

#### DEPARTMENT OF THE ARMY U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT 1222 SPRUCE STREET ST. LOUIS, MISSOURI 63103-2833

12 March 2021

Reply to: U.S. Army Corps of Engineers St. Louis District Environmental Compliance Section (PD-C) 1222 Spruce Street St. Louis, MO 63103-2833

Dear Sir or Madam:

The St. Louis District, U.S. Army Corps of Engineers has prepared a draft Environmental Assessment (EA) with unsigned Finding of No Significant Impact (FONSI) to evaluate the proposed actions at the Darst Bottom Levee District, St. Charles County, Missouri.

Under the National Environmental Policy Act of 1969, as amended, the St. Louis District is distributing this letter to notify concerned agencies, interest groups, and individuals of the proposed project and to solicit comments from those persons or organizations who may be interested in or affected by the project. The FONSI is unsigned and will only be signed after comments received as a result of this public review have been considered. The electronic version of draft EA and unsigned FONSI are available online at:

https://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/PL8499DarstLeveeRepair2019.pdf

The St. Louis District of the U.S. Army Corps of Engineers is proposing to restore the levee to the pre-flood condition. The Darst Bottom Levee District is active in the USACE Rehabilitation and Inspection Program, which makes them eligible for Flood Control and Coastal Emergency funding under Public Law 84-99 to address levee damages from flood events. The proposed action would restore the levee system to its pre-disaster condition. Environmental impacts associated with the proposed actions are outlined in the draft EA.

Please provide any comments you may have regarding this project to Evan Hill of the Environmental Compliance Section, at **telephone** 314-925-5004 or **e-mail** at evan.b.hill@usace.army.mil. Please send any comments to the phone or email contact above, ATTN: Environmental and Planning Branch (PD-C, Hill). **In order for comments to be considered prior to a final decision being made, they must be received by this office by close of business on 12 April 2021.** 

Sincerely,

Teri C. Allen, Ph.D. Chief, Environmental Compliance Section

# DRAFT ENVIRONMENTAL ASSESSMENT WITH FINDING OF NO SIGNIFICANT IMPACT

# LEVEE REPAIR (PL 84-99): DARST BOTTOM LEVEE SYSTEM ST. CHARLES COUNTY, MISSOURI MISSOURI RIVER, RIVER MILES 49-55

March 11, 2021

Prepared by:

Environmental Compliance Branch U.S. Army Corps of Engineers St. Louis District 1222 Spruce Street St. Louis Missouri 63103-2833



US Army Corps of Engineers St. Louis District

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### 1. INTRODUCTION

This document is a DRAFT Environmental Assessment (EA) with an attached (unsigned) Finding of No Significant Impact (FONSI) for levee repairs to the Darst Bottom Levee System. This document was prepared under the National Environmental Policy Act of 1969, 42 USC 4321-4347. The purpose of this EA is to evaluate potential environmental impacts of proposed levee repairs, determine if the environmental impacts rise to the level of significant, and to serve as a record of interagency coordination for the emergency rehabilitation actions.

#### **1.1. Project Authorization**

Emergency actions undertaken by USACE to repair flood control works damaged or destroyed by flooding are authorized by Public Law 84-99, as amended by Section 206 of the Flood Control Act of 1962 (hereafter referred to as P.L. 84-99). USACE regulations covering these and other emergency rehabilitation activities are contained in the Rehabilitation Code 910-300 of ER 500-1-1 (33 C.F.R 203). The Code states that actions taken to *restore facilities to pre-disaster conditions* under P.L. 84-99 will not be construed to be either major federal actions or as having significant effects. However, the effect of rehabilitation on the environment must be considered. This includes the effects of construction on endangered species (P.L. 93-205 and Appendix B of ER 1105-2-50) and archeological and historic properties (Chapter 3 of ER 1105-2-50). Since the Darst Bottom Levee District is active in the USACE Rehabilitation and Inspection Program, they are eligible for Flood Control and Coastal Emergency funding authorized by P.L. 84-99.

On 4 October 2019, a Memorandum for Record was signed by MAJ John Miller, Deputy Commander, giving approval to complete PL 84-99 Levee Repairs, resulting from 2019 flooding, using the emergency provisions of Engineering Regulations (ER) 500-1-1, Emergency Employment of Army and Other Resources Civil Emergency Management Program; ER 200-2-2 Procedures for Implementing the National Environmental Policy Act (NEPA); and 33 CFR Part 325.2(e)(4) and 36 CFR Part 800.12 (b)(2), Protection of Historic Properties.

These levee repairs are emergency actions because of the following:

- a. The need to complete construction of levee repairs as soon as possible and prior to additional flooding or inundation.
- b. The risk of economic loss from additional flooding of communities along rivers within the St. Louis District, their tributaries, and adjacent agricultural lands.

Neither the implementation of the Emergency Action provision within ER 200-2-2, nor the use of a categorical exclusion, exempts the action from compliance with any other Federal law (e.g., Endangered Species Act, Fish and Wildlife Coordination Act, Bald and Golden Eagle Protection Act, National Historic Preservation Act, Clean Water Act, etc.). All environmental evaluation,

coordination, consultation, and compliance including acquiring any necessary permits will be completed concurrent with, or following, the emergency repairs.

### **1.2.** Project Location and Scope

The Darst Bottom Levee System is located along the left descending bank of the Missouri River, RM 49-55. The levee is near the Missouri River, Fisher Creek, and Femme Osage Creek. The Darst Bottom Levee System reduces the risk of flooding from the Missouri River to properties in St. Charles County, Missouri (Figure 1). Located adjacent to the community of Defiance, the system was privately constructed and is locally owned and operated by the nonfederal sponsor Darst Bottom Levee District Section 2. Originally constructed in the 1940s, the levee system was improved in the 1980s and consists of 6.7 miles of earthen embankment with a maximum crown height of eleven feet. Within the 3,500-acre leveed area are agricultural bottomlands, an oil/gas pipeline, a portion of the Katy Trail, an abandoned residence, and a couple of farm structures. No towns or villages are located within the leveed area and there are no residents. This system provides benefits to \$1.1 million in agricultural property value with a 5% annual chance exceedance protection.



Figure 1. Location of the Darst Bottom Levee System

### 1.3. Project Purpose and Need

The Darst Bottom Levee System sustained damages from high water events from March to June 2019. The purpose of this federal action is to restore flood risk reduction to pre-2019 flood event

levels. There is a need for action because flood damages reduced flood risk reduction leaving the entire levee system vulnerable to the next flood event. Without federal involvement through the PL 84-99 program, it is unlikely that the Darst Bottom Levee District has the financial ability to restore the level of risk reduction according to Corps of Engineers' standards.

### 1.4. Damage Classification

Damages to levee systems are generally classified into seven types: levee breaches, embankment slides, rutting, turf damage, and erosion types I, II, and III (Table 1). Levee breaches refer to any break in the levee continuity because of flood damages. Breaches typically result in scour holes on either side of the levee and are repaired by filling in the scour holes and the missing section of the levee. Embankment slides can occur on either side of the levee and are repaired by removing the sliding soil and replacing it with compact substrate. Rutting and turf damage are relatively superficial damage to the levee structure that are repaired by filling with soil and reseeding. Erosion types are categorized based on their severity, from type I to III, and are repaired like embankment slides.

<b>Table 1.</b> Description of each damage type and the methods by which these damage types are					
typically repaired.					
Damage Type         Damage Description         Repair Method					
Breach	A rupture break or gap in the levee	Stripping preparing placing			

Damage Type	Damage Description	
Breach	A rupture, break, or gap in the levee	Stripping, preparing, placing
	system, measured in linear feet or	embankment, and compacting
	yards <sup>3</sup> .	in lifts.
Slide	A movement of soil down the levee	Excavation of damaged area,
	slope where the levee cannot support	and replacement of
	its own saturated weight.	embankment in compacted lifts.
Erosion Type I	Wave wash / minor erosion less than 12	Disking and compacting.
	inches deep, measured in linear feet.	
Erosion Type II	Moderate erosion between 12 and 18	Stripping, disking, filling, and
	inches deep, measured in yards <sup>3</sup> .	compacting.
Erosion Type III	Major erosion greater than 18 inches	Stripping, preparing, placing
	deep, measured in yards <sup>3</sup> .	embankment, and compacting
		in lifts.
Rutting	Depressions, ruts, or potholes that are	Filling in the eroded areas using
	located along the levee crown,	embankment material from
	embankments, and access roads	designated borrow area(s) or
	unrelated to levee settlement that will	material from the adjacent
	pond water.	undamaged levee section.

Turf Damage	The upper layer of ground made up of	Disking and seeding.
	grass and plant roots has been	
	damaged due to long-standing water	
	inundation.	

### 1.5. Damage Description

The damage to the Darst Bottom Levee System sustained from the 2019 high water events is classified as Type III Erosion. The damage area consisted of 230 feet of Type III Erosion on the riverside side of the levee parallel to the levee centerline near river mile (RM) 50-51 (Figure 2).



Figure 2. Location of the damages to the Darst Bottom Levee System.

### 2. PROJECT ALTERNATIVES CONSIDERED

This section describes and compares the alternatives based on their environmental impact and achievement of project objectives for the damaged Darst Bottom Levee System. NEPA requires that in analyzing alternatives to a proposed action, a federal agency must consider an alternative of "No Action." Likewise, Section 73 of the WRDA of 1974 (PL 93-251) requires federal agencies to consider nonstructural measures to reduce or prevent flood damage.

### 2.1. Alternative 1 – No Action (Future without Project)

Under the No Action Alternative, the federal government would not repair the damages to the Darst Bottom levee system. It is possible that the Darst Bottom Levee District would make repairs without federal assistance. Environmental impacts of repairs made by the Darst Bottom Levee District would be like the recommended alternative, except that the repair duration may differ, and the environmental protections may be reduced. However, due to the uncertainty of the Darst Bottom Levee District making all necessary repairs, **the environmental impacts of allowing the damage to remain unrepaired are regarded as the No Action Alternative**. This would presumably perpetuate a state of reduced levee structural integrity. The levee would be susceptible to further erosion at the damaged site. The current damage would decrease flood risk reduction for the levee system, thereby increasing risks to individuals, commercial and residential properties, structures, businesses, and agricultural activities within the leveed area.

#### 2.2. Alternative 2 – Non-structural Measures

Section 73 of the WRDA of 1974 (PL 93-251) requires federal agencies to consider non-structural measures to reduce or prevent flood damage. Nonstructural measures reduce flood risks without significantly altering the nature or extent of flooding. Damage reduction from nonstructural measures is accomplished by changing the land use within the floodplains, or by accommodating existing uses to the flood hazard. Examples include acquisition, relocation, elevation, and flood proofing existing structures; rural land easements and acquisitions; and restoration of wetland.

# Under PL 84-99, the Corps has the authority to pursue a non-structural alternative only if the project sponsor requests such an alternative.

"There is hereby authorized an emergency fund to be expended in preparation for emergency response to any natural disaster, in flood fighting and rescue operations, or in the repair or restoration of any flood control work threatened or destroyed by flood, including the strengthening, raising, extending, or other modification thereof as may be necessary in the discretion of the Chief of Engineers for the adequate functioning of the work for flood control, or in implementation of **nonstructural alternatives to the repair or restoration of such flood control work if requested by the non-federal sponsor.**" Additionally, ER 500-1-1, dated 30 September 2001, states that:

"Under P.L. 84-99, the Chief of Engineers is authorized, when requested by the non-Federal public sponsor, to implement nonstructural alternatives (NSA's) to the rehabilitation, repair, or restoration of flood control works damaged by floods or coastal storms. The option of implementing an NSA project (NSAP) in lieu of a structural repair or restoration is available only to non-Federal public sponsors of flood control works (FCW's) eligible for Rehabilitation Assistance in accordance with this regulation, and only upon the written request of such non-Federal public sponsors. The principal purposes of an NSAP are for floodplain restoration, provision, or restoration of floodways; and/or reduction of future flood damages and associated (FCW) repair costs. [NOTE: Habitat restoration is recognized as being a significant benefit that can be achieved with an NSAP, and may be a significant component of an NSAP, but is not considered to be a principal purpose under this authority.]

The Darst Bottom Levee District declined to request the pursuit of a non-structural alternative because present owners desire to continue agricultural use; therefore, this alternative was eliminated from further analysis in this EA.

# **2.3.** Alternative **3** – Structural Repair of Levee System with Federal Assistance (Tentatively Selected Plan, TSP)

Under this alternative, at the request of the Darst Bottom Levee District, the federal government would repair the damaged area to the pre-flood level of risk reduction. Structural repair of the existing levee system to pre-flood condition is the Tentatively Selected Plan. A team including members of the St. Louis District's Engineering Design Branch and Geotechnical Engineering Branch were involved with developing the most economical and efficient design for repair.

According to preliminary project plans the Darst Bottom Levee System damage would be repaired by placing riprap (i.e., stone revetment) in the eroded areas using material from approved quarries. Typical revetment design is illustrated in Figure 3. Approximately 14,399 TN of riprap would be placed to its full course thickness in one operation using approved equipment. The large stones shall be well distributed and the entire mass of stones in their final position shall be graded to conform to the gradation specified. Placement shall begin at the bottom of the area to be covered and continue up slope. Subsequent loads of material shall be placed against previously placed material in such a manner as to ensure a relatively homogenous mass. Each load shall be representative of the gradation requirements. Existing vegetation on the riverbank shall be left untouched. No clearing of trees > 3"dbh is anticipated and no on-site borrow material would be required for this repair. Only commercial borrow material will be used. The stone material will be hauled and placed by dump trucks and other heavy land-based vehicles and equipment. The Contractor would also have the option to haul and place material from a barge, should they choose to do so. This review will assume both options could be selected by the Contractor, to be as conservative as possible in the impact analysis. Figure 4 and Figure 5 show the location and design of the proposed revetment structure.

Staging areas and access routes to the repair site would be established to avoid and minimize environmental impacts. Existing access points such as roads, rights of way, and levees located within a reasonable distance to the construction site would be utilized instead of creating a new access road. Additional gravel material may be placed on these existing roads to allow the heavy equipment to use the roads without damaging them. This material may or may not be removed after the work is complete. Construction would commence as soon as possible thereafter and is anticipated to be completed within one construction season.



Figure 3. Typical repair sections for erosion type III damages.



Figure 4. Location of the proposed revetment structure designed to repair damages to the Darst Bottom Levee System along the Missouri River, St. Charles County, Missouri.



Figure 5. Proposed construction diagram for the revetment structure to repair damages to the Darst Bottom Levee System.

### **2.3.1.** Environmental Protection Measures

Environmental protection is the prevention/control of pollution and habitat disruption that may occur during construction. The control of environmental pollution and damage requires consideration of air, water, land, biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive materials; and other pollutants. The designated contractor shall adhere to all environmental protection requirements listed in the Construction Plans and Specifications. Examples include, but are not limited to:

- The Contractor shall submit an Environmental Protection Plan for review and acceptance by the USACE Contracting Officer, which shall include: a list of state and local laws and regulations; a Spill Control Plan; a Recycling and Waste Minimization Plan; a Contaminant Prevention Plan; a Storm Water Pollution Prevention Plan; an Environmental Protection Plan, and an Environmental Monitoring Plan.
- The Contractor shall provide environmental protective measures and procedures to prevent and control pollution, limit habitat disruption, and correct environmental damage that occurs during construction.
- No fill shall be excavated or permanently placed except where required for erosion.
- There shall be no removal of existing vegetation outside of the construction area.
- All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils; and all contractor work areas shall be re-vegetated with fast germinating grass mixtures to reduce any further erosion.
- Thoroughly clean all construction equipment at the prior job site in a manner that ensures all residual soil is removed and that seed deposits from plant pests are not present.
- The Contractor shall comply with any special environmental requirements, which are an outgrowth of environmental commitments made by the Government during the project development.
- Proper disposal of solid waste and debris.
- Proper storage and use of fuels and lubricants.
- Minimize interference with, disturbance to, and damage of, fish and wildlife.
- Protection of water resources to avoid pollution of surface and ground waters.
- Construct or install temporary and permanent erosion and sedimentation control features such as berms, dikes, drains, grassing and mulching, silt screens, or hay bales.

- Maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, disposal sites, and all other work areas free from airborne dust which would cause a hazard or nuisance.
- Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.

### **3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS**

This chapter summarizes the biological, physical, and social environments of the affected project area relative to the alternatives under consideration. Relevant resources are addressed in terms of their present condition, their projected condition under the No Action alternative, and the expected effects of the Tentatively Selected Plan.

### 3.1. Physical Resources

### 3.1.1. Topography, Geology, and Soils

The topography and geology of the area near the Darst levee is characterized by the typical ridge and swale topography created by the Missouri River as it migrates across the floodplain. The area behind the levee is relatively flat, while the surrounding landscape is covered in hills and ridgelines which can rise to 843 feet above sea level (Figure 6).

A review of the Missouri Geological Survey found that the Darst levee lies on the border between two physiographic regions of Missouri: the dissected till plains and the Ozarks Salem Plateau. The underlying geology of this area along the Missouri River is a Tertiary-Quaternary formation. The surficial materials in the Missouri River floodplain are alluvium-silt, sand, and gravel up to 150 feet thick. The surrounding geology is a Mississippian formation that encompasses much of St. Louis and St. Charles County. The surficial materials encountered in the remainder of St. Charles County include residuum from shale, limestone, and sandstone in the form of clay, silt, and sand up to 10 feet thick. The northern portion of St. Charles County is covered in surficial material composed of glacial deposits of clay, silt, and gravel up to 300 feet thick, and some residuum from cherty limestone in the form of clay and gravel up to 50 feet thick.

A review of the Natural Resource Conservation Service's Web Soil Survey found approximately twenty different soil types within the area protected by the Darst Bottom Levee System. The most common soil types were a Peers silty clay loam (34.9%), and Lowmo silt loam (21.2%), and a SansDessein silty clay (17.2%). These soils were described as occasionally flooded with 0-2% slopes. The remainder of the soil types were various loams described as occasionally to frequently flooded and having the same 0-2% slopes. However, the western boundary of the

protected area where it borders Highway 94 featured Menfro silt loams with slopes as great as 20-45%, though they only accounted for less than 1% of the protected area.



Figure 6. A topographical map of the Darst Bottom Levee System.

Alternative 1 – No Action (Future without Project) - The increased risk of levee failure and flooding under the current conditions means that future high-water events could have adverse impacts including: erosion and sedimentation within the unprotected area. Topography and soil conditions may be altered by the scouring and subsequent sediment deposition following major high-water events. These processes are natural; therefore, it is not appropriate to claim the potential changes are beneficial or adverse. The topography, geology, and soils in the area will not be impacted by the No Action alternative.

Alternative 3 – Repair of Levees with Federal Assistance – Topography and composition of soil types would be expected to remain the same as pre-flood conditions, should repairs take place. Therefore, the topography, geology, and soils will not be impacted by the TSP.

### 3.1.2. Land Use and Land Cover

The leveed area within the Darst Bottom Levee System is predominantly agricultural bottomlands. There are no towns or villages within the leveed area and no permanent residents. An oil/gas pipeline runs through the area, but there is no other industry besides

agriculture. A section of the Weldon Spring Conservation Area is in the southern portion of the leveed area. This Conservation Area is covered in bottomland forest, wetlands, and oldfields, providing habitat for wildlife in the area. A segment of the Katy Trail also runs through the leveed area.

Alternative 1 - No Action (Future without Project) – If no action is taken, the capacity of the leveed area to provide agricultural cropland would be appreciably diminished as flood waters pond in the area and destroy infrastructure. As agricultural use decreases, a more diverse and dynamic terrestrial habitat may develop over time. The increased risk of inundation could damage the oil pipeline that runs through the leveed area and cause damage to the Conservation Area and Katy Trail segment. The capacity of the leveed area to provide these land uses would sustain a minor adverse impact if the No Action alternative is selected and if the Levee District undertakes no repairs without Federal Assistance.

*Alternative 3 - Repair of Levees with Federal Assistance* – No changes in land use would be expected when compared to the pre-flood conditions.

### 3.1.3. Prime Farmland

The Darst Bottom Levee System protects approximately 1.1 million USD in agricultural property value. A review of the USDA WebSoil Survey found that the vast majority (89.6%) of the area is of a Prime Farmland Type (Figure 7). There are 0.2 acres (<1%) of Prime Farmland of Statewide Importance in the leveed area. As shown in Figure 7, only a small area (10.4%) of soil in the southern portion of the leveed area (in the Weldon Spring Conservation Area) is not considered Prime Farmland. As previously noted in the Topography, Geology, and Soils Section, the most common soil types were a Peers silty clay loam (34.9%), and Lowmo silt loam (21.2%), both considered Prime Farmland, and a SansDessein silty clay (17.2%), which is considered Prime Farmland if drained.



Figure 7. A map generated from the USDA WebSoil Survey showing the distribution of Prime Farmland across the leveed area.

Alternative 1 – No Action (Future without Project) – A No Action alternative would increase the frequency of flood events in Prime Farmland areas. Frequent flooding would reduce the ability of the land to support agriculture, and Prime Farmland soil types would be inundated regularly. Prime Farmland resources would sustain a minor adverse impact if the No Action alternative is selected.

Alternative 3 – Repair of Levees with Federal Assistance - Levee repairs would provide flood risk reduction to Prime Farmland, up to a 5% annual chance exceedance event. This repair would return the leveed area to pre-flood conditions. Prime Farmland resources would be substantially benefitted by the selection of the TSP.

#### 3.1.4. Noise

Inadequately controlled noise presents a growing danger to the health and welfare of the Nation's population, particularly in urban areas. Therefore, the Federal government has enacted several measures to control noise pollution. The Noise Control Act of 1972 established by statutory mandate a national policy "to promote an environment for all Americans free from noise that jeopardizes their public health and welfare". The 1990 Clean Air Act Amendments added a new title IV, relating to acid deposition control, without repealing the existing title IV, relating to noise pollution. The U.S. Code designates the original title IV (noise pollution) as subchapter IV and the new title IV (acid deposition control) as subchapter IV-A. The Section (c) of the original title IV (noise pollution) requires that in any case where any Federal department or agency is carrying out or sponsoring any activity resulting in noise which the Administrator (of the Office of Noise Abatement and Control) determines amounts to a public nuisance or is otherwise objectionable, such department or agency shall consult with the Administrator to determine possible means of abating such noise. Ambient noise in the leveed area is generated mostly by agriculture, land stewardship, commercial navigation in the river, and outdoor recreational activities in Weldon Spring and along the Katy Trail. These uses typically have noise levels in the range of 34-70dB, which would not constitute an objectionable public nuisance (Figure 8).



Figure 8. Examples of the sound level and decibel (dB) level of various sources.

Alternative 1 - No Action (Future without Project) – If no repair action is taken, the level of noise would remain the same as pre-flood conditions. The level of noise generated by agricultural activities may lessen as the capacity of the leveed area to provide cropland is reduced by future flood damages. The noise level in the leveed area would sustain a minor beneficial impact if the No Action alternative is selected.

Alternative 3 - Repair of Levees with Federal Assistance – The vehicles and equipment used in the repair efforts would temporarily increase noise levels near the damage areas and associated worksites and access roads. Construction noise would likely be disruptive to outdoor recreation near the Conservation Areas and along the Katy Trail, but this would be temporary (Figure 9). Based upon similar construction activities conducted in the past, noise above 85dB would not be expected to occur for periods longer than eight hours. The noise level in the leveed area would sustain a temporary minor adverse impact if the TSP is selected.



Figure 9. Location of the Katy Trail in relation to the access road and construction area.

### 3.1.5. Water Quality

Water Quality Standards (WQS) are the foundation of the Clean Water Act. In Missouri, the standards define the water quality goals for a waterbody by designating its beneficial uses. The WQS also set maximum allowable concentrations for up to 100 contaminants for each of those beneficial uses. Missouri's water quality standards extend the Clean Water Act protections to more than 115,000 miles of streams and rivers and 3,080 lakes and reservoirs. The standards also give the beneficial uses for each of those waters (MO DNR 2019a). The main water bodies in and near the Darst Bottom Levee System include the Missouri River, Fisher Creek, Crow Creek, and Femme Osage Creek (Figure 10). Table 2 provides the current designations of each of the water bodies in and near the leveed area (MO DNR 2019b).



Figure 10. Location of the streams located in and near the Darst Bottom Levee System.

,								
	Warm	Cold	Drinking	Industrial	Irrigation	Livestock/	Secondary	Whole
	Water	Water	Water	Water		Wildlife	Contact	Body
	Habitat	Habitat	Supply	Supply		Protection	<b>Recreation</b> <sup>1</sup>	Contact <sup>2</sup>
Missouri	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
River								
Fisher	Yes	No	No	No	Yes	Yes	Yes	Yes
Creek								
Crow	Yes	No	No	No	Yes	Yes	Yes	Yes
Creek								
Femme	Yes	No	No	No	Yes	Yes	Yes	Yes
Osage								
Creek								
<sup>1</sup> Uses include fishing, wading, commercial and recreational boating, any limited contact incidental to shoreline								
activities, and activities in which users do not swim or float in the water. These recreational activities may result								
in contact with the water that is either incidental or accidental.								
<sup>2</sup> Activities involving direct human contact with waters of the state to the point of complete body submergence.								

**Table 2.** Water Quality Designations for the water bodies found in and near the Darst BottomLevee System.

Section 303(d) of the Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole-body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking

water for people, livestock, and wildlife. None of the streams flowing through or near the Darst Bottom Levee System are on the 303d list for impairment. However, downstream of the project site, the Missouri River is on the proposed 303d list for *E. coli* contamination (MO DNR 2019c).

The Missouri Regional General Permit (GP) 41 for Flood Recovery and Repair Activities authorizes the protection and repair of existing flood damaged structures, damaged land areas and damaged fills, under authority of Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344), which include actions outlined under the Tentatively Selected Plan. General Permit 41 is currently valid with an expiration date of April 22, 2023 unless revoked or specifically extended. Preconstruction notification is required for all activities obtaining borrow from forested wetlands, borrowing material from potential migratory bird nesting areas, clearing trees along stream channels, working in areas with known exotic species, and/or if the proposed repair activity includes restoration of a stream channel back to the original, pre-flood location. However, there will be no on-site borrow area for these repairs.

Other authorized activities that meet the terms and limits of this GP may proceed without preconstruction notification to USACE. However, post construction reporting is required for all activities undertaken under this GP. Maintenance of existing flood damaged structures and/or flood damaged fills, which have been previously authorized, may be authorized by Nationwide Permit No. 3 or exempted by Part 323.4 of Federal regulations 33 CFR 320- 332. Section 401 Water Quality Certification is included with most general permits listed above, but additional coordination and/or other state permits may be required prior to construction depending on the scope of repairs. All authorizations are on file in the District Office. **The levee repair work would be fully authorized under Regional General Permit 41 and/or Nationwide Permit 3.** 

Alternative 1 – No Action (Future without Project) - If the Darst Bottom Levee System is not repaired, flood waters would enter the leveed area at approximately a 40% (2-year frequency) annual chance exceedance flood. While floodwaters may carry excess nitrogen and phosphorus from the existing farmland into the Missouri River, floodplains also provide a place for sediments and other materials to settle out of the main river system. Water Quality would be minimally affected if the No Action alternative is selected.

Alternative 3 – Repair of Levees with Federal Assistance – Construction activities would occur on the levee berms and fields adjacent to streams and water areas. The proposed repair activities may result in minor temporary increases in sedimentation into the Missouri and Mississippi rivers. In addition, levee repairs could cause a short-term increase in turbidity in the waterways at the immediate construction site if flooding or heavy rains occurred during construction. The Contractor shall use best management practices to reduce or eliminate sedimentation resulting from the proposed repairs. All areas of soil disturbance would be restored following construction to reduce the potential for erosion. Water Quality would sustain a temporary minor adverse impact if the TSP is selected.

### 3.1.6. Air Quality

The Clean Air Act of 1963 requires the U.S. Environmental Protection Agency (USEPA) to designate National Ambient Air Quality Standards (NAAQS). The USEPA has identified standards for six criteria pollutants: ozone, particulate matter ( $PM_{10}$  = less than 10 microns; and  $PM_{2.5}$  = less than 2.5 microns in diameter), sulfur dioxide, lead, carbon monoxide, and nitrogen dioxide. The air quality of St. Charles County has improved since 2017, when the County was in non-attainment for 8-hour ozone and particulate matter (2.5). As of 2019, St. Charles County is in non-attainment for 8-hour ozone only (USEPA 2019). St. Charles County has been in non-attainment for 8-hour ozone for the years 2019, 2020, and 2021.

Alternative 1 – No Action (Future without Project) – If the levee is not repaired to the Federal Standard, future levee damages would reduce the available area that could be developed for agriculture, which would reduce emissions resulting from said agricultural activities. Air Quality would incur minor beneficial impacts if the No Action alternative is selected.

Alternative 3 – Repair of Levees with Federal Assistance – Construction activities would cause a slight increase in suspended particulates (i.e., dust). Emissions from construction equipment would temporarily increase the ozone, carbon monoxide and carbon dioxide levels in the immediate vicinity of the construction site. The expected increases would be temporary and would cease after construction. Air Quality would sustain a temporary minor adverse impact if the TSP is selected.

### 3.1.7. Hazardous, Toxic, and Radioactive Waste (HTRW)

The U.S. Army Corps of Engineers (USACE) regulations (ER-1165-2-132, ER 200-2-3) and District policy requires procedures be established to facilitate early identification and appropriate consideration of potential HTRW in reconnaissance, feasibility, preconstruction engineering and design, land acquisition, construction, operations and maintenance, repairs, replacement, and rehabilitation phases of water resources studies or projects by conducting Phase I Environmental Site Assessment (ESA). USACE specifies that these assessments follow the process/standard practices for conducting Phase I ESA's published by the American Society for Testing and Materials (ASTM). The purpose of a Phase I ESA is to identify, to the extent feasible in the absence of sampling and analysis, the range of contaminants (i.e. RECs) within the scope of the U.S. Environmental Protection Agency's (EPA) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. Current policy is to avoid

known HTRW sites. However, the Environmental Quality Section should be contacted immediately if HTRW material is encountered at any point during construction activities.

A Phase I study was not recommended for this project because the likelihood of hazardous substances adversely affecting the project area is very low. There is still a potential of encountering hazardous substances during the proposed actions. If HTRW material is encountered at any point during the levee repairs, an environmental contractor should be contacted to assess the conditions. USACE does not and cannot represent that the site contains no hazardous waste or material, including petroleum products.

Alternative 1 - No Action (Future without Project) – If repairs are not made, future flood events have the potential to spread some contaminants which may be in the area; or introduce contaminants into the leveed area. HTRW concerns may sustain a minor adverse impact if the No Action alternative is selected.

*Alternative 3 - Repair of Levees with Federal Assistance -* The likelihood of hazardous substances adversely affecting the project area due to the proposed construction activities is very low. However, as previously mentioned, USACE does not and cannot represent that the site contains no hazardous waste or material, including petroleum products. HTRW concerns would not be impacted by the TSP.

### 3.2. Biological Resources

### 3.2.1. Fish and Wildlife

While the leveed area is mostly covered in agricultural cropland, the Weldon Spring CA provides a wide variety of habitats for fish and wildlife. Weldon Spring is predominately bottomland forest interspersed with vegetated wetlands, open water, and some oldfields. These terrestrial habitats provide food and cover for a variety of wildlife species including rabbit, squirrel, opossum, skunk, beaver, Red Fox, and White-Tailed Deer; and the aquatic habitats provide habitat for a variety of reptiles such as the Common Snapping Turtle, amphibians such as the Spotted Salamander, and fish such as catfish, crappie, sunfish, black bass, and White Bass. Common birds in the area include many species of waterfowl, shorebirds, and songbirds. Typical tree species include Pecan, Eastern Cottonwood, American Elm, Box-Elder, Silver Maple, Pin Oak, Shagbark Hickory, and River Birch. The levees are mowed grass areas that are managed to prevent shrub and tree growth and provide minimal habitat for wildlife.

Alternative 1 – No Action (Future without Project) – If the Darst Bottom Levee System is not repaired to the federal standard, the levee system could have less stability and therefore an

increased probability of future flooding. During highwater events, bank line erosion could cause short-term increase in turbidity in the immediate area, and temporarily displacing fish and other mobile organisms. If agricultural use diminishes due to increased flooding frequency or magnitude, a more diverse and dynamic terrestrial and aquatic habitat could develop within the levee footprint over time. The terrestrial habitat could be inundated by high water more frequently, and the vegetative composition may be altered. During high water events, water could pond on the landside of the levee and deposit sediment, decreasing flood water turbidity, filling wetlands. During high water events, terrestrial fauna would be displaced as their habitat is inundated. Conversely, fishes and other aquatic organisms would gain access to a large area of floodplain habitat, which could benefit the spawning and rearing of many fish species. Fish and Wildlife resources in the leveed area may see minor beneficial impacts if the No Action alternative is selected.

Alternative 3 – Repair of Levees with Federal Assistance – If heavy rain occurs during levee repair, increased sedimentation could result in a short-term increase in turbidity in the Missouri River. This could possibly displace fish and other mobile organisms temporarily. Following construction, any displaced mobile aquatic species would be expected to return rapidly. However, the Contractor is required to comply with all applicable federal, state, and local laws and regulations. The Contractor is required to provide environmental protective measures and procedures to prevent and control pollution. This includes the condition that the Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of, fish and wildlife. Therefore, no more than temporary, minor impacts to fish and wildlife resources are anticipated because of the TSP.

### 3.2.2. Bald Eagle

Although the Bald Eagle (*Haliaeetus leucocephalus*) was removed from the federal list of threatened and endangered species in 2007, it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits unregulated take of bald eagles, including disturbance (USFWS 2007). Bald Eagles (*Haliaeetus leucocephalus*) occur regularly in Missouri as migrants and breeders, with some populations of year-round residents along the Missouri and Mississippi Rivers. The Bald Eagle was removed from the federal list of threatened and endangered species in 2007, but it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (USFWS 2020a). On 28 October 2020, USACE wildlife biologist Rachel Steiger conducted a field investigation and survey of the Darst Bottom Levee System to determine the presence of bald eagle nests/nesting within the drainage district. No bald eagle nests were observed. The closest documented nest is on the right descending back of the Missouri River, 0.9 miles upstream from

the project location. No impacts to bald eagles, or their nests, are anticipated by either alternative.

Alternative 1 – No Action (Future without Project) – The environmental impacts of allowing the damage to remain unrepaired would include further erosion of soil and vegetation from the crown and slope of the levee. The large trees providing nesting habitat for Bald Eagles may be knocked down as a result. Bald Eagles commonly nest along large rivers such as the Missouri, so Bald Eagles could be minorly impacted by the No Action.

Alternative 3 – Repair of Levees with Federal Assistance – The proposed repairs would prevent erosion and felling of large nesting trees along the levee. Bald Eagles would be minorly benefitted by the TSP.

### **3.2.3.** Biological Assessment

In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, official lists of species and critical habitats potentially occurring in the vicinity of the proposed work areas was acquired from the USFWS Information for Planning and Conservation (IPaC) website at (<u>https://ecos.fws.gov/ipac/</u>) on 24 February 2021 (Consultation Code: 03E14000-2021-SLI-0431, Event Code: 03E14000-2021-E-01195; Table 3). Habitat requirements and impacts of the proposed action are discussed for each listed species.

**Table 3.** List of federally threatened and endangered species and habitat potentially occurring in the vicinity of the proposed project, acquired from the USFWS Information for Planning and Conservation (IPaC) website.

Common Name (Scientific Name)	Classification	Habitat
Gray bat ( <i>Myotis grisescens</i> )	Endangered	Caves year-round (winter hibernacula and summer roosting); forage along rivers lakes, and creeks, and may roost under bridges in the summer
Indiana Bat ( <i>Myotis sodalis)</i>	Endangered	Caves, mines (winter hibernacula); trees (summer roosting); and small stream corridors with well- developed riparian woods; upland forests (foraging)
Northern Long-eared Bat (Myotis septentrionalis)	Threatened	Caves, mines; rivers and reservoirs adjacent to forests
Pallid Sturgeon (Scaphirhynchus albus)	Endangered	Missouri River; Mississippi River downstream of the Missouri River

Decurrent False Aster	Threatened	Disturbed alluvial soils
(Boltonia decurrens)		

### 3.2.3.1. Gray Bat

The Gray Bat occupies a limited geographic range of limestone karst areas of the southeastern United, which includes several Missouri counties. With rare exceptions, gray bats live incaves year-round. During the winter gray bats hibernate in deep, vertical caves. In the summer, they roost in caves which are scattered along rivers. Gray Bats forage on a variety of night-flying aquatic and terrestrial insects along rivers, lakes, and creeks. Gray bats are endangered largely due to their habit of living in large numbers in relatively few caves. As a result, they are extremely vulnerable to disturbance. Cave disturbance during hibernation periods can deplete energy reserves, potentially causing a bat to leave the cave too soon and die. Many caves important to Gray bat populations were flooded and submerged by reservoirs or are in danger of natural flooding. The commercialization of caves, and alterations of the air flow, temperature, humidity, and amount of light can make the cave unsuitable habitat for gray bats (USFWS 2019b).

Alternative 1 – No Action (Future without Project) – If future flood damages cause a transition from cropland to more natural floodplain habitat, the area of foraging habitat could increase, which would represent a minor beneficial impact to the species. However, the amount of roosting habitat (caves) would not be affected.

Alternative 3 – Repair of Levees with Federal Assistance – The proposed project would not negatively affect any caves, which, as previously mentioned, are used as roosting habitat for the Gray Bat. Given the species is known to roost in several caves in St. Charles County, the St. Louis District has made a "may affect but is not likely to adversely affect" (NLAA) determination for the Gray Bat.

#### 3.2.3.2. Indiana Bat

The Indiana Bat has been reported in several Illinois and Missouri counties, and potentially occur in any area with forested habitat. Indiana Bats migrate seasonally between winter hibernacula and summer roosting habitats. Winter hibernacula includes caves and abandoned mines. Females emerge from hibernation in late March or early April to migrate to summer roosts (USFWS 1999). Females form nursery colonies under the loose bark of trees (dead or alive) and/or in cavities. A maternity colony may include up to 100 individuals and may utilize multiple roost trees during the summer, typically a primary roost tree and several alternates. Some males remain in the area near the winter hibernacula during the summer months, but others disperse throughout the range of the species and roost individually or in small numbers (USFWS 2019a). During the summer, Indiana Bats frequent the corridors of small streams with well-developed riparian woods, as well as mature bottomland and upland forests. They forage for insects along stream corridors, within the canopy of floodplain and upland forests, over clearings with early successional vegetation (old fields), along the borders of croplands, along wooded fence rows, and over farm ponds and in pastures. Suitable foraging habitat may be the forested areas in and adjacent to the Darst Bottom Levee District.

Alternative 1 - No Action (Future without Project) – If the levee is not repaired, future flood damages may transition the leveed area to a more natural floodplain habitat, which could increase the area of foraging habitat in and around the leveed area, which would represent a minor beneficial impact to the species. In contrast, if large trees along the levee with suitable roosting characteristics are washed away into the Missouri River, it could reduce the available roosting habitat, causing a minor impact.

Alternative 3 - Repair of Levees with Federal Assistance – The proposed project would not affect any caves and tree clearing is not anticipated. The levee repairs would also prevent large trees along the levee from falling into the Missouri River, which could benefit tree-roosting bats like the Indiana Bat. Like the Gray Bat, the Indiana Bat is known to roost in St. Charles County. In addition, given the proximity of good roosting and foraging habitat (forested hillsides and bottomland forests) in and around the leveed area, the St. Louis District has made a NLAA determination for the Indiana Bat.

### 3.2.3.3. Northern Long-Eared Bat

The Northern Long-Eared Bat is sparsely found across much of the eastern and north central United States, and all Canadian provinces. Northern Long-Eared Bats spend winter hibernating in large caves and mines (USFWS 2020b). During summer this species roosts singly or in colonies underneath bark, in cavities, and in crevices of both live and dead trees; and in manmade structures such as barns and culverts. Foraging occurs in interior upland forests. Forest fragmentation, logging, and forest conversion are major threats to the species. One of the primary threats to the Northern Long-Eared Bat is the fungal disease, white-nose syndrome, which has killed an estimated 5.5 million cave hibernating bats in the Northeast, Southeast, Midwest, and Canada. Suitable Northern Long-Eared Bat summer habitat may be in the forested areas in and adjacent to the Darst Bottom Levee District.

Alternative 1 - No Action (Future without Project) – A transition to a more natural floodplain habitat may increase the area of foraging habitat, which would represent a minor beneficial impact to the species. However, if large trees along the levee fall into the river because of continued erosion, it could result in a minor impact to tree-roosting bats like the Northern Long-eared Bat.

Alternative 3 - Repair of Levees with Federal Assistance – Like Indiana Bat, the Northern Longeared Bat roosts in trees during the summer. However, tree clearing is not anticipated for the project. The Northern Long-eared Bat is known to roost in St. Charles County and there is good roosting and foraging habitat in and around the leveed area. The TSP would keep some trees along the levee that have suitable roosting characteristics from falling into the river, which would be minor benefit. The St. Louis District has made a NLAA determination for the Northern Longeared Bat.

### 3.2.3.4. Pallid Sturgeon

The pallid sturgeon is found in the Missouri River, and the Mississippi River downstream of its confluence with the Missouri River. Pallid Sturgeon are adapted to large rivers with extensive micro-habitat diversity, turbid water, braided channels, irregular flows, and flood cycles (USFWS 2019d). It is suspected that sand and gravel bars and the mouths of major tributaries may be utilized for spawning. This species feeds on aquatic invertebrates and small fish.

Alternative 1 - No Action (Future without Project) – During highwater events, the levee would continue to erode and wash soil into adjacent water bodies, resulting in an increase in turbidity in the immediate area. Conversely, reconnected floodplains have been identified as an important habitat for sturgeon. Openings on or near the main stem river may allow sturgeon to gain access to a large area of floodplain habitat, therefore, Pallid Sturgeon may be minorly benefitted by the No Action.

Alternative 3 - Repair of Levees with Federal Assistance – Levee repair would take place within the footprint of the levee and designated work areas but could also take place from a barge in the river. All contracts to conduct levee repairs would require the implementation of Best Management Practices (BMPs) to minimize indirect effects to Pallid Sturgeon habitat by erosion and runoff into waters. Considering the importance of the Missouri River to the life-history of the Pallid Sturgeon and the possibility of the use of a barge in the river, the St. Louis District has determined that the proposed project "may affect but is not likely to adversely affect the Pallid Sturgeon".

#### 3.2.3.5. Decurrent False Aster

In Missouri, the Missouri Department of Conservation states that the Decurrent False Aster is known to occur only in St. Charles County. Historically, this plant was found in wet prairies, marshes, and along the shores of some rivers and lakes. The species favors recently disturbed areas and flooding may play a role in maintaining its habitat. Current habitats include riverbanks, old fields, roadsides, mudflats, and lake shores (MDC 2017). It relies on periodic flooding to scour

away other plants that compete for the same habitat, but excessive siltation is a cause of decline (USFWS 2015). The typical flowering season for Decurrent False Aster is from August through October.

Alternative 1 - No Action (Future without Project) – The environmental impacts of allowing the damage to remain unrepaired would include further erosion of vegetation from the crown and slope of the levee, which could favor the colonization of Decurrent False Aster, if a nearby seed source is present.

Alternative 3 - Repair of Levees with Federal Assistance – The proposed levee repair is within the existing levee footprint and adjacent forested lands. Levees are planted with grasses and mowed regularly, making them non-suitable for establishment of Decurrent False Aster. The St. Louis District has determined that the proposed project "may affect but is not likely to adversely affect Decurrent False Aster".

### **3.2.4.** Missouri Department of Conservation – Natural Heritage Database Review

A Level Three Report was generated by the MDC Heritage Database on 09 December 2020. The report identified that there may be state-listed species in the area and other sensitive resources but was not specific in their nature or location. On 16 December 2020, MDC provided a list of species from their Natural Heritage Database that had presence records in and near the leveed area. The precise locations of these records are kept private. Fish species included the Lake Sturgeon (*Acipenser fulvescens*), Skipjack Herring (*Alosa chrysochloris*), Highfin Carpsucker (*Carpiodes velifer*), Western Silvery Minnow (Hybognathus argyritis), Plains Minnow (*Hybognathus placitus*), Sturgeon Chub (*Macrhybopsis gelida*), Ghost Shiner (*Notropis buchanani*), River Darter (*Percina shumardi*), and Pallid Sturgeion. Other aquatic organisms included the Ringed Salamander (*Ambystoma annulatum*) and Longtail Tadpole Shrimp (*Triops longicaudatus*). Mammal species included the Long-tailed Weasel (*Mustela frenata*) and the Gray Bat, Indiana Bat, and Northern Long-eared Bat. Plant species included Bergia (*Bergia texana*), Schweinitz's Flatsedge (*Cyperus schweinitzii*), and Small Pocket Moss (*Fissidens exilis*)

Alternative 1 - No Action (Future without Project) – The environmental impacts of allowing the damage to remain unrepaired would include further erosion of soil and vegetation from the crown and slope of the levee. During future flood events, erosion could cause sedimentation in the immediate area downstream of the levee, temporarily displacing fish and other mobile organisms. As discussed in the Fish & Wildlife section, a potential transition to a more natural floodplain habitat within the leveed area could benefit the fish and amphibian species that rely on such habitats. Likewise, the state-listed plant species may be able to colonize a more natural floodplain habitat more easily than in the current agricultural state of the leveed area. The

state-listed mammals would also gain benefits from this hypothetical transition to a more natural floodplain habitat. These state-listed species would be minorly benefited by the No Action alternative.

Alternative 3 - Repair of Levees with Federal Assistance – A concern during construction of the TSP would be increase sedimentation into adjacent streams and rivers while the soil disturbance is taking place. However, all BMPs to control sedimentation during construction will be implemented during construction. Only temporary, minor impacts to state-listed species are anticipated because of the TSP.

### **3.3. Socioeconomic Resources**

### **3.3.1.** Cultural Resources (Historic and Archaeological)

Levee repairs can cause disturbances to cultural resources such as Historic Properties, artifacts, and existing archeological research sites. Soil disturbance is the primary way that construction can harm these resources. The turning of the soil can physically destroy artifacts and remove them from the context of the soil layers that would allow them to be dated.

Alternative 1 – No Action (Future without Project) – Without flooding, there would be no change from current conditions. With flooding, there is the potential for damage to potentially culturally significant sites protected by the levee. However, no such resources are identified within the leveed area. There is the possibility that unknown Cultural Resources could be impacted by further erosion under the No Action alternative.

Alternative 3 – Repair of Levees with Federal Assistance – It was determined that the proposed repair work falls under a 36 CFR Section 800.3(a)(1): no potential to cause an effect to significant historic properties. The proposed repairs to the levee within the Darst Bottom Levee District would have no effect upon significant historic properties (archaeological remains or standing structures). The repairs consist of minor earth work and filling the breach and scour areas with earthen and rock material. Cultural Resources would not be impacted by the TSP. In the unlikely event that earthmoving activities associated with the proposed repairs did impact potentially significant archeological/historic remains, all construction activities and earthmoving actions in the immediate vicinity of the remains would be held in abeyance until the potential significance of the remains could be determined. The precise nature of such investigations would be developed by the Saint Louis District in concert with the professional staff of the Missouri State Historic Preservation Office (SHPO). A letter was sent to the MO SHPO on 11 March 2021.

### 3.3.2. Tribal Resources

The St. Louis District typically consults with 25 Native American tribes that have an interest in projects along all rivers within our District boundaries. These 25 tribes will be invited to comment on the draft EA during the Public Review period.

Alternative 1 - No Action (Future without Project) – Current farming practices may cause damage to Tribal Resources. If future flooding damage reduces the area of agriculture, the fallow fields may protect Tribal Resources from further harm. However, given that the area has been farmed continuously for decades, damages to Tribal Resources from farming soil disturbance have already occurred. There is the possibility that unknown Tribal Resources could be impacted by further erosion under the No Action alternative.

Alternative 3 - Repair of Levees with Federal Assistance – The recovery and repair of levees damaged by the 2019 flood events, authorized under PL 84-99, would provide protection to any undiscovered or unknown Tribal interests in the project area.

### 3.3.3. Economics

Levees are of regional economic importance to maintain the agricultural productivity occurring in the floodplain. The levee system also protects commercial structures, farm structures, outbuildings, roads, ditches, utilities, and related infrastructure.

Alternative 1 - No Action (Future without Project) - The annual damages without the repairs is estimated to be \$136,000. If the levee is not repaired, Missouri River waters will enter the levee district at approximately a 4% (25-year frequency) annual chance exceedance flood. The previously leveed area would be subject to a higher probability of flooding, making the area less suitable for reliable agricultural productivity, and may decrease recreational activities, especially under flood conditions. This could result in the potential for adverse impacts to the Drainage District and the local economy.

Alternative 3 - Repair of Levees with Federal Assistance – The economic value of the Tentatively Selected Alternative was based on comparing the average annual damages with and without the repairs. The total cost of the project repairs is \$783,000. The benefit to cost (b/c) ratio is estimated at 1.8 to 1. The repair is estimated to provide annual benefits of \$107,000. Local agriculture business and visitors to the Katy Trail and Weldon Spring CA would benefit from levee repair and subsequent flood damage reduction. The proposed levee repairs would not require residential displacement because there are no residents living within the leveed area. Furthermore, no adverse impacts to life, health, or safety would result from levee repair. The economic situation of the levee district would be consistent with pre-flood conditions.

### **3.3.4.** Environmental Justice

Environmental justice refers to fair treatment of all races, cultures, and income levels with respect to development, implementation and enforcement of environmental laws, policies, and actions. Environmental Justice Analysis applies to both minority and low-income populations. For the analysis of Environmental Justice, minority populations are defined as any person who is Black, Hispanic, Asian American, American Indian, or Alaskan Native. Environmental justice analysis was developed following the requirements of: Executive Order 12898 ("Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations," 1994), and "Department of Defense's Strategy on Environmental Justice" (March 24, 1995). This mandates that federal agencies identify and address, as appropriate, disproportionately high, and adverse human health, or environmental effects of proposed projects on minority and low-income populations. Environmental Justice builds on Title VI of the Civil Rights Act of 1964. Environmental Justice has three guiding principles:

- 1. Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental impacts, including social and economic effects on minority and low-income populations
- 2. Ensure full and fair participation by all potentially affected communities in the decisionmaking process
- 3. Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations

There are no permanent residents within the leveed area.

*Alternative 1 - No Action (Future without Project)* – The No Action would not disproportionately affect low income or minority populations, because such populations do not exist currently in the leveed area. Environmental Justice concerns would not be impacted by the No Action alternative.

Alternative 3 - Repair of Levees with Federal Assistance – The TSP would not disproportionately affect low income or minority populations because such populations do not exist within the leveed area. Environmental Justice concerns would not be impacted by the TSP.

#### 3.4. Effects Summary

Many of the levee systems in the region have been in place for decades. Repairs would involve returning most of the damaged levee sections to the same alignment and level of flood risk reduction as existed prior to the high-water events of 2019. Temporary impacts from noise, air, and increased water sedimentation would occur; however, effects of these impacts would be negligible. These repairs are not anticipated to decrease the post-flood productivity of lands riverward or landward of the levee systems. The Darst Bottom Levee District PL 84-99 project

would not require on-site borrow areas for levee repairs. Impacts of the considered alternatives to natural resources, cultural resources, and other aspects and features of the human environment are summarized in Table 4 of this EA.

**Table 4.** Summary of the "No Action" and Tentatively Selected Plan alternatives to physical,biological, and socioeconomic resources.

Deserves	Alternatives				
Resources	No Action	Tentatively Selected Plan			
	Flood damage would occur if the levee is not repaired and the levee integrity is further compromised during additional floods.	The erosion repairs would return the levee to pre-2019 flood event conditions.			
Physical Resources	Increased potential for erosion of bank line and levee with eventual sedimentation within the levee District during flood events.	Temporary minor impacts to water and air quality during construction.			
	Does not meet project objective of reducing flood risk in the leveed area.	Does meet project objective of repairs to Federal standard.			
	If levee system is further compromised, there is potential for beneficial impacts due to potential increase in floodplain wetland habitat. However, there is a potential for water/land pollution if contaminants exist in either area or in the floodwaters.	Construction would be confined to the levee footprint and adjacent agricultural lands which may result in minor temporary impacts.			
Biological Resources	It is unlikely that federally listed threatened or endangered species would be adversely impacted. However, there is the potential for eventual loss of forested areas (possible bat or bald eagle habitat) and other vegetation along the riparian area due to continued levee erosion.	The Tentatively Selected Plan would not result in the removal or alteration of habitat that coincides with the habitat required for the Gray Bat, Indiana Bat, Northern Long-Eared Bat, Pallid Sturgeon, or Decurrent False Aster. Therefore, federally listed species are not anticipated to be adversely affected. No impacts to Bald Eagles are anticipated.			
	Meets project objective of minimal environmental impacts.	Meets project objective of minimal environmental impacts.			

	The levee District would be	Repair of levee would result in		
	susceptible to future floods and	reduction of flood risks to		
	potential negative impacts to the	croplands, businesses, and		
	levee District and regional economy	structures from floods up to		
Socioeconomic	nic due to levee damages. the design (25-year frequen			
Resources		of the levee system.		
	Does not meet project objective of	Meets project objective of		
	protecting the socioeconomic value of	protecting the economic value		
	the levee district and regional	of the levee district and		
	economy.	regional economy.		

### 3.5. Relationship of Tentatively Selected Plan to Environmental Requirements

The relationship of the Tentatively Selected Plan (Alternative 3 – Repair of Levees with Federal Assistance) to environmental requirements, environmental acts, and /or executive orders is shown in Table 5.

**Table 5.** Relationship of the Tentatively Selected Plan to environmental requirements,environmental acts, and/or executive orders.

Environmental Requirement	Compliance
Bald Eagle Protection Act, 42 USC 4151-4157	FC
Clean Air Act, 42 USC 7401-7542	FC
Clean Water Act, 33 USC 1251-1375	FC
Comprehensive Environmental Response, Compensation, and Liability Act, (HTRW) 42 USC 9601-9675	FC
Endangered Species Act, 16 USC 1531-1543	PC <sup>1</sup>
Farmland Protection Policy Act, 7 (Prime Farmland) USC 4201-4208	FC
Fish and Wildlife Coordination Act, 16 USC 661-666c	PC <sup>1</sup>
Food Security Act of 1985 (Swampbuster), 7 USC varies	FC
Land and Water Conservation Fund Act, (Recreation)16 USC 460d-4601	FC
National Environmental Policy Act of 1969, 42 USC 4321-4347	PC <sup>2</sup>
National Historic Preservation Act, 16 USC 470 et seq.	PC <sup>1</sup>
Noise Control Act of 1972, 42 USC 4901-4918	FC
Resource, Conservation, and Rehabilitation Act, (Solid Waste) 42 USC 6901- 6987	FC

Rivers and Harbors Appropriation Act, (Sec. 10) 33 USC 401-413	FC
Water Resources Development Acts of 1986 and 1990 (Sec 906 – Mitigation;	FC
Sec 307 - No Net Loss - Wetlands)	
Floodplain Management (EO 11988 as amended by EO 12148)	FC
Federal Compliance with Pollution Control Standards (EO 12088)	FC
Protection and Enhancement of Environmental Quality (EIS Preparation) (EO	FC
11991)	TC TC
Protection and Enhancement of the Cultural Environment (Register	EC
Nomination) (EO 11593)	
Protection of Wetlands (EO 11990 as amended by EO 12608)	FC

FC = Full Compliance,  $PC^1$  = Partial Compliance (on-going, will be accomplished prior to construction),  $PC^2$  full compliance will be achieved upon signing of the NEPA document.

### **4. CUMULATIVE IMPACTS**

A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions of what agency (Federal or non-federal) or person undertakes such actions" (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The majority of the levee systems in the region have been in place for decades. Repairs would involve returning most of the damaged levee sections to the same alignment and level of protection as existed prior to the high-water events of 2019. Temporary impacts from noise, air, and increased water sedimentation would occur; however, repair sites are widely scattered throughout the St. Louis District and therefore additive effects of these impacts would be negligible. These repairs are not anticipated to decrease the post-flood productivity of lands riverward or landward of the levee systems. The Darst Bottom Levee System PL 84-99 project would not require borrow for levee repairs. However, for those which do require borrow material, all borrow sites have been examined and selected to avoid sensitive areas and resources. Borrow for many of these projects would come from agriculture areas and previously utilized borrow areas. Some PL 84-99 projects, (i.e., Elm Point Levee District and the Augusta Bottom and Dutzow Bottom Levee System), sustained damage that is impractical to repair on the original levee alignment. For new levee alignments, some acreage would be removed from agricultural use causing a minor loss to overall farm production and increase in floodplain habitat. The widely scattered nature of repair sites and shallow excavation depth of borrow sites would reduce impacts and no long term adverse cumulative impacts are anticipated.

### **5. COORDINATION, PUBLIC VIEWS, AND RESPONSES**

Notification of the DRAFT Environmental Assessment and unsigned Finding of No Significant Impact was sent to several relevant officials, agencies, organizations, and individuals for review and comment. Additionally, an electronic copy was available on the St. Louis District's website during the 30-day public review period beginning on 12 March 2021 at the following url:

### https://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/PL8499DarstLeveeRepair20 19.pdf

Please note that the Finding of No Significant Impact was unsigned during the public review period. These documents would be signed into effect only after having carefully considered comments received because of the public review. To assure compliance with the National Environmental Policy Act, Endangered Species Act, and other applicable environmental laws and regulations, coordination with these agencies will continue as required throughout the planning and construction phases of the proposed levee repairs.

Notification of Draft Environmental Assessment and unsigned Finding of No Significant Impact was sent to the following entities:

### **MVS External Agency Stakeholder** Environmental Protection Agency, Region 5 Westlake, Kenneth Environmental Protection Agency, Region 7 Tapp, Joshua State Employees Missouri Dept. of Conservation Vitello, Matt Hodge, Kate Missouri Dept. of Natural Resources - Policy Unit Beres, Audrey Missouri Dept. of Natural Resources, Water Protection Program Bax, Stacia Missouri Dept. of Natural Resources - State Historic Preservation Office Rubingh, Amy National Oceanic and Atmospheric Administration Buan, Steve National Park Service Lange, James U.S. Fish and Wildlife Service, Missouri Office Weber, John

### U.S. Department of Agriculture-NRCS, MO Office Lugo-Camacho, Jorge

MVS External Environmental Stakeholder Ducks Unlimited Held, Eric Hillburn, Craig **Great Rivers Habitat Alliance** Stokes, David **Great Rivers Law** Morrison, Bruce Skrukrud, Cindy Missouri Coalition for the Environment Fung, Jenny The Nature Conservancy, Missouri Office Sierra Club, Missouri Chapter Heartlands Conservancy **MVS External Government Stakeholder** Academy Coordinator for Congresswoman Ann Wagner Winship, Jaci Field Representative Manager for Congressman Sam Graves Josh Hurlbert Staff Member with Senator Roy Blunt's Office Lavalle, Tricia MVS External Industry Stakeholder American Waterways Operators (AWO) Muench, Lynn Werner, Paul Tow Inc. Alter Logistics

G, Jeff Apex Oil Company Caito, J Hanneman, M Archer Daniels Midland (ADM) Burlingame, Chuck

Heroff, Bernard Porter, Jason Atlantic-Meeco Inc. Fabrizio, Christi Canal Barge Company Popplewell, Micket Tyson, J Chain of Rocks WTP Baldera, Patrick Consolidated Grain & Barge Co. (CGB) Jamison, Larry Cultural Resource Analysts, Inc. Niquette, Charles Docks Economy Boat Store Zupan, T **Ecosystem Investment Partners** Urban, David **Ecosystems Insurance Associates** Spoth, Robert Ergon Inc. Cruse, Lester Florida Marine Marine, Louis Gary Elmestad & Associates Elmestad, Gary Hanke Terminal Inc. HMT Bell South **Hoppies Marine** Illinois Marine Towing Barnes, Ryan Ingram Barge Company Dotts, Glenn Henleben, Ed Johnson, Frank Kristen, John International Dock Products Teah, Phillip J.F. Brennan Company Inc.

Pehler, Kent JBS USA JBS Chief **Kirby Corporation** Ebey, Mike **Koch Industries** Muir, T Layne Hunt, Henry Luhr Bros., Inc. S, Glenn Missouri Corn Grower's Assoc. Reitz & Jens **SCI Engineering** Harding, Scott **SEACOR Marine LLC** Coder, Justin Slay Industries Inc. Slay, Glen Southeast Missouri Port Authority Southern Illinois Transfer Terra Technologies Staten, Shane Treated Wood Council Miller, Jeff Tri City Port District Shahlman, Bill Wilmsmeyer, Dennis York Bridge Co. Southwestern Power Administration (SWPA) Corker, Ashley **BellSouth Telecommunications** MVS External Tribe Stakeholder Absentee-Shawnee Tribe **Devon Frazier** Caddo Nation **Historic Preservation Office** 

Chairman of Caddo Nation Francis, Tamara Citizen Potawatomi Nation Kelli Mosteller Eastern Shawnee Tribe of Oklahoma Brett Barnes **Delaware Tribe of Indians** Dr. Brice Obermeyer Forest County Potawatomi Melissa Cook Hannahville Indian Community Earl Meshigaud Ho-Chunk Nation of Wisconsin William Quackenbush Iowa Tribe of Kansas and Nebraska Lance Foster Iowa Tribe of Oklahoma Dr. Robert Fields Kickapoo Tribe of Indians of Kansas Fred Thomas Kickapoo Tribe of Oklahoma Kent Collier Nottawaseppi Band of Huron Potawatomi Fred Jacko, JR Peoria Tribe of Indians of Oklahoma Logan Pappenfort Pokagon Band of Potawatomi Matthew Bussler Prairie Band Potawatomi Nation Warren Wahweotten Sac & Fox Nation of Missouri in Kansas and Nebraska **Chairperson Tiauna Carnes** Sac & Fox Nation of Oklahoma Principal Chief Kay Rhoads Sac & Fox Tribe of the Mississippi in Iowa Buffalo, Jonathon Shawnee Tribe Tonya Tipton

SOARRING Foundation Joseph Standing Bear Schranz The Osage Nation Chief John Red Dr. Andrea Hunter The Quapaw Tribe of Indians Everett Bandy United Keetoowah Band of Cherokee of Oklahoma Sheila Bird Winneb be of Nebraska Randy Tebeo

### 6. ENVIRONMENTAL ASSESSMENT PREPARERS

Dave Parker Project Manager Richard Archeski HTRW, Environmental Engineering Alan Edmondson Regulatory Specialist Meredith Trautt National Historic Preservation Act Analysis and Tribal Consultation Evan Stewart Economic Analyst Evan Hill Wildlife Biologist, environmental compliance Rachel Steiger Wildlife Biologist

### 7. REFERENCES

- Missouri Department of Natural Resources (MO DNR). 2019a. Section 303d Listed Waters. <<u>https://dnr.mo.gov/env/wpp/waterquality/303d/docs/2018-303d-list-epa-approved-08-30-2019-attachments.pdf</u>> (Accessed 10 August 2020).
- Missouri Department of Natural Resources (MO DNR). 2019b. Water Quality Standards Map Viewer Application. < <u>https://modnr.maps.arcgis.com/apps/webappviewer/index.html</u>> (Accessed 10 August 2020).

Missouri Department of Natural Resources (MO DNR). 2019c. Rules of DNR Clean Water Commission. Chapter 7-Water Quality. Code of State Regulations. 77 pages. <<u>https://www3.epa.gov/airquality/greenbk/anayo\_mo.html</u>> (Accessed: 10 August 2020)

- USFWS (U.S. Fish and Wildlife Service). 1999. Agency draft Indiana Bat (*Myotis sodalis*) revised recovery plan. U.S. Fish and Wildlife Service, Fort Snelling, Minnesota. 53 pp.
- USFWS (U.S. Fish and Wildlife Service). 2007. National Bald Eagle Management Guidelines. <u>https://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines</u> <u>.pdf</u>
- U.S. Fish and Wildlife Service (USFWS). 2019a. Indiana Bat (*Myotis sodalis*) Fact Sheet. <fws.gov/midwest/endangered/mammals/inba/index.html> (Accessed: 3 August 2020).
- U. S. Fish and Wildlife Service (USFWS). 2019b. Gray Bat (*Myotis grisescens*) Fact Sheet. <<u>https://www.fws.gov/midwest/endangered/mammals/grbat\_fc.html</u>> (Accessed: 3 August 2020).
- U.S. Fish and Wildlife Service (USFWS). 2019c. Decurrent False Aster (*Boltonia decurrens*) Fact Sheet <<u>https://www.fws.gov/Midwest/endangered/plants/decurrentfalseaster/decurrfa.html</u> > (Accessed 3 August 2020)
- U.S. Fish and Wildlife Service (USFWS) 2019d. Pallid Sturgeon (*Scaphirhynchus albus*) Fact Sheet. <<u>https://www.fws.gov/Midwest/endangered/fishes/PallidSturgeon/index.html</u>> (Access 3 August 2020).
- U. S. Fish and Wildlife Service (USFWS). 2020a. Species Profile: Bald Eagle (*Haliaeetus leucocephalus*). Available at

<<u>https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=1626</u>> (Accessed: 3 August 2020).

- U. S. Fish and Wildlife Service (USFWS). 2020b. Northern Long-eared Bat (*Myotis septentrionalis*) Fact Sheet.
  <a href="https://www.fws.gov/midwest/endangered/mammals/nleb/nlebfactsheet.html">https://www.fws.gov/midwest/endangered/mammals/nleb/nlebfactsheet.html</a> (Accessed: 3 August 2020).
- USEPA (U.S. Environmental Protection Agency). 2020. Current Nonattainment Counties for All Criteria Pollutants as of 31 October 2020. Accessed 2 November 2020. https://www3.epa.gov/airquality/greenbook/anayo\_mo.html

### DRAFT FINDING OF NO SIGNIFICANT IMPACT

### PUBLIC LAW 84-99 DARST LEVEE DISTRICT ST. CHARLES COUNTY, MISSOURI

1. I have reviewed the documents concerned with the proposed levee repairs to the Darst Levee District. The purpose of this project is to repair levee sections damaged by an extended high-water event during the spring of 2019. Repairs would return the levee system to pre-flood conditions.

2. I have also evaluated pertinent data concerning practicable alternatives relative to my decision on this action. As part of this evaluation, I have considered the following alternatives:

- a. <u>No Action Alternative</u>: Under the no-action alternative, the federal government would not repair the flood damaged levee. It is assumed that, because of the cost of repairs, the levee district would not repair the levee.
- b. <u>Nonstructural Alternative</u>: Under PL 84-99, the Corps has the authority to pursue a nonstructural alternative only if the project sponsor requests such an alternative. The Darst Levee District declined to request the pursuit of a non-structural alternative; therefore, this alternative was eliminated from further consideration.
- c. <u>Repair of Levees with Federal Assistance (Tentatively Selected Plan)</u>: Under this alternative, the federal government would repair the damaged areas to the pre-flood level of flood risk reduction. Since the Darst Levee District is active in the USACE Rehabilitation and Inspection Program, it is eligible for Flood Control and Coastal Emergency funding authorized by PL 84-99.

3. The possible consequences of the No Action Alternative and Tentatively Selected Plan have been studied for physical, environmental, cultural, social, and economic effect, and engineering feasibility. Major findings of this investigation include the following:

a. The No Action Alternative was evaluated and subsequently rejected primarily based upon the higher potential for future flooding and damage to area agricultural fields, commercial structures, farm structures, out-buildings, roads, ditches, utilities, and related infrastructure.

b. No appreciable effects to general environmental conditions (i.e., air quality, noise, water quality) would result from the Tentatively Selected Plan.

c. The Tentatively Selected Plan is not expected to cause significant adverse impacts to general fish and wildlife resources.

d. The Tentatively Selected Plan is not expected to cause unacceptable adverse impacts to riparian habitat, bottomland hardwood forest, or other wetlands.

e. Federally endangered or threatened species are anticipated to be adversely impacted by the Tentatively Selected Plan.

f. No prime farmland would be adversely impacted as a result of the Tentatively Selected Plan.

g. No significant impacts to historic properties (cultural resources) are anticipated as a result of the Tentatively Selected Plan.

h. No significant impacts to tribal resources are anticipated as a result of the Tentatively Selected Plan.

i. The Tentatively Selected Plan would not disproportionately affect low income or minority populations.

j. Under the Tentatively Selected Plan, local economies would benefit through an increased labor demand to carry out levee repairs. Agricultural land and structures within the drainage district would be provided with pre-2019 flood risk reduction levels.

k. The Contractor shall comply with all applicable federal, state, and local laws and regulations. The Contractor shall provide environmental protective measures and procedures to prevent and control pollution, limit habitat disruption, and correct environmental damage that occurs during construction. All disturbed areas would be reseeded following construction to reduce the potential for erosion.

4. Based upon the Environmental Assessment of the Tentatively Selected Plan, no significant impacts on the environment are anticipated. The proposed action has been coordinated with appropriate resource agencies, and there are no significant unresolved issues. Therefore, an Environmental Impact Statement will not be prepared prior to proceeding with this action.

Date

Kevin R Golinghorst Colonel, U.S. Army District Commander

## Appendix 1



## United States Department of the Interior

FISH AND WILDLIFE SERVICE Missouri Ecological Services Field Office 101 Park Deville Drive Suite A Columbia, MO 65203-0057 Phone: (573) 234-2132 Fax: (573) 234-2181



In Reply Refer To: Consultation Code: 03E14000-2021-SLI-0431 Event Code: 03E14000-2021-E-01195 Project Name: Darst Bottoms Levee District PL 84-99 December 09, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

### **Threatened and Endangered Species**

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

#### **Consultation Technical Assistance**

Refer to the Midwest Region <u>S7 Technical Assistance</u> website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects: projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

#### **Federally Listed Bat Species**

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

*Gray bats* - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features particularly within stream corridors, riparian areas, or associated upland woodlots gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags 5 inches diameter at breast height (dbh) for Indiana bat, and 3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of <u>unsuitable</u> habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

### Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example <u>"No Effect" document</u> also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project other than bats (see #3 below) then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.

3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern longeared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:

- a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
- b. Any activity in or near the entrance to a cave or mine;
- c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
- d. Construction of one or more wind turbines; or
- e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example <u>"No Effect" document</u> also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of <u>suitable</u> forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the <u>Range-wide Indiana Bat Summer Survey</u> <u>Guidelines</u>.

#### **Other Trust Resources and Activities**

*Bald and Golden Eagles* - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

*Migratory Birds* - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

*Communication Towers* - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

*Transmission Lines* - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to <u>guidelines</u> developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

*Wind Energy* - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's <u>Wind Energy Guidelines</u>. In addition, please refer to the Service's <u>Eagle</u> <u>Conservation Plan Guidance</u>, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

#### Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

### Karen Herrington

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

# **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

### **Missouri Ecological Services Field Office**

101 Park Deville Drive Suite A Columbia, MO 65203-0057 (573) 234-2132

### **Project Summary**

Consultation Code:	03E14000-2021-SLI-0431
Event Code:	03E14000-2021-E-01195
Project Name:	Darst Bottoms Levee District PL 84-99
Project Type:	STREAM / WATERBODY / CANALS / LEVEES / DIKES
Project Description:	The USACE and levee sponsor propose to conduct emergency repairs on the Darst Bottoms Levee District per the PL 84-99 agreement. Single damage area at river mile 50.

Project Location:

Approximate location of the project can be viewed in Google Maps: <u>https://www.google.com/maps/place/38.623671511718754N90.7708078752352W</u>



Counties: St. Charles, MO

### **Endangered Species Act Species**

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### Mammals

NAME	STATUS
Gray Bat Myotis grisescens	Endangered
No critical habitat has been designated for this species.	U
Species profile: <u>https://ecos.fws.gov/ecp/species/6329</u>	
Indiana Bat <i>Myotis sodalis</i>	Endangered
There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.	0
Species profile: <u>https://ecos.fws.gov/ecp/species/5949</u>	
Northern Long-eared Bat <i>Myotis septentrionalis</i>	Threatened
No critical habitat has been designated for this species.	
Species profile: <u>https://ecos.fws.gov/ecp/species/9045</u>	
Fishes	
NAME	STATUS
Pallid Sturgeon Scaphirhynchus albus	Endangered
No critical habitat has been designated for this species.	C C
Species profile: https://ecos.fws.gov/ecp/species/7162	

### **Flowering Plants**

NAME

STATUS

Threatened

Decurrent False Aster *Boltonia decurrens* No critical habitat has been designated for this species. Species profile: <u>https://ecos.fws.gov/ecp/species/7705</u>

### **Critical habitats**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

## Wetlands

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of</u> <u>Engineers District</u>.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- <u>PEM1A</u>
- <u>PEM1Ad</u>
- <u>PEM1C</u>
- PEM1Cd
- PEM1Cx

FRESHWATER FORESTED/SHRUB WETLAND

- <u>PFO1A</u>
- <u>PFO1C</u>
- <u>PSS1A</u>
- <u>PSS1C</u>

RIVERINE

- <u>R4SBC</u>
- <u>R4SBCx</u>

### Appendix 2



**Missouri Department of Conservation** 

Missouri Department of Conservation's Mission is to protect and manage the forest, fish, and wildlife resources of the state and to facilitate and provide opportunities for all citizens to use, enjoy and learn about these resources.

### Natural Heritage Review <u>Level Three Report: Species Listed Under the Federal Endangered</u> <u>Species Act</u>

There are records for species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. <u>Please contact</u> the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

**Foreword:** Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this website is to provide information to federal, state and local agencies, organizations, municipalities, corporations and consultants regarding sensitive fish, wildlife, plants, natural communities and habitats to assist in planning, designing and permitting stages of projects.

#### **PROJECT INFORMATION**

Project Name and ID Number: Darst Bottoms Levee District PL 84-99 Repair #8377
Project Description: RM 50-51, Missouri River, St Charles, MO
Project Type: In-stream / Riverine Activities and Projects, Levees and similar flood control structures (construction, modification, maintenance)
Contact Person: Rachel Steiger
Contact Information: rachel.l.steiger@usace.army.mil or 3143318027

**Disclaimer:** The NATURAL HERITAGE REVIEW REPORT produced by this website identifies if a species tracked by the Natural Heritage Program is known to occur within or near the area submitted for your project, and shares suggested recommendations on ways to avoid or minimize project impacts to sensitive species or special habitats. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information. The Natural Heritage Program tracks occurrences of sensitive species and natural communities where the species or natural community has been found. Lack of an occurrence record does not mean that a sensitive plant, animal or natural community is not present on or near the project area. Depending on the project, current habitat conditions, and geographic location in the state, surveys may be necessary. Additionally, because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, Reports include information about records near but not necessarily on the project site.

<u>The Natural Heritage Report is not a site clearance letter for the project.</u> It provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from the Natural Heritage Program into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive fish, forest and wildlife resources. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

**U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination:** Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. The information within this report is not intended to replace Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit the USFWS Information for Planning and Conservation (IPaC) website at <a href="https://ecos.fws.gov/ipac/">https://ecos.fws.gov/ipac/</a> for further information. This site was developed to help streamline the USFWS environmental review process and is a first step in ESA coordination. The Columbia Missouri Ecological Field Services Office may be reached at 573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203.

**Transportation Projects:** If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or <u>www.modot.mo.gov/ehp/index.htm</u> for additional information on recommendations.



### Darst Bottoms Levee District PL 84-99 Repair

December 8, 2020

Project Boundary

Buffered Project Boundary



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

#### Species or Communities of Conservation Concern within the Area:

There are records for species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. <u>Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.</u>

MDC Natural Heritage Review Resource Science Division P.O. Box 180 Jefferson City, MO 65102-0180 Phone: 573-522-4115 ext. 3182 <u>NaturalHeritageReview@mdc.mo.gov</u> U.S. Fish and Wildlife Service Ecological Service 101 Park Deville Drive Suite A Columbia, MO 65203-0007 Phone: 573-234-2132

#### **Other Special Search Results:**

The project occurs on or near public land, Howell Island CA, Weldon Spring CA, please contact MDC.

#### Project Type Recommendations:

Recommendations for Best Management Practices are under development.

#### Project Location and/or Species Recommendations:

Endangered Species Act Coordination - Indiana bats (*Myotis sodalis*, federal- and state-listed endangered) and Northern long-eared bats (*Myotis septentrionalis*, federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April. If any trees need to be removed for your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.

The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: <a href="http://www.fws.gov/midwest/MidwestBird/EaglePermits/index.html">http://www.fws.gov/midwest/MidwestBird/EaglePermits/index.html</a> if eagle nests are seen.

The project location submitted and evaluated is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream. See <a href="http://mdc.mo.gov/104">http://mdc.mo.gov/104</a> for best management recommendations.

The project location submitted and evaluated is located within or adjacent to the Mississippi or Missouri rivers. Pallid Sturgeons (*Scaphirhynchus albus*, federal- and state-listed endangered) are big river fish that range widely in the Mississippi and Missouri River system (including parts of some major tributaries). Any project that modifies big river habitat or impacts water quality should consider the possible impact to pallid sturgeon populations. See <a href="http://mdc.mo.gov/124">http://mdc.mo.gov/124</a> for Best Management Practices. Additional coordination with the U.S. Fish and Wildlife Service under the Endangered Species Act may be necessary (U.S. Fish and Wildlife Service, Ecological Services, 101 Park DeVille Drive, Suite A, Columbia, Missouri 65203-0007; phone 573-234-2132.)

**Invasive exotic species** are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See <u>http://mdc.mo.gov//9633</u> for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (?140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

**Streams and Wetlands – Clean Water Act Permits:** Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (<u>http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx</u>) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (<u>http://dnr.mo.gov/env/wpp/401/index.html</u>), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit <u>http://dnr.mo.gov/env/wpp/permits/index.html</u> for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below.

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#### **Miscellaneous Information**

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

Additional information on Missouri's sensitive species may be found at <a href="http://mdc.mo.gov/discover-nature/field-guide/endangered-species">http://mdc.mo.gov/discover-nature/field-guide/endangered-species</a> . Detailed information about the animals and some plants mentioned may be accessed at <a href="http://mdc4.mdc.mo.gov/applications/mofwis/mofwis\_search1.aspx">http://mdc4.mdc.mo.gov/discover-nature/field-guide/endangered-species</a> . Detailed information about the animals and some plants mentioned may be accessed at <a href="http://mdc4.mdc4.mdc.mo.gov/applications/mofwis/mofwis\_search1.aspx">http://mdc4.mdc.mo.gov/applications/mofwis/mofwis\_search1.aspx</a> . If you would like printed copies of best management practices cited as internet URLs, please contact the Missouri Department of Conservation.