting BLH and/or cypress tree species on up to 13.8 acres of existing WRP land adjacent to the project footprint at project expense and as per a restoration plan developed in cooperation with, and approved by NRCS that specifies the site preparation; location, size, density and species of trees to be established, and any post-site treatment to ensure tree survival. To mitigate for the loss of the 10.5 acres of wetlands and wildlife habitat within the wooded wetlands, approximately 31.5 acres of prior converted cropland would be restored to BLH, or a comparable amount of forested wetland mitigation credits would be purchased from

an approved mitigation bank. To mitigate for the loss of the 10.5 acres of farmed wetlands, approximately 10.5 acres of prior converted cropland would be restored to BLH, or a comparable amount of forested wetland mitigation credits would be purchased from an approved mitigation bank.

Within the 50-foot easement at the WRP site, approximately 4.6 acres of wetland habitat would be removed and native grasses and forbs established to allow for the control of woody vegetation though mowing. The vegetation would be established according to a restoration plan developed in cooperation with, and approved by NRCS. Mowing would occur during non-nesting periods, as prescribed by NRCS in the restoration and maintenance plan. All cost for vegetative planting, establishment, and mowing/maintenance on the WRP easement area would be borne by the project.

No ditch work would occur along the toe of the levee at the WRP site in order to allow seepage waters from the relief wells to flow along the natural topography of the land through the WRP site and to Fish Pond. Seepage via the relief wells would be a sheet flow of water that would inundate wetlands within the WRP site along a 4,000-foot reach of the levee.

### 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, impacts to wildlife resources would include the loss of approximately 4.6 acres of wetlands within the WRP easement currently consisting of bottomland hardwood (BLH) tree saplings and various wetland grasses and sedges and 10.5 acres of wooded wetlands within existing ditches and the associated wildlife habitat provided. Disturbance and noise from project-related activities would temporarily displace most wildlife species from the project work areas. The loss of habitat and temporary disturbance would not adversely impact the general population of wildlife species within the region, due to the extensive forested wetlands and comparable habitat readily available within the vicinity of the project area within Fish Pond and the forested wetlands along the riverside of the levee.

Mitigation for the loss of 4.6 acres of wetlands consisting of BLH tree saplings and wetland grasses and forbs within the WRP easement would be conducted within the existing WRP boundaries. Mitigation for these impacts would include planting BLH and/or cypress tree species on up to 13.8 acres of existing WRP land adjacent to the project footprint at project expense and as per a restoration plan developed in cooperation with, and approved by NRCS. To mitigate for the loss of the 10.5 acres of wooded wetlands, approximately 31.5 acres of prior converted cropland would be restored to BLH, or a comparable amount of forested wetland mitigation credits would be purchased from an approved mitigation bank. These forested wetlands are expected to provide valuable habitat needs for resident and migratory wildlife species. An additional 10.5 acres of planted bottomland hardwood species and associated

wildlife habitat or mitigation credits would result as mitigation for project impacts to approximately 10.5 acres of farmed wetlands.

### 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: With implementation of the proposed action, the proposed project action would remove approximately 10.5 acres of wooded wetlands, including several sycamore trees having loose bark and snags that may be potential roosting trees for the endangered Indiana bat. To avoid impacting the bats during the roosting season of April 1 to October 14, tree clearing activities would be avoided during this time frame. The loss of a few potential roosting trees for the endangered bat is not likely to adversely affect the general population of Indiana bats within the region due to the extensive forested wetlands and other woodlands readily available in the vicinity of the project area.

The existing levee would serve as a buffer to nesting bald eagles and so reduce disturbance from project-related noise. To avoid disturbance to potential nesting eagles, no overstory tree clearing or use of a chainsaw would be conducted with 660 feet of a bald eagle nest during the nesting season from January to July, as per the National Bald Eagle Management Guidelines published by the USFWS in May 2007. In addition, a survey for eagle nests would be conducted prior to the start of project activities and during the construction. Should a nest be found within 660 feet of the proposed project area, the USFWS, Ecological Services, Frankfort, Kentucky Sub-Office would be immediately notified for further guidance. With the implementation of the aforementioned restrictions, MVM has determined that the proposed project is not likely to adversely affect any threatened or endangered species.

The USFWS concurred with this determination by letter dated December 20, 2011, provided the restrictions to avoid impacting the Indiana bat and bald eagle are followed.

### 4.4 Hydrology and Water Quality

Future Conditions with No Action: Without implementation of the proposed action, continued seepage could undermine the levee causing it to breach. A levee breach would temporarily flood the surrounding lands with a high flow of turbid water that would be heavily laden with sediments from the levee. Existing water bodies in the area may have reduced oxygen levels as a result of flood waters.

Future Conditions with the Proposed Action: With implementation of the proposed action, hydrology landside of the levee would be as noted in the Existing Conditions section. Impacts to water quality within the existing ditches would be minimal or have no effect, as the project action would be conducted during dry or low water periods. Installation of the relief wells and

associated drainage work would maintain the existing hydrology landside of the levees by transporting seepage waters from the wells to the existing drainage ditches. No ditch work would occur along the toe of the levee at the WRP site, thus seepage from the relief wells would flow along the natural topography of the land to the WRP site and Fish Pond. In addition, cleaning out the existing drainage ditches would facilitate water flow through the ditches, which connect to other drainage ditches. Thus, no significant impacts to water quality would occur as a result of the proposed project action.

### 4.6 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, the 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. As the equipment to be used is a mobile source, the project is exempt from air quality permitting requirements. Although air emissions would not require a permit, best management practices shall be used throughout the construction to minimize air pollution.

### 4.7 Hazardous, Toxic, and Radioactive Waste (HTRW)

The USACE is obligated under Engineer Regulation (ER) 1165-2-132 to assume responsibility for the reasonable identification and evaluation of all HTRW contamination within the vicinity of the proposed action. 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 Web Page (http://maps.epa.gov). The web site was checked for any superfund sites, toxic releases, or hazardous waste sites within the vicinity of the proposed project area. Site inspection of the proposed project was conducted by MVM personnel on October 25, 2011. Environmental record search and the 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 Illinois Environmental Protection Agency.

### 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)."

A final SEIS, *Mississippi River Mainline Levees Enlargement and Seepage Control*, was completed in July 1998 to address all remaining work on the levee enlargement and seepage control project. However, the seepage problems at the proposed project locations were not anticipated when the SEIS was completed. Benefits resulting from cumulative effects in the SEIS included 1) the mitigation plan and borrow area reforestation which resulted in a net gain of 4,070 acres of BLH; 2) incremental impacts which resulted in a net gain in nationally significant habitat and environmental values; 3) the action would not improve or worsen any cumulative effects associated with the existing Mississippi River levees; 4) the project did not affect the hypoxia zone in the Gulf of Mexico; and 5) the environmental design and compensation features result in a net increase in terrestrial, wetland, waterfowl, and aquatic resource values such that no significant cumulative environmental impact resulted on an ecosystem, landscape, or regional scale.

Impacts of the proposed project action were evaluated during the preparation of this draft EA on the natural and human environment. A total of approximately 73.1 acres would be impacted by the proposed project, including 45.9 acres of non-wet agricultural lands, 1.6 acres of existing drainage ditches overgrown with grass and weeds, and 25.6 acres of wetlands. The 1.6 acres of existing drainage ditches are not classified as wetlands, but are instead non-jurisdictional, as per Section 404 of the Clean Water Act. The 25.6 acres of wetlands impacted by the proposed project include 4.6 acres of wetlands within the WRP easement currently consisting of bottomland hardwood (BLH) tree saplings and various wetland grasses and sedges, 10.5 acres of farmed wetlands, and 10.5 acres of wooded wetlands within existing ditches and farmed fields.

Mitigation for impacts in the easement through the WRP land would occur within the existing WRP boundaries. Mitigation for these impacts would include planting BLH and/or cypress tree species on up to 13.8 acres of existing WRP land adjacent to the project footprint at project expense and as per a restoration plan developed in cooperation with, and approved by NRCS. To mitigate for the loss of the 21.0 acres of wetlands and wildlife habitat within the farmed wetlands and wooded wetlands, approximately 42.0 acres of prior converted cropland would be restored to BLH, or a comparable amount of forested wetland mitigation credits would be purchased from an approved mitigation bank.

The 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 SEIS.

## 5.0 COORDINATION

Preparation of this draft EA and draft Finding of No Significant Impact (FONSI) have been coordinated with the project interagency environmental team. The team is comprised of representatives from USACE, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, U.S. Environmental Protection Agency, Kentucky Department of Natural Resources, Kentucky Environmental Protection Agency, and the Kentucky Natural Heritage Commission. In addition, this draft environmental assessment is being coordinated with these agencies:

Kentucky State Historic Preservation Officer, Kentucky Historic Preservation Program, federally recognized tribes, and other interested parties.

## 6.0 MITIGATION

A total of approximately 25.6 acres of wetlands would be impacted by the proposed project; including 4.6 acres of wetlands within the WRP easement consisting of BLH tree saplings and various wetland grasses and forbs, 10.5 acres of wooded wetlands, and 10.5 acres of farmed wetlands. Mitigation for project impacts to wetlands within the WRP easement and to wooded wetlands was calculated using a ratio of 3:1 for acres of mitigation required to acres of impacts. Mitigation for project impacts to farmed wetlands was calculated as a 1:1 ratio. Mitigation for impacts in the easement through the WRP land would occur within the existing WRP boundaries. Mitigation would include planting up to 13.8 acres with bottomland hardwood species. To mitigate for the loss of the 10.5 acres of wetlands and wildlife habitat within the wooded wetlands, approximately 31.5 acres of prior converted cropland would be restored to BLH, or a comparable amount of forested wetland mitigation credits would be purchased from an approved mitigation bank. To mitigate for the loss of the 10.5 acres of farmed wetlands, approximately 10.5 acres of prior converted cropland would be restored to BLH, or a comparable amount of forested wetland mitigation credits would be purchased from an approved mitigation bank.

## 7.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

By letter dated December 20, 2011, the USFWS agreed with MVM's determination that the proposed project action is not likely to adversely affect any threatened and endangered species. By letter dated April 9, 2012, the Kentucky Division of Water, Water Quality Certification Section, waived requirements for a state water quality certificate. Coordination is currently ongoing with the Kentucky Floodplain Management Section, Surface Water Permits Branch, to obtain a permit to construct across or along a stream. In addition, a Notice of Intent would be submitted to the Surface Water Permits Branch in order to obtain a general permit for stormwater discharges associated with construction activities. A Section 404(b)(1) Evaluation was prepared for the proposed project action on April 9, 2012 and submitted for public review along with the draft EA on May 8, 2012.

Coordination with NRCS is continuing throughout the development of this draft EA and related NEPA documentation. NRCS has provided guidance on mitigating for WRP wetland impacts; that guidance has been incorporated into this draft EA. NRCS would need to subordinate their WRP easement interest and modify the warranty easement deed on 4.6 acres to allow the relief wells to be placed and maintained on the easement area and authorize mowing.

### 7.1 Cultural Resources

In 2011 a cultural resources survey was conducted near Island No. 8 on approximately 133 acres of proposed relief wells and collector ditches in Fulton County, Kentucky. The project

area consisted of two different widths: 100 feet landward from the levee toe for the relief wells, and 50 feet on either side of the collector ditches. Six previously recorded sites (15FU34, 15FU35, 15FU55, 15FU64, 15FU137, and 15FU138) are mapped within the study area and their locations were revisited. Eleven previously unrecorded sites were identified, all of which are mid-twentieth century historic scatters.

Of the six previously recorded sites, one site is a floodgate structure currently being utilized, and the other five sites have been razed or otherwise destroyed. Three of the razed structures were newly recorded as archeological sites during this project. Two of the identified sites, 15FU55 and 15FU64 were recommended for further work when they were initially recorded due to the possibility of buried features. They are outside the current project area and will not be affected. However, they are close to the right of way and caution must be exercised to avoid these two sites. The remaining sites and structures all date from the early to middle part of the twentieth century and are recommended as not eligible for listing in the National Register of Historic Places. The Kentucky State Historical Preservation Officer determined that the proposed project would have no effect on historical properties by letter dated June 20, 2011. By e-mail on May 4, 2012, an archaeologist representing NRCS concurred with the findings concerning the archeological resources located within the WRP easement; therefore, no further archeological work is recommended for those locations.

### 7.2 Water Quality, State Certification

The proposed project action would be conducted during dry or low water periods, thus no significant impacts to water quality would occur as a result of the proposed project action. A Section 404(b)(1) Evaluation for the proposed project was completed on April 9, 2012 and submitted for public review along with the draft EA. The Kentucky Division of Water, Water Quality Certification Section, issued a waiver (#2012-012-W) for state water quality certification for the proposed project on April 9, 2012.

## 8.0 CONCLUSION

The proposed project involves seepage control measures along the Mississippi River mainline levee. A total of approximately 73.1 acres would be impacted by the proposed project, including 45.9 acres of non-wet agricultural lands, 1.6 acres of existing drainage ditches overgrown with grass and weeds, and 25.6 acres of wetlands. The 1.6 acres of existing drainage ditches are not classified as wetlands, but are instead non-jurisdictional, as per Section 404 of the Clean Water Act. The 25.6 acres of wetlands impacted by the proposed project include 4.6 acres of wetland habitat within the WRP easement, 10.5 acres of farmed wetlands, and 10.5 acres of wooded wetlands within existing ditches and farmed fields.

Mitigation for impacts in the easement through the WRP land would occur within the existing WRP boundaries. Mitigation for these impacts would include planting BLH and/or cypress tree species on up to 13.8 acres of existing WRP land adjacent to the project footprint at project expense and as per a restoration plan developed in cooperation with, and approved by

NRCS. The 50-foot easement needed along the entire length of the WRP easement would be planted with native grasses and forbs, and mowed according to the NRCS mowing dates established outside of the bird nesting seasons. To mitigate for the loss of the 21.0 acres of wetlands and wildlife habitat within the farmed wetlands and wooded wetlands, approximately 42.0 acres of prior converted cropland would be restored to BLH or a comparable amount of forested wetland mitigation credits will be purchased from an approved mitigation bank.

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. Hydrology for the WRP site north of Fish Pond Road would be via relief wells installed along the toe of the levee instead of existing sand boils. The water flow into the WRP site would be in the form of a sheet flow along the 4,000-foot border with the levee instead of the sand boils that have formed along a 300 to 400-foot reach of the levee. No ditch work would occur along the toe of the levee at the WRP site, thus seepage from the relief wells would flow along the natural topography of the land to the WRP site and Fish Pond.

Impacts to wildlife and air quality would be temporary, and would be 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, aquatic resources / fisheries, cultural resources, municipal facilities, municipal utilities, roadways, recreation, aesthetics, socio-economic, or environmental justice. Also, no significant adverse impacts would occur to wetlands, wildlife, threatened and endangered species, hydrology/water quality, air quality, or the human environment. Therefore, the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment; therefore, the preparation of a supplemental EIS is not required. The final FONSI was signed by the District Engineer on _____, 2012.

## 9.0 PREPARED BY

This EA and associated FONSI was prepared by Mr. Alan Bennett, biologist, with cultural resources information provided by Mr. Jimmy McNeil, archeologist. For additional information, contact Mr. Alan Bennett at (901) 544-4313, by email at alan.w.bennett@usace.army.mil, or by mail at USACE Memphis District, Attn: Alan Bennett, 167 North Main St., B202, Memphis, TN 38103-1894.