

# **DRAFT ENVIRONMENTAL ASSESSMENT**

## **Below Senath Seepage Remediation St. Francis River Basin Dunklin County, Missouri**

**January 2019**



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

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DRAFT

# DRAFT ENVIRONMENTAL ASSESSMENT

## **Below Senath Seepage Remediation St. Francis River Basin Dunklin County, Missouri**

### **1.0 INTRODUCTION**

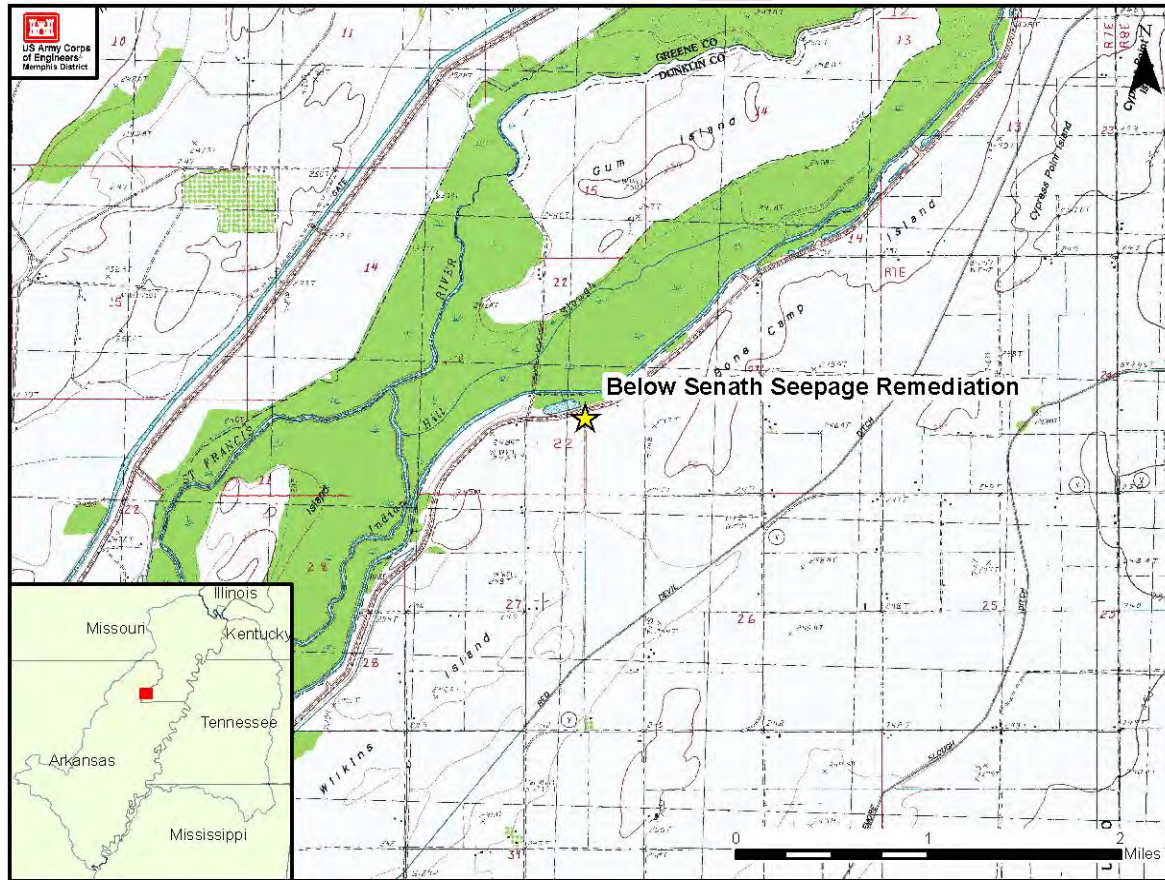
The U.S. Army Corps of Engineers (USACE), Mississippi River Valley Division, Regional Planning and Environmental Division South, has prepared this draft environmental assessment (EA) for Memphis District (MVM) to evaluate the potential impacts associated with seepage control measures at one location along the St. Francis Levee, near the town of Senath, Dunklin County, Missouri (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 (CEQ) 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 1973 EIS, *St. Francis Basin Project, Arkansas and Missouri*, addressed flood control measures to be implemented along the St. Francis River. However, since publication of the 1973 EIS, it has been determined that other flood control measures are needed along the St. Francis River within the MVM to prevent continued seepage and potential degradation of the levee. During high water events in the St. Francis River in 2011, 2015, and 2017, seepage issues were observed at the proposed project location.

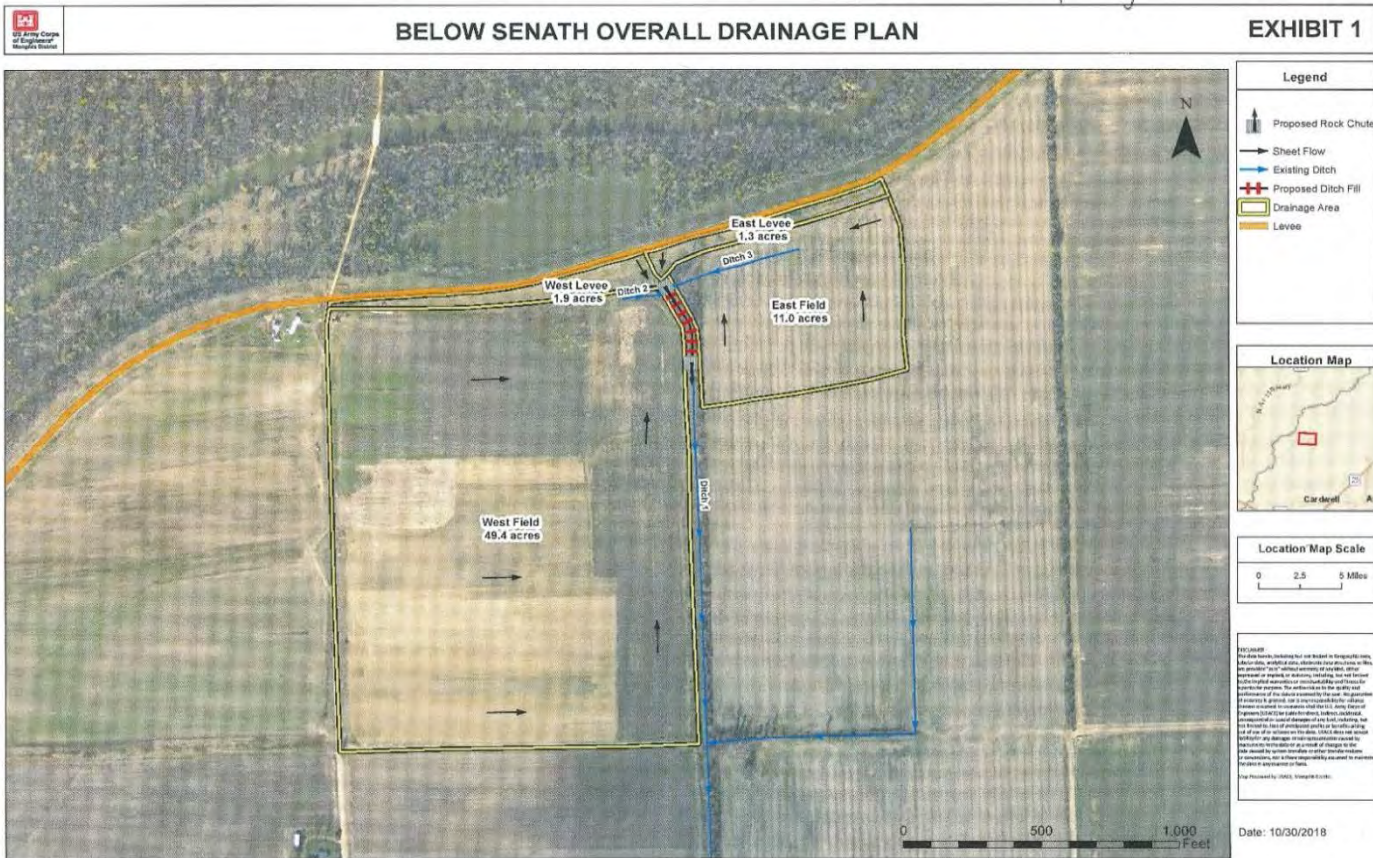
### **1.1 PROPOSED ACTION**

The proposed project involves implementing seepage control measures along the St. Francis Levee in Dunklin County, Missouri. Project features for the proposed seepage control action includes modifying existing ditches, placement of borrow material into existing ditches, and constructing a rock chute structure in an existing ditch (Figure 2). Access to the project area would be from County Road 611. A bulldozer and excavator would be used to modify and fill the existing ditches. Although two inlet ditches would be re-directed towards a grass lined swale, ditch layout would remain largely the same. Ditch 1 would be filled to a maximum depth of 5 feet approximately 300 feet from the intersection of Ditches 2 and 3 and would transition back to existing grade via a riprap chute transition structure. Where Ditches 2 and 3 enter Ditch 1, a riprap apron would be constructed to reduce erosion potential. Approximately 1,450 cubic yards (CY) of material would be used to fill Ditch 1 and approximately 500 tons of R-400 riprap and 145 tons of bedding material would be needed to create the transition structure at the Ditch 1, 2, and 3 confluence area. Ditch 1, post-improvement, would still be able to handle the 100 year flood event with 1 foot of freeboard. Ditches 2 and 3, post-improvement, would also have their capacity increased to more easily pass a 100 year flood event.



**Figure 1. Location of Proposed Seepage Remediation Project, Dunklin County, Missouri.**





**Figure 2. Proposed ditch modifications and alignments for the proposed Below Senath Seepage Remediation Project, Dunklin County, Missouri.**

## **1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION**

The purpose of the proposed action is to control seepage under the St. Francis Levee, and reduce flood risk, flood damages, and flood protection costs resulting from flood events on the St. Francis River. The proposed project would bring the existing infrastructure into compliance with current Engineering Manuals and ERs.

## **1.3 AUTHORITY FOR THE PROPOSED ACTION**

The proposed action is authorized as part of the Flood Control Act (FCA) of 15 May 1928 as amended by the Acts of 15 June 1936, 18 August 1941, 24 July 1946, 17 May 1950, 27 October 1965, and 13 August 1968. These Acts provided for the construction, enlargement, and strengthening of the levees of the St. Francis Basin Project to safely pass the floodwaters of the St. Francis River and its tributaries.

## **1.4 PUBLIC CONCERNS**

Public concerns exist regarding the ability of the St. Francis Levee system 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. High water events in the St. Francis River in 2011, 2015, and 2017 have heightened public concerns.

## **2.0 ALTERNATIVES TO THE PROPOSED ACTION**

Five alternatives to the proposed action were considered. These alternatives were: No-action; the filling in of the existing ditch along the levee toe, construction of landside seepage berms, installation of impervious cutoff walls, and installation of relief wells.

### **2.1 ALTERNATIVE 1 – FUTURE WITHOUT PROJECT CONDITION**

In the future without project condition (a.k.a. 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 would result in property damage and could cause human injuries and/or loss of life.

### **2.2 ALTERNATIVE 2 – FILLING IN OF THE EXISTING DITCH**

The proposed project action for this alternative involves implementing seepage control measures along the St. Francis Levee. Project features for the proposed seepage control action includes filling approximately 300 feet of Ditch 1 to prevent seepage and sand boils within the ditch and creating a riprap transition structure at the confluence of Ditches 1, 2, and 3 to minimize erosion and scour. Fill material would be obtained from borrow pit(s) located in a nearby agricultural field.

## **2.3 ALTERNATIVE 3 – LANDSIDE SEEPAGE BERMS**

This alternative involves constructing a berm along the landside toe of the St. Francis Levee to control seepage under the levee. Large quantities of suitable soils would need to be obtained from borrow areas located at the project site or hauled in from an off-site location. Additional time required to locate a suitable borrow source and to obtain the land or borrow rights would delay project implementation. Furthermore, if the borrow areas were to be located in wooded or farmed wetlands, additional adverse environmental impacts would result and increase costs for project compensatory mitigation requirements. Impacts to local roadways and the public use of those roads would also result, as haul trucks would be needed to transport the tons of material to the project site.

## **2.4 ALTERNATIVE 4 – IMPERVIOUS CUTOFF WALLS**

This alternative would involve constructing an impervious cutoff wall (slurry trench) riverside of the St. Francis Levee to control seepage under the levee. Impervious cutoff walls would have to penetrate the entire aquifer to be effective, and could potentially adversely impact groundwater recharge.

## **2.5 ALTERNATIVE 5 – RELIEF WELLS**

Under this alternative, relief wells would be installed along the landside toe of the St. Francis Levee. Additionally, existing ditches or excavation of new outlet ditches may be required to provide adequate drainage for seep water.

## **2.6 PREFERRED ALTERNATIVE FOR THE PROPOSED PROJECT**

After careful consideration of all alternatives, it was determined that Alternative 1 (no action) was unacceptable. Alternative 2 (filling in existing ditches) would create the least environmental impacts and be the most cost effective alternative studied. Alternative 3 (landside berms) was not considered practical due to the adverse environmental effects and the close proximity of the St. Francis River. Alternative 4 (impervious cutoff walls) was not considered feasible due to the high cost of construction associated with the extreme depth of the aquifer in the project area. Alternative 5 (relief wells) was not considered practical due to the cost associated with placing relief wells every 50 feet within the project reach. Therefore, Alternative 2 was selected as the preferred plan.

## **3.0 AFFECTED ENVIRONMENT**

### **3.0.1 ENVIRONMENTAL SETTING**

The proposed seepage control project is located in Dunklin County, Missouri. Within the project area, properties on the landside of the levee surrounding the proposed work sites are dominated by large, row crop agricultural production. However, in the batture (riverside of the levee), land is primarily occupied by bottomland hardwood forest 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 ditch proposed to receive fill (Ditch 1) to provide back pressure to prevent sand boils, and have rip-rap placed to prevent scour occupies approximately 0.1 acres designated as Waters of the U.S. The east bank of the ditch is dominated by sugarberry, silver maple, hickory, and cottonwood (Figure 3); however, the west bank of the ditch is not treed. Ditches 2 and 3 are dry throughout most of the year, covered in various grasses and forb species, farmed to top bank on the south side and bound by maintained levee toe on the north side, and function as wet weather conveyances (Figure 4). Thus, these ditches are not considered Waters of the United States.

### **3.0.2 CLIMATE**

Dunklin County has a humid subtropical climate with cool winters and hot summers. Summertime high temperatures average in the 90s (degrees Fahrenheit), whereas the average wintertime lows are in the 30s (degrees Fahrenheit). The average annual precipitation is approximately 50 inches, generally spread out over the year.

### **3.0.3 GEOLOGY**

The study area is located on braided relict alluvial fan deposits. The material within these types of deposits generally consist of approximately 5 to 15 feet of clay with occasional layers of fine sand and silt.

The major soil association of the project area is of the Lilbourn fine sandy loam series with Sharkey silty clay. Lilbourn soils are somewhat poorly drained, nearly level soils on natural levees. The Sharkey series are deep, nearly level, poorly drained soils on slack-water flats. The soils in the vicinity of the potential borrow pit are Lilbourn fine sandy loam and Dubbs-Silverdale, rarely flooded. Dubbs-Silverdale soils are deep, well-drained, nearly level soils on natural levees.



**Figure 3. Existing condition of Ditch 1, which is proposed to receive fill, Dunklin County, Missouri.**



**Figure 4. Existing condition of adjacent ditches (Ditch 3 shown), Dunklin County, Missouri.**

### **3.1 RELEVANT RESOURCES**

This section contains a description of relevant resources that could be impacted by the project. The important 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 under the alternative being considered: bottomland hardwood forest, freshwater marshes, freshwater lakes, state-designated scenic streams, fisheries, municipal facilities, municipal utilities, roadways, recreation, aesthetics, socio-economic, and environmental justice.

#### **3.1.1 AGRICULTURAL LANDS**

##### Existing Conditions

The existing ditches proposed for modification transect, and are adjacent to, agricultural fields currently in production. The U.S. Department of Agriculture Web Soil Survey (<https://websoilsurvey.nrcs.usda.gov/app/>) was utilized to determine if any prime farmland was noted within the proposed projects construction limits. The inquiry revealed that although some land in the vicinity of the proposed project is considered prime farmland, none has been noted within the proposed construction limits.

#### **3.1.2 WETLANDS**

##### Existing Conditions

The ditch proposed to receive approximately 300 linear feet of fill, Ditch 1, can be described as Waters of the United States due to its groundwater influence, remaining wet throughout the year. Approximately 0.1 acres of Ditch 1 would be filled. The two inlet ditches (Ditches 2 and 3) are primarily wet weather conveyances and thus not considered Waters of the United States.

#### **3.1.3 WILDLIFE**

##### Existing Conditions

Wildlife species that could be expected to be found within or in the vicinity of 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 within the St. Francis River Basin.

**Table 1: Relevant Resources**

<b>Resource</b>	<b>Institutionally Important</b>	<b>Technically Important</b>	<b>Publicly Important</b>
<b>Agricultural Lands</b>	Food Security Act of 1985, as amended; the Farmland Protection Policy Act of 1981	The habitat provided for the provision or potential provision of human and livestock food products.	The present economic value or potential for future economic value.
<b>Wetlands</b>	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; Estuary Protection Act of 1968; Executive Order 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.
<b>Wildlife</b>	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.
<b>Threatened and Endangered Species</b>	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 Missouri Department of Natural 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.
<b>Cultural Resources</b>	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.
<b>Air Quality</b>	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.
<b>Hydrology and Water Quality</b>	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.

### **3.1.4 THREATENED AND ENDANGERED SPECIES**

#### Existing Conditions

According to results obtained from the U.S. Fish and Wildlife Service (USFWS), there are a total of three threatened, endangered, or candidate species that could potentially be found within the proposed project area. These species are the Indiana bat (*Myotis sodalis*), grey bat (*M. grisescens*), and northern long-eared bat (*M. septentrionalis*). Of these species, only the endangered Indiana bat and threatened northern long-eared bat would potentially utilize the forested habitat within the project areas. Grey bats are cave-dependent species, and caves are not found within the project area.

In the summer of 2018, USACE biologists conducted a site assessment of the proposed project area. Scattered vegetation within the ditches proposed for modification was examined for the presence of suitable/potential habitat for the Indiana and northern long-eared bat. Dominant tree species include sugarberry, silver maple, hickory, and cottonwood; of which, some tree species were documented being larger than 3 inches diameter at breast height, although no evidence of suitable roost trees (snags or live trees with exfoliating bark, cracks, crevices, or hollows) were observed. Therefore, USACE biologists conducted an acoustical bat survey following the USFWS 2018 Range-Wide Indiana Bat Summer Survey Guidelines. The results of the survey failed to identify the presence of the Indiana and northern long-eared bat. Furthermore, habitat within the proposed project area is not considered critical habitat by USFWS for any potential species.

### **3.1.5 CULTURAL RESOURCES**

The National Historic Preservation Act of 1966 (Public Law 89 80 655), as amended; NEPA of 1969 (Public Law 91-90), as amended; and other applicable laws and regulations require Federal agencies to take into account the effects of their undertaking on the environment and any significant cultural resources within the project area of the proposed undertaking, as well as its area of potential effect (APE). Typically, these studies require archival searches and field surveys to identify any cultural resources. When significant sites are recorded, efforts are made to minimize adverse effects and preserve the site(s) in place. If any significant sites cannot be avoided and would be adversely impacted, an appropriate mitigation plan would be implemented to recover data that would be otherwise lost due to the undertaking.

#### Existing Conditions

A literature review and cultural resources survey within the project's APE was previously completed by the MVM archaeologist. The investigation revealed no identified cultural resources within the proposed project footprint. The proposed borrow area would be surveyed upon finalization of real estate with appropriate actions taken to comply with state and Federal laws.

### **3.1.6 AIR QUALITY**

#### Existing Conditions

**Below Senath Seepage Remediation  
January 2019**

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

The proposed project area is in attainment for all air quality standards. Since the equipment to be used is a mobile source, the project is exempt from air quality permitting requirements. Although air emissions will not require a permit, best management practices shall be used throughout the construction to minimize air pollution.

### **3.1.7 HYDROLOGY AND WATER QUALITY**

#### Existing Conditions

In addition to the main ditch, there are two inlet ditches within the proposed project footprint. The inlet ditches are wet weather conveyances while the main ditch is fed year-round by groundwater. All ditches drain adjacent agricultural fields. Water flow within the existing ditches and waterways within the proposed project area is dependent on heavy rainfall, groundwater, and seepage under the levee from the adjacent St. Francis River.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 AGRICULTURAL LANDS**

#### Future Conditions with No Action

Without implementation of the proposed action, agricultural lands (prime and unique farmland) 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 existing agricultural lands through erosion and excess deposition of sand and gravel.

#### Future Conditions with the Proposed Action

With implementation of the proposed action, agricultural lands (prime and unique farmland) within the project area would be expected to remain as noted in Existing Conditions. This is attributed to the fact that the proposed project construction limits do not contain any prime and unique farmland. However, once finalized, the proposed borrow location would also be investigated to determine the presence of prime and unique farmland. Should any be noted, coordination with the Natural Resources Conservation Service would occur.

### **4.2 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 the adjacent levee remains stable. However, continued seepage could lead to a levee failure during a major flood event. Floodwaters could negatively impact wetlands within the project area through erosion and excess deposition of sand and gravel.

#### Future Conditions with the Proposed Action



With implementation of the proposed action, approximately 0.1 acres Waters of the U.S. are anticipated to be impacted by placing fill material within Ditch 1. However, it is anticipated that post-construction, wetland characteristics within the ditch would return to those noted in Existing Conditions. All work along Ditch 1 would be conducted from the west bank; therefore, no bottomland hardwoods will be impacted.

As the area proposed to be impacted is less than 0.1 acres, the proposed project qualifies for Nationwide Permit 18 (Minor Discharges). Thus, a section 404(b)(1) evaluation and compensatory mitigation would not be required.

#### **4.3 WILDLIFE**

##### Future Conditions with No Action

Without implementation of the proposed action, 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, wildlife resources within the project footprint are not anticipated to be impacted by the clearing of scattered vegetation within in project area ditches. However, disturbance and noise from the construction equipment would temporarily disperse wildlife species from the project area. Once the project is completed, wildlife species would be expected to return to the project area. The minor habitat loss 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.

#### **4.4 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

At the time of coordination with USFWS, minimal tree clearing was anticipated. However, further analysis revealed that tree clearing is no longer required for construction. Based on the project and surveys of the project area, USACE has determined the proposed project would have no effect on threatened or endangered species. Additionally, no evidence of bald eagles, or their nests, were observed at any project location. The bald eagle is no longer listed as a threatened species, but is still protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act.

## **4.5 CULTURAL RESOURCES**

### Future Conditions with No Action

Without implementation of the proposed action, any potential 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, no impacts to cultural resources are anticipated as there are no historic properties listed or determined eligible for inclusion in the National Register for Historic Places. 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).

## **4.6 AIR QUALITY**

### Future Conditions with No Action

Without implementation of the proposed action, no changes 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. Since the equipment to be used is a mobile source, the project is exempt from air quality permitting requirements. Although air emissions will not require a permit, best management practices shall be used throughout the construction to minimize air pollution.

## **4.7 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 noted as 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

With implementation of the proposed action, hydrology riverside of the levee is expected to remain as noted in Existing Conditions. Impacts to water quality within the St. Francis River would be minimal or have no effect, as the river normally carries a heavy sediment load and the project action would be conducted during dry or low water periods. Modifying the existing drainage ditches would increase their discharge capacity, allowing them to handle in excess of

100-year flood events. The project would have only minor impacts on water quality to adjacent areas. Turbidity and suspended solids would be increased to minor degrees as a result of runoff from cleared areas. However, 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. As noted in Section 4.2, the proposed project qualifies for Nationwide Permit 18 (Minor Discharges), as the area proposed to be impacted is less than 0.1 acres. The Missouri Department of Natural Resources re-issued state water quality certification in May 2014 for the Nationwide Permit as it applies to water within the state. Thus, state water certification would not be required.

#### **4.8 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE**

The USACE is obligated under 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 website was checked for any superfund sites, toxic releases, or hazardous waste sites within the proposed project area. Additionally, a site inspection of the proposed project was conducted by USACE personnel during the summer of 2018. 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 assessment, it was concluded that the probability of encountering HTRW for the proposed action is minimal. If any hazardous waste/substance is encountered during construction activities, the proper handling and disposal of these materials would be coordinated with the Missouri Department of Environmental Quality, EPA, and other applicable agencies.

#### **4.9 CUMULATIVE IMPACTS**

The CEQ regulations (40 CFR 1500-1508) implementing the procedural provisions of the 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.”

Three additional similar seepage remediation projects in the vicinity of the project area are proposed for construction in the near future and are currently under design. These three projects will be the subject of their own separate environmental assessment at a future date. These projects are: Below Kennett/Drainage Ditch 48 seepage remediation; Below Piggott seepage remediation; and Big Island seepage remediation. Landside berms would be constructed and some ditches may be filled in or re-routed to reduce potential seepage concerns. As the berms would be located on existing levees and adjacent agricultural land, and all efforts would be made

to locate borrow material from non-wet agricultural fields, no significant adverse environmental effects are anticipated.

The proposed Big Island project area is located on the western side (in Arkansas) of the St. Francis River and is located approximately 5.5 miles south of the proposed Below Senath location. The proposed Below Piggott project area is located on the western side (in Arkansas) of the St. Francis River and is located approximately 12 miles north of the proposed Below Senath location. The proposed Below Kennett/Drainage Ditch 48 project area is located on the eastern side (in Missouri) of the St. Francis River and is located approximately 12 miles north of the proposed Below Senath location.

Both the proposed Big Island and Below Piggott projects will be covered by one environmental assessment with any unavoidable project impacts within that document. The proposed Big Island preliminary design calls for filling in some ditches with the creation of additional ditches to direct flow away from the levee along the approximate 2.5 mile long project. Two berm areas of approximately 5.5 acres total are proposed. The proposed Below Piggott project preliminary designs call for filling in some ditches with the creation of additional ditches to direct flow away from the levee along the approximate 10 mile long project. Preliminary designs call for an approximate 150 foot wide berm constructed along the length of the project. In some locations, this berm may be extended no wider than 300 feet to counter calculated localized seepage. As there are very little existing trees or wetlands in the adjacent agricultural land, the environmental impacts of this proposed project would be minimal.

The proposed Below Kennett/Drainage Ditch 48 would require approximately 625,000 cubic yards of fill over the approximately 7 mile long project. Preliminary designs call for an approximate 150 foot wide berm the length of the project along with some ditch construction. In some locations, this berm may be extended no wider than 300 feet to counter calculated localized seepage. As final berm locations and lengths have not been identified, actual environmental impacts cannot be finalized but for planning purposes, approximately 18 acres are assumed to be unavoidable environmental impacts. As detailed designs become available, some berms are anticipated to be replaced by filling in ditches and constructing new ditches; and adverse impacts would be reduced.

All four proposed projects are located in rural, agricultural fields adjacent to the St. Francis River. Any water quality or hydrologic impacts would be temporary in nature and would occur during construction. All post-project hydrology would be similar to pre-project hydrology. 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. Agricultural land within all of the proposed berm footprints would be impacted by permanent easements prohibiting farming activities on the berms. These berms would be required to be maintained in grasses and forbs. With the removal of lands from agricultural production a slight improvement in overall water quality in the region may be seen. There may be impacts to wetlands by the other proposed projects, but any unavoidable impacts would be mitigated. If mitigation is required, suitable sites adjacent to the project area would be most desirable. However, if no willing sellers are identified, land that would be of most ecological value would be acquired, with a goal of enhancing ecosystem connectivity. Wildlife impacts would be

minimal throughout all proposed project areas as the interior wooded batture of the St. Francis would not be disturbed.

Therefore, the analysis set forth in this report indicates that no significant beneficial or adverse impacts to the various resources within the project area are anticipated under either the future with-project conditions scenarios, or the future without-project conditions scenario; therefore, the proposed action, coupled with other known proposed projects, are not expected to result in significant cumulative impacts. The three proposed projects would, in addition to the current project, provide for the continued integrated protection of lands in this part of the St. Francis Levee system.

## **5.0 COORDINATION**

Preparation of this draft EA and draft FONSI is being coordinated with appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties. The following agencies have received copies of this EA and draft FONSI: USFWS, U.S. Environmental Protection Agency, Missouri Department of Environmental Quality, Missouri Department of Conservation, federally recognized tribes, and other interested parties.

## **6.0 MITIGATION**

With the implementation of the proposed project, approximately 0.1 acres of Waters of the U.S. are anticipate to be impacted. However, as previously noted, the proposed project qualifies for Nationwide Permit 18 (Minor Discharges), as the area proposed to be impacted is less than 0.1 acres. The Missouri Department of Natural Resources re-issued state water quality certification in May 2014 for the Nationwide Permit as it applies to water within the state. Thus, no mitigation would be required for the proposed action.

## **7.0 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 on the impact analysis documented in this draft EA. The draft FONSI will not be signed until the proposed action achieves environmental compliance with applicable laws and regulations.

### **7.1 THREATENED AND ENDANGERED SPECIES**

In the summer of 2018, the proposed project area was surveyed acoustically in accordance with the USFWS 2018 Range-Wide Indiana Bat Summer Survey Guidelines. The presence of *Myotis grisescens* was indicated within the project footprint and the presence of *M. septentrionalis* could not be ruled out upon qualitative review of the data. USACE has determined that project activities will not affect with bat species since no trees will be cleared.

## **7.2 CULTURAL RESOURCES**

A literature review and cultural resources survey within the Project's Area-of-Potential-Effect (APE), including the proposed borrow location, were completed by the MVM archaeologist in the summer of 2018. The proposed project APE was previously cleared during construction of the St. Francis Levee. However, final permission to utilize the borrow area has not been obtained at this time.

No significant cultural resources were identified within the Below Senath APE. No additional cultural resources investigations are recommended prior to project implementation. However, should 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).

## **8.0 CONCLUSION**

The proposed work involves implementing seepage control measures along the St. Francis Levee. Project features consist of modifying existing ditches, placement of borrow material into existing ditches, and constructing a rock drop structure in an existing ditch. A total of 0.1 acres of Waters of the U.S. are anticipated to be impacted by the proposed project. However, as the impact is less than 0.1 acres, the proposed action qualifies for Nationwide Permit 18 (Minor Discharges). The Missouri Department of Natural Resources re-issued state water quality certification in May 2014 for the Nationwide Permit as it applies to water within the state. Thus, no mitigation, Section 404(b)(1) Evaluation, or state water quality certification would be required.

This office has assessed the environmental impacts of the proposed action and has determined that the proposed action is expected to have only minor impacts on agricultural lands, wildlife, air quality, and hydrology and water quality. Impacts to wildlife, air quality, and hydrology and water 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 significant impacts on the following resources: wetlands, terrestrial resources, bottomland hardwood forests, wildlife, threatened and endangered species, cultural resources, aesthetics, socio-economic resources, environmental justice, air quality, or hydrology and water quality. It was also determined that the risk of encountering hazardous, toxic, and radioactive waste is low. Therefore, a supplemental EIS is not required.

## **9.0 PREPARED BY**

This draft EA and associated draft FONSI was prepared by Kevin Pigott, USACE biologist, with cultural resources information provided by Pamela Lieb, USACE District Archaeologist. The address of the preparers is: U.S. Army Corps of Engineers, Memphis District, Regional Planning Division South, Environmental Compliance Branch, 167 North Main St., B-202, Memphis, TN 38103-1894.