

**DRAFT ENVIRONMENTAL ASSESSMENT  
WITH  
FINDING OF NO SIGNIFICANT IMPACT**

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**LEVEE REPAIR (P.L. 84-99)  
LAKESIDE 370 LEVEE DISTRICT  
MISSISSIPPI RIVER, RIVER MILE 230 to 228  
ST CHARLES COUNTY, MISSOURI**

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November 2016



**US Army Corps  
of Engineers**  
St. Louis District

Prepared by:  
Environmental Compliance Section  
U.S. Army Corps of Engineers  
St. Louis District  
1222 Spruce Street  
St. Louis Missouri 63103-2833



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

8 November 2016

**Reply to:**

US Army Corps of Engineers  
St. Louis District  
Environmental Compliance Section (PD-C)  
1222 Spruce Street  
St. Louis, MO 63103-2833

RE: Lakeside 370 Levee District 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 Lakeside 370 Levee District, which incurred levee damages during the winter flood events of 2015. 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/Lakeside370DraftEAandFONSIPL84992015Repair.pdf>.

Levees throughout the St. Louis District were damaged during the summer and winter flooding in 2015. Many drainage and levee districts have requested assistance under Public Law 84-99, which provides repair assistance for flood damaged levees. 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, by close of business on 12 December 2016.

Thank you,

*Brian L. Johnson*  
Brian L. Johnson

Chief, Environmental Compliance Section

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DRAFT

## **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 Lakeside 370 Levee District. The purpose of this EA is to evaluate potential environmental impacts of proposed levee repairs, determine if the environmental impacts rise to the level of significant, and to serve as a record of interagency coordination for the emergency rehabilitation actions.

### **1.1. Project Authorization**

Emergency actions undertaken by USACE to repair flood control works damaged or destroyed by flooding are authorized by Public Law 84-99, as amended by Section 206 of the Flood Control Act of 1962 (hereafter referred to as P.L. 84-99). USACE regulations covering these and other emergency rehabilitation activities are contained in the Rehabilitation Code 910-300 of ER 500-1-1 (33 C.F.R 203). The Code states that actions taken to *restore facilities to pre-disaster conditions* under P.L. 84-99 will not be construed to be either major federal actions or as having significant effects. However, the effect of rehabilitation on the environment must be considered. This includes the effects of construction on endangered species (P.L. 93-205 and Appendix B of ER 1105-2-50) and archeological and historic properties (Chapter 3 of ER 1105-2-50). Since the Lakeside 370 Levee District is active in the USACE Rehabilitation and Inspection Program, they are eligible for Flood Control and Coastal Emergency funding authorized by P.L. 84-99.

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

The Lakeside 370 Levee System is a non-federally constructed, non-federally maintained levee located in St. Charles County, Missouri, and is located approximately 3 miles south of the Mississippi River at approximately miles 228 to 230 (Figure 1). The levee system provides flood risk reduction for primarily agricultural land with some residential and commercial properties, and infrastructure including Highway 370. The levee system provides flood risk reduction for a total of 1,400 acres. The levee system provides a 500-year level of flood risk reduction with 2-feet of freeboard. The system consists of a 4-mile levee constructed with a 12-foot crown and 1 on 3 side slopes.

### **1.3. Project Purpose and Need**

The Lakeside 370 Levee District sustained damages from high water events that resulted from a powerful winter storm that occurred in the Midwest during 26-29 December 2015, bringing torrential rain and heavy snow across the region. The purpose of this federal action is to restore the level of flood protection to that which existed prior to the 2015 flood event. There is a need for repairs because damages reduced flood protection provided by the levee, making the district vulnerable to more frequent flooding. Without federal involvement through the P.L. 84-99 program, it is unlikely that the Lakeside 370 Levee District has the financial ability to restore the level of protection according to Corps of Engineers' standards.

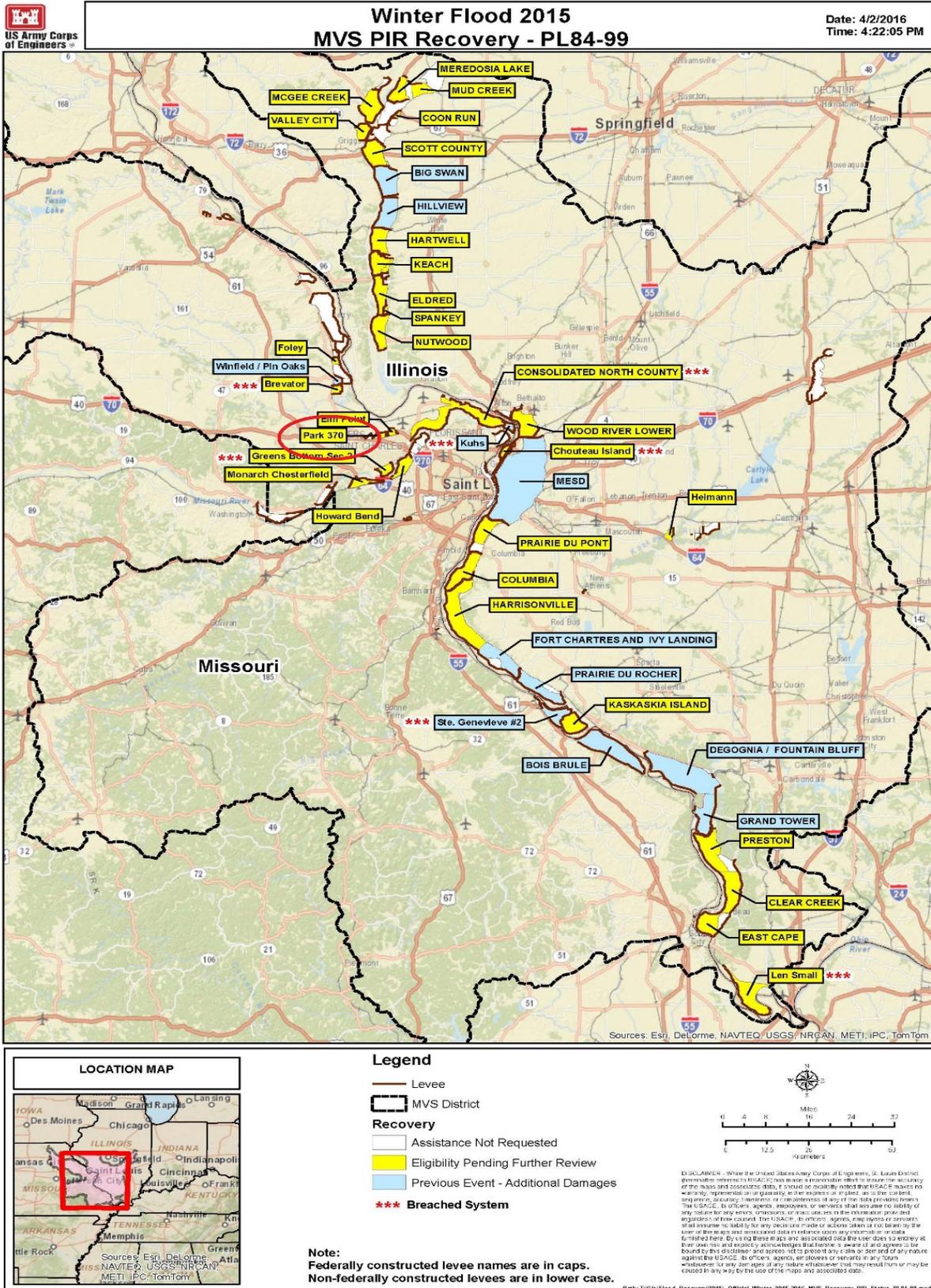


Figure 1. General Location Map of the Lakeside 370 Levee District.

## 1.4. Damage Description

Damages sustained by the Lakeside 370 levee as a result of the winter 2015 high water event on the Mississippi Rivers consist of slides. Damage locations are shown in Figure 2.

### 1.4.1. Damage Classification

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

### 1.4.2. Damages

Two slides occurred on the riverside of the levee (Figure 2). The slides are located near the intersection of Premiere Parkway South and Spencer Road. Slide 1 is 125' long and extends from the toe of the levee to the top of levee slope (Figure 3). Slide 2 is 105' long and extends from the toe of the levee to the top of levee slope (Figure 4).

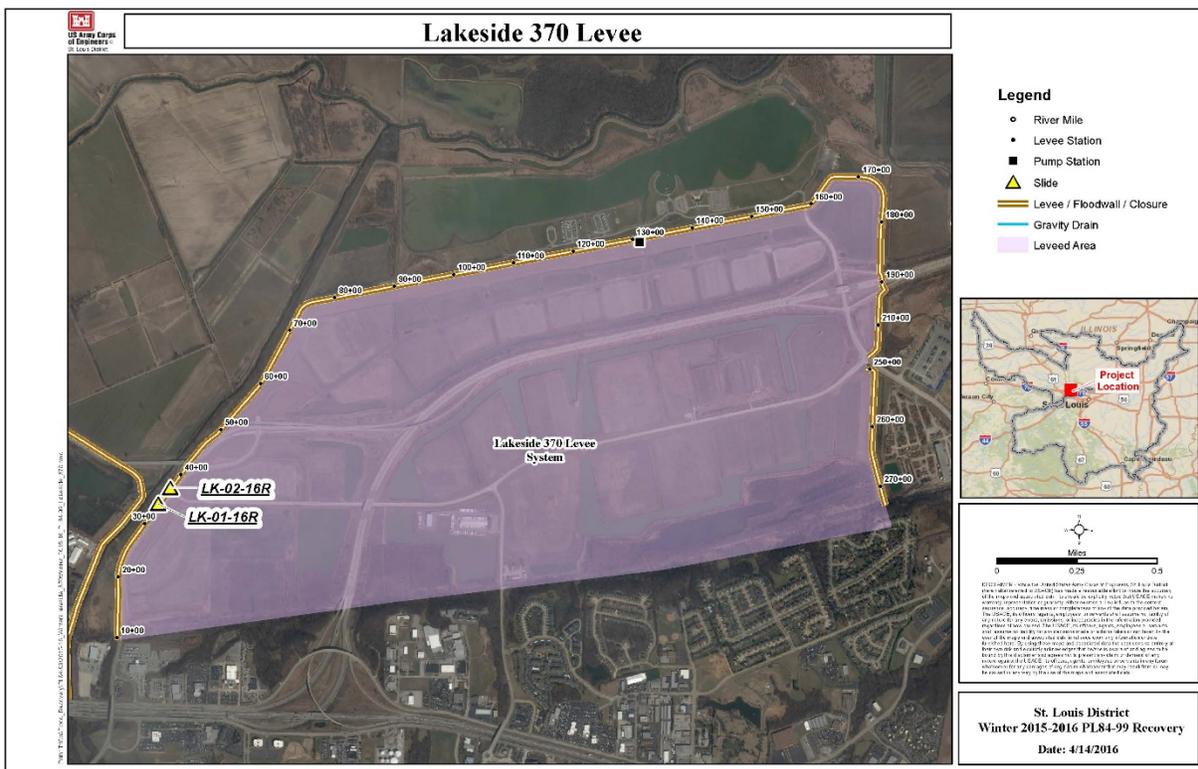


Figure 2. Location of Lakeside 370 levee slides as result of the December 2015 high water event.



**Figure 3.** Photo of Slide 1.



**Figure 4.** Photo of Slide 2.

## **2. ALTERNATIVES**

This section describes and compares the alternatives based on their environmental impact and achievement of project objectives for the damaged Lakeside 370 Levee District. The National Environmental Policy Act (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 Water Resources Development Act (WRDA) of 1974 (P.L. 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 Lakeside 370 levee. It is possible that the Levee District would make repairs without federal assistance. Environmental impacts of repairs made by the Levee District 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 Levee District making all necessary repairs, the environmental impacts of allowing the damage to remain unrepaired are regarded as the No Action Alternative. This would presumably perpetuate a state of reduced levee structural integrity. The levee would be susceptible to further erosion at the damaged sites. The current damages would decrease flood protection, thereby increasing risks to individuals, structures, businesses, and agricultural activities within the leveed areas.

### **2.2. Alternative 2 – Non-Structural Measures**

Section 73 of the WRDA of 1974 (P.L. 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 Lakeside 370 Levee District, would have large costs, and would result in the loss of numerous acres of agricultural land.

Under P.L. 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 PL 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 Lakeside 370 Levee District declined to request the pursuit of a non-structural alternative; therefore, this alternative was eliminated from further consideration in this EA.

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

Under this alternative, at the request of the Lakeside 370 Levee District, the federal government would repair the damaged areas to the pre-flood level of protection. Since the Lakeside 370 Levee District is active in the USACE Rehabilitation and Inspection Program, it is eligible for Flood Control and Coastal Emergency funding authorized by P.L. 84-99.

#### **2.3.1. Slide Repairs**

The damaged areas of the levee would be reconstructed by excavation and replacement of approximately 4,900 cubic yards of embankment material, returning the levee to its original slope and grade. Since the excavated material would be reused as embankment material to refill the damaged area, there would be no associated borrow site. All repair areas would then be reseeded to prevent or minimize erosion when conditions are suitable for grass germination.

#### **2.3.2. Construction Limits**

Construction limits would be established in the immediate vicinity of the erosion and turf repair areas. No emergent or forested wetlands exist within the proposed construction limits.

#### **2.3.3. 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. Haul road locations and staging areas would be restored to their pre-project condition after project completion.

#### **2.3.4. 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 would be completed within one construction season.

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

#### **3.1. Physical Resources**

The Lakeside 370 Levee District is located on the floodplain of the Mississippi River. Because of the fertility of the soil and moisture, the land is prized for its agricultural productivity.

St. Charles County, Missouri, is currently a non-attainment area for 8-hour ozone (2008 standard; marginal) and particulate matter-2.5 (1997 standard; moderate). The area is in attainment for sulfur dioxide, lead, carbon monoxide, and nitrogen dioxide (USEPA 2016). Ambient noise in the study area is generated by wildlife, human activities, and vehicular traffic and agricultural traffic.

*Alternative 1 – No Action (Future without Project)* - If the levee system is not repaired to the federal standard there would be an increased flood risk and more physical damages could potentially occur within the Lakeside 370 Levee District, such as erosion and sedimentation. The area would remain unprotected during high water events. Debris and unsuitable materials could enter farm fields creating less than desirable agricultural conditions and hinder future farming productivity. Air quality and noise pollution are not anticipated to be altered by this alternative.

*Alternative 3 – Repair of Levees with Federal Assistance* - 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. 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 may minimally increase ozone, carbon monoxide and carbon dioxide levels in the vicinity of the construction site. Due to the extremely limited levee repairs required, the expected increases would be negligible and would cease after construction. EPA has set de minimis emission levels beneath which conformity to the state implementation plan (SIP) does not need to be demonstrated. Due

to the relatively small scale of the project, emissions of PM are clearly de minimis; therefore an emissions analysis was not performed.

Construction activities would occur on the mowed grass levee berms adjacent to streams and water areas. Levee repairs could cause a short-term increase in turbidity in the waterways at the immediate construction sites 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.

## **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, and agricultural cropland. These habitats provide food and cover for a variety of fish and wildlife, including Largemouth Bass, Bluegill, Carp, Crappie, Warmouth, Channel Catfish, Bullfrog, Snapping Turtle, Muskrat, Rabbits, Squirrel, Red Fox, White-Tailed Deer, and Beaver. Common birds in the area include Great Blue Herons, Geese, Gulls, waterfowl, shorebirds, and songbirds. 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 Lakeside 370 Levee District is not repaired to the federal standard, the levee system would have less stability and there is an increased probability of future flooding. If that flooding were to occur then a more diverse and dynamic terrestrial and aquatic habitat may develop if the levee system were to remain unrepaired. 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, killing vegetation as flood water ponds on typically historical wetland areas that are currently dominated by agriculture. However over time, wetland vegetation would become reestablished. During high water events, terrestrial fauna would be displaced as their habitat is inundated. Conversely, fishes and other aquatic organisms would gain access to floodplain habitat, which would benefit the spawning and rearing of many species.

*Alternative 3 – Repair of Levees with Federal Assistance* – If heavy rain occurs during levee repair, washing soil into the river and other waterways, there could be a short-term increase in turbidity in the immediate area, possibly displacing fish and other mobile organisms temporarily. Following construction, any displaced mobile aquatic species would be expected to return. However, the Contractor is required to comply with all applicable federal, state, and local laws and regulations. The Contractor is required to provide environmental protective measures and procedures to prevent and control pollution. This includes the condition that the Contractor shall keep construction activities under surveillance, management and control to minimize interference with, disturbance to, and damage of, fish and wildlife.

Therefore, no more than 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 2007, 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 13 September 2016, USACE biologist Jim Gruhala conducted a field investigation and survey of the levee district to determine the presence of bald eagle nests/nesting within the levee district. No bald eagle nests were observed.

*Alternative 1 – No Action (Future without Project)* – Current status anticipated to remain the same.

*Alternative 3 – Repair of Levees with Federal Assistance* – Based on the site investigation and survey results showing no nests or eagle in the vicinity of the proposed project, no detrimental impacts on bald eagles or nests are anticipated.

### 3.2.3. Federal Threatened and Endangered Species Biological Assessment

In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, a list of species and critical habitat was acquired from the USFWS Information for Planning and Conservation (IPaC) website: (<https://ecos.fws.gov/ipac/project/UQSTU53E6RGDXOUOOK5MA27F5U/resources.pdf>) on 31 October 2016 for the proposed project vicinity in St. Charles County, Missouri (Table 1). Habitat requirements and impacts of the federal action are discussed for each species.

Table 1. List of federally threatened and endangered species and their habitat potentially occurring in the proposed project vicinity in St. Charles County, Missouri.

Common Name (Scientific Name)	Classification	Habitat
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)
Gray bat ( <i>Myotis grisescens</i> )	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.

Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	Threatened	Caves, mines; rivers and reservoirs adjacent to forests
Decurrent False Aster ( <i>Boltonia decurrens</i> )	Threatened	Disturbed alluvial soils.

**3.2.3.1. 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 2007a, USFWS 1999).

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 the vicinity of the Lakeside 370 Levee District.

*Alternative 1 - No Action (Future without Project)* - Current status anticipated to remain the same.

*Alternative 3 - Repair of Levees with Federal Assistance* - The proposed project would not affect any caves or summer roost / foraging habitat (*i.e.*; trees). As currently planned, this project involves no tree clearing. Therefore, the St. Louis District has determined that the Tentatively Selected Plan would have “no effect” on the Indiana bat.

### **3.2.3.2. 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 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)* - Current status anticipated to remain the same.

*Alternative 3 - Repair of Levees with Federal Assistance* - The proposed project would not affect any caves or summer roost / foraging habitat (*i.e.*; caves, forested riparian habitat). Therefore, the St. Louis District has determined that the Tentatively Selected Plan would have “no effect” on the Gray 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 the vicinity of the Lakeside 370 Levee District.

*Alternative 1 - No Action (Future without Project)* - Current status anticipated to remain the same.

*Alternative 3 - Repair of Levees with Federal Assistance* - The proposed project would not affect any caves or summer roost / foraging habitat. As currently planned, this project involves no tree clearing. Therefore, the St. Louis District has determined that the Tentatively Selected Plan would have “no effect” on the Northern Long-Eared Bat.

According to the IPaC report, there are no critical habitats in the location of the proposed project.

#### **3.2.3.4. 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. It primarily prefers a moist habitat but can tolerate drought (MDC 2008). 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. Former distribution of this plant included Lincoln, St. Charles, St. Louis, and Cape Girardeau Counties. Presently it is only known to occur in St. Charles County (MDC 2008).

*Alternative 1 - No Action (Future without Project)* - Current status anticipated to remain the same.

*Alternative 3 - Repair of Levees with Federal Assistance* - The project area is within the footprint of the levee, which is planted with grasses and mowed regularly. Therefore the St. Louis District has determined that the Tentatively Selected Plan will have “no effect” on Decurrent False Aster.

### **3.3. Socioeconomic Resources**

#### **3.3.1. Economic**

Based on an economic analysis of the Lakeside 370 LD system, the project average annual benefits are estimated to be \$42,000 with average annual costs of \$31,000, yielding a Benefit to Cost Ratio of 1.4 to 1. In order to complete this report in a timely and cost efficient manner, engineering/economic studies were limited to those required to validate that the repair work is economically feasible.

Lakeside 370 Levee (St. Charles, MO), located on the Mississippi River at river mile 230, was damaged by winter 2015 flooding. The Lakeside 370 Levee District repair project will provide flood risk reduction against a 0.2% (500-year frequency, pre-flood design) chance exceedance flood. Action is needed to repair the levee damage and, therefore, prevent future flooding of the 1,394 acres (674 cropland acres)

protected by the levee. 2013 USDA NASS aerial imagery provided an estimation of the crop allocation inside the levee district, which was used to determine a distribution of 36% corn, 63% soybean, and 1% wheat. Should the levee remain unrepaired, the stability of the levee system is in question during future flood events. The Lakeside 370 Levee District is a non-federal project that is active in the USACE Rehabilitation and Inspection Program (RIP). Therefore, Lakeside 370 Levee District is eligible for Flood Control and Coastal Emergency (FCCE) funding authorized by PL84-99. Based on the economic analysis of the Lakeside 370 Levee District system, the project average annual benefits are estimated to be \$42,000 with average annual costs of \$31,000, yielding a Benefit to Cost Ratio of 1.4 : 1.0.

*Alternative 1 - No Action (Future without Project)* - If the Lakeside 370 Levee District is not repaired to the Federal standard, there would be reduced flood protection 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, and may decrease recreational activities, especially under flood conditions. This could result in potential negative economic effects on the Levee District and the local economy.

*Alternative 3 - Repair of Levees with Federal Assistance* - Local agriculture and agri-businesses would benefit from levee repair and subsequent flood damage reduction. The proposed levee repairs would not require residential displacement. No adverse impacts to life, health, or safety would result from levee repair.

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

The repair site locations are composed of areas of erosion in recently deposited material or recently-placed levee berm material. There are no recorded archaeological sites in the repair site locations.

*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 culturally significant sites protected by the levee.

*Alternative 3 – Repair of Levees with Federal Assistance* – The proposed repairs to the levee within the Lakeside 370 Levee District will have no effect upon significant historic properties (archaeological remains or standing structures). The repairs consist of minor earth work and returfing on the levee itself. No borrow material would be required for the repairs, including the breaches.

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 Saint Louis District in concert with the professional staff of the Missouri State Historic Preservation Office (SHPO).

### **3.3.3. Tribal Coordination**

The St. Louis District consults with 27 tribes that have an interest in projects along all rivers within our district boundaries.

*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 culturally significant sites protected by the levee.

*Alternative 3 - Repair of Levees with Federal Assistance* - The recovery and repair of these damaged levees, authorized under P.L. 84-99, would be coordinated with all tribes in the following manner: An initial letter to the tribes would describe the locations of existing flood damaged structures, lands and fills. Maps of the areas and a description of the types of impacts resulting from construction would also be included. The tribes are requested to contact the USACE if there are known tribal areas of concern in any of the project areas and if they desire further consultation on each or any project. Depending on tribal response, the USACE continues the consultation process until the completion of the project.

### **3.3.4. Environmental Justice**

Environmental Justice refers to fair treatment of all races, cultures and income levels with respect to development, implementation and enforcement of environmental laws, policies and actions. Environmental Justice analysis was developed following the requirements of:

- Executive Order 12898 ("Federal Actions to Address Environmental Justice in Minority Populations 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 protection would be reduced (due to potential levee breaches) from that provided by the design (pre-2015 flood event) levee. This would not disproportionately affect low income or minority populations.

*Alternative 3 - Repair of Levees with Federal Assistance* - If the Lakeside 370 Levee District levee is repaired to the Federal standard, the level of protection would be that provided by the design (pre-2015 flood event) levee. This would not disproportionately affect low income or minority populations.

### **3.3.5. HTRW**

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.

### 3.4. 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.

**Table 2.** Summary of the effects of the “No Action” and Tentatively Selected Plan to physical, biological, and socioeconomic resources.

Resources	Alternatives	
	No Action	Tentatively Selected Plan
Physical Resources	Flooding will occur if the levees are not repaired and the levees’ integrity is compromised during a flood.	Erosion repair and turf repairs would meet the Federal standard.
	Increased potential for further erosion of levee and sedimentation within drainage district 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-2015 conditions.
Biological Resources	If levee system is compromised in the future due to levee instability, there is potential for beneficial impacts due to potential increase in floodplain wetland habitat.	Construction would be confined to the levee which may result in minor temporary impacts.
	Federal T&E species would not likely be adversely impacted.	The Tentatively Selected Plan would not result in the removal or alteration of habitat that coincides with the habitat required for the Indiana Bat, Gray Bat, Northern Long-Eared Bat, or Decurrent False Aster. Therefore, federally listed species are not anticipated to be adversely affected.

	Meets project objective of minimal environmental impacts.	Meets project objective of minimal environmental impacts.
<b>Socioeconomic Resources</b>	The levee district would be susceptible to future floods and potential negative impacts to the levee district 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 (500 year frequency) of the levee system.
	Does not meet project objective of protecting the socioeconomic value of the levee district.	Meets project objective of protecting the socioeconomic value of the levee district.

#### 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. 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 2015. Temporary impacts from noise, air, and increased water sedimentation would occur; however, repair sites are widely scattered throughout the St. Louis District and therefore additive effects of these impacts would be negligible. These repairs are not anticipated to decrease the post-flood productivity of lands riverward or landward of the levee systems. For new levee alignments, some acreage would be removed from agricultural use causing a minor loss to overall farm production and increase in floodplain habitat. Due to the widely scattered nature of repair sites, no long term adverse cumulative impacts are expected.

#### 5. RELATIONSHIP OF TENTATIVELY SELECTED PLAN TO ENVIRONMENTAL REQUIREMENTS

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

**Table 3.** Relationship of the Tentatively Selected Plan to environmental requirements, environmental acts, and/or executive orders.

<b>Environmental Requirement</b>	<b>Compliance</b>
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
Endangered Species Act, 16 USC 1531-1543	PC
Farmland Protection Policy Act, 7 (Prime Farmland) USC 4201-4208	FC
Fish and Wildlife Coordination Act, 16 USC 661-666c	PC
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
National Historic Preservation Act, 16 USC 470 et seq.	PC
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
Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898)	
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, PC = Partial Compliance (on-going, will be accomplished before construction)

## 6. COORDINATION, PUBLIC VIEWS, AND RESPONSES

Notification of this Draft Environmental Assessment and unsigned Finding of No Significant Impact was sent to the officials, agencies, organizations, and individuals listed below for review and comment (Table 4). Additionally, an electronic copy is 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.

**Table 4.** Notification of Environmental Assessment and unsigned Finding of No Significant Impact was sent to the following entities.

Missouri Senator Roy Blunt (R) 260 Russell Senate Office Building Washington, DC 20510	Janet Sternburg Resource Science Supervisor Missouri Department of Conservation PO Box 180 Jefferson City, MO 65102
Missouri Senator Claire McCaskill (D) 730 Hart Senate Office Building Washington, D.C. 20510	Missouri Emergency Management Agency 2302 Militia Drive P.O. Box 116 Jefferson City, MO 65102
Representative Blaine Luetkemeyer (District 3) U.S. House of Representatives 2440 Rayburn House Office Bldg. Washington, DC 20515	St. Charles County Emergency Management Agency Sergeant Chris Hunt, Emergency Management Director 301 N. Second Street, Room 280 St. Charles, MO 63301-5410
Larry Shepard US EPA Region 7 (MO) NEPA Team 11201 Renner Blvd. Lenexa, Kansas 66219	Sierra Club, Missouri Chapter 2818 Sutton Avenue St. Louis, MO 63143
Federal Emergency Management Agency 1 Memorial Drive St. Louis, MO 63102	Izaak Walton League of America Ron Moore, President Illinois Division 55 Ridgcrest Drive Decatur, IL 62521

Matt Mangan Acting Field Supervisor U.S. Fish and Wildlife Service Marion Illinois Suboffice (ES) 8588 Route 148 Marion, Illinois 62959	Kathy Andria American Bottoms Conservancy P.O. Box 4242 Fairview Heights, IL 62208
U.S. Fish and Wildlife Service Columbia Ecological Services Field Office 101 Park Deville Drive, Suite A Columbia, MO 65203-0057	The Nature Conservancy Missouri Field Office 2800 S. Brentwood Boulevard Saint Louis, MO 63144
Missouri Department of Natural Resources Sara Parker Pauley, Director P.O. Box 176 Jefferson City, MO 65102	

DRAFT

## 7. ENVIRONMENTAL ASSESSMENT PREPARERS

Rick Archeski, Environmental Engineer

Experience: 16 years USFWS, 16 years US Army, 19 years USACE-MVS

Role: Environmental Engineering, HTRW

James E. Barnes, District Archaeologist

Experience: 8 years private sector; 22 years Center of Expertise, Curation and Maintenance of Archaeological Collections

Role: National Historic Preservation Act Analysis and Compliance

Bryan Dirks, P.E.

Experience: 8 years Design Branch, USACE

Role: Technical Engineering Lead

James Gruhala, Biologist

Experience: 10 years USFWS, 3 months Environmental Compliance Section, USACE

Role: EA Coordinator, Environmental Impact Analysis, NEPA and Environmental Compliance

Sheila McCarthy, Project Manager

Experience: 8 years USACE-CERL; 8 years USACE-MVS

Role: Project Manager

Danny McClendon, Chief Regulatory Branch

USACE-MVS Regulatory Office

Role: Section 404/401 permit review; NEPA and Environmental Compliance Coordination

Evan Stewart, Economist

Experience: 3 years USACE-MVN

Role: Economist

## 8. REFERENCES

- MDC (Missouri Department of Conservation). 2008.  
<http://mdc.mo.gov/nathis/endangered/endanger/aster/index.htm>
- USEPA (U.S. Environmental Protection Agency). 2016. Missouri Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants.  
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- USFWS (U.S. Fish and Wildlife Service). 1999. Agency draft Indiana Bat (*Myotis sodalis*) revised recovery plan. U.S. Fish and Wildlife Service, Fort Snelling, Minnesota. 53 pp.
- USFWS (U.S. Fish and Wildlife Service). 2007. Species Profile: Bald Eagle (*Haliaeetus leucocephalus*). Available at <http://ecos.fws.gov/speciesProfile/SpeciesReport.do?spcode=B008>
- USFWS (U.S. Fish and Wildlife Service). 2007a. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. U.S. Fish and Wildlife Service, Fort Snelling, MN. 258 pp.  
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- USFWS (U.S. Fish and Wildlife Service). 2007b. Protection of Eagles; Definition of “Disturb”. Federal Register 72(107): 31132-31133
- USFWS (U.S. Fish and Wildlife Service). 2007c. National Bald Eagle Management Guidelines.  
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- USFWS (U.S. Fish and Wildlife Service). 2016. Missouri Threatened and Endangered Species. Available:  
<https://ecos.fws.gov/ipac/project/UQSTU53E6RGDXOUOOK5MA27F5U/resources.pdf>  
(Accessed: 31 October 2016)

## FINDING OF NO SIGNIFICANT IMPACT

### PUBLIC LAW 84-99 LAKESIDE 370 LEVEE DISTRICT ST. CHARLES COUNTY, MISSOURI

I. I have reviewed the documents concerned with the proposed levee repairs to the Lakeside 370 Levee District. The purpose of this project is to repair levee sections damaged by a high water event during the winter of 2015. Repairs would return the levee district to pre-flood conditions in an expedient manner.

II. 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 levees. It is assumed that, because of the cost of repairs, the levee district would not repair the levee.
- b. Nonstructural Alternative: Under P.L. 84-99, the Corps has the authority to pursue a non-structural alternative only if the project sponsor requests such an alternative. The Lakeside 370 Levee District 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 Lakeside 370 Levee District is active in the USACE Rehabilitation and Inspection Program, it is eligible for Flood Control and Coastal Emergency funding authorized by P.L. 84-99.

III. 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, primary and secondary residences, outbuildings, and infrastructure.
- b. No borrow material (borrow site) will be required for erosion repairs.
- c. No appreciable effects to general environmental conditions (air quality, noise, water quality) would result from the Tentatively Selected Plan.

- d. The Tentatively Selected Plan is not expected to cause significant adverse impacts to general fish and wildlife resources.
- e. The Tentatively Selected Plan is not expected to cause unacceptable adverse impacts to riparian habitat, bottomland hardwood forest, or other wetlands.
- f. No federally endangered or threatened species are anticipated to be adversely impacted by the Tentatively Selected Plan.
- g. No prime farmland would be adversely impacted as a result of the Tentatively Selected Plan.
- h. No significant impacts to historic properties (cultural resources) are anticipated as a result of the Tentatively Selected Plan.
- i. 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-2015 flood protection.
- j. 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.

**IV.** Based on the disclosure of the Tentatively Selected Plan impacts contained within the Environmental Assessment, no significant impacts to the environment are anticipated. The proposed action has been coordinated with the appropriate resource agencies, and there are no significant unresolved issues. Therefore, an Environmental Impact Statement will not be prepared prior to proceeding with the proposed project for the Lakeside 370 Levee District PL 84-99 Project, located in St. Charles County, Missouri.

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Date

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Anthony P. Mitchell  
Colonel, U.S. Army  
District Commander