



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

20 September 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 an unsigned Finding of No Significant Impact (FONSI) to evaluate the repair of the Augusta Bottom segment of the Augusta Bottom and Dutzow Bottom Levee System, St. Charles County, Missouri.

Under the National Environmental Policy Act of 2020, 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 would 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/AugustaBottom2019EAFONSIDraft.pdf>

The St. Louis District of the U.S. Army Corps of Engineers is proposing to repair the damage associated with the 2019 flood event. The Augusta Bottom and Dutzow Bottom Levee System 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 make repairs to levees damaged during flood events. The proposed repair would restore the levee segment to its pre-disaster condition. Environmental impacts associated with the proposed project are outlined in the draft EA.

Please provide any comments you may have regarding this project to Rachel Steiger of the Environmental Compliance Section, at **telephone** 314-331-8027 or **e-mail** at Rachel.L.Steiger@usace.army.mil. 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 25 October 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):
AUGUSTA BOTTOM LEVEE ASSOCIATION
ST. CHARLES COUNTY, MISSOURI
MISSOURI RIVER, RIVER MILE 64**

20 September 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 Finding of No Significant Impact (FONSI) for levee repairs to the Augusta Bottom segment of the Augusta Bottom and Dutzow Bottom Levee System. 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 U.S. Army Corps of Engineers (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 PL 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 CFR 203). The Code states that actions taken to *restore facilities to pre-disaster conditions* under PL 84-99 would 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 (PL 93-205 and Appendix B of ER 1105-2-50) and archeological and historic properties (Chapter 3 of ER 1105-2-50). Since the Augusta Bottom Levee Association is active in the USACE Rehabilitation and Inspection Program, it is eligible for Flood Control and Coastal Emergency funding authorized by PL 84-99.

1.2. Project Location and Scope

The Augusta Bottom and Dutzow Bottom Levee System reduces the risk of flooding from the Missouri River to properties in St. Charles and Warren Counties, Missouri (Figure 1). Within the 7,300-acre leveed area are agricultural bottomlands, a small population within scattered farmsteads, the Washington Memorial regional airport, several oil/gas pipelines, and a portion of the Katy Trail bike trail. No towns or villages are located within the leveed area. The system provides an approximately 25-year frequency (4% annual chance exceedance) flood risk reduction for over 7,300 acres (6,800 acres productive agricultural land).

The Augusta Bottom levee segment is located along the left descending bank of the Missouri River, RM 66.0-57.2, approximately 60 miles west of St. Louis, MO, and was locally constructed and is owned and operated by the nonfederal sponsor Augusta Bottom Levee Association. The Augusta Bottom levee segment consists of 12.5 miles of earthen levee, 8 gravity drains and 1 sand bag closure structure. This levee segment is approximately 10 feet high, with a 12-foot crown, and an average side slope of 3:1.



Figure 1. General Location Map of the Augusta Bottom and Dutzow Bottom Levee System.

1.3. Project Purpose and Need

The Augusta Bottom levee segment sustained damages from high water events from March to June 2019. The purpose of this federal action is to restore flood protection to pre-2019 flood event levels. There is a need for levee repair because flood damages reduced flood protection 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 Augusta Bottom Levee Association has the financial ability to restore the level of protection according to Corps of Engineers' standards.

1.4. Damage Description

The damage to the Augusta Bottom levee segment sustained from the 2019 high water events is classified as bank erosion. The damage area consisted of 377 feet of erosion of the levee embankment and foundation parallel to the levee centerline near river mile (RM) 64 (Figures 2, 3, 4).

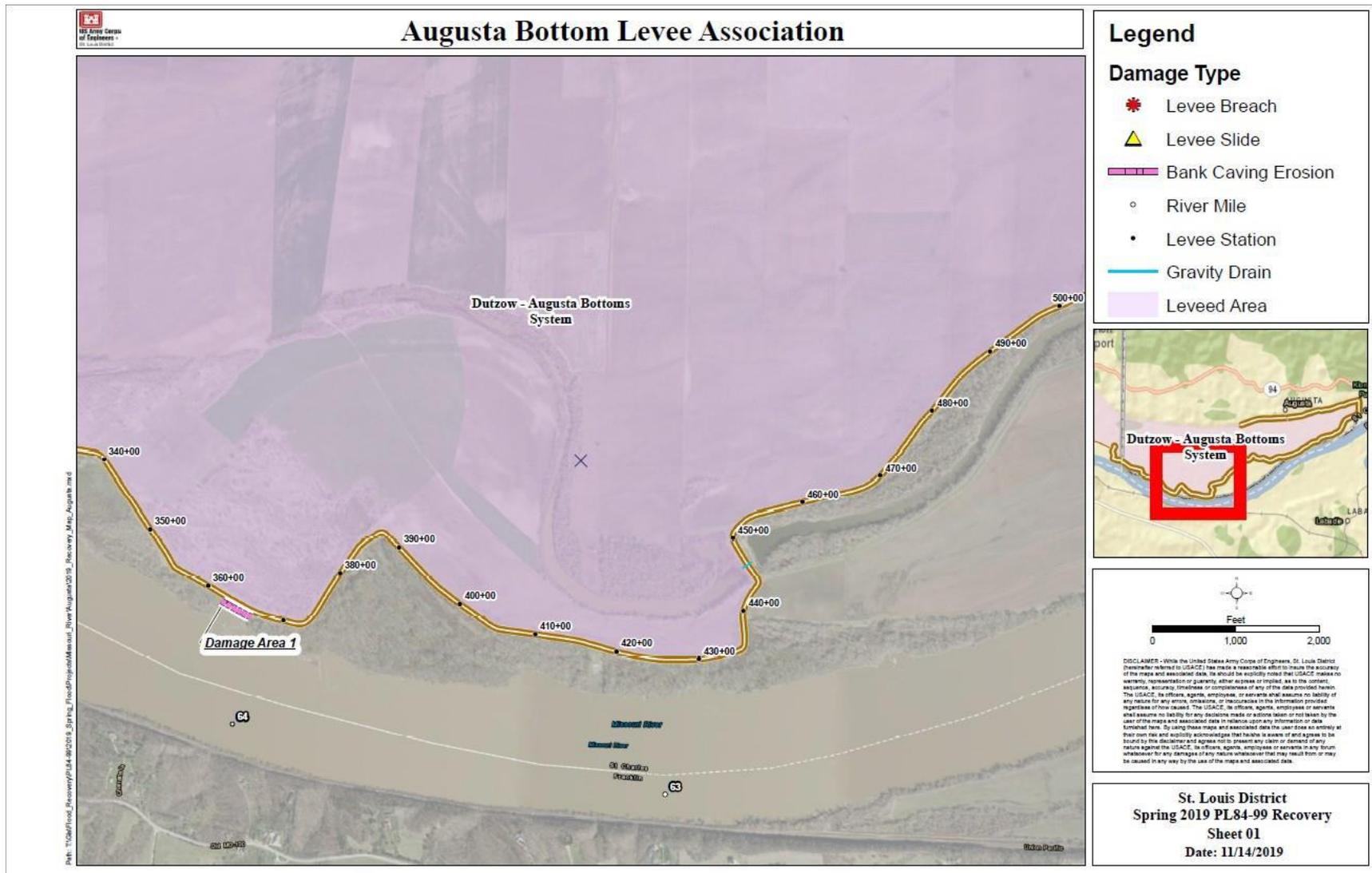


Figure 2. Map of the Augusta Bottom levee segment damage locations.



Figure 3. Photo of erosion damage.



Figure 4. Photo of erosion damage.

2. PROJECT ALTERNATIVES CONSIDERED

This section describes and compares the alternatives based on their environmental impact and achievement of project objectives for the damaged Augusta Bottom levee segment. 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 Augusta Bottom levee segment. It is possible that the Augusta Bottom Levee Association would make repairs without federal assistance. Environmental impacts of repairs made by the Augusta Bottom Levee Association would be similar to the recommended alternative, except that the repair duration may differ and the environmental protections may be reduced. However, due to the uncertainty of the Augusta Bottom Levee Association 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 protection 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 damages 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 Augusta Bottom Levee Association 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 Segment with Federal Assistance (Recommended Plan)

Under this alternative, at the request of the Augusta Bottom Levee Association, the federal government would repair the damaged area to the pre-flood level of protection. Structural repair of the existing levee segment to pre-flood condition is the Recommended 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 Augusta Bottom levee segment repair would setback levee sections 356-374 to a new alignment paralleling the Missouri River (Figure 5). The estimated borrow quantity for the repair is approximately 24,000 cubic yards of impervious material. Pervious material from the existing levee alignment would be repurposed and used in the construction of the levee setback.



Figure 5. Flood damage repair area for Augusta Bottom levee segment PL 84-99 2019 repair.

Approximately 5.37 acres of tree clearing would be required for the levee setback. The abandoned levee section (5.43 acres) would be allowed to return to a natural state and all areas would be reseeded upon completion of construction as necessary. The construction limits, including haul roads, for repair are shown in Figure 6.

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. The contractor would be required to restore access roads to pre-construction condition at the completion of construction.

Following review of comments and the signing of the FONSI (should that be the decision), plans and specifications would be finalized for construction. Construction would commence as soon as possible thereafter and is anticipated to be completed within one construction season.

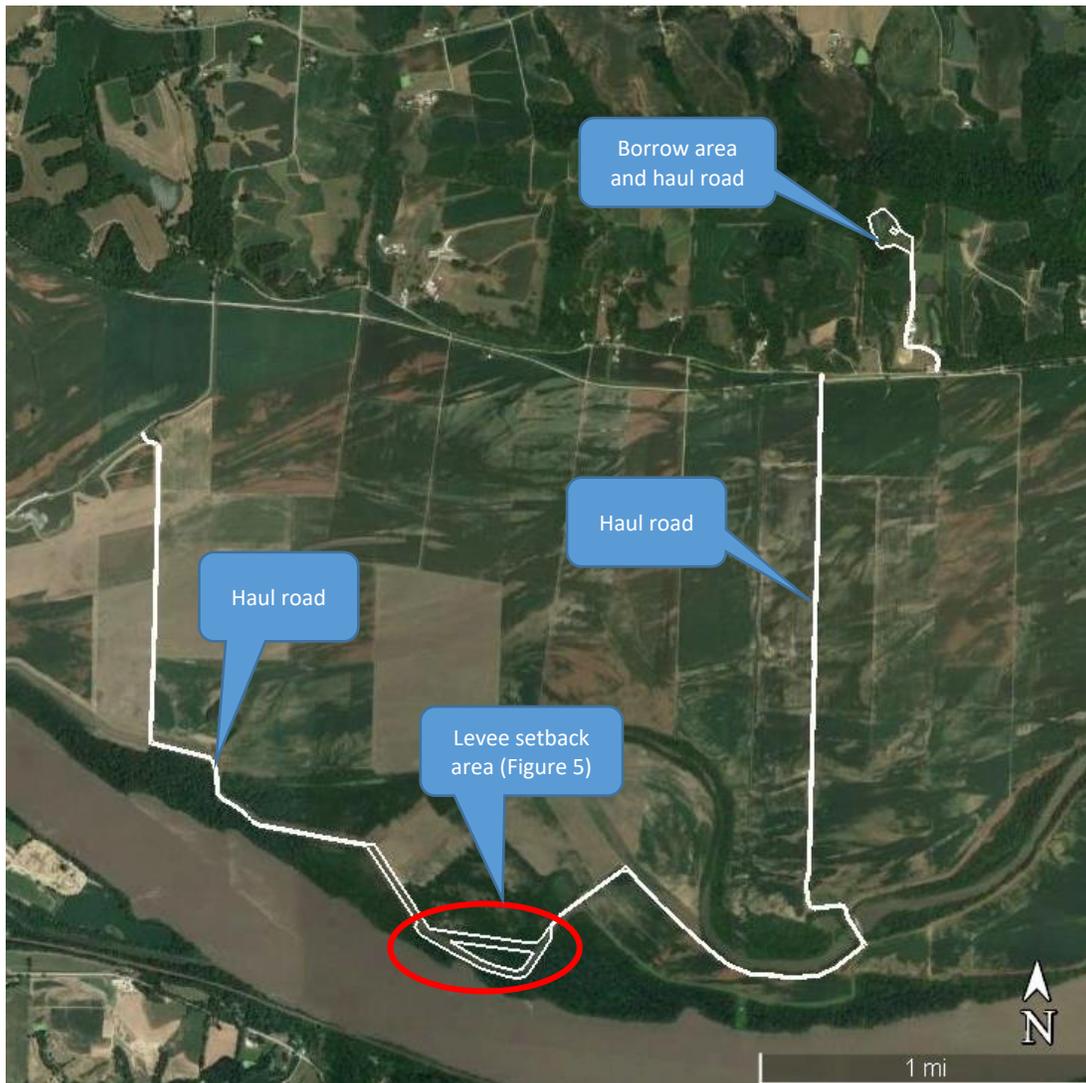


Figure 6. Construction limits for Augusta Bottom levee segment PL 84-99 2019 repair.

2.3.1. Borrow Areas and Material

The Recommended Plan would require approximately 24,000 cubic yards of impervious material. The proposed borrow site is shown in Figure 7. No tree clearing is anticipated to access the borrow material. A site visit was conducted on 28 January 2021. The proposed borrow area does not exhibit wetland characteristics, therefore a Section 404 permit is not required. In the borrow area approximately 2 inches of topsoil may need to be stripped off, stockpiled, and then re-deposited as top dress on the disturbed areas if large amounts of agricultural deposits remain. A maximum of 10 feet of borrow material would be taken from beneath the initial topsoil strip. The borrow area would be sloped to drain excess water at the end of construction. The borrow area is a reasonable and economically feasible haul distance to the levee.



Figure 7. Aerial photo of the proposed borrow site (outlined in white) for the Augusta Bottom levee segment PL 84-99 2019 repair.

2.3.2. 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 Recommended Plan.

3.1. Physical Resources

The leveed area provides flood risk reduction for a regional airport, residential structures and outbuildings, utilities, and roadways. Levees have been constructed to the federal standard to

reduce the likelihood of inundation within the leveed area to approximately a 25-year return period (4% annual chance exceedance) and to provide a reasonable amount of certainty of producing crops in most years. Much of the area within the levee is considered valuable farmland.

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 (PM¹⁰ = less than 10 microns; and PM^{2.5} = less than 2.5 microns in diameter), sulfur dioxide, lead, carbon monoxide, and nitrogen dioxide. St. Charles County, Missouri, is currently in non-attainment status for U.S. Environmental Protection Agency air quality criteria for 8-Hour Ozone (2015; marginal) (USEPA 2020). Ambient noise in the study area is generated by wildlife, human activities, agricultural activities, and vehicular traffic.

Alternative 1 – No Action (Future without Project) – Because of the increased risk of levee failure and landside flooding under the current conditions, future high-water events could have adverse impacts including increased erosion and sedimentation, as well as temporary or permanent changes in land use. Continued bankline erosion along the Missouri River is threatening the levee. Debris, deposition of unsuitable materials, and contaminated liquids or solids could enter farm fields creating less than desirable agricultural conditions and hinder future farming productivity. Levee failure may allow the adjacent river to gain lateral connectivity with the floodplain. Air quality and noise levels are not anticipated to be notably altered by this alternative.

Alternative 3 – Repair of Levees with Federal Assistance – Construction activities would occur within a forested area adjacent to the Missouri River near RM 64. The levee repair could cause a short-term increase in turbidity in the waterways at the construction site if flooding or heavy rains occurred during construction. However, 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. The proposed project would be expected to temporarily increase noise levels near the repair and associated worksites. The U.S. Environmental Protection Agency has set a limit of 85 decibels on the A scale (the most widely used sound level filter) for eight hours of continuous exposure to protect against permanent hearing loss (Figure 8). Based upon similar construction activities conducted in the past, noise above this level would not be expected to occur for periods longer than eight hours. Noise levels would return to normal after construction completion.

Construction activities would cause a slight increase in suspended particulates (i.e., dust). Emissions from construction equipment would increase the carbon monoxide and carbon dioxide levels in the vicinity of the construction site. The Contractor shall arrange for environmental protective measures and procedures to prevent and control dust and emissions. The expected increases would be negligible and would cease after construction.

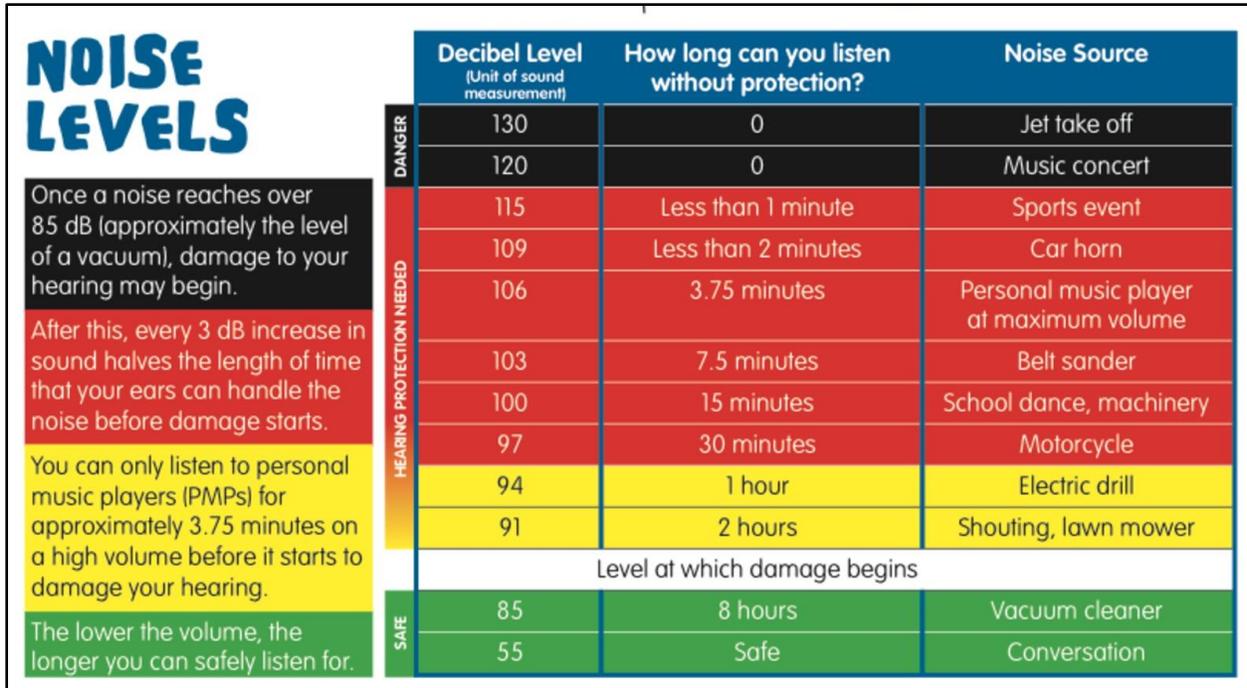


Figure 8. Example of noise levels and time exposure in relation to hearing loss.

3.2. Biological Resources

3.2.1. Fish and Wildlife

Fish and wildlife habitats located in and near the leveed area include permanent water, temporary water, bottomland forest, wooded swamp, old fields, and agricultural cropland. These terrestrial habitats provide food and cover for a variety of wildlife species including Rabbit, Squirrel, 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 Gray Tree Frog, and fish species including Largemouth Bass, Bluegill, Carp, Crappie, Warmouth, and Channel Catfish. Common birds in the area include Great Blue Herons, Bald Eagles, Geese, Gulls, Pelicans, and many species of waterfowl, other 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 animal damage.

Alternative 1 – No Action (Future without Project) – If the Augusta Bottom levee segment is not repaired to the federal standard, the levee system would have less stability and therefore an increased probability of future flooding. During highwater events, bankline 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 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.

Alternative 3 – Repair of Levees with Federal Assistance – Levee repair to the federal standard would setback the levee between sections 356-374 to an alignment ranging from 40-450 ft landward and roughly paralleling the Missouri River. The existing levee alignment would be graded down to the surrounding area's elevation and allowed to return to a natural state. Approximately 68 acres of the forested area would remain protected from future flood events by the setback levee alignment, while approximately 16 acres would provide a forested buffer between the Missouri River and setback alignment. During high water events, water could pond riverside of the levee and deposit sediment, decreasing flood water turbidity, and create new wetland habitat.

Levee setback would require the removal of approximately 5.37 acres of trees from a young, even-aged stand of cottonwoods in a former agricultural field abandoned after the 1993 flood. Tree growth by natural succession on the abandoned levee alignment (approximately 5.43 acres) would offset tree removal and increase the width of the forested riparian corridor. Construction activities could temporarily displace terrestrial and aquatic mobile organisms may result in a short-term increase in turbidity in the immediate area. Following construction, species would be expected to return and water quality return to normal. The Contractor is required to comply with all applicable federal, state, and local laws and regulations, and 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 short-term limited impacts to fish and wildlife resources are anticipated.

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. On 28 October 2020, USACE wildlife biologist Rachel Steiger conducted a field investigation and survey of the Augusta Bottom the levee segment 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 bank of the Missouri River, 0.9 miles upstream from the project location.

Alternative 1 – No Action (Future without Project) – Based on the site investigation and survey results, there are no nests or eagle activity in the vicinity of the damaged area. Erosion may continue dislodging trees which could potentially be used for Bald Eagle nests in the future.

Alternative 3 – Repair of Levees with Federal Assistance – Based on the site investigation and survey results, there are no nests or eagle activity in the vicinity of the proposed project. No detrimental impacts on Bald Eagles or nests are anticipated.

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 real estate land easements was acquired from the USFWS Information for Planning and Conservation (IPaC) website at (<https://ecos.fws.gov/ipac/>) on 30 August 2021 (Consultation Code: 03E14000-2021-SLI-0157; Event Code: 3E14000-2021-E-06382; Table 1). Habitat requirements and impacts of the federal action are discussed for each listed species.

Table 1. 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 on 30 August 2021 (Consultation Code: 03E14000-2021-SLI-0157; Event Code 3E14000-2021-E-06382).

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 (<i>Myotis septentrionalis</i>)	Threatened	Caves, mines; rivers and reservoirs adjacent to forests
Pallid Sturgeon (<i>Scaphirhynchus albus</i>)	Endangered	Missouri River; Mississippi River downstream of the Missouri River
Decurrent False Aster (<i>Boltonia decurrens</i>)	Threatened	Disturbed alluvial soils

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.

Alternative 1 – No Action (Future without Project) – Without levee repair, additional vegetation near the damage area may be washed away. Riparian habitat would be adversely impacted by erosion.

Alternative 3 – Repair of Levees with Federal Assistance – The proposed project would not negatively affect any caves. As currently planned, levee setback involves approximately 5 acres of tree clearing in an area determined to be poor bat habitat (i.e. young, even-aged stand of cottonwoods). Therefore, the St. Louis District has determined that the proposed project “*may affect, but is not likely to adversely affect 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. 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.

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 located in the forested areas in and adjacent to the Augusta Bottom Levee Association.

Alternative 1 - No Action (Future without Project) – Without levee repair, trees potentially used by Indiana Bats could become dislodged. Riparian habitat would be adversely impacted by erosion.

Alternative 3 - Repair of Levees with Federal Assistance – The proposed project would not affect any caves or mines or involve clearing forest habitat containing suitable roosting habitat. As currently planned, levee setback involves approximately 5 acres of tree clearing in an area

determined to be poor bat habitat (i.e. young, even-aged stand of cottonwoods). Therefore, the St. Louis District has determined that the proposed project “*may affect, but is not likely to adversely affect 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. 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 located in the forested areas in and adjacent to the Augusta Bottom Levee Association.

Alternative 1 - No Action (Future without Project) – Without levee repair, trees potentially used by Northern Long-Eared Bats could become dislodged. Riparian habitat would be adversely impacted by continued erosion.

Alternative 3 - Repair of Levees with Federal Assistance – The proposed project would not affect any caves or mines or involve clearing forest habitat containing suitable roosting habitat. As currently planned levee setback involves approximately 5 acres of tree clearing in an area determined to be poor bat habitat (i.e. young, even-aged stand of cottonwoods). Therefore, the St. Louis District has determined that the proposed project “*may affect, but is not likely to adversely affect the Northern Long-Eared 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. 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, continued erosion would result in a short-term increase in turbidity in the immediate area.

Alternative 3 - Repair of Levees with Federal Assistance – Levee repair would take place within the footprint of the levee and designated work areas. During future high water events, water could pond in the forested area riverside of the levee, depositing sediment and decreasing flood water turbidity, potentially creating more variable aquatic habitat. 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 specific location and nature of work, and provided BMPs would be adhered to, 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

The Decurrent False Aster is presently known from scattered localities on the floodplains of the Illinois River and Mississippi River from its confluence with the Missouri River south to Madison County, Illinois. Decurrent False Aster grows in wetlands, on the borders of marshes and lakes, and on the margins of bottomland oxbows and sloughs. 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. The typical flowering season for Decurrent False Aster is from August through October.

Alternative 1 - No Action (Future without Project) – Without levee repair, additional vegetation may be washed away. Riparian habitat would be adversely impacted by erosion. Failure to repair the levee could increase potential Decurrent False Aster colonization within the forested and agricultural areas adjacent to the damage location 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 landward adjacent forested lands. Levees are planted with grasses and mowed regularly, making them non-suitable for establishment of Decurrent False Aster. Construction of a new levee alignment would involve ground disturbance within construction limits of the new levee alignment, old alignment, and borrow area, however during a site visit on 28 October 2020 no Decurrent False Aster was identified in the project location. Flooding due to future high-water events could potentially support Decurrent False Aster colonization in the forested area riverside of the levee if there is a seed bank present. 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. State Listed Species

A Missouri Department of Conservation Natural Heritage Review was conducted for this project on 28 October 2020. A Level 3 Report is the result of a Bald Eagle nest on the right descending bank near the mouth of Busch Creek (roughly RM 65) approximately 0.9 miles from the project location. The nest was occupied during the most recent survey conducted in 2017. State species of concern in the project vicinity include the Sturgeon chub (*Macrhybopsis gelida*, vulnerable). Neither alternative is anticipated to impact the Sturgeon chub or Bald Eagle.

3.3. Cultural Resources (Historic and Archaeological)

St. Louis District personnel conducted a pedestrian survey of the proposed borrow sites. Three areas were surveyed on 14 June 2018 and one area was surveyed on 4 March 2021. No cultural

materials were found in any of the surveyed areas. Based upon the results of the pedestrian survey, information from landowners, referencing the history of the land forms, and consultation with Indian tribes, it is the District's determination that proposed project will have no adverse effect on historic properties.

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.

Alternative 3 – Repair of Levees with Federal Assistance – The proposed repairs to the levee within the Augusta Bottom Levee Association will have no effect on historic properties. In the unlikely event that earthmoving activities associated with the proposed repairs 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 USACE Saint Louis District in concert with the professional staff of the Missouri State Historic Preservation Office (SHPO).

The Missouri SHPO responded on 23 August 2018 and 4 May 2021 and concurred that adequate documentation has been provided (36 CFR Section 800.11) and that there would be "no historic properties affected" by the current project.

3.4. Socioeconomic Resources

Levees are of regional economic importance to maintain the agricultural productivity occurring in the floodplain. The levee system also protects commercial structures, farm structures, residences, farmsteads, roads, ditches, utilities and infrastructure. Levee damage due to the 2019 high water event reduced the degree of protection from a 25-year flood event to a 2-year event due to the damage to the system.

According to 2019 American Community Survey 1-year estimate for St. Charles County, Missouri, there were approximately 150,668 households in the county, with an average of 2.62 persons per household (US Census Bureau 2019). The median value of owner-occupied housing units is approximately \$230,000 (US Census Bureau 2019). The population is approximately 88.9% white, 4.9% black, 0.2% American Indian or Alaska Native, 2.7% Asian, 2.4% two or more races, and 3.4% Hispanic (US Census Bureau 2019). Median household income is approximately \$89,146 (US Census Bureau 2019). Approximately 4.2% of the population for whom poverty status is determined in St. Charles County, MO (394,168 people) live below the poverty line (US Census Bureau 2019).

Alternative 1 - No Action (Future without Project) – If the Augusta Bottom levee segment is not repaired to the federal standard, there would be increased flood risk due to levee instability during future flood events. The previously leveed area would be subject to a higher probability of flooding, making the area less suitable for reliable agricultural productivity, residential and

commercial establishments, and may decrease recreational activities, especially under flood conditions. This could result in negative economic effects on the Levee Association and the local economy.

Alternative 3 - Repair of Levees with Federal Assistance – Residents, businesses, and local agricultural would benefit from levee repair and subsequent flood risk reduction. The proposed repairs would not require residential displacement. No adverse impacts to life, health, or safety would result from levee repair.

3.5. 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 was developed following the requirements of:

- Executive Order 12898 ("Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations," 1994)
- "Department of Defense's Strategy on Environmental Justice" (March 24, 1995).

Alternative 1 – No Action (Future without Project) – If the levee is not repaired to the federal standard, the level of risk reduction would be reduced from that provided by the pre-2019 flood event levee. This would not disproportionately affect low income or minority populations.

Alternative 3 - Repair of Levees with Federal Assistance – If the Augusta Bottom levee segment is repaired to the federal standard, the level of risk reduction would be that provided by the pre-2019 flood event levee. This would not disproportionately affect low income or minority populations.

3.6. Tribal Coordination

The St. Louis District consults with 26 Indian tribes that have an interest in projects along all rivers within our District boundaries. Several levees adjacent to the Missouri River within the U.S. Army Corps of Engineers St. Louis District boundaries were damaged by flooding in 2019.

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 any culturally significant sites protected by the levee.

Alternative 3 - Repair of Levees with Federal Assistance – An initial letter, dated 23 July 2018, was sent to the 26 Indian tribes the St. Louis District consulted with at that time. Along with the letter, enclosed maps showing the Augusta Bottom levee segment that had been damaged and three proposed borrow areas that had been archaeologically surveyed. The surveys determined the project will have no adverse effects on historic properties and the tribes were requested to

contact USACE if there were known tribal areas of concern within the project areas and if they desired further consultation on the project. USACE would continue the consultation process until the completion of the projects.

The following correspondence was received from Indian tribes: letter dated 6 August 2018 from the Quapaw Tribe of Oklahoma requesting a copy of the SHPO correspondence; letter dated 7 August 2018 from the Absentee Shawnee Tribe of Oklahoma concurring with finding of no adverse effects and deferring comment to USACE and SHPO; letter dated 17 August 2018 from Miami Tribe of Oklahoma offering no objection to the project, requesting to be notified if any archaeological sites or human remains are identified during construction; and an e-mail dated 23 August 2018 from Shawnee Tribe concurring that no known historic properties would be negatively impacted by this project.

A letter dated 6 April 2021 was sent to the 22 Indian tribes the St. Louis District currently consults discussing an archaeological survey of a fourth borrow area and haul road. The survey determined that the proposed project will have no adverse effects on historic properties and tribes were requested to contact USACE if there were known areas of tribal concern within the project areas if they desired further consultation on the project.

The following correspondence was received from Indian tribes: an email dated 8 April 2021 from the Nottawaseppi Huron Band of the Potawatomi offering no objection to the project, requesting to be notified if any archaeological sites or human remains are identified during construction; a letter dated 3 May 2021 from the Quapaw Nation concurring that the proposed project will have no adverse effects on historic properties, requesting to be notified if any archaeological sites or human remains are identified during construction; and a letter dated 7 May 2021 from the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians providing no comments at this time, but requesting to be notified if any archaeological sites or human remains are identified during construction.

3.7. 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 feasibility, preconstruction engineering and design, land acquisition, construction, operations and maintenance, repairs, replacement, and rehabilitation phases of water resources studies or projects by conducting a Phase I Environmental Site Assessment. USACE specifies that these assessments follow the process/standard practices for conducting Phase I Environmental Site Assessment's published by the American Society for Testing and Materials (ASTM).

The purpose of a Phase I Environmental Site Assessment is to identify, to the extent feasible in the absence of sampling and analysis, the range of contaminants (i.e. Recognized Environmental Conditions, 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 to the extent practicable or until hazard risks and potential liability are mitigated.

The likelihood of hazardous substances adversely affecting the project area due to the proposed levee repair activities 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, HTRW discovery provisions in the Activity Hazards Analysis (AHA) should be followed and the USACE Environmental Quality Section should be contacted immediately 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) – Without flooding, there would be no change from current conditions. With flooding, there is the potential for flood water to spread some contaminants.

Alternative 3 – Repair of Levees with Federal Assistance – The likelihood of hazardous substances adversely affecting the project area is low. The St. Louis District conducted a modified Phase I assessment including a site investigation on 29 July 2021 to ensure that no HTRW contamination exists within the project area. There were no HTRW concerns for repair activities.

3.7.1. Permits

A site visit was conducted on 28 January 2021. The proposed borrow areas do not exhibit wetland characteristics, therefore a Clean Water Act Section 404 permit is not required. The levee repair work would potentially impact jurisdictional waters of the U.S. and would be fully covered under Regional General Permit 41.

3.8. Effects Summary

The majority of the levee systems in the region have been in place for decades. Repairs would build a new levee alignment to the same level of protection as existed prior to the high-water events of 2019. Temporary impacts from noise, air, and increased water sedimentation may occur; however, effects of these impacts would be negligible. The Augusta Bottom Levee Association PL 84-99 project would require borrow for levee repairs. Borrow sites have been examined and selected to avoid sensitive areas and reduce environmental impacts. No long term adverse cumulative impacts are anticipated. Impacts of the considered alternatives to natural resources, cultural resources, and other aspects and features of the human environment are summarized in Table 2 of this EA.

Table 2. Summary of the “No Action” and Recommended Plan alternatives to physical, biological, and socioeconomic resources.

Resources	Alternatives	
	No Action	Recommended Plan
Physical Resources	Increased risk of levee failure, landside flooding, and adjacent river gaining lateral connectivity with the floodplain.	Levee repair would meet the Federal standard.
	Increased potential for bankline erosion and sedimentation. Air quality and noise levels not anticipated to be notably altered.	Temporary, minor impacts to air and water quality during construction. Temporary noise level increase near worksites.
	Does not meet project objective of repairs to Federal standard.	Does meet project objective of repairs to Federal standard.
Biological Resources	Potential for eventual loss of forested areas and other vegetation along the riparian area due to continued bankline erosion.	Potential for riparian habitat creation. Forested areas behind levee would remain protected from future flooding.
	Federally listed species are not anticipated to be adversely affected.	Federally listed species are not anticipated to be adversely affected.
	Meets project objective of minimal environmental impacts.	Meets project objective of minimal environmental impacts.
Socioeconomic Resources	Potential negative impacts to the levee association and regional economy due to levee damages and future flooding.	Protection of croplands, businesses and structures from floods up to the design (25-year frequency) of the levee system.
	Potential for flood damage to potentially culturally significant sites protected by the levee.	No effect on historic or culturally significant properties, as determined by MO SHPO and corresponding Indian tribes.
	No disproportionate affect to low income or minority populations.	No disproportionate affect to low income or minority populations.

3.9. Relationship of Recommended Plan to Environmental Requirements

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

Table 3. Relationship of the Recommended 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 ¹
Farmland Protection Policy Act, 7 (Prime Farmland) USC 4201-4208	FC
Fish and Wildlife Coordination Act, 16 USC 661-666c	PC ¹
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, 42 USC 4321-4347	PC ²
National Historic Preservation Act, 16 USC 470 et seq.	FC
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; Sec 307 - No Net Loss - Wetlands)	FC
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 11991)	FC
Protection and Enhancement of the Cultural Environment (Register Nomination) (EO 11593)	FC
Protection of Wetlands (EO 11990 as amended by EO 12608)	FC

FC = Full Compliance, PC¹ = Partial Compliance (on-going, will be accomplished prior to construction), PC² full compliance will be achieved upon signing of the NEPA document.

4. COORDINATION, PUBLIC VIEWS, AND RESPONSES

Notification of this Environmental Assessment and unsigned Finding of No Significant Impact will be sent to the officials, agencies, organizations, and individuals listed below for review and comment. Additionally, an electronic copy will be available on the St. Louis District's website at <http://www.mvs.usace.army.mil/Missions/ProgramsProjectManagement/PlansReports.aspx> during the public review period.

Please note that the Finding of No Significant Impact is unsigned. These documents are to be signed into effect only after having carefully considered public review comments received.

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:

US Fish and Wildlife Service

John Weber, Columbia, MO Field Office

US EPA Region 7 (MO) NEPA Team

Joshua Tapp

Federal Emergency Management Agency

US Senator (MO)

Josh Hawley

Roy Blunt

US House District 03 (MO)

Rep. Blaine Luetkemeyer

The Nature Conservancy

Missouri Field Office

Sierra Club

Missouri Chapter

Izaak Walton League of America

Robert D. Shepherd

American Bottoms Conservancy

Kathy Andria

Missouri Emergency Management Agency

Missouri Department of Conservation

Matt Vitello

Missouri Department of Natural Resources

Billy Hackett

MO State Senator, District 2

Robert F. (Bob) Onder, Jr.

MO State Representative, District 42

Jeff Porter

St. Charles County Emergency Management Agency

Sergeant Chris Hunt

Regulatory Division Distribution List

5. ENVIRONMENTAL ASSESSMENT PREPARERS

Name	Role
Shane Simmons	Project Manager
Meredith Trautt	Archaeologist and Tribal Liaison Assistant
Richard Archeski	Environmental Engineer
Chad LaMontagne	Regulatory Project Manager
Curtis Moore	Engineer
Rachel Steiger	Environmental Compliance
Teri Allen, Ph.D.	Environmental Compliance Review

6. REFERENCES

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<http://www.fws.gov/midwest/Endangered/mammals/inba/index.html>).

DRAFT FINDING OF NO SIGNIFICANT IMPACT

PUBLIC LAW 84-99 AUGUSTA LEVEE ASSOCIATION ST. CHARLES COUNTY, MISSOURI

1. I have reviewed the documents concerned with the proposed levee repairs to the Augusta Bottom levee segment of the Augusta Bottom and Dutzow Bottom Levee System. 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 segment to pre-flood conditions in an expedient manner.

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. No Action Alternative: 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. Nonstructural Alternative: Under PL 84-99, the Corps has the authority to pursue a non-structural alternative only if the project sponsor requests such an alternative. The Augusta Levee Association declined to request the pursuit of a non-structural alternative; therefore, this alternative was eliminated from further consideration.
- c. Repair of Levees with Federal Assistance (Recommended Plan): Under this alternative, the federal government would repair the damaged areas to the pre-flood level of protection. Since the Augusta Levee Association 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 Recommended 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, residences, farmsteads, roads, ditches, utilities and infrastructure.
- b. No appreciable effects to environmental conditions (air quality, noise, water quality) would result from the Recommended Plan.
- c. The Recommended Plan is not expected to cause significant adverse impacts to fish and wildlife resources.

- d. The Recommended Plan is not expected to cause unacceptable adverse impacts to riparian habitat, bottomland hardwood forest, or other wetlands. Levee setback would require the removal of approximately 5.37 acres of trees from a young, even-aged stand of cottonwoods in a former agricultural field abandoned after the 1993 flood. Tree growth by natural succession on the abandoned levee alignment (approximately 5.43 acres) would offset tree removal and increase the width of the forested riparian corridor.
- e. No Federally endangered or threatened species would be adversely impacted by the Recommended Plan.
- f. No prime farmland would be adversely impacted as a result of the Recommended Plan.
- g. No significant impacts to historic properties (cultural resources) are anticipated as a result of the Recommended Plan.
- h. No significant impacts to tribal resources are anticipated as a result of the Recommended Plan.
- i. The Recommended Plan would not disproportionately affect low income or minority populations.
- j. Under the Recommended Plan, local economies would benefit through an increased labor demand to carry out levee repairs. Agricultural land and structures within the leveed area 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 Recommended 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