

FINAL ENVIRONMENTAL ASSESSMENT

Below Piggott and Big Island Seepage Remediation St. Francis River Basin Clay and Greene Counties, Arkansas

March 2020



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

**St. Francis AR Seepage Remediation
March 2020**

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Regional Planning and Environmental Division South**

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FINAL ENVIRONMENTAL ASSESSMENT

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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 draft environmental assessment (EA) for the Memphis District (MVM) to evaluate potential impacts associated with proposed seepage control measures at two locations along the St. Francis Levee, near the town of Piggott, Clay County, Arkansas, and near the town of Paragould, Greene County, Arkansas (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 to prevent continued seepage and potential degradation of the St. Francis Levee. During recent high water events within the St. Francis Basin, seepage issues were observed at the proposed project locations.

1.1 PROPOSED ACTION

The proposed project involves implementing two seepage control measures along the St. Francis Levee in Clay and Greene counties, Arkansas. Project features include the construction of landside berms and modification of existing ditches to accommodate drainage and for loss of existing ditches by berm construction (Figure 2). Access to the project area will be from county roads or from roads on top of the levee. Heavy construction equipment will be used to modify and fill the existing ditches and construct berms. Post-construction hydrology will be similar to pre-existing conditions for both proposed projects.

Below Piggott

The proposed project reach/area is approximately 9.5 miles long, extending from just north of U.S. Highway 90 south along the existing St. Francis River levee. Proposed berms will be between approximately 150 – 300 feet wide, depending on location. However, berms will not be required along the entirety of the 9.5-mile project reach, as seepage concerns in some areas will be addressed through ditch modification or creation. Throughout the 9.5 mile project reach,

existing ditches will be filled and new ditches constructed approximately 170 feet from the existing levee toe (Figure 1).

Approximately 1,032,000 cubic yards of spoil material from previous maintenance activities on the St. Francis River will be utilized for borrow material (Below Highway 90 Channel Maintenance Cleanout). However, approximately 0.2 acres of trees will be required to be cleared to establish access to the borrow source. This clearing is added to the overall project mitigation requirements. The borrow area identified is riverside of the proposed project area.

Big Island

The proposed project reach/area is approximately 2.5 miles long, extending from U.S. Highway 412 south along the existing Big Slough levee. Two berms, approximately 2,500 and 1,000 feet long and approximately 150 feet wide, are proposed. As the case with the Below Piggott reach, existing ditches will be filled by the constructed berm and new ditches constructed approximately 20 feet from the constructed berm toe (Figure 2). Borrow is proposed to be obtained from a 40-acre cleared agricultural field riverside of the existing levee approximately 1.5 miles south of project reach/area. However, unlike the Below Piggott portion, proposed work at Big Island will be split into two phases. Phase I will consist of the major portion of the 2,500-foot berm (the approximate lower half of the project reach) and will be truncated at the property line of the downstream landowner. Additionally, to preserve current hydrology, Phase I will be designed to receive existing runoff, as well as anticipated runoff from Phase II work to the north, which will consist of the remaining 1.25 miles of the project reach. Upon completion of construction activities, the levee will be re-graveled from the borrow location north to Highway 412. Please note that finalized design plans for Phase II are not yet complete, but contain enough details to calculate potential environmental impacts. Anticipated impacts based on Phase II preliminary designs have been estimated and accounted for in this EA's impact assessment and mitigation recommendations. If the Phase II design changes significantly from current design or requires additional mitigation, this EA will be updated to reflect the new design and mitigation requirements and re-submitted for public review.

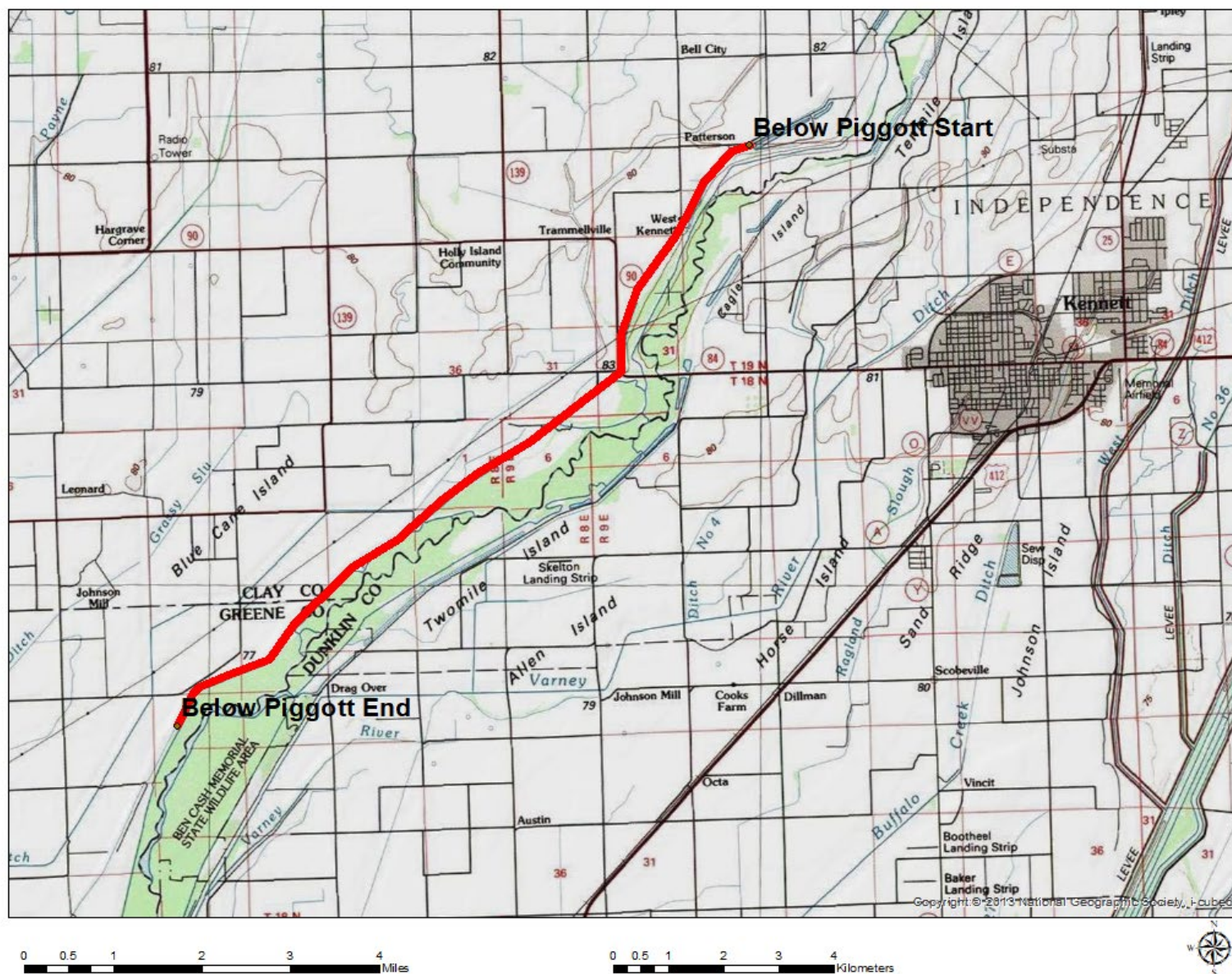


Figure 1. Location of Proposed Below Piggott Seepage Remediation Project, Clay and Greene County, Arkansas.

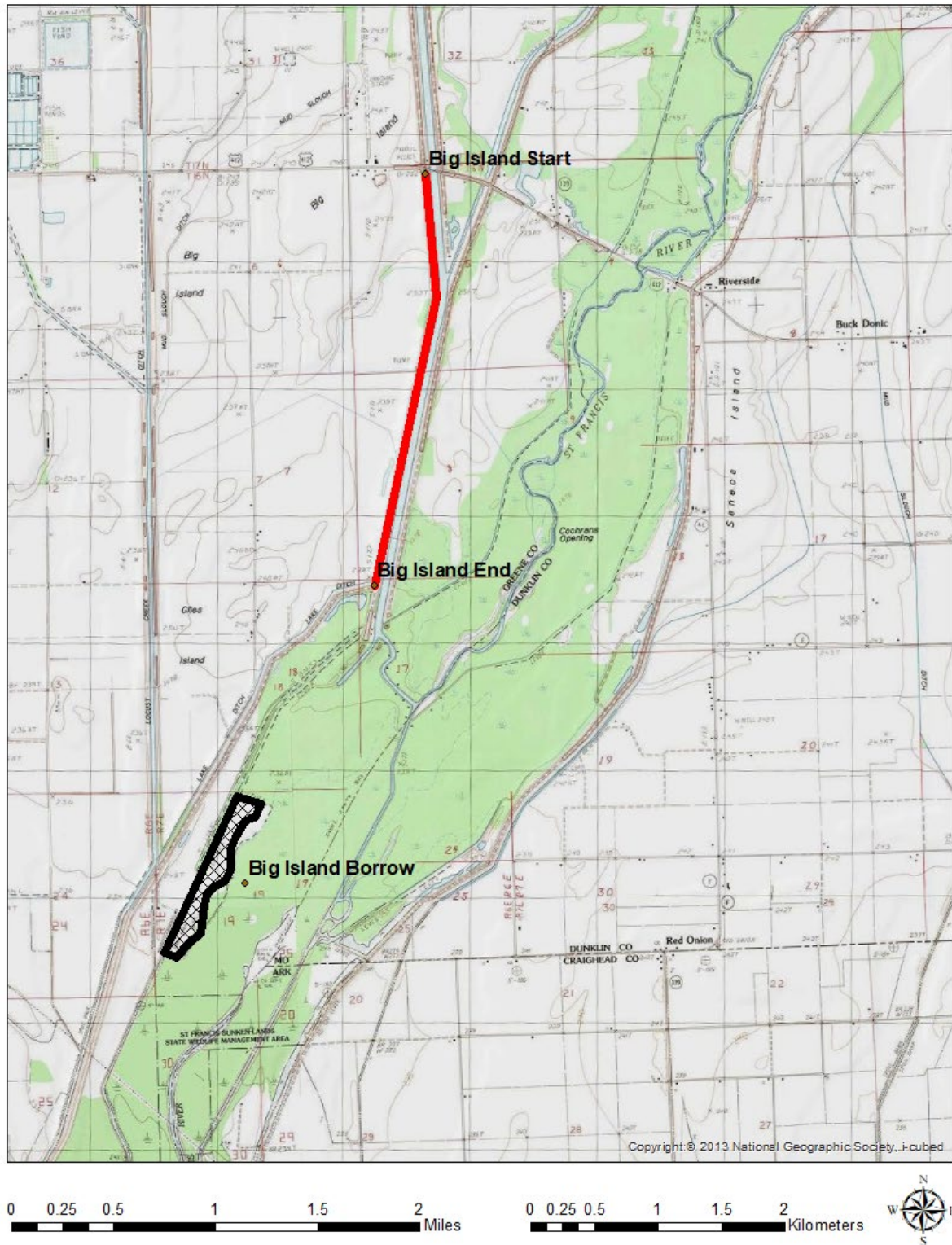


Figure 2. Location of Proposed Big Island Seepage Remediation, Greene County, Arkansas.

**St. Francis AR Seepage Remediation
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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 will 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 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 can 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. Recent high water events within the St. Francis Basin have heightened public concerns.

2.0 ALTERNATIVES TO THE PROPOSED ACTION

Six alternatives to the proposed action were considered. These alternatives were: (1) No-action; (2) the filling in of the existing ditch along the levee toe only; (3) construction of landside seepage berms only; (4) construction of landside seepage berms and filling in of the existing ditches; (5) installation of impervious cutoff walls; and (6) the installation of relief wells. Alternative 5 (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 6 (relief wells) was not considered practical due to the cost associated with placing relief wells every 50 feet within the project reach. These two alternatives were eliminated during the screening process.

2.1 ALTERNATIVE 1 – FUTURE WITHOUT PROJECT CONDITION

In the future without project condition (a.k.a. no-action), the proposed action will not be constructed. The no-action alternative will result in continued seepage during flood conditions. Sands and silts will be carried under the levee, potentially causing sand boils. This can 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 ONLY

The proposed project action for this alternative involves filling existing ditches adjacent to the St. Francis Levee to prevent seepage and sand boils within the ditch. Fill material will be obtained from previously identified borrow locations.

2.3 ALTERNATIVE 3 – LANDSIDE SEEPAGE BERMS ONLY

This alternative involves constructing only landside berms along the St. Francis Levee approximately 300 feet wide using fill material from previously identified borrow locations. Large quantities of suitable soils will need to be obtained from borrow areas located at the project site or hauled in from an off-site location. Impacts to local roadways and the public use of those roads will also result, as haul trucks will be needed to transport the tons of material to the project site. Additionally, seepage berms themselves do not address local interior drainage requiring additional drainage work to be completed; and therefore, although seepage concerns will be alleviated, flooding induced by lack of interior drainage will occur.

2.4 ALTERNATIVE 4 – LANDSIDE SEEPAGE BERMS AND FILLING IN OF THE EXISTING DITCHES

Under this alternative, selected ditches will be filled to reduce landside seepage, via increasing back pressure. In areas where ditch fill alone will not generate a sufficient level of seepage reduction, berms varying in length and ranging between 150 and 300 feet will be constructed. The existing landside toe ditch will be re-created approximately 50 feet from the berm toe.

2.5 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. Alternative 2 (filling in existing ditches only) will create the least environmental impacts but will not generate the level of protection needed. Alternative 3 (landside seepage berms only) was not considered practical because building only the berms will not provide for interior drainage and will not alleviate the flooding problem from landside toe ditches. Alternative 4 (landside seepage berms and filling in of existing ditches) will lower the environmental impacts by reducing the widths of the required berms while providing the necessary level of protection. Therefore, Alternative 4 was selected as the preferred plan.

3.0 AFFECTED ENVIRONMENT

3.0.1 ENVIRONMENTAL SETTING

At both project locations, properties on the landside of the levee surrounding the proposed work sites are dominated by 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.

3.0.2 CLIMATE

Clay and Greene Counties have 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 proposed project areas are both 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 majority of the proposed Below Piggott project is composed of either Sharkey-Dundee-Dubbs-Bosket or Falaya soil series. Kobel-Commerce soils comprise the lower portion of Below Piggott and the entirety of the proposed Big Island project. These soils are somewhat poorly drained and occur mostly as narrow strips that parallel levees where soil material has been excavated for use in constructing the levee.

3.1 RELEVANT RESOURCES

This section contains a description of relevant resources that can be impacted by the project. The important resources (Table) 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: 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 and seepage berm construction 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 prime farmland was noted in the project vicinity, none was located within proposed construction limits.

3.1.2 WETLANDS

Existing Conditions

At both project areas, ditches proposed to receive fill can be described as Waters of the United States, which due to groundwater influence, typically remain wet throughout the year.

Approximately 64,000 and 11,000 cubic yards of fill material will be placed in existing ditches for seepage control at the Below Piggott and Big Island project areas, respectively. Approximately 1,137,855 cubic yards will be required for project construction with approximately 105,855 cubic yards for the proposed Big Island project with the remainder from the proposed Below Piggott project. Additionally, the construction of landside berms will result in the placement of fill into approximately 20 acres of farmed wetlands (0.8 acres within the Below Piggott project area and 19 acres within the Big Island project area).

Below Piggott

Ditches proposed to receive fill are adjacent to the levee toe and can be described as Waters of the United States due to its groundwater influence, remaining wet throughout the year. Approximately 64,000 cubic yards of fill material (plus an additional approximately 750,000 cubic yards for seepage berm construction) will be placed in existing ditches for seepage control. New ditches are proposed 170 feet offset from the toe of the seepage berm and will carry water currently conveyed by the existing ditches filled fill via berm construction.

Big Island

Similar to the ditches at the Below Piggott project area, ditches within the Big Island project area can also be described as Waters of the United States. Approximately 11,000 cubic yards of fill material (plus an additional approximately 110,000 cubic yards for seepage berm construction) will be placed in existing ditches for seepage control. New ditches are proposed 170 feet offset from the toe of the seepage berm and will carry water the ditches replaced currently discharge. There are approximately 19 acres of farmed wetland that exist in the footprint of the seepage berms.

3.1.3 BOTTOMLAND HARDWOOD FOREST

Existing Conditions

Bottomland Hardwood Forest (BLH) is predominately in the batture (riverside of the levee). There are limited trees landside of the levee, primarily located alongside the ditch at the toe of the levee. Tree species in the batture and adjacent to the project areas generally consist of cottonwood, American elm, sugarberry, silver maple, hickory, sycamore, cypress, black willow and various types of oaks.

3.1.4 WILDLIFE

Existing Conditions

Wildlife species that can 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

Resource	Institutionally Important	Technically Important	Publicly Important
Agricultural Lands	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.
Wetlands	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.
Bottomland Hardwood Forest	Section 906 of the Water resources Development Act of 1986 and the Fish and Wildlife Coordination Act of 1958, as amended.	Provides necessary habitat for a variety of plant, fish, and wildlife species; it often provides a variety of wetland functions and values; it is an important source of lumber and other commercial forest products; and it provides various consumptive and non-consumptive recreational opportunities.	The high priority that the public places on its esthetic, recreational, and commercial value.
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 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.
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.

Resource	Institutionally Important	Technically Important	Publicly Important
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.

3.1.5 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 can 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 will 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 areas. 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 American elm, sugarberry, silver maple, hickory, sycamore, various types of oaks, and cottonwood. Some trees were documented as 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. Three proposed seepage projects were under consideration for construction in early 2018. These three projects (of which Big Island and Below Piggott were two) comprised approximately 25 linear miles of seepage remediation. Out of an abundance of caution, USACE biologists conducted a mist-net 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 for any of the three proposed projects. Furthermore, habitat within the proposed project area is not considered critical habitat by USFWS for any other potential threatened or endangered species.

3.1.6 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 will be adversely impacted, an appropriate mitigation plan will be implemented to recover data that will 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 in the summer of 2018. The investigation revealed no identified cultural resources within the proposed project footprint. Furthermore, the proposed borrow area was surveyed with no identified cultural resources within the proposed footprint.

3.1.7 AIR QUALITY

Existing Conditions

The proposed project areas are 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.

3.1.8 HYDROLOGY AND WATER QUALITY

Existing Conditions

Within the project areas, the numerous ditches along the levee toe typically remain wet through the year with all ditches draining 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 actions, agricultural lands (prime and unique farmland) within the project vicinity area are expected to remain as noted in Existing Conditions, provided that the adjacent levee remains stable. However, continued seepage can 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 actions, agricultural lands (prime and unique farmland) within the project area will be expected to be provided the authorized level of protection as described in the 1973 EIS.

4.2 WETLANDS

Future Conditions with No Action

Without implementation of the proposed actions, wetland habitats within the project area are expected to remain as noted in Existing Conditions, provided the adjacent levee remains stable. However, continued seepage can 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 actions, approximately 19.8 acres of farmed wetlands are anticipated to be impacted by the placement of fill material. However, it is anticipated that post-construction, wetland characteristics within the newly constructed ditches will likely replicate that of the impacted ditches. In addition to the ditches, a grass “farm road” will be established on the right hand (landward) side of the ditches allowing farmers access to their land.

4.3 BOTTOMLAND HARDWOOD FORESTS

Future Conditions with No Action

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

Future Conditions with the Proposed Action

With implementation of the proposed actions, approximately 3.6 acres (Below Piggott) and 2.9 acres (Big Island) of BLH will be cleared during filling the existing ditches. An additional 0.2 acres of BLH will be required to establish access to the borrow site for Below Piggott.

4.4 WILDLIFE

Future Conditions with No Action

Without implementation of the proposed actions, 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 actions, wildlife resources within the project footprints are not anticipated to be impacted by the clearing of scattered vegetation within the project area ditches. However, disturbance and noise from the construction equipment will temporarily disperse wildlife species from the project area. Once the project is completed, wildlife species will be expected to return to the project area. The minor habitat loss and temporary disturbance will 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. The removal of 6.7 acres of trees will eliminate habitat for wildlife; however, the area on the riverside of the levee consists primarily of forested habitat. Therefore it is likely that displaced organisms will successfully relocate to those areas.

4.5 THREATENED AND ENDANGERED SPECIES

Future Conditions with No Action

Without implementation of the proposed actions, threatened and endangered species within the project area are expected to remain as noted in Existing Conditions.

Future Conditions with the Proposed Action

Based on the project and surveys of the project areas, USACE has determined the proposed project will 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.

4.6 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 can 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 actions, 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 will be evaluated, assessed for effects, avoided if possible, or mitigated if unavoidable in accordance with Federal statutes and regulations (36 CFR, Part 800).

4.7 AIR QUALITY

Future Conditions with No Action

Without implementation of the proposed action, no changes in air quality will occur.

Future Conditions with the Proposed Action

With implementation of the proposed actions, project-related equipment will produce small amounts of engine exhaust during construction activities. The temporary, minor impacts to air quality will be localized to the project area and will not affect area residents. The project area will 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.

4.8 HYDROLOGY AND WATER QUALITY

Future Conditions with No Action

Without implementation of the proposed actions, hydrology and water quality within the project area will 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 actions, hydrology riverside of the levee is expected to remain as noted in Existing Conditions. Impacts to water quality within the St. Francis River will be minimal or have no effect, as the river normally carries a heavy sediment load and the project action will be conducted during dry or low water periods. Modifying the existing drainage ditches will increase their discharge capacity, allowing them to handle in excess of 100-year flood events. The project will have only minor impacts on water quality to adjacent areas. Turbidity and suspended solids will be increased to minor degrees as a result of runoff from cleared areas. However, best management practices (*e.g.*, silt fences, seeding) will be employed throughout construction to minimize impacts. Any temporary impacts to water quality will be anticipated to return to normal shortly after construction ceases. Thus, no significant impacts to water quality will occur as a result of the proposed project.

4.9 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 actions is minimal. If any hazardous waste/substance is encountered during construction activities, the proper handling and disposal of these materials will be coordinated with the Missouri Department of Environmental Quality, EPA, and other applicable agencies.

4.10 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.”

A similar seepage remediation project (Below Senath Seepage Remediation Project, Dunklin County, MO) was the subject of a previous EA in 2019 with a FONSI signed on 22 March 2019 (<https://www.mvm.usace.army.mil/About/Offices/Regulatory/Public-Notices/>). This project is located in Dunklin County, Missouri, in the vicinity of Senath, Missouri. For this particular project, one 300-foot section of a main ditch was filled and two adjacent wet weather conveyances were re-directed over a swale to drain into the main ditch.

A similar seepage remediation project (Below Kennett/DD48) is being planned. The proposed seepage remediation measures for Below Kennett/DD48 are along the left descending bank (LDB) of the St. Francis River Levee, located near the town of Kennett in Dunklin County, Missouri. The proposed action includes approximately eight miles of the existing St. Francis River, approximately from Missouri Highway 438 south along the existing levee to just south of Missouri Highway 513. Proposed work will consist of a 150-foot wide continuous, semi-pervious landside berm, constructed at the toe of the existing levee, except in several locations where wider berms (up to 300 feet wide) are required to reduce seepage issues. Proposed work also consists of interior ditch work and some field re-grading to direct drainage away from the seepage berm into existing drainages. The proposed seepage remediation measures for Below Kennett/DD 48 will similarly have a draft EA prepared in accordance with the Nation 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.

Below Piggott and Big Island along with the above Below Senath, Below Kennett/DD48 projects are located in rural, agricultural fields adjacent to the St. Francis River. Any water quality or hydrologic impacts will be temporary in nature and will occur during construction. All post-project hydrology will be similar to pre-project hydrology. The temporary, minor impacts to air quality will be localized to the project area and will not affect area residents. The project area will still be in attainment for all air quality standards. Agricultural land within all of the proposed berm footprints will be impacted by permanent easements prohibiting farming activities on the berms. These berms will 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 project, but any unavoidable impacts will be mitigated. Suitable sites adjacent to the project area will be most desirable mitigation tracts. However, if no willing sellers are identified, land that will be of most ecological value will be acquired, with a goal of enhancing ecosystem connectivity. The Memphis District is actively working to identify willing sellers and move forward with purchasing any required mitigation. Wildlife impacts will be minimal throughout all proposed project areas as the interior wooded batture of the St. Francis will not be disturbed.

USACE has engaged U.S. Fish and Wildlife as State Historic Preservation Office for consultation for Below Senath, Below Piggott, Big Island, and the Below Kennett/DD48

projects. A no effect determination and concurrence letter have been received for all of the above projects.

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 will, 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, draft FONSI, and 404(b)(1) is being coordinated with appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties. The draft EA does not appear to warrant the appropriateness of an environmental impact statement. As such, a draft FONSI is being coordinated with this EA. The following agencies have received copies of this EA and draft FONSI: USFWS, U.S. Environmental Protection Agency, Arkansas Department of Environmental Quality, Arkansas Department of Game and Fish, federally recognized tribes, and other interested parties.

6.0 MITIGATION

With the implementation of the proposed project, approximately 6.7 acres of bottomland hardwood (BLH) and 19.8 acres of Waters of the U.S. (farmed wetlands) are anticipate to be impacted. The farmed wetland impacts will be mitigated at a 1:1 ratio with the 6.7 acres of BLH impacts mitigated at a 3:1 ratio for a total of 39.9 acres of BLH restoration required for both projects. Several properties have been suggested for mitigation and will provide sufficient acreage to meet mitigation requirements. A mitigation team consisting of members from USFWS, U.S. Environmental Protection Agency, Arkansas Department of Environmental Quality, Arkansas Game and Fish Commission has reviewed the properties and have deemed the properties to be suitable for mitigation. However, final fee purchase of the proposed mitigation property has not been completed, so a mitigation plan has not been finalized. This mitigation plan will be finalized with input from all team members and implemented concurrently with project construction.

7.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action will be achieved upon coordination of this draft EA, draft FONSI, and 404(b)(1) evaluation 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 using mist netting in accordance with the USFWS 2018 Range-Wide Indiana Bat Summer Survey Guidelines. No listed species were captured during the survey period. USACE has determined that project activities will not affect listed bat species due to the probable absence of listed bat species, with tree clearing proceeding with no restriction dates. The USFWS concurred with this no effect determination 30 November 2018. Any potential roost trees will be avoided to the extent practicable, especially in areas where complete clearing is not necessary. Removal of vegetation outside peak breeding seasons to help protect bird species will also be restricted to the extent practicable.

7.2 CULTURAL RESOURCES

A literature review and cultural resources survey within the Project's Area-of-Potential-Effect (APE), including the proposed borrow locations, 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. Field surveys of potential borrow locations not previously surveyed were conducted in the summer of 2019 with results coordinated with the Arkansas State Historic Property Office.

No significant cultural resources were identified within the proposed projects APE. No additional cultural resources investigations are recommended prior to project implementation. However, should inadvertent discovery be made during construction, the resource will 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/re-routing existing drainage, placement of borrow material into existing toe drainage ditches, placement of culverts in existing ditches. A total of 19.8 acres of farmed wetlands and 6.7 acres of BLH impacts are anticipated to be impacted by the proposed projects. The mitigation for the unavoidable impacts is 39.9 acres of BLH restoration and will be mitigated concurrent with construction in a suitable area near the proposed projects.

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 will be temporary, and will be expected to return to existing conditions after completion of the project action. The proposed project will have no significant impacts on the following resources: 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 EA and associated FONSI and 404(b)(1) evaluation was prepared by Kevin Pigott, USACE biologist, with cultural resources information provided by Pamela Lieb, USACE District Archaeologist. The address of the preparer 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.