DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
ROBERT A. YOUNG BUILDING - 1222 SPRUCE ST.
ST. LOUIS, MISSOURI 63103-2833

27 July 2018

Reply to:
US Army Corps of Engineers, St. Louis District
Regional Planning and Environmental Division North
Environmental Compliance Section (CEMVP-PD-C)
1222 Spruce Street
St. Louis, Missouri 63103-2833

RE: Augusta Bottoms Levee Association PL 84-99

Dear Sir or Madam:

We are providing for your review a Draft Environmental Assessment (EA) and unsigned Finding of No Significant Impact for the Augusta Bottom Levee Association (LA), which incurred levee damages during the spring flood events of 2017. Please note that the Finding of No Significant Impact is unsigned. This document will be signed into effect only after having carefully considered comments received as a result of this public review.

An electronic copy of the EA and unsigned FONSI can be obtained from the St. Louis District's website at

http://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/DraftAugustaBottomsEAandFONSIPL84992017Repairs.pdf

Several levees throughout the St. Louis District were damaged during the spring flooding in 2017. Augusta Bottom Levee Association has requested assistance under Public Law 84-99, which provides repair assistance for flood damaged levees active in the USACE Rehabilitation and Inspection Program. We are in the process of preparing plans and specifications and completing all necessary documentation including environmental compliance documents.

We invite your comments related to the content of the environmental assessment. Please address your comments or questions to Dr. Teri Allen of the Environmental Compliance Section (CEMVP-PD-C), at **telephone** number (314) 331-8084, or **e-mail** at Teri.C.Allen@usace.army.mil. **Please respond by close of business on Friday, 31 August 2018, in order to have your comments considered.**

Thank you,

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FOR Brian L. Johnson
Chief, Environmental Compliance Section

DRAFT ENVIRONMENTAL ASSESSMENT
WITH
FINDING OF NO SIGNIFICANT IMPACT

LEVEE REPAIR (PL 84-99):

AUGUSTA BOTTOMS LEVEE ASSOCIATION

WARREN AND ST. CHARLES COUNTIES, MISSOURI

MISSOURI RIVER, RIVER MILE 58 to 66

July 2018

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 Augusta Bottoms Levee Association (LA). 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 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 (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 Bottoms 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 Dutzow / Augusta Levee System is located in St. Charles County, Missouri with a very small section in Warren County, Missouri. The Augusta Bottoms levee is a non-federally constructed and maintained segment located along the left descending bank of the Missouri River, RM 66.0-57.2, approximately 60 miles west of St. Louis, Missouri. Bordering west of the levee association is a creek and Augusta Bottoms Road and Dutzow Bottoms Levee District. Bigelow Creek is along the northern border of Augusta Bottoms and the Katy Trail, used for biking and hiking runs along the northern border (Figure 1).

The Augusta Bottoms levee segment provides an approximately 25-year level of flood risk reduction for over 7,300 acres (6,800 acres productive agricultural land). The levee system also protects a regional airport, several residential structures and outbuildings, as well as utilities and roadways.

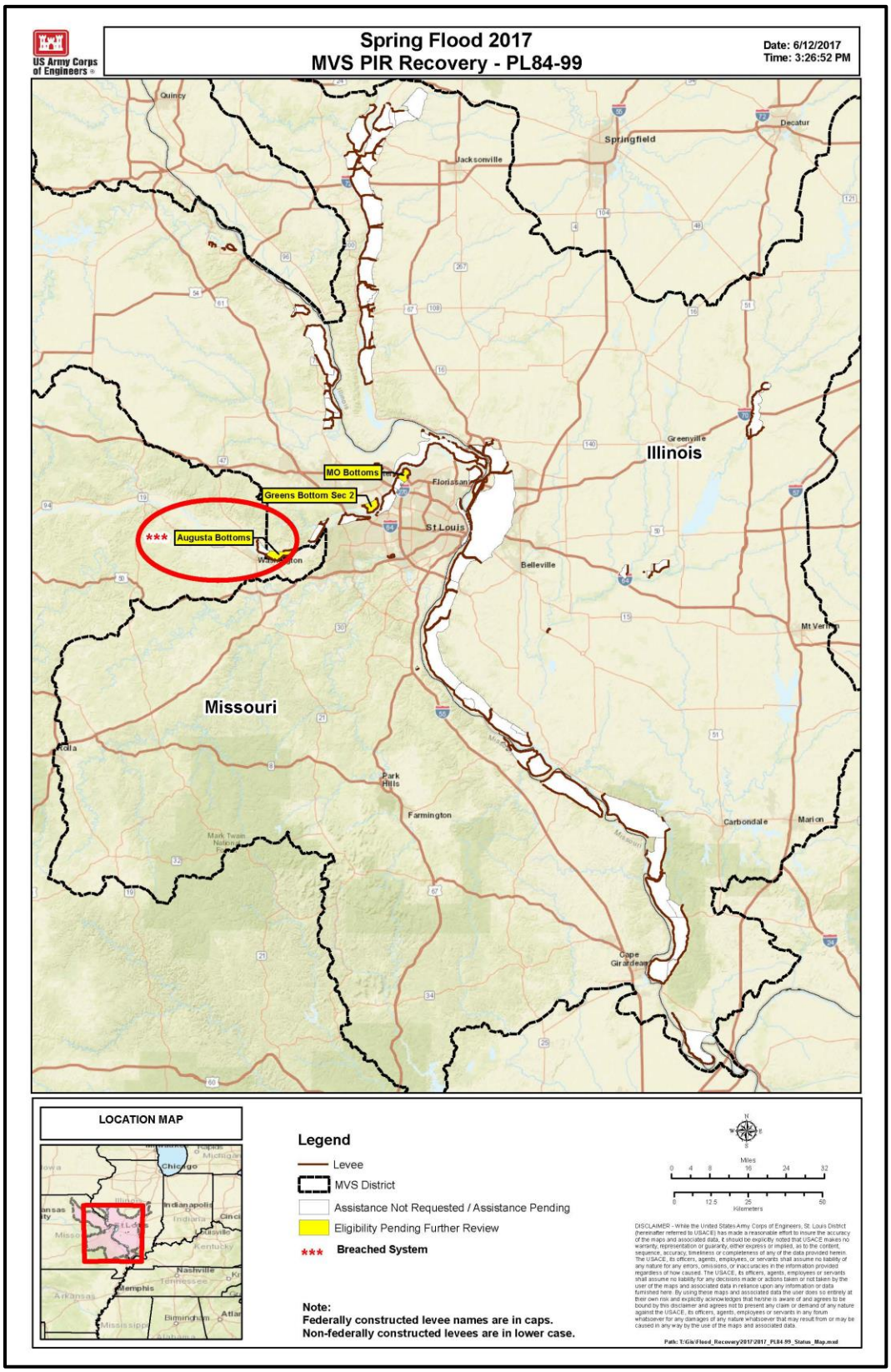

Figure 1. General Location Map of the Augusta Bottoms Levee Association.

The Augusta Bottoms 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.

1.3. Project Purpose and Need

The Augusta Bottoms levee segment sustained damages from high water events that resulted from powerful spring storms that occurred in the Midwest during 28 April – 11 May 2017, bringing torrential rain across the region. The purpose of this federal action is to restore the level of flood protection to that which existed prior to the 2017 flood events. There is a need for repairs, because flood damages reduced flood protection provided by the levee, making the levee association vulnerable to the next flood event. Without federal involvement through the PL 84-99 program, it is unlikely that the Augusta Bottoms Levee Association has the financial ability to restore the level of protection according to Corps of Engineers' standards.

1.4. Damage Description

The damages to the Augusta Bottoms levee segment sustained from the high water events are classified as follows:

Damage Classifications:

- Breach - A rupture, break, or gap in the levee system, measured in cubic yards. Breaches are repaired by stripping, preparing, placing embankment, and compacting in lifts.

- Slide - A movement of soil down the levee slope where the levee cannot support its own saturated weight. Slides are repaired by excavation of damaged area, and replacement of embankment in compacted lifts.

- Erosion Type II - Moderate erosion between 12 and 18 inches deep, measured in cubic yards. Erosion Type II is repaired by stripping, disking, filling, and compacting.

- Erosion Type III - Major erosion greater than 18 inches deep, measured in cubic yards. Erosion Type III is repaired by stripping, preparing, placing embankment, and compacting in lifts.

Damages:

- Breach Area 1 - The main breach is located between STA 557+50 and STA562+00 (riverside). The breach is approximately 175 yards wide and 10' deep with a significant

amount of slide/erosion on both sides of the breach. There is a 50 yard wide scour area in the field on the landside of the levee that is 50 feet deep at its deepest point. The interior scouring was approximately 400 yards from the breach (Figures 2-5).

- Breach Area 2 - The second breach is located on the interior portion of the levee (creekside), near the northeast corner of the levee at STA Station 735+00 to 736+50 (Figures 2, 6-8).

- Slide - A slide occurred at the gravity drain that is approximately 140 yards downstream of the breach at Area 2 (Figures 7-8). The gravity drain was also damaged (Figures 7-8).

- Erosion and Turf damage - Erosion Types II and III, as well as turf damage were located adjacent to the breaches (Figures 2, and 5-8).

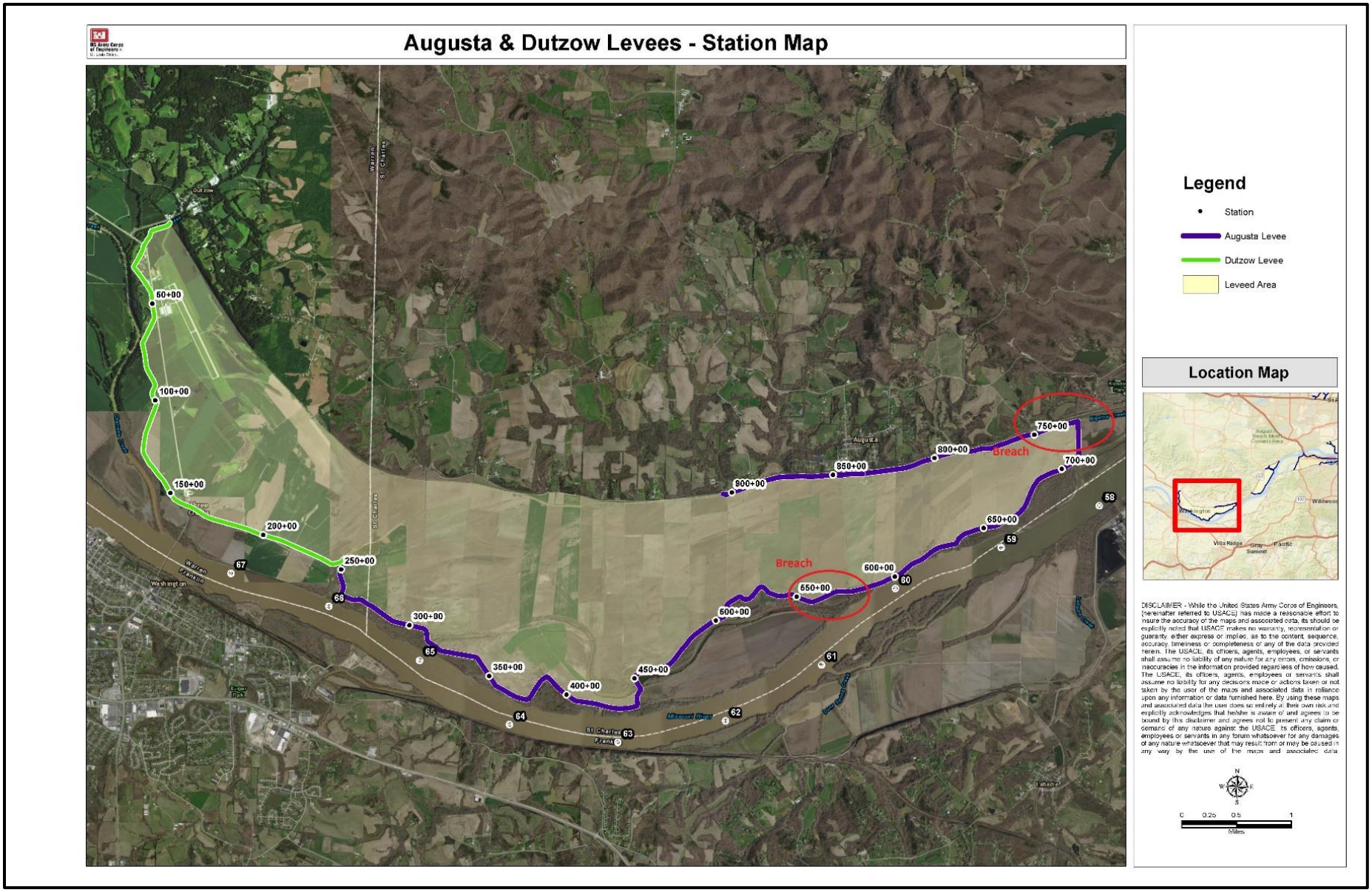

Figure 2. Map of the Augusta Bottoms levee segment damage locations.

Figure 3. Photo of Breach 1 - Station 558+50 to 561+50.

Figure 4. Photo of Breach 1 - Station 558+50 to 561+50.

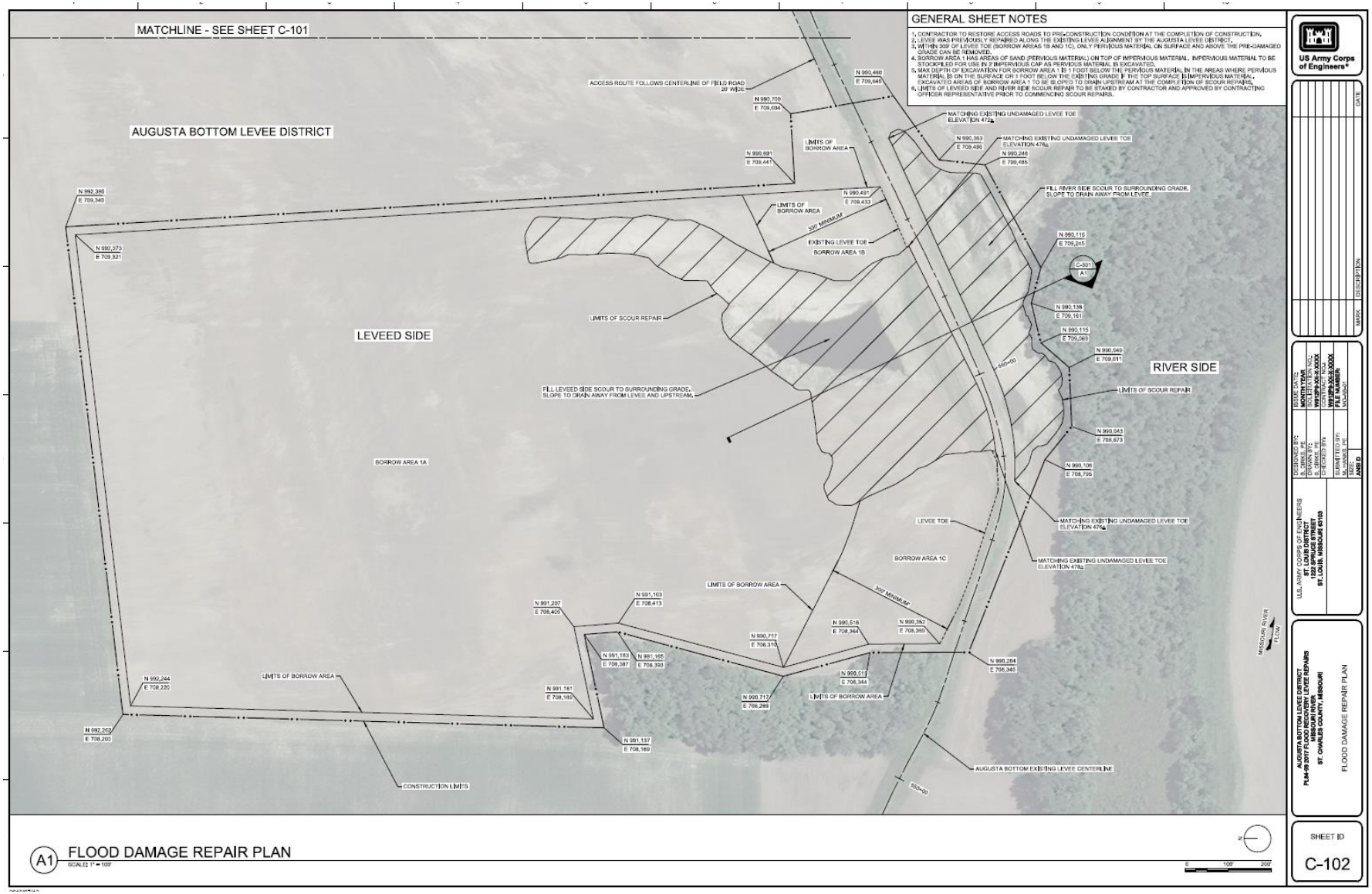

Figure 5. Illustration of flood damage repair plan for breach 1; and location of borrow area 1.

Figure 6. Photo of Breach 2 - Station 735 to 736+50.

Figure 7. Photo of the levee slide at STA 728+20 to STA 732+40.

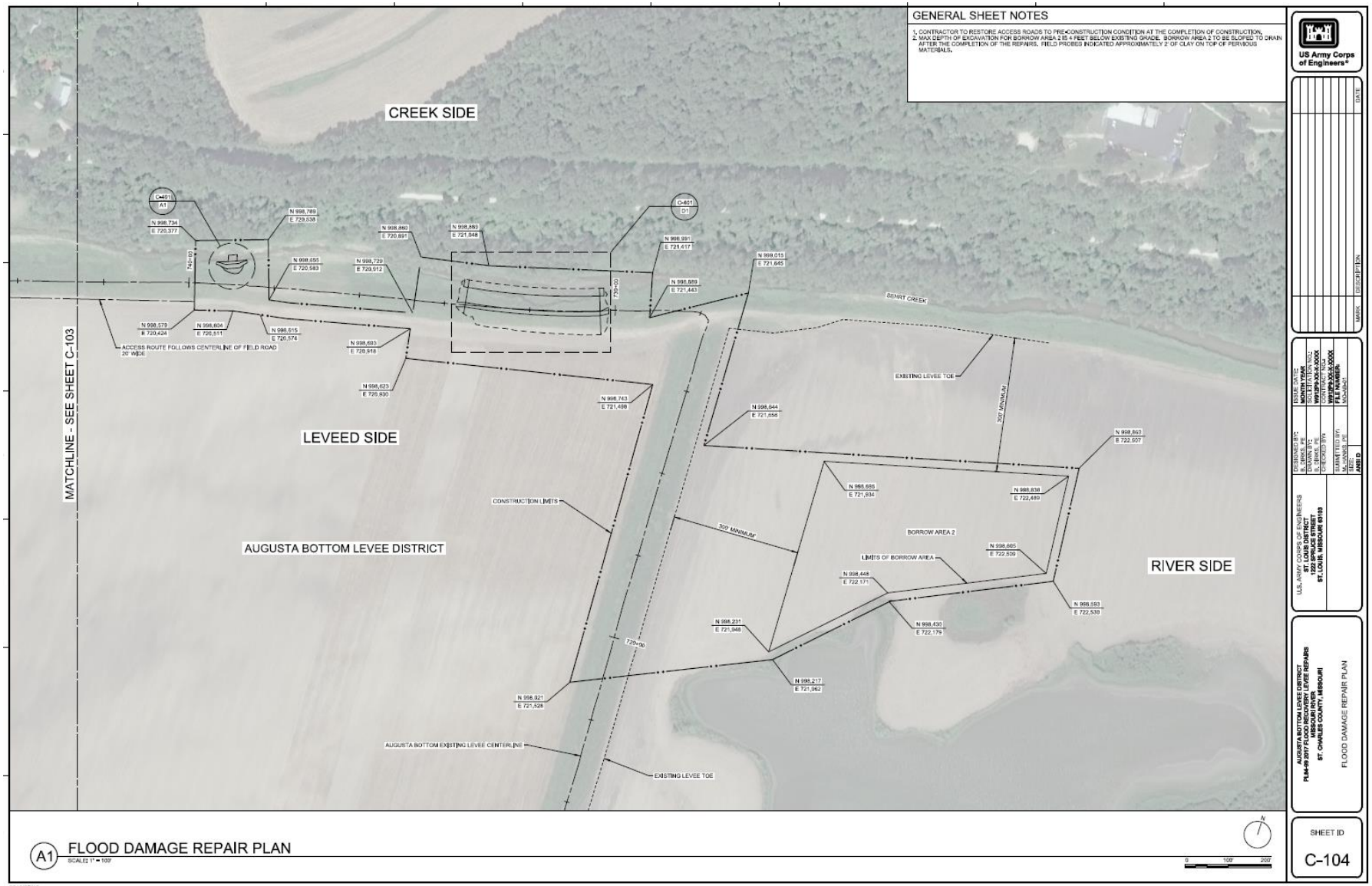

Figure 8. Illustration of breach 2, slide, and gravity drain flood damage repair plan; and location of borrow area 2.

2. PROJECT ALTERNATIVES CONSIDERED

This section describes and compares the alternatives based on their geotechnical, engineering design, economic, and environmental impact and achievement of project objectives for the damaged Augusta Bottoms 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 give consideration to 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 Bottoms levee segment. It is possible that the Augusta Bottoms Levee Association would make repairs without federal assistance. Environmental impacts of repairs made by the Augusta Bottoms Levee Association would be similar to the tentatively selected alternative, except that the repair duration may differ and the environmental protections may be reduced. However, due to the uncertainty of the Augusta Bottoms 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 damages would decrease flood protection, 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 give consideration to 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 flood proofing, relocation of structures such as levees, flood warning and preparedness systems, and regulation of floodplain uses. A flood warning system would do little to reduce structural and agricultural damages. Flood proofing or relocation is not desirable to the Augusta Bottoms Levee Association, because it would result in loss of numerous acres of agricultural land, and the present land owners desire to continue agricultural use.

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 Bottoms 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 Levees with Federal Assistance

Under this alternative, at the request of the Augusta Bottoms Levee Association, the federal government would repair the damaged areas to the pre-flood level of protection. Since the Augusta Bottoms 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.

2.4. Tentatively Selected Plan - Structural Repair of Levee Segment with Federal Assistance

Alternative 3, structural repair of the existing levee segment 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.

Repairs for the Augusta Bottoms levee segment would consists of restoring protection along the previous alignment versus establishing a new alignment in the areas of the breaches. Structural repair would reconstruct the levee to pre-flood grade at the location of the breaches and slide.

The Augusta Bottoms Levee Association has self-repaired some of the levee damages, particularly near Breach 2. The estimated borrow quantity for the remaining repairs to the Augusta Bottoms levee segment is approximately 27,000 cubic yards of impervious and 26,000 cubic yards of pervious material. This includes material for the scour hole at Breach 1, the slide repair (creek erosion) downstream of Breach 2, and the erosion around the gravity drain upstream of Breach 2. Additionally, bedding material and riprap would be used to make repairs at Breach 2, Slide 1, Erosion Area 1, and Erosion Area 2. All areas would be reseeded upon completion of construction as necessary. Figures 9-15 illustrate typical cross-sections indicating methods of repair for breaches, slides, Erosion Types II and III, turfing, gravity drain, stone protection key, creek scour repair and gravity drain scour repair.

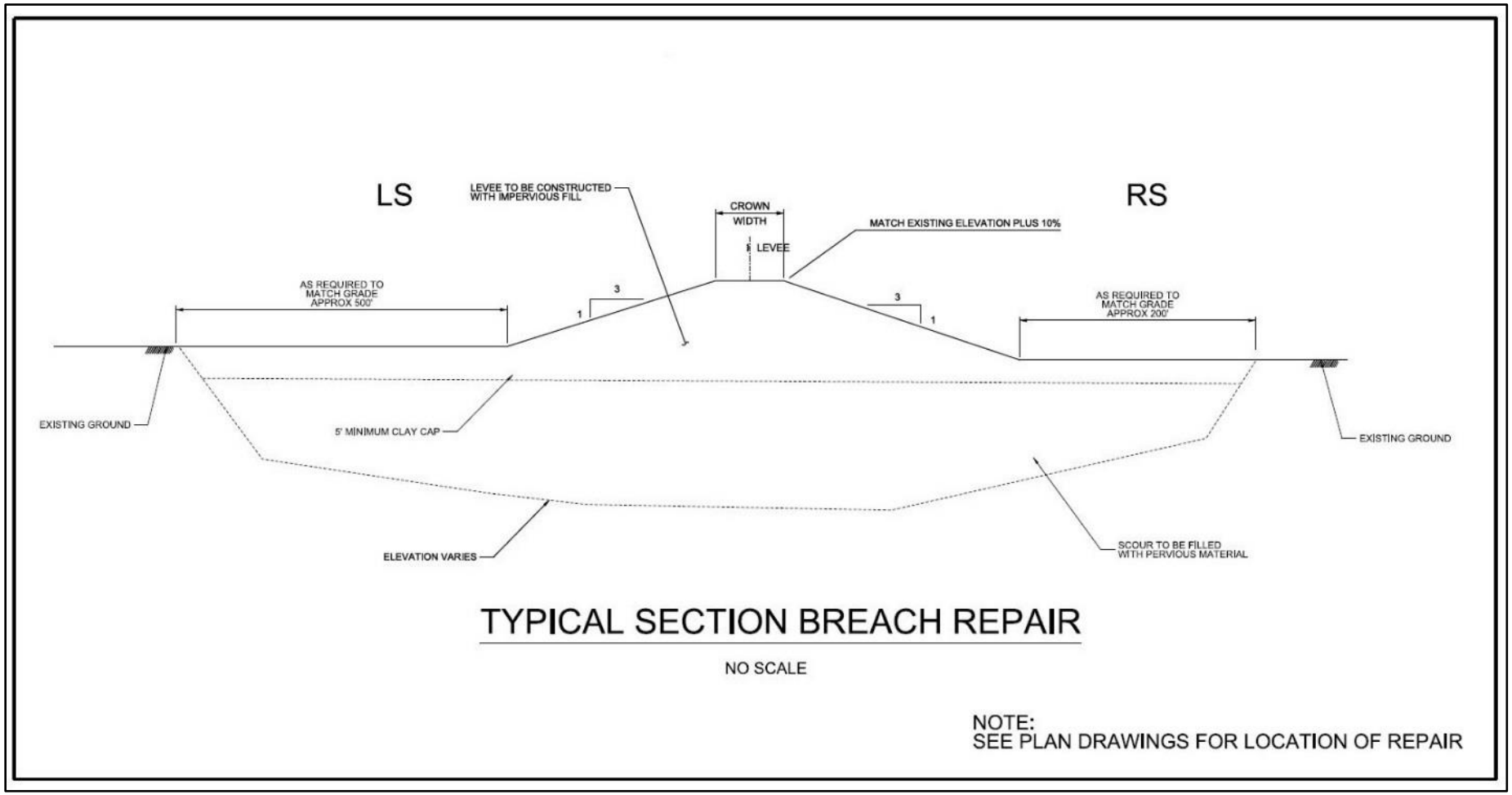

Figure 9. Illustration of a typical reach repair.

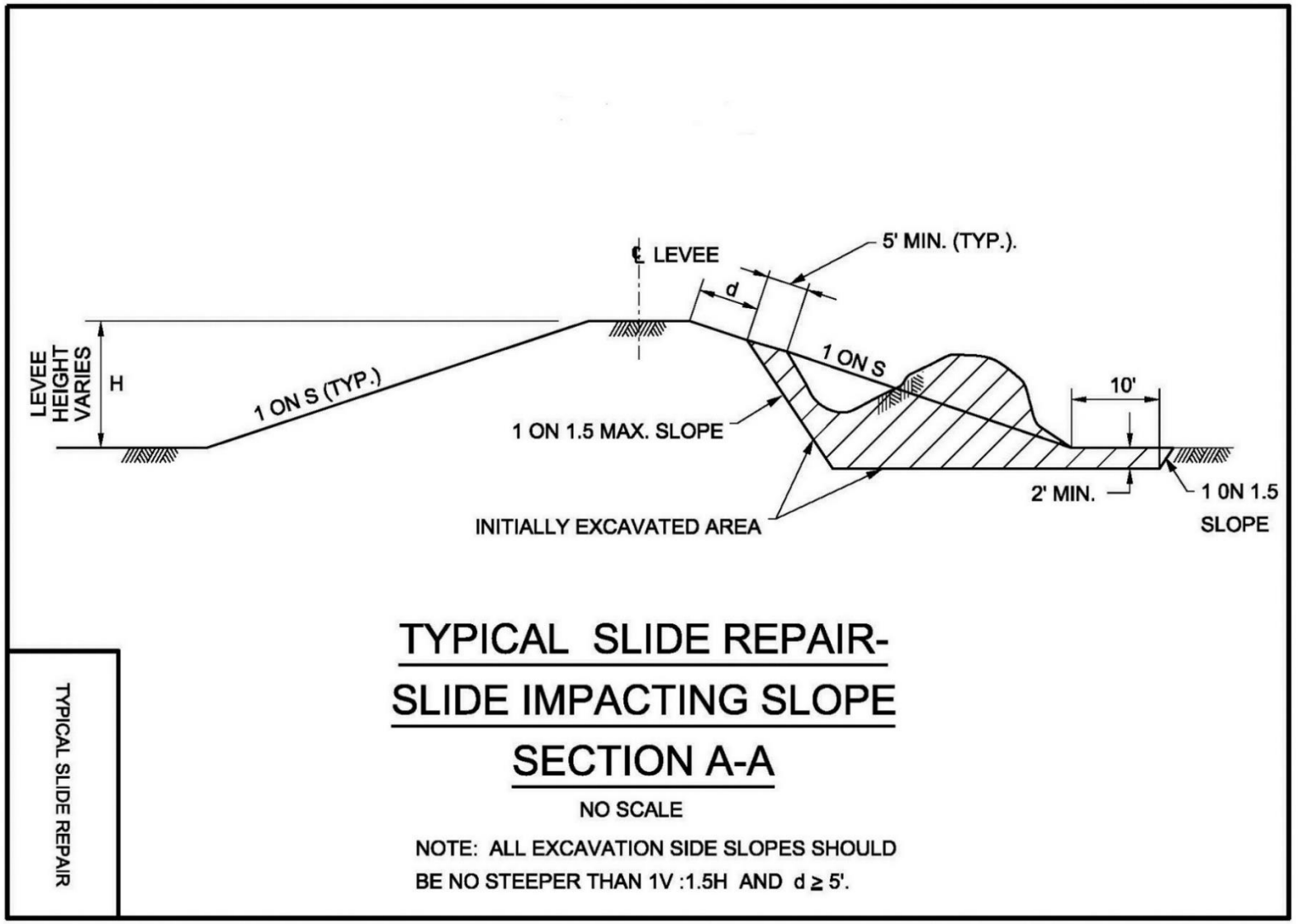

Figure 10. Illustration of a typical levee slide repair.

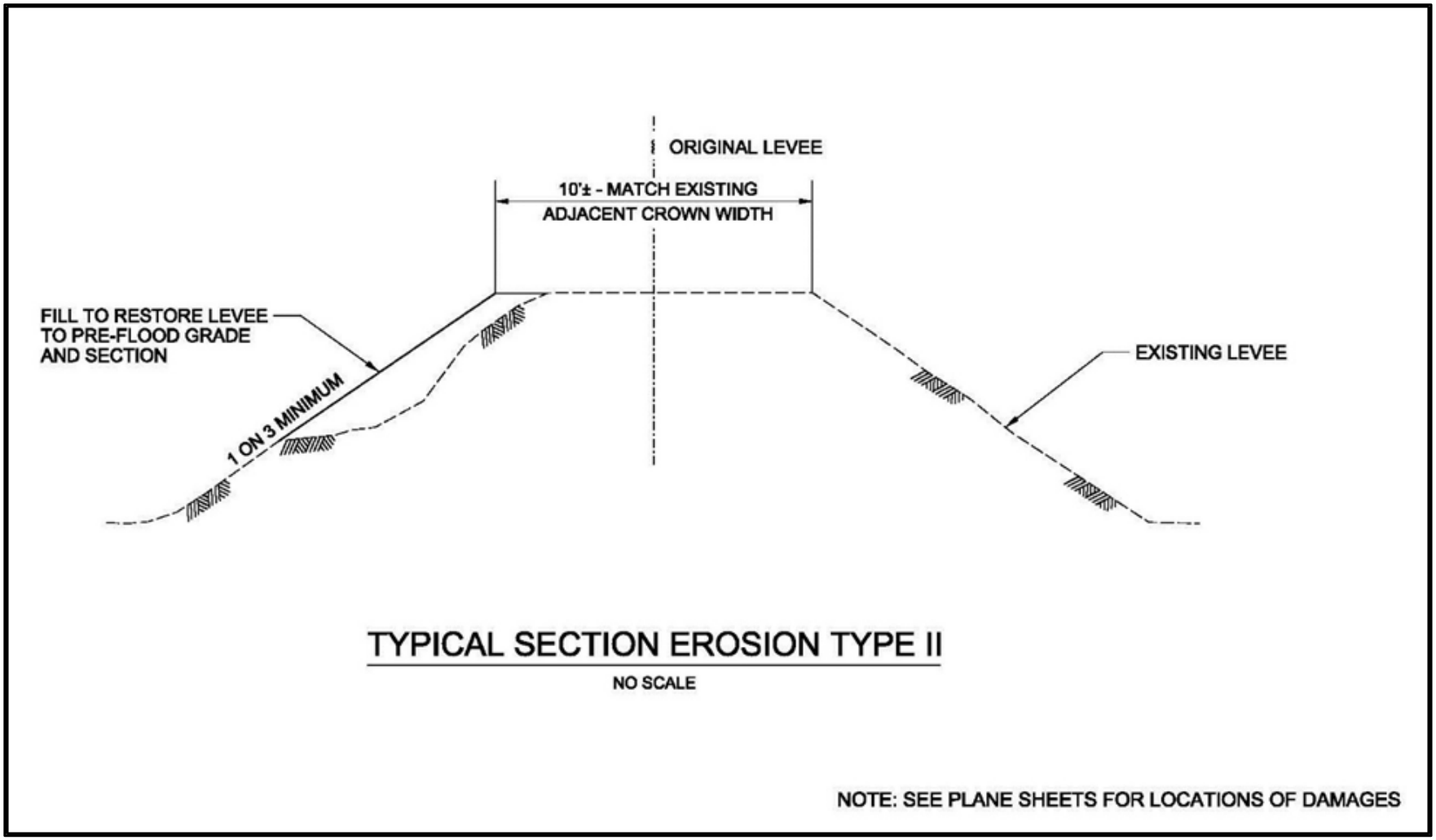

Figure 11. Illustration of a typical erosion type II repair.

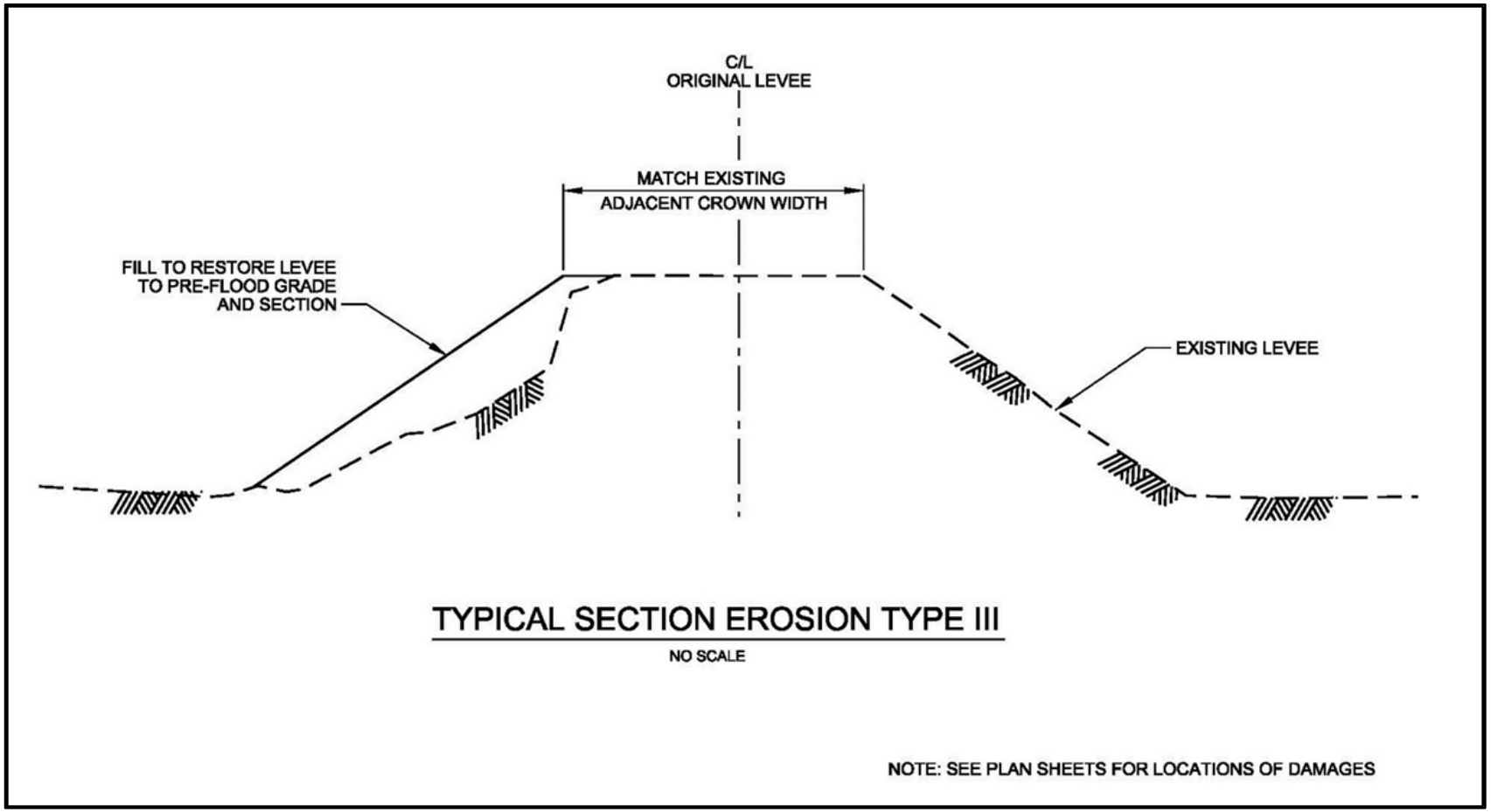

Figure 12. Illustration of a typical erosion type III repair.

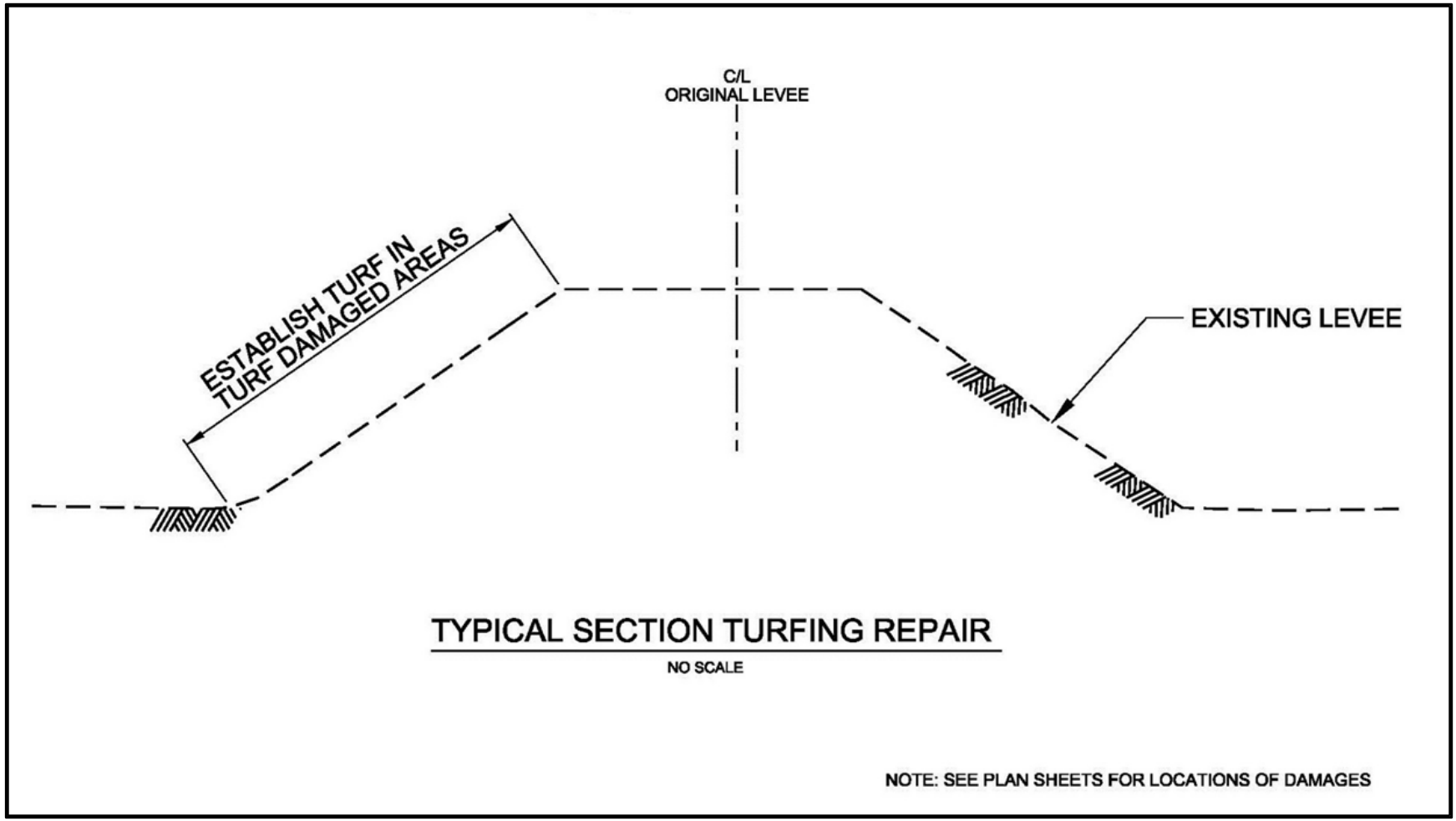

Figure 13. Illustration of a typical turf repair.

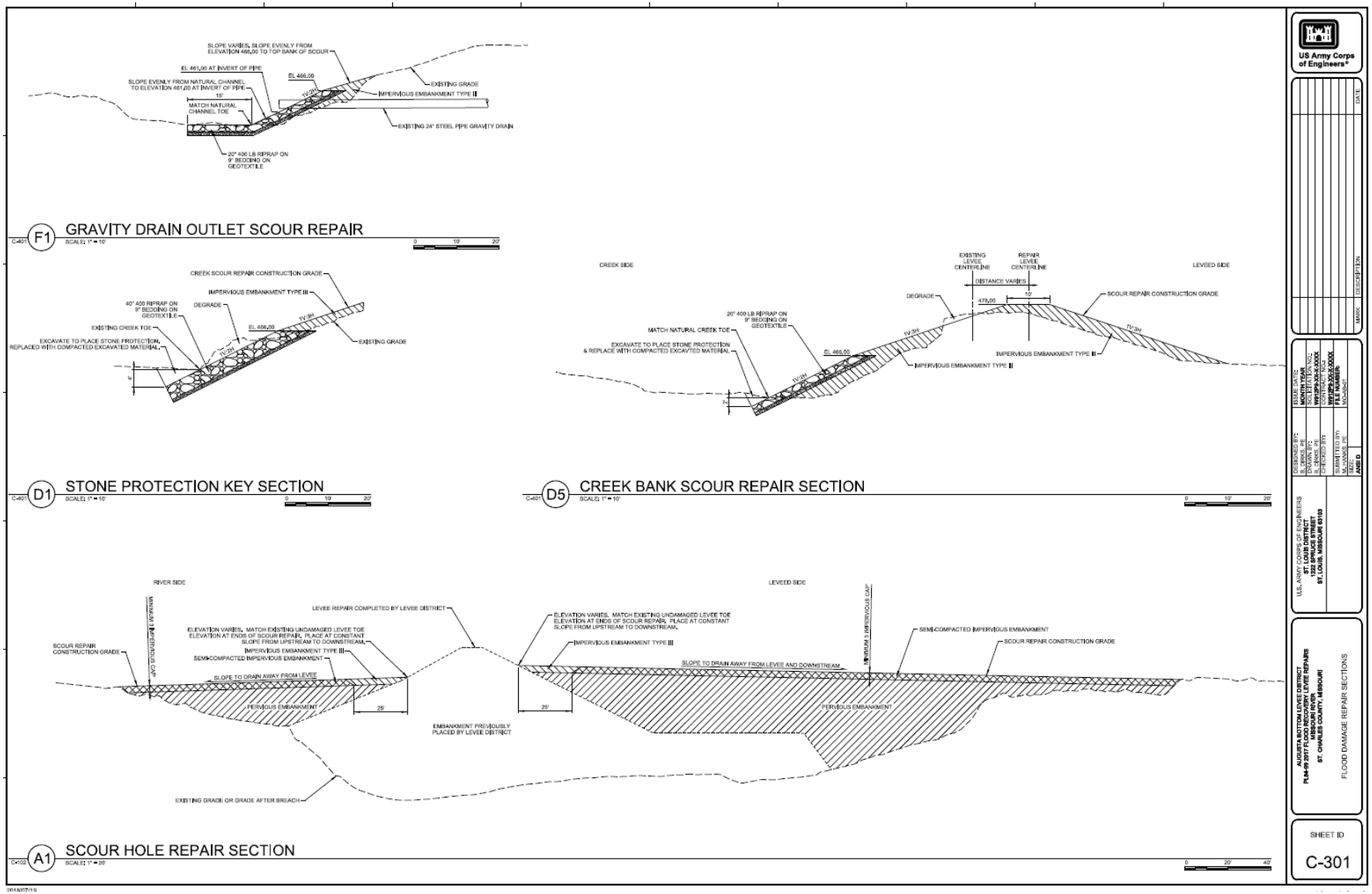

Figure 14. Illustration of gravity drain, stone protection key, scour hole repair, and creek bank scour repair.

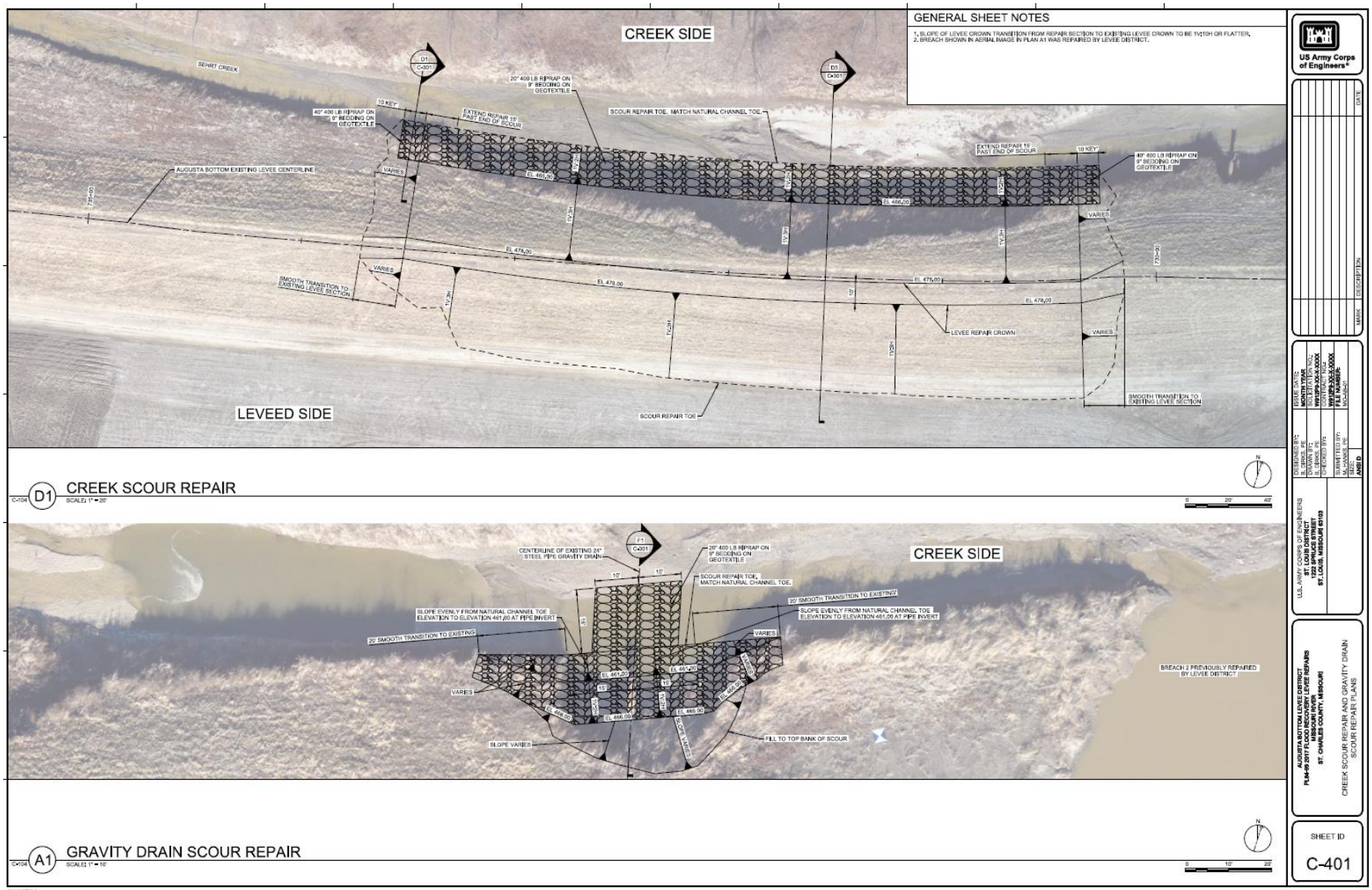

Figure 15. Illustration of creek scour repair and gravity drain scour repair.

2.4.1. Borrow Areas and Material

The Tentatively Selected Plan would require approximately 27,000 cubic yards of impervious and 26,000 cubic yards of pervious material. The proposed borrow sites are shown in Figures 5, 8, and 16. No tree clearing is required. A site visit was conducted on 14 June 2018. The proposed borrow areas do not exhibit wetland characteristics, therefore a Section 404 permit is not required. In both Borrow Area 1 and Borrow Area 2, 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 3 feet of borrow material would be taken from beneath the initial topsoil strip. The borrow areas would be sloped to drain excess water at the end of construction. The borrow areas are a reasonable and economically feasible haul distance to the levee.

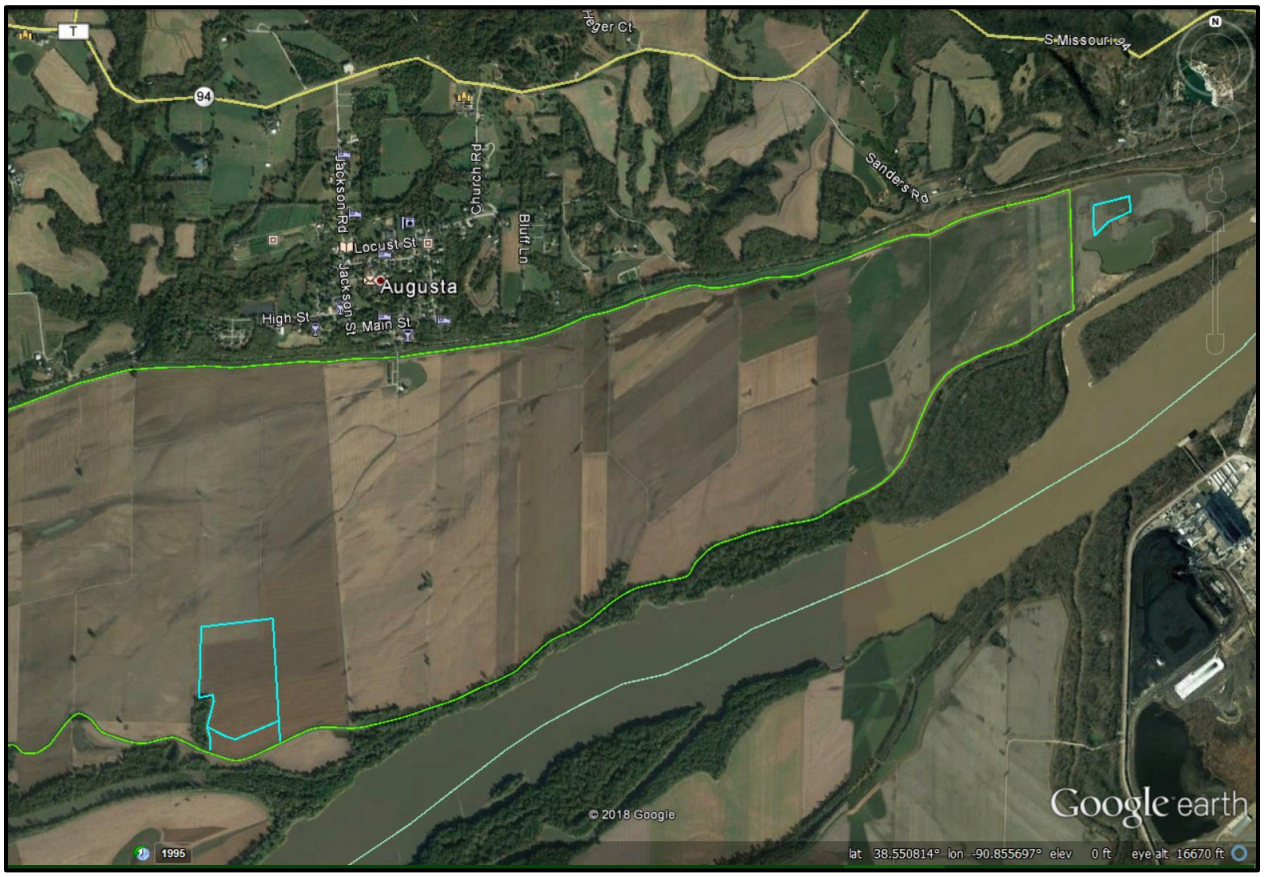

Figure 16. Aerial photo of the proposed borrow sites (outlined in blue) for the Augusta Bottoms levee segment PL 84-99 2017 repairs.

2.4.1.1. Construction Limits

The construction limits for repairs are shown in the associated repair figures. As currently planned, shrubby vegetation along the levee breach and scour area would be removed as part of these repairs. According to preliminary project plans, the levee would be repaired back to the existing levee section and alignment. Riprap and bedding material are to be placed as described in the project plans and specifications.

2.4.1.2. Access and Staging Areas

Staging areas and access routes to the repair sites 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 sites would be utilized. The contractor is required to restore access roads to pre-construction condition at the completion of construction

2.4.1.3. Final Plans and Specifications

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.

2.4.1.4. 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 egg 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

The Augusta Bottoms Levee Association is located in Warren and St. Charles Counties, Missouri adjacent to the left descending bank of the Missouri River. The leveed area provides flood risk reduction for a regional airport, several residential structures and outbuildings, as well as utilities and roadways. Levees have been constructed to the federal standard to reduce the likelihood of inundation within the leveed area to a 25-year return period; 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 (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. St. Charles County, Missouri, is currently in non-attainment status for U.S. Environmental Protection Agency air quality criteria for 8-Hour Ozone (2008 (marginal), and $PM^{2.5}$ (1997) (moderate) (USEPA 2018; (https://www3.epa.gov/airquality/greenbook/anayo_mo.html). 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 scour and sedimentation as well as temporary or permanent changes in land use. Continued bankline scour 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. However, without the levee, the adjacent river could gain lateral connectivity with the floodplain, possibly benefitting fish and wildlife. 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 an agricultural area adjacent to the Missouri River and Bigelow Creek. 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 17). 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 very negligible and would cease after construction.

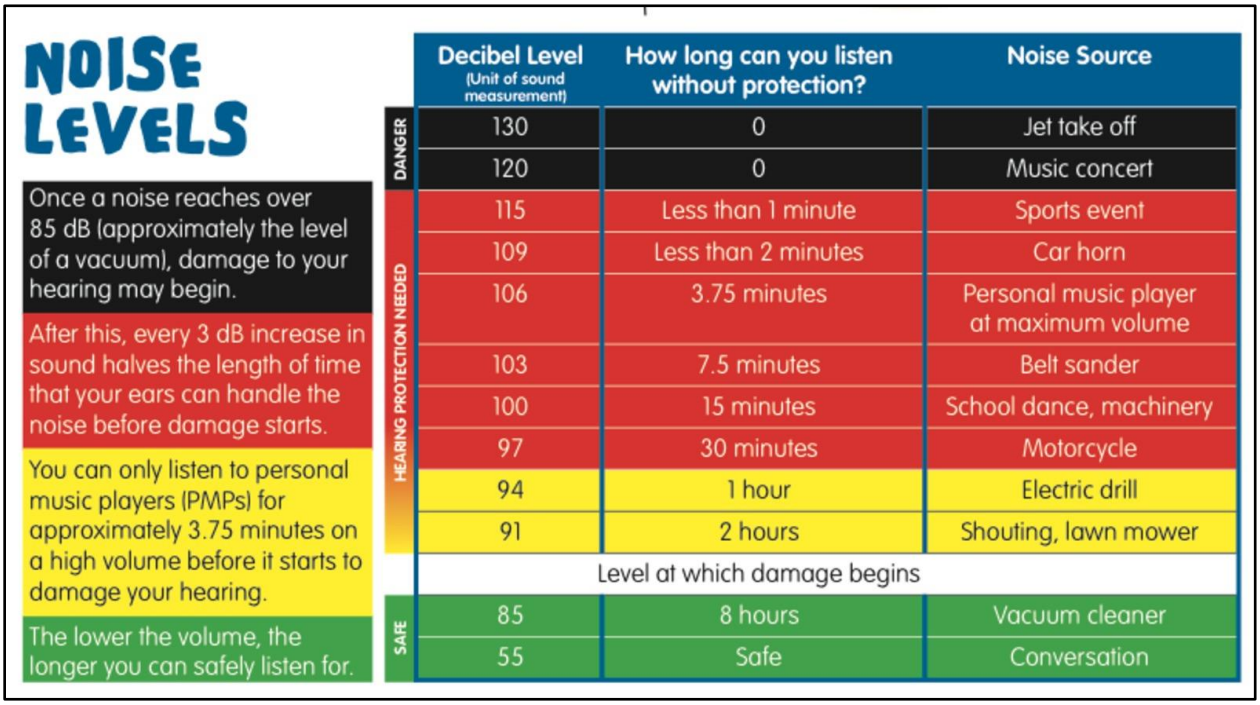

Figure 17. Example of noise levels and time exposure in relation to hearing loss.

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 Bottoms levee segment is not repaired to the federal standard, the levee system would have less stability and there is an increased probability of future flooding. During highwater events, bankline scour could erode into the levee and wash soil into adjacent waterbodies, resulting in a short-term increase in turbidity in the immediate area, and temporarily displacing fish and other mobile organisms. Additionally, if flooding were to occur, and agricultural use diminishes, then a more diverse and dynamic terrestrial and aquatic habitat may develop 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, and killing vegetation as flood water ponds on typically dry areas that are currently dominated by agriculture. However over time, wetland vegetation could become established. 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 – It is anticipated that impacts of the levee repair on fish and wildlife resources would be minimal. Repairs would be made by clearing, grubbing and stripping the any scrubby vegetation from the levee breach area. Bedding material and riprap would then be placed according to the project plans and specifications. The riprap and bedding material would extend upstream and downstream of ends of scour to avoid flanking. Approximately 27,000 cubic yards of impervious and 26,000 cubic yards of pervious material would be used for repairs. The levee repair area would be reseeded with turf.

If heavy rain occurs during the levee repair, the levee would continue to erode and wash soil into the surrounding waterbodies, resulting in a short-term increase in turbidity in the immediate area, and temporarily displacing fish and other mobile organisms. Following construction, aquatic species would be expected to return. 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 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. The U.S. Fish and Wildlife Service developed the National Bald Eagle Management Guidelines (USFWS 2007a, 2007b, 2007c) to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may constitute disturbance. On 14 Jun 2018, USACE biologist Chris Hopfinger conducted a field investigation and survey of the Augusta Bottoms the levee system to determine the presence of bald eagle nests/nesting within the drainage district. No bald eagle nests were observed.

Alternative 1 – No Action (Future without Project) – Without levee repair, additional vegetation in the path of the breach may be washed away. Trees which may potentially be used for bald eagle nests in the future could become dislodged.

Alternative 3 – Repair of Levees with Federal Assistance – Based on the site investigation and survey results showing 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 11 July 2018 (Consultation Code: 03E14000-2018-SLI-2042 Event Code: 03E14000-2018-E-04390) (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.

Common Name (Scientific Name)	Classification	Habitat
Gray bat (*Myotis grisescens*)	Endangered	Caves year-round (winter hibernacula and summer roosting). In the summer gray bats forage along rivers lakes, and creeks, and may roost under bridges.
Indiana Bat (*Myotis sodalis)*	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 with 4(d) rule	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 (*Boltonia decurrens*)	Threatened	Disturbed alluvial soils

3.2.3.1. Gray Bat

The Gray Bat is a species that has a limited range in limestone karst areas of the southeastern United States, including several Illinois and Missouri counties. Gray Bats typically roost in caves year-round. During winter, Gray Bats hibernate in deep, vertical caves, and during summer, Gray Bats generally roost in various caves, but have been documented roosting under bridges and in other structures. Gray Bats forage on a variety of night-flying aquatic and terrestrial insects along rivers, lakes, and creeks.

Gray Bats are endangered largely because of their habitat of living in large numbers in only a few caves; thus making the species vulnerable to human disturbance and habitat loss or modification. Disturbance of Gray Bats in their caves during their hibernation, can cause them to use their

energy reserves and could lead to starvation. Disturbances to their caves during their nursing season (June and July) can frighten females causing them to drop non-volant pups to their death in panic to flee from the intruder. Additionally, many important caves that have been historically used by Gray Bats have been inundated by reservoirs. 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 and drive bats away.

The fatal bat disease, white-nose syndrome (WNS), has not yet been documented to adversely affect the Gray Bat. However, because of Gray Bats are cave obligates, and considering how WNS has decimated other cave-dwelling bat species, WNS could be another significant threat to the Gray Bat.

Alternative 1 – No Action (Future without Project) – Without levee stabilization, additional vegetation in the path of the breaches may be washed away. Riparian habitat would be adversely impacted by scour.

Alternative 3 – Repair of Levees with Federal Assistance – The proposed project would not negatively affect any caves or summer roost / foraging habitat (i.e.; caves, forested riparian habitat). As currently planned, this project involves no tree clearing. 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 endangered Indiana Bat has been noted as occurring in several Illinois and Missouri counties. Indiana Bats are considered to 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, where each female gives birth to a single young in June or early July. A maternity colony may include from one to 100 individuals. A single colony may utilize a number of 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 in the same types of trees as females. The best available data indicate that the species or size of tree does not appear to influence whether Indiana Bats utilize a tree for roosting provided the tree exhibits any of the following characteristics: exfoliating bark, cracks, crevices,

cavities. Data also indicate that the use of a particular tree is influenced by conditions, such as solar exposure, temperature and precipitation (USFWS 1999, USFWS 2007d).

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. It has been shown that the foraging range for the bats varies by season, age and sex and ranges up to 81 acres (33 ha). Suitable Indiana Bat summer habitat may be located in the forested areas in and adjacent to the Augusta Bottoms Levee Association.

Alternative 1 - No Action (Future without Project) – Without levee breach stabilization, trees which may potentially be used by Indiana Bats could become dislodged. Riparian habitat would be adversely impacted by breaching and scour.

Alternative 3 - Repair of Levees with Federal Assistance – The proposed project would not affect any caves or mines or involve clearing forest or woodland habitat containing suitable roosting habitat. As currently planned, this project involves no tree clearing. A site visit was conducted on 14 Jun 2018 to determine if potential Indiana Bat habitat existed in the proposed construction or borrow areas; however none was discovered. 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 from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. 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, in crevices of both live and dead trees, and 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 Bottoms Levee Association.

Alternative 1 - No Action (Future without Project) – Without levee breach stabilization, trees which may potentially be used by Northern Long-Eared Bats could become dislodged. Riparian habitat would be adversely impacted by breaching and scour.

Alternative 3 - Repair of Levees with Federal Assistance – The proposed project would not affect any caves or mines or involve clearing forest or woodland habitat containing suitable roosting habitat. As currently planned, this project involves no tree clearing. A site visit was conducted on 14 Jun 2018 to determine if potential Northern Long-Eared Bat habitat existed in the proposed construction and borrow areas; however none was discovered. 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. Little is known of its micro-habitat preferences; however, it is suspected that sand/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 breaches would continue to erode and wash soil into adjacent waterbodies, resulting in a short-term increase in turbidity in the immediate area.

Alternative 3 - Repair of Levees with Federal Assistance – Levee repairs would take place within the footprint of the levee and designated work areas and would not impact any large river 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. 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 (USFWS 2015). The typical flowering season for Decurrent False Aster is from August through October.

In Missouri, Decurrent False Aster distribution is currently restricted to the Mississippi River floodplain from the Illinois River southward. Current populations are fewer and more isolated than in historical times. Presently it is only known to occur in St. Charles County (MDC 2017).

Alternative 1 - No Action (Future without Project) – Without levee breach stabilization, additional vegetation in the path of the breach may be washed away. Riparian habitat would be adversely impacted by scour. Failure to repair the levee could possibly lead to the increased potential of Decurrent False Aster colonization within the agricultural areas adjacent to the breaches if a nearby seed source is present. However, these areas would likely return to agricultural production once flood water receded, inhibiting the establishment of the species.

Alternative 3 - Repair of Levees with Federal Assistance – The proposed project area is within the existing levee footprint and adjacent agricultural lands (borrow areas). The levees are planted with grasses and mowed regularly. The agricultural lands are intensively managed for row crop production and receive chemical and mechanical disturbance annually, making them non-suitable for establishment of Decurrent False Aster. The St. Louis District has determined that the Tentatively Selected Plan "*may affect, but is not likely to adversely affect Decurrent False Aster*".

3.2.4. Cultural Resources (Historic and Archaeological)

St. Louis District personnel conducted a pedestrian survey of the proposed borrow sites on 14 June 2018. No cultural materials were found in any of the surveyed areas. Based upon the results of the pedestrian survey, information from land owners and referencing the history of the land forms, it is the District's opinion that the proposed project would have no 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 Bottoms Levee Association 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.

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).

3.2.5. Socioeconomic Resources

Levees are of regional economic importance to maintain the agricultural productivity occurring in the floodplain. The crop distribution within the area is approximately 44 percent soybeans, 44 percent corn, and 12 percent wheat. The levee system also protects commercial structures, farm structures, residences, farmsteads, roads, ditches, utilities and infrastructure. Levee damage due to the 2017 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. The benefit to cost (b/c) ratio is estimated at 2.8 to 1.

According to 2010 census data for St. Charles County, Missouri, there were approximately 134,274 households in the county, with an average of 2.6 person per household. The median value of owner-occupied housing units was $144,500. The population was approximately 90.7% white, 4.1% black, 0.2% American Indian or Alaska Native, 2.2% Asian, 1.8% two or more races, and 2.8% Hispanic. According to 2012-2016 data, median household income was $75,603. Approximately 6.1% of the population for whom poverty status is determined in St. Charles County, MO (372,238 people) live below the poverty line.

Alternative 1 - No Action (Future without Project) – If the Augusta Bottoms 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 potential 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.

3.2.6. 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-2017 flood event levee. This would not disproportionately affect low income or minority populations.

Alternative 3 - Repair of Levees with Federal Assistance – If the Augusta Bottoms Levee Association levee segment is repaired to the federal standard, the level of risk reduction would be that provided by the pre-2017 flood event levee. This would not disproportionately affect low income or minority populations.

3.2.7. Tribal Coordination

The St. Louis District consults with 26 Native American 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 2017.

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 – The recovery and repair of levees damaged by the 2017 flood events, authorized under PL 84-99, was coordinated with all tribes in

the following manner: An initial letter, dated 23 July 2018, was sent to the tribes, describing the damages to the levee . Along with the letter, enclosed maps indicated the Augusta Bottom levee segment had incurred damage and had requested assistance. The tribes were requested to contact the USACE if there were known tribal areas of concern in any of the project areas and if they desired further consultation on each or any project. USACE would continue the consultation process until the completion of the projects.

3.2.8. 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. At this time, there are no recognized environmental conditions that would indicate a risk of HTRW contamination within the project area.

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 due to the proposed construction activities is very low. The St. Louis District would conduct a modified Phase I assessment including a site investigation prior to construction to ensure that no HTRW contamination exists within the project area.

3.2.9. Permits

A site visit was conducted on 14 June 2018. 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.

3.3. Summary Comparison of Project Alternatives

Impacts of the Tentatively Selected Plan 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 Tentatively Selective Plan alternatives to physical, biological, and socioeconomic resources.

Resources	Alternatives	
	No Action	**Tentatively Selected Plan**
Physical Resources	Additional bankline breaching and scour will occur if the damage is not repaired; and the integrity of the levee would be compromised during high water events.	Breach, slide, erosion, and turf repairs would meet the Federal standard.
	Increased potential for further breaching, scour, and erosion of bankline and levee; with eventual sedimentation within the levee association during flood events.	Temporary minor impacts to water and air quality during construction.
	Does not meet project objective of repairs to Federal standard.	Brings the levee protection level back to pre-2017 flood event conditions.
Biological Resources	If levee segment is compromised in the future, 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.
	It is unlikely that federally listed threatened or endangered species would be adversely impacted. However, there is the potential for	The Tentatively Selected Plan would not result in the removal or alteration of habitat that coincides with the

	eventual loss of forested areas (possible bat or bald eagle habitat) and other vegetation along the riparian area due to continued bankline erosion.	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 adverse affected.
	Meets project objective of minimal environmental impacts.	Meets project objective of minimal environmental impacts.
Socioeconomic Resources	The levee association would be susceptible to future floods and potential negative impacts to the levee association and regional economy due to levee damages.	Repair of levee would result in the protection of croplands, businesses and structures from floods up to the design (25-year frequency) of the levee system.
	Does not meet project objective of protecting the socioeconomic value of the levee district and regional economy.	Meets project objective of protecting the economic value of the levee district and regional economy.

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 2017. 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 Augusta Bottoms Levee Association PL 84-99 project would require borrow for levee repairs. Borrow sites have been examined and selected in order to avoid sensitive areas and resources. Borrow for the project would come from agriculture areas. 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. Borrow sites have been evaluated during site visits to reduce environmental impacts.

4.1. 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 3.

Table 3. 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	PC[1]
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.	PC[1]
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)	PC[1]
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.

5. COORDINATION, PUBLIC VIEWS, AND RESPONSES

Notification of this Environmental Assessment and unsigned Finding of No Significant Impact was 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 will be signed into effect only after having carefully considered comments received as a result of this 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 Environmental Assessment and unsigned Finding of No Significant Impact was sent to the entities listed in Table 4.

Table 4. A letter regarding the availability of a draft Environmental Assessment and unsigned FONSI for the Augusta Bottoms Levee Association PL 84-99 2017 repair was sent to the following entities.

Jane Ledwin Fish and Wildlife Biologist U.S. Fish and Wildlife Service 101 Park DeVille Drive, Suite A Columbia, Missouri 65203-0057	Robert F. (Bob) Onder, Jr. MO State Senator, District 2 201 W Capitol Ave., Rm. 331 Jefferson City, Missouri 65101
Matt Vitello, P.E. Policy Coordinator Missouri Department of Conservation PO Box 180 Jefferson City, MO 65102	St. Charles County Emergency Management Agency Sergeant Chris Hunt, Emergency Management Director 301 N. Second Street, Room 280 St. Charles, MO 63301-5410
US Senator Roy Blunt (MO) 260 Russell Senate Office Building Washington, DC 20510	Missouri Emergency Management Agency 2302 Militia Drive P.O. Box 116 Jefferson City, MO 65102
US Senator Claire McCaskill (MO) 730 Hart Senate Office Building Washington, D.C. 20510	Sierra Club Missouri Chapter 2818 Sutton Boulevard Maplewood, MO 63143
U.S. Rep. Blaine Luetkemeyer U.S. House District 03 (MO) 2440 Rayburn House Office Building Washington, D.C. 20515	Robert D. Shepherd Izaak Walton League of America 16 Juliet Ave Romeoville, IL 60446
Missouri Department of Natural Resources Sara Parker Pauley, Director P.O. Box 176 Jefferson City, MO 65102	Kathy Andria American Bottoms Conservancy P.O. Box 4242 Fairview Heights, IL 62208
Federal Emergency Management Agency 1 Memorial Drive St. Louis, MO 63102	The Nature Conservancy Missouri Field Office P.O. Box 440400 Saint Louis, MO 63144
Bart Korman MO State Representative, District 42 MO House of Representatives 201 West Capitol Avenue Room 113 Jefferson City MO 65101	Larry Shepard US EPA Region 7 (MO) NEPA Team 11201 Renner Blvd. Lenexa, Kansas 66219

6. ENVIRONMENTAL ASSESSMENT PREPARERS

Rick Archeski, Environmental Engineer
Experience: 13 years USFWS, 10 years US Army, 16 years USACE
Role: Environmental Engineering, HTRW

James E. Barnes, District Archaeologist
Experience: 8 years private sector; 24 years Center of Expertise, Curation and Maintenance of Archaeological Collections
Role: National Historic Preservation Act Analysis and Compliance

Bryan Dirks, P.E.
Experience: 11 years Civil Design Section, USACE
Role: Technical Engineering Lead

Teri C. Allen, Ph.D.; Chief – Environmental Compliance Section; Aquatic Ecologist
Experience: 10 years private sector; 17 years Planning and Environmental Branch, USACE
Role: EA Coordinator, Environmental Impact Analysis, NEPA and Environmental Compliance

Sheila A. McCarthy, RA, PMP; Project Manager
Experience: 7 years USACE-CERL; 8 years NPS; 8 years USACE
Role: Project Manager

Rob Heer; Structural Engineer
Experience: 2+ years USACE
Role: Project Manager

Chad LaMontagne, Regulatory Specialist
Experience: 3 years USACE-MVS Regulatory; 10 years USDA-NRCS
Role: Section 404/401 permit review

Evan Stewart, Economist
Experience: 5 years USACE
Role: Economic Analysis

7. REFERENCES

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USFWS (U.S. Fish and Wildlife Service). 2007a. Species Profile: Bald Eagle (*Haliaeetus leucocephalus*). Available at http://ecos.fws.gov/speciesProfile/SpeciesReport.do?spcode=B008

USFWS (U.S. Fish and Wildlife Service). 2007b. National Bald Eagle Management Guidelines. https://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines.pdf

USFWS (U.S. Fish and Wildlife Service). 2007c. Protection of Eagles; Definition of ''Disturb''. Federal Register 72(107): 31132-3113.

USFWS (U.S. Fish and Wildlife Service). 2007d. Indiana Bat (Myotis sodalis) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. April 2007. 258 pp. (This document has been peer-reviewed and is available at http://www.fws.gov/midwest/Endangered/mammals/inba/index.html).

FINDING OF NO SIGNIFICANT IMPACT

PUBLIC LAW 84-99
AUGUSTA LEVEE ASSOCIATION
WARREN AND ST. CHARLES COUNTIES, MISSOURI

1. I have reviewed the documents concerned with the proposed levee repairs to the Augusta Levee Association. The purpose of this project is to repair levee sections damaged by an extended high water event during the spring of 2017. 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 (Tentatively Selected 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 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, residences, farmsteads, roads, ditches, utilities and infrastructure.

b. No appreciable effects to general environmental conditions (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. No Federally endangered or threatened species would 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-2017 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

Bryan K. Sizemore
Colonel, U.S. Army
District Commander