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

18 July 2012

Reply to:
Regional Planning Division North
Planning and Environmental Branch (PD-E)
1222 Spruce St.
St. Louis, MO 63103-2833

Dear Sir or Madam:

A copy of the Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for repair of Winfield – Pin Oaks Drainage and Levee District (D&LD), Lincoln Co., MO is available online or upon request for your review. This levee was damaged during spring 2011 flooding. Please note that the Draft 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. We invite your comments related to the content of the posted EA by **20 August 2012**.

Electronic copies of the EA are available online at:
http://www.mvs.usace.army.mil/pm/pm-reports.html

Levees throughout the St. Louis District were damaged during flooding in spring 2011. Many drainage and levee districts have requested assistance under Public Law 84-99 which provides repair assistance to a levee district for flood damaged levees. We are in the process of evaluating damages, completing all necessary documentation including environmental compliance and preparing plans and specifications. Once these steps are complete for a D&LD, construction to repair the damages can begin.

For question, or comments, please contact:
Ken Cook of the Environmental Compliance Section (CEMVS-PD-C)
Telephone number (314) 331-8498
Facsimile number (314) 331-8806
e-mail: kenneth.m.cook@usace.army.mil
Written comments may be sent to the above address, c/o Ken Cook.

Thank you,

Timothy K. George

Timothy K. George
Chief, Environmental Compliance Section

US Army Corps of Engineers
St. Louis District

ENVIRONMENTAL ASSESSMENT WITH DRAFT FINDING OF NO SIGNIFICANT IMPACT

LEVEE REPAIR (PL 84-99): WINFIELD - PIN OAKS DRAINAGE AND LEVEE DISTRICT MISSISSIPPI RIVER, MILE 239 TO MILE 241 LINCOLN COUNTY, MISSOURI

Prepared by:	For Information Contact:
Environmental Compliance Branch U.S. Army Corps of Engineers St. Louis District 1222 Spruce Street St. Louis Missouri 63103-2833	Ken Cook U.S. Army Corps of Engineers St. Louis District 314-331-8498 kenneth.m.cook@usace.army.mil

July 2012

TABLE OF CONTENTS

1. PURPOSE, NEED AND SUMMARY OF ACTION 1
   1.1 AUTHORIZATION 1
   1.2 LEVEE SYSTEM DESCRIPTION 1
2. ALTERNATIVES INCLUDING THE PROPOSED ACTION 3
   2.1 CAUSES OF DAMAGE 3
   2.2 DAMAGE DESCRIPTION 5
   2.3 ALTERNATIVES 5
   2.4 All contractor work areas would be revegetated. MITIGATION 6
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES 8
   3.1 FEDERALLY THREATENED AND ENDANGERED SPECIES, LINCOLN, COUNTY, MO: 8
   3.2 WATER RESOURCES 10
   3.3 TOPOGRAPHY, GEOLOGY, AND SOILS 10
   3.4 PRIME FARMLAND 10
   3.5 VEGETATION 10
   3.6 WILDLIFE 11
   3.7 FISHERIES 11
   3.8 AIR QUALITY 11
   3.9 HAZARDOUS, TOXIC AND RADIOACTIVE WASTE (HTRW) SITES 11
   3.10 NOISE 12
   3.11 SOCIOECONOMIC 12
   3.12 ENVIRONMENTAL JUSTICE 13
   3.13 Cultural Resources: 13
   3.14 Tribal Coordination: 14
   3.15 CUMULATIVE IMPACTS 14
4. RELAVENT LAWS AND REGULATIONS 14
5. ENVIRONMENTAL REGULATORY CONSTRAINTS 16
6. RELATIONSHIP OF PLANS TO ENVIRONMENTAL LAWS AND REGULATIONS 17
7. COORDINATION WITH OTHER STATE AND FEDERAL AGENCIES 17
8. LIST OF PREPARERS 18

TABLES

Table 1. List of federally threatened and endangered species from Lincoln, County, MO. 8
Table 2. Relationship of plans to environmental laws and regulations. 17

FIGURES

Figure 1. Location of Winfield - Pin Oaks Drainage and Levee District. 2
Figure 2. River gage and Lock and Dam25. 3
Figure 3. Veiw of McLean Creek toe erosion. 4
Figure 4. Erosion Type III proposed repair 7

ENVIRONMENTAL ASSESSMENT WITH DRAFT FINDING OF NO SIGNIFICANT IMPACT

LEVEE REPAIR (PL 84-99): WINFIELD - PIN OAKS DRAINAGE AND LEVEE DISTRICT ALEXANDER COUNTY, ILLINOIS

1. PURPOSE, NEED AND SUMMARY OF ACTION

This document is an Environmental Assessment (EA) with an attached Draft Finding of No Significant Impact for levee repairs to the Winfield - Pin Oaks Drainage and Levee District (D&LD). It describes levee damage, repair alternatives, the existing environment, and potential environmental impacts associated with each alternative. Under Public Law 84-99 (PL 84 – 99), Drainage Districts whose levees are within the federal levee system can request federal assistance with flood damage repairs. Damages sustained to a portion of the Winfield - Pin Oaks D&LD in the 2011 consisted of bank erosion brought on by heavy rains and river backwater. There is an estimated 3,000 cubic yards of embankment material and 6,300 tons of riprap required for the repairs.

The purpose of this federal action is to restore the level of flood protection to that which existed prior to the 2011 flood events. Without federal involvement through the PL 84-99 program, it is unlikely that the D&LD has the financial ability to restore the level of protection according to Corps of Engineers standards.

The environmental impacts of the repair would include temporary noise, air pollution, localized erosion, & disturbance to vegetation on the levees and associated work areas. Temporary impacts would cease after construction was completed and vegetation established in the repaired area.

1.1 AUTHORIZATION

PL 84-99, an amendment to the Flood Control Act of 1962, authorizes the US Army Corps of Engineers (Corps) to assist Drainage and Levee Districts in the repair of both federal (Corps constructed, locally operated and maintained) and non-federal (constructed by non-federal interests or by the Work Projects Administration) flood control projects damaged by flooding. The Winfield - Pin Oaks D&LD is a non-federal project that is active in the St. Louis District Corps Rehabilitation and Inspection Program. Therefore Wingate-Pin Oaks D&LD is eligible for Flood Control and Coastal Emergency funding authorized by PL 84-99.

1.2 LEVEE SYSTEM DESCRIPTION

Winfield – Pin Oaks Drainage and Levee District is located in Lincoln County, Missouri and is adjacent to the right descending bank of the Mississippi River at approximately river miles 239 to mile 241. A portion of the levee runs along Bobs and McLean creeks (Figure 1). The Winfield – Pin Oaks D&LD protects the City of Winfield as well as 2,800 acres of primarily agricultural lands along with some urban areas, farm houses, and outbuildings. The Winfield – Pin Oaks D&LD provides protection from main-line backwater effects in Bobs and McLean creeks (Figure 1). The levee system was designed for a 16-year flood with 2 feet of freeboard. The system consists of 9.4 miles of levee constructed with a crown width between 5 and 12 feet and 1 on 2.5 side slopes.

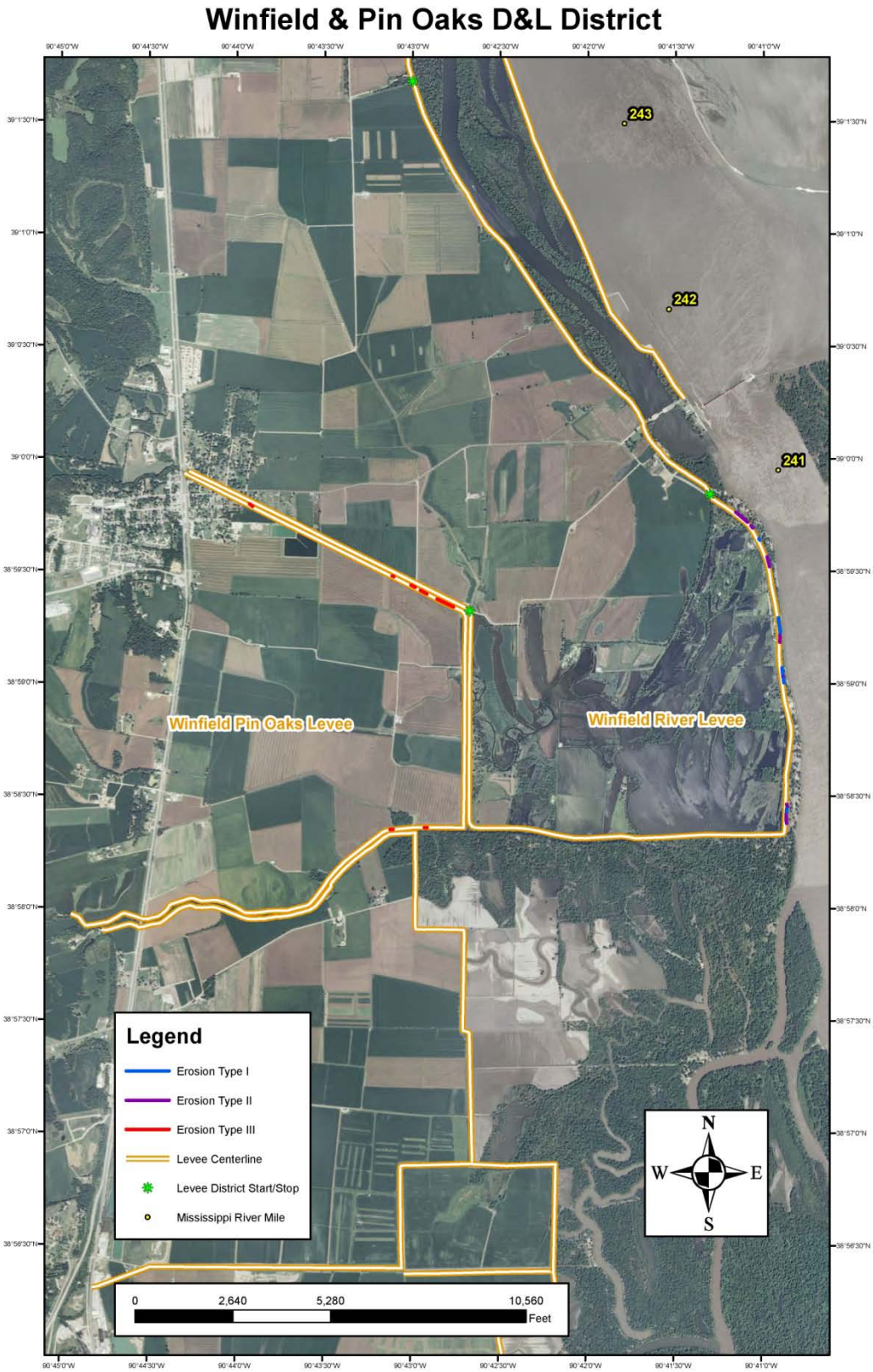


Figure 1. Location of Winfield - Pin Oaks Drainage and Levee District.

2. ALTERNATIVES INCLUDING THE PROPOSED ACTION

The following section describes the cause and damages to the system and alternatives for repair.

2.1 CAUSES OF DAMAGE

High water events on the Mississippi River in the spring of 2011 resulted in damages to the Winfield - Pin Oaks D&LD. Heavy rains during March through June 2011 caused flooding along the Mississippi River drainage basin within the St. Louis District in Missouri and Illinois. Saturated soils caused much of the rainfall to become direct runoff. Rainfall totals over Missouri and Illinois ranged from 4-12 inches during the months of May and June. The saturated soil, combined with the heavy rains, created near record river levels throughout the St. Louis District.

The Winfield - Pin Oaks D&LD nearest gage is located at Lock and Dam 25 (river mile 241.4). The Lock and Dam gage peaked on April 25, 2011 with a reading of 32.4 (Figure 2). This reading was 6.4 feet above the flood stage of 26.0 feet - 7 feet short of the record reading of 39.57 feet.

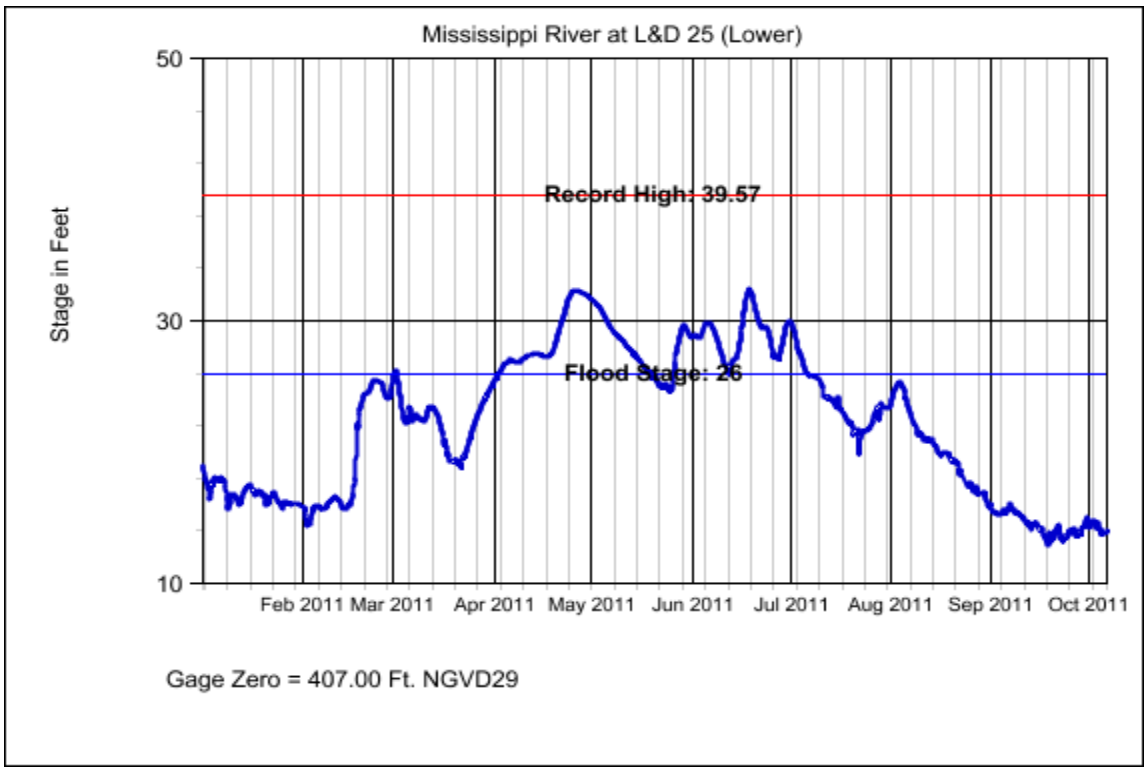


Figure 2. River gage and Lock and Dam25.

Figure 3. Veiw of McLean Creek toe erosion.

2.2 DAMAGE DESCRIPTION

Damages sustained to a portion of the Winfield - Pin Oaks D&LD in the 2011 consisted primarily of bank erosion/scour (Figure 3). Damages have been categorized as Erosion Type III. Erosion Given the nature of the damages, the levee currently provides approximately a 12.5% (8- year) level of protection.

2.3 ALTERNATIVES

NEPA requires that in analyzing alternatives to a proposed action a federal agency consider an alternative of "No Action." Likewise, Section 73 of the WRDA of 1974 (PL93-251) requires federal agencies to give consideration to nonstructural measures to reduce or prevent flood damage.

2.3.1 NONSTRUCTURAL ALTERNATIVE

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. This allows flood waters to spread out over a larger area reducing flood heights and damages. 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 Winfield - Pin Oaks D&LD declined to request the pursuit of a non-structural alternative; therefore, this alternative was eliminated from further consideration.

2.3.2 NO ACTION ALTERNATIVE

Under this alternative no emergency levee repairs under PL 84-99 authority or funding sources would be provided. The current conditions of the levee increase flood risk, threatening the livelihood of the landowner(s). Temporary repairs in the levee could degrade compromising the integrity of the levee system.

2.3.3 TENTAVIELY SELECTED PLAN: REPAIR OF LEVEE WITH FEDERAL ASSISTANCE

Under this alternative, the federal government would assist with repairs to the damaged areas to a pre-flood level of protection. Since the Winfield - Pin Oaks D&LD is a Federal project that is active in the USACE Rehabilitation and Inspection Program, it is eligible for Flood Control and Coastal Emergency funding authorized by PL 84-99. Repair costs for the federal drainage district would be 100 percent federal government.

Type III erosion repair.

Type III erosion repair (Figure 4) would involve a combination of bank stabilization and levee slope/toe reconstruction and stone armoring. The scouring is a result of toe erosion. In repair areas, the banks of channelized McLean Creek and Bobs Creek are more or less contiguous with the levee toe. Therefore, bank erosion has scoured away the levee toe. Erosion of the levee toe has resulted in progressive bank steepening and soil loss from the levee, such that portions of the levee cross-section have been lost. Repair of the scour areas would require excavation and re-contouring of the affected areas, as well as excavation to key the stone into the channel beds. Following excavation and re-contouring, the stabilization areas would be backfilled with

crushed stone bedding, and armored with heavy stone.

The five stabilization areas on McLean Creek would cumulatively impact approximately 1,275 linear feet of channel. The stabilization area on Bob's Creek would impact approximately 130 linear feet of channel. Roughly 6,300 tons of rip-rap on 2,000 tons of bedding material would be placed on the riverside slope and roughly 2,200 cubic yards of material (excavated from the riverside slope) would be placed on the landside slope.

Construction Limits
An area of 20 feet from the landside and riverside toe of the levee and 500 feet adjacent to repair areas on both sides have been established for construction activities. As currently planned, no trees would be removed as part of this repair.

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 are within a reasonable distance of the construction sites and would be utilized. Hauling would be performed on existing roads, as well as a constructed temporary access road. Haul road locations and staging areas would be restored to their pre-project condition after project completion. No wetland impacts are expected. However, restoration and/or mitigation would be required if wetlands are impacted.

Environmental Protection Measures
Within the designated contractor work areas, the following protective and preventative measures shall be followed.

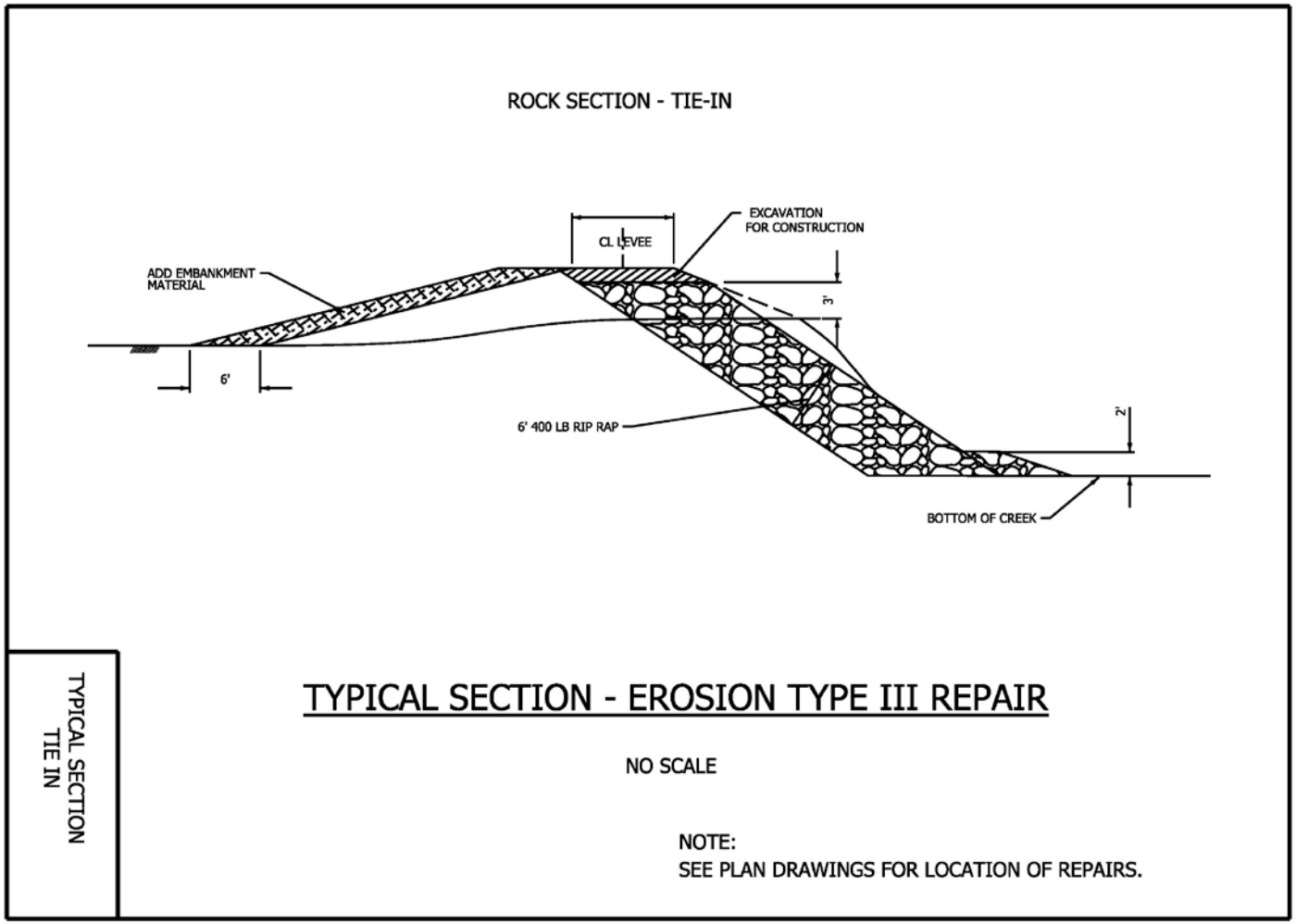
- No fill shall be excavated or permanently placed except where required for erosion.
- There shall be no removal of trees.
- Changes in the project must be coordinated with the regulatory and environmental branch of the Corps of Engineers through the contracting officer. If tree removal becomes necessary, it would require additional coordination with interested agencies, additional documentation, and possibly mitigation.
- All contractor work areas would be revegetated.

2.4 MITIGATION

All activities associated with levee repairs would be conducted to avoid and minimize environmental impacts. An approximate 50-ft. wide, 1,200-ft long depression exists on the northern side of Bobs Creek (Figure 1). The depression abuts and is parallel to the landward levee toe. The depression has been identified as a potential emergent (farmed) wetland. Therefore, any material placed in the depression for temporary construction access, materials storage, staging areas, or other purposes shall be removed in its entirety following construction, and the area returned to pre-disturbance elevations and contours.

Appropriate erosion and siltation controls would be properly maintained in effective operating condition during construction, and all exposed soil and other fills would be permanently stabilized, (mulched and seeded) at the earliest practical date.

Figure 4. Erosion Type III proposed repair



3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

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

3.1 FEDERALLY THREATENED AND ENDANGERED SPECIES, LINCOLN, COUNTY, MO:

Existing - 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 website on 10 July 2012 (USFWS 2009a) for Lincoln Co., Mo. (Table 1). Habitat requirements and impacts of the alternatives are discussed for each species below.

No Action - Conditions for threatened and endangered species would remain the same.

Table 1. List of federally threatened and endangered species from Lincoln, County, MO.

Common Name (Scientific Name)	Habitat	Determination Of Effect
Indiana Bat (*Myotis sodalis)* Endangered	Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging)	No Affect
Decurrent False Aster (*Boltonia decurrens*) Threatened	Disturbed alluvial soils, floodplains, require abundant light and periodic flooding to remove competitors.	No Affect
Running Buffalo Clover (*Trifolium stoloniferum*) Endangered	Found in disturbed bottomland meadows and areas with rich, moist soils that are subjected to mowing, trampling or grazing	No Affect

Indiana Bat The Indiana bat is a migratory species that occurs over much of the eastern half of the United States. Indiana bats forage on flying insects in the canopy of floodplain trees found typically along the shorelines of rivers and lakes, and also in upland forests. In summer, habitat consists of wooded or semi-wooded areas, mainly along streams. Females bear their offspring in hollow trees or under loose bark of living or dead trees. Trees standing in sunny openings are attractive because of warmer air spaces and crevices under the bark. Maternity sites have been reported in riparian areas, floodplain forests, and upland habitats. During winter limestone caves that are close to pools or open water are often used as hibernacula (USFWS 2007a, NatureServe 2009).

Most known maternity sites have been located in forested tracts in agriculturally

dominated landscapes (e.g., Missouri, Iowa, Indiana, Illinois) (USFWS 1999). It is fair to assume that this species is present in the vicinity of the Winfield - Pin Oaks D&LD.

Federal Action – The proposed project would not affect any caves. As currently planned, this project involves no tree clearing. Therefore, it is expected that the Tentatively Selected Plan would have no affect on the species.

Decurrent False Aster A perennial endemic to the floodplains of the Illinois River and its confluence with the Mississippi River. Although historically know from Kings Lake in Lincoln Co., Mo, it has not been found there for a number of years (Smith 2000, Mettler-Cherry et al. 2006). It appears to require abundant light and periodic flooding to remove competitors. Populations presently grow in natural habitat, but are more common in disturbed lowland areas where they appear to be dependent on human disturbance for survival (USFWS 1990, MDC 2008a).

Federal Action – Populations of the decurrent false aster are not known to occur within the project area. Although this species has occasionally been found on levees they generally do not provide suitable habitat (USFWS 1990, Smith et al. 1998). Levees slopes are generally dry and would not support decurrent false aster populations over extended time periods (Smith et al. 1998). The repair would take place within the footprint of the existing levee. The proposed repair sites consist of mowed cool season grasses and are unlikely to support any native plant populations. Therefore, it is expected that the Tentatively Selected Plan would have no affect on the species.

Running Buffalo Clover Running buffalo clover requires periodic disturbance and a somewhat open habitat to successfully flourish, but it cannot tolerate full-sun, full-shade, or severe disturbance. Historically running buffalo clover was found in rich soils in the ecotone between open forest and prairie in the eastern and central United States. Those areas were probably maintained by grazing and disturbance by large animals such as the buffalo for population viability. Today, the species is found in disturbed bottomland meadows and areas with rich, moist soils that are subjected to mowing, trampling or grazing such as partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. Clearing land for agriculture and development has led to elimination of populations, loss of habitat, and fragmentation of the clover populations that remain. Small, isolated populations of running buffalo clover are prone to extinction from herbivory, disease, and inbreeding (MDC 2008b).

Running buffalo clover was historically widespread and ranged from Nebraska to West Virginia. It has disappeared from all known historic sites in Missouri. It formerly occurred in the southern two-thirds of the state. There are historical records from Jasper, Wayne, Cooper, and St. Louis counties. It was considered extirpated from Missouri until as recently as 1989, when some plants were reported growing in an unattended pile of topsoil in St. Louis. One natural site for running buffalo clover was discovered in Madison County in 1994 and another was discovered in Maries County in 1998 (MDC 2008b).

Federal Action - The repair would take place within the footprint of the existing levee. The proposed repair sites consist of mowed cool season grasses and are unlikely to support any native plant populations. Therefore, it is expected that the Tentatively Selected Plan would have no affect on the species.

3.2 WATER RESOURCES

Existing – The areas proposed for repair are located in the portion of the levee that runs along Bobs and McLean Creeks. Run-off and flows to these creeks is primarily through gravity drains and seepage. No critical aquatic habitats or wetlands are present within the footprint of the project.

No Action – Without repair, flooding waters would directly enter the interior of the drainage district potentially causing extensive damage to homes and properties. In addition, the other damaged portions of the levee would likely erode further and the levee would be more likely to fail in these areas.

Federal Action - A temporary increase in water turbidity resulting from erosion may occur during construction around repair operations and borrow removal. These impacts would cease shortly after construction completion and pre-flood conditions would be reestablished. Protective measures would be taken to prevent spillage of potential pollutant materials such as fuel, emulsion materials, chemicals etc., from storage containers or equipment, into adjacent waters.

3.3 TOPOGRAPHY, GEOLOGY, AND SOILS

Existing - The levee district lies in the flood plain of the Mississippi River. The landscape is typical ridge and swale topography created by the river as it migrated across the flood plain. The low ridges in the flood plain typically are composed of sandy or silty material, while the lower swales have surface soils that are typically silty clays.

No Action - Without flooding, land use and soils in this area would remain in agricultural use. With flooding, sedimentation and scour would occur and cropland would be inaccessible until flood waters receded.

Federal Action – Land would remain in agricultural use similar to pre-flood conditions. Side slopes and back slopes would be protected as soon as practicable upon completion of rough grading. All earthwork would be planned and conducted to minimize the duration of exposure of unprotected soils. Agricultural land uses would continue.

3.4 PRIME FARMLAND

Existing – Winfield - Pin Oaks D&LD protects approximately 1,600 acres of prime farmland. Currently, all available farmland within the levee district is being farmed.

No Action – Under this alternative, the level of flood protection is reduced, increasing the risk of prime farmland flooding.

Federal Action - Levee repairs would ensure protection to prime farmland.

3.5 VEGETATION

Existing – On the land side of the repair sites, the area is predominantly agricultural lands. Vegetation on the levee consists of

mowed cool season grasses and non-woody/weedy vegetation.

No Action – Agricultural lands within the drainage district would continue to be farmed but would be disrupted by periodic flooding.

Federal Action - Disturbances to levee vegetation (predominantly cool season grasses) would occur during repairs. After repair, the area would be reseeded with similar vegetation resulting in no long term vegetation impacts.

3.6 WILDLIFE

Existing – The floodplain forest, wet meadow, aquatic, and agricultural habitats in the area support a wide variety of wildlife common to the Mississippi River farmed and un-farmed floodplain. The proposed repair areas do not provide quality wildlife habitat because of regular disturbances from mowing, burrowing mammal control, and other maintenance activities. Therefore, it is unlikely that the repair area supports significant wildlife populations.

No Action – Without flooding, fauna and associated habitat would remain unchanged. With flooding, fauna would be displaced and habitat would be impacted by flood waters.

Federal Action - Wildlife populations occupying the natural areas adjacent to the levee toe would be disturbed during construction. No tree clearing or disturbance would be necessary to remove borrow or repair the sites. No significant impacts to biological resources are anticipated.

3.7 FISHERIES

Existing – Common fish species occurring in the Mississippi River that likely come into Bobs and McLean creek backwaters could include gar, gizzard shad, exotic carps, emerald shiner, buffalo, catfish, sunfish, and freshwater drum.

No Action - Without flooding, there would be no impacts to fisheries. With flooding, fish would have access to a large area of floodplain habitat. This would benefit spawning and rearing of many fish species.

Federal Action - Any disturbance due to construction would have no long term adverse impacts to fish or their habitat.

3.8 AIR QUALITY

Existing – The Clean Air Act of 1963 requires the U.S. Environmental Protection Agency (EPA) to designate National Ambient Air Quality Standards (NAAQS). They have identified standards for seven pollutants: lead, sulfur dioxide, carbon monoxide, nitrogen dioxide, ozone, particulate matter less than 10 microns in diameter, and particulate matter less than 2.5 microns. Lincoln County, Mo., currently meets all EPA air quality standards (USEPA 2009).

No Action – There would be no change in air quality under this alternative.

Federal Action - Repair activities would result in dust and exhaust from equipment. Therefore, a minor short-term reduction in air quality would occur

3.9 HAZARDOUS, TOXIC AND RADIOACTIVE WASTE (HTRW) SITES

The U.S. Army Corps of Engineers (USACE) regulations (ER-1165-132) 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.

Existing - There are no recognized environmental conditions that would indicate a risk of HTRW contamination within the project area. The likelihood of hazardous substances existing within the project area or adversely affecting the project area due to the proposed construction activities is very low.

No Action - There would be no change under this alternative.

Federal Action - The St. Louis District conducted a Phase I ESA to satisfy the All Appropriate Inquiry requirements set by the Environmental Protection Agency to identify, to the extent feasible recognized environmental conditions (RECs) in connection with the given property. This assessment found no RECs present at the project sites, borrow areas or adjacent properties and concludes that a Phase II assessment is not necessary. Restoration of a pre-flood level of flood protection would reduce the chances of chemical contamination.

3.10 NOISE

Existing - Ambient noise in the study area is generated by wildlife, human activities and vehicular traffic.

No Action - There would be no change in noise under this alternative.

Federal Action - The proposed project would be expected to temporarily increase noise levels near the repair sites. 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.

3.11 SOCIOECONOMIC

Existing - The undamaged levee provides a 6.25% (16-year) design level of protection. The damaged levees currently provide an estimated level of protection at a 12.5% (8-year) chance exceedance flood (based upon engineering judgment). he area protected by the Winfield - Pin Oaks D&LD is characterized as being rural and agricultural. An economic analysis scope was developed for the project and is part of the Project Information Report dated 20 February 2011.

No Action - Without flooding, there would be no socioeconomic impacts. With flooding there could be considerable agricultural and residential economic losses.

Federal Action - Local agriculture and agri-businesses would benefit from levee repair and subsequent restoration of the pre-flood level of protection. The proposed initial levee repairs would not require residential displacement and could provide short-term employment for local contractors and laborers.

3.12 ENVIRONMENTAL JUSTICE

Existing – The standard unit of analysis for environmental justice is the census-designated Block Group. The Winfield - Pin Oaks D&LD is located entirely in Lincoln County. Lincoln County is roughly 640 square miles. According to the 2010 census data the population of Lincoln County is 52,566 persons, up roughly14,000 since the 200 census. The racial makeup of the county was 96% white in 2000.

No Action – Without flooding, there would be no change from current conditions. With flooding, damage, sedimentation and scour would occur. This would impair the ability of landowners to use their land resulting in economic losses and displacement of landowners.

Federal Action - The local agriculture and agri-business economy would benefit from levee repair and subsequent restoration of the pre-flood level of protection. The repairs would also provide short-term employment partially funded by federal money. No adverse impacts (such as displacement) to minority citizens is anticipated under the Tentatively Selected Plan.

3.13 Cultural Resources:

Existing – 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.

No Action - Without flooding, there would be no change from current conditions. With flooding, damage to culturally significant sites protected by the levee could occur.

Federal Action - The proposed repairs to the levee within the Winfield - Pin Oaks Levee District will have no effect upon significant historic properties (archaeological remains or standing structures). The type of repairs to remediate erosion will protect any unknown sites that may exist in the vicinity of the repairs.

In the unlikely event that earthmoving activities associated with the proposed repairs did impact potentially significant archeological/historic remains, all construction activities and earthmoving actions in the immediate vicinity of the remains would be held in abeyance until the potential significance of the remains could be determined. The precise nature of such investigations would be developed by the Saint Louis District in concert with the professional staff of the Illinois Historic Preservation Agency.

All actions taken will be in accordance with the National Historic Preservation Act of 1966, as amended (NHPA). The NHPA requires that any Federal undertaking consider the effects to historic properties and consultation with State Historic Preservation Officers and the Advisory Council on Historic Preservation. This act is further codified in 36 CFR Part 800, Protection of Historic Properties. Should

any actions result in the collection of data or material from historic properties, such information and objects shall be cared for in accordance with 36 CFR Part 79, Curation of Federally Owned and Administered Archaeological Collections. St. Louis District has initiated consultation with the Illinois Historic Preservation Agency (IHPA). Any future actions will be coordinated with IHPA's concurrence.

3.14 Tribal Coordination:

The St. Louis District consults with 27 tribes that have an interest in projects along all rivers within our district boundaries. Many levees adjacent to Missouri and Illinois rivers within the U.S. Army Corps of Engineers St. Louis District boundaries were damaged by flooding in 2011. The recovery and repair of these damaged levees, authorized under PL84 -99, will be coordinated with all tribes in the following manner.

An initial letter to the tribes will 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 are also 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.

3.15 CUMULATIVE IMPACTS

Existing - System-wide repairs to levees are currently underway from 2011 flood damages. Final repairs would involve returning most of the levee breaches to the same alignment and level of protection as existed prior to the high water events of 2011. Temporary impacts to noise, air, and possibly localized turbidity impacts would occur; however, repair sites are widely scattered throughout the St. Louis District and therefore additive effects of these impacts would be negligible. Some D&LD PL84-99 projects have required borrow material for levee repairs. Borrow for the majority of these projects came from agriculture areas, low quality wetlands and previously identified borrow areas. Some PL84-99 projects sustained damage that is infeasible to repair on the original levee alignment. For new levee alignments, some acreage would be removed from agricultural use causing a minor loss to overall farm production and increase in floodplain habitat. The widely scattered nature of repair sites and shallow excavation depth of borrow sites would reduce impacts and no long term adverse impacts are expected.

No Action - No long term adverse impacts are expected.

Federal Action - No long term adverse impacts are expected.

4. RELAVENT LAWS AND REGULATIONS

Clean Water Act (Sections 401 and 404)

The proposed impacts are authorized under Section 404 of the Clean Water Act by existing Department of the Army nationwide permits for *Bank Stabilization* and *Temporary Construction, Access, and Dewatering*, as described in the February 21, 2012 Federal Register, Reissuance of Nationwide Permits; Notice (77 FR 10272, 10278), Appendix A (B)(13,33).

Executive Order 11988 (Floodplain Management):
Under this Executive Order, federal agencies are to "provide leadership and shall take action to reduce the risk of flood loss, to minimize the impacts of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains". The St. Louis District Corps of Engineers has evaluated the proposed levee repairs for damages which occurred in the Winfield - Pin Oaks D&LD during the high water events of 2011. Not repairing the levee would increase the risk of flood damage and loss. Based on the extent of levee damage that currently exists, it is prudent to repair the levee to restore the level of flood protection that existed prior to the flood event. By reducing the future risk of flood loss and minimizing the impacts on existing vegetation in the floodplain, this proposed project is in full compliance with this Executive Order.

Executive Order 11990 (Protection of Wetlands):
Under this Executive Order, federal agencies shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities.

The St. Louis District Corps of Engineers has evaluated the proposed levee repairs for the damages which occurred in the Winfield - Pin Oaks D&LD during high water events of 2011. The proposed project work would be conducted within the footprint of the levee and in associated work areas. Any wetlands impacted by the project would be restored or mitigated for. Therefore, the proposed levee repairs are in full compliance with this Executive Order.

Bald and Golden Eagle Protection Act of 1940:
Bald Eagles range over most of North America. They build large nests in the tops of large trees near rivers, lakes, marshes, or other aquatic areas. The staple food of most bald eagle diets is fish, but they will also feed on waterfowl, rabbits, snakes, turtles, other small animals, and carrion. In winter, eagles that nest in northern areas migrate south and gather in large numbers near open water areas where fish or other prey are plentiful (USFWS 2006).

On August 9, 2007, the bald eagle was removed from the federal list of threatened and endangered species. It remains protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The Bald and Golden Eagle Protection Act prohibits unregulated take of bald eagles. The Fish and Wildlife Service recently finalized a rule defining “take” that includes “disturb.” “Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (USFWS 2007b).

To prevent disturbance, the National Bald Eagle Management Guidelines (USFWS 2007c) was used to determine appropriate distances from any known eagle nests. The Guidelines state that no construction activities should occur within 660 feet of an

active eagle nest tree during breeding season. No bald eagle nest trees are known from the project area. It is anticipated that construction activities would not disturb any bald eagles.

5. ENVIRONMENTAL REGULATORY CONSTRAINTS

The Recommended Alternative was subject to compliance review with all applicable environmental regulations and guidelines. The Tentatively Selected Plan was determined to be in full compliance with all applicable acts and legislation with noted exceptions (Table 2.).

Table 2. Relationship of plans to environmental laws and regulations.

Federal Policies	Compliance
Bald Eagle Protection Act, 42 USC 4151-4157	Full
Clean Air Act, 42 USC 7401-7542	Full
Clean Water Act, 33 USC 1251-1375	Full
Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC 9601-9675	Full
Endangered Species Act, 16 USC 1531-1543	Partial[1]
Farmland Protection Policy Act, 7 USC 4201-4208	Full
Fish and Wildlife Coordination Act, 16 USC 661-666c	Full
Food Security Act of 1985, 7 USC varies	Full
Land and Water Conservation Fund Act, 16 USC 460d-4601	Full
National Environmental Policy Act, 42 USC 4321- 4347	Partial[2]
National Historic Preservation Act, 16 USC 470 *et seq.*	Partial[3]
Noise Pollution and Abatement Act, 42 USC 7691-7642	Full
Resource, Conservation, and Rehabilitation Act, 42 USC 6901-6987	Full
Rivers and Harbors Appropriation Act, 33 USC 401-413	Full
Water Resources Development Acts of 1986 and 1990	Full
Floodplain Management (EO 11988 as amended by EO 12148)	Full
Prevention, Control, and Abatement of Air and Water Pollution at Federal Facilities (EO 11282 as amended by EO's 11288 and 11507)	Full
Protection and Enhancement of Environmental Quality (EO 11991)	Full
Protection and Enhancement of the Cultural Environment (EO 11593)	Full
Protection of Wetlands (EO 11990 as amended by EO 12608)	Full

Full compliance: having met all requirements of the statute for the current stage of planning
Not applicable: compliance with the statute not required
1Full compliance to be achieved with agreement from the U.S. Fish and Wildlife Service on Endangered Species impacts.
2 Full compliance to be achieved with the District Engineer's signing of the Finding of No Significant Impact
3 Full compliance to be achieved with the State Historic Preservation Officer's concurrence in the District's EA conclusions.

6. COORDINATION WITH OTHER STATE AND FEDERAL AGENCIES

Coordination has been ongoing with this project and the proposed initial repairs have been coordinated with respective State and Federal agencies.

This EA and Draft FONSI was provided to the following state and federal agencies for their review, comments, and concurrence.

U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency
Federal Emergency Management Agency
Missouri Department of Conservation

State of Missouri Emergency Management Agency
Natural Resources Conservation Service
Missouri Department of Natural Resources
Missouri Historic Preservation Office

To assure compliance with the National Environmental Policy Act, Endangered Species Act, and other applicable environmental laws and regulations, coordination with these agencies would continue as required throughout the planning and construction phases of the proposed levee repairs.

7. LIST OF PREPARERS

Mr. Mike Rodgers, Hydraulic Engineer	Role: Project Manager
Ms. Nancy Tokraks, Civil Engineer	Role: Civil Engineer
Mr. Matt Shively, Regulatory Specialist	Role: Regulatory Permits
Mr. Jim Barnes, Archaeologist	Role: Archeological Compliance
Mr. Ken Cook, Biologist	Role: Environmental Assessment

REFERENCES

MDC (Missouri Department of Conservation). 2008a. Decurrent False Aster. http://mdc.mo.gov/discover-nature/field-guide/decurrent-false-aster

MDC (Missouri Department of Conservation). 2008b. Running Buffalo Clover. http://mdc.mo.gov/discover-nature/field-guide/running-buffalo-clover

Mettler-Cherry, P.A., Smith, M., and Keevin, T.M. 2006. Habitat characterization and geospatial metapopulation dynamics of threatened floodplain species *Boltonia decurrens* using a GIS. *Wetlands,* 26, 336-348

NatureServe. 2009. Comprehensive report species – *Cumberlandia monodonta, Plethobasus cyphyus, Myotis sodalis, and Haliaeetus leucocephalus*. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: February 20, 2010).

Smith, M., Keevin, T.M., and Mettler-McClure. P. 1998. Relating site characteristics of a threatened floodplain plant species to flood frequency and duration. Proceedings of Seventh Annual Conference of the Illinois Groundwater Consortium: Research on agricultural chemicals in Illinois groundwater. VIII: 54-62

Smith, M. 2000. Year 2000 inventory and assessment of decurrent false aster (Boltonia decurrens). Report prepared for the Rock Island District, U.S. Army Corps of Engineers.

USEPA (U.S. Environmental Protection Agency). 2009. The Green Book Nonattainment Areas for Criteria Pollutants. Available at http://www.epa.gov/oar/oaqps/greenbk/index.html (Accessed February 20, 2010).

USFWS (U. S. Fish and Wildlife Service). 1990. Decurrent False Aster Recovery Plan. U. S. Fish and Wildlife Service, Twin Cities, MN. 26 pp.

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). 2006. Species Profile: Bald Eagle (*Haliaeetus leucocephalus*). Available at http://ecos.fws.gov/speciesProfile/SpeciesReport.do?spcode=B008 (Accessed February 20, 2010).

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. Available:http://www.mcrcc.osmre.gov/Bats/PDF/IN%20BAT%20DRAFT%20PLAN%20apr07.pdf (Accessed: February 20, 2010).

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

USFWS (U.S. Fish and Wildlife Service). 2007c. National Bald Eagle Management Guidelines.

USFWS (U.S. Fish and Wildlife Service). 2009a. Illinois Threatened and Endangered Species. Available: http://www.fws.gov/midwest/endangered/section7/sppranges/illinois-cty.html (Accessed February 20, 2010)

FINDING OF NO SIGNIFICANT IMPACT

PUBLIC LAW 84-99

WINFIELD - PIN OAKS DRAINAGE AND LEVEE DISTRICT
MISSISSIPPI RIVER, MILE 239 TO MILE 241
LINCOLN COUNTY, MISSOURI

1. I have reviewed the document concerned with the proposed levee repairs to the Winfield - Pin Oaks Drainage and Levee District. The main purpose of this work is to repair the levee damaged by 2011 flooding. Repairs would return the drainage district 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: 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. Action Alternative (Tentatively Selected Plan): Under this alternative, which is the preferred alternative or Tentatively Selected plan, the levee in the drainage district would be repaired and restored to the pre-2011 level of protection by the Federal Government. Repair costs for the Federal drainage district would be 100 percent Federal government.

3. The possible consequences of these alternatives 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 plan was evaluated and subsequently rejected primarily based upon the higher potential for future flooding and damage to area farms.

b. No appreciable effects to general environmental conditions (air quality, noise, water quality) would result from the recommended plan.

c. The recommended plan is not expected to cause significant adverse impacts to aesthetic quality, recreational use, or general fish and wildlife resources.

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

e. No Federally endangered or threatened species would be adversely impacted by the recommended plan.

f. No prime farmland would be adversely impacted as a result of the recommended plan.

g. No significant impacts to historic properties (cultural resources) are anticipated as a result of the recommended plan.

h. Under the recommended 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-2011 flood protection.

4. The following environmental commitments are part of the recommended plan:

a. If any suspected hazardous materials are found, the USACE would notify the Missouri Environmental Protection Agency, and the hazardous materials would be removed in an approved manner before proceeding with the project.

b. For those areas where some erosion may occur from borrow excavations, levee repairs, and staging or storage areas, silt screens or hay bales will be used to reduce siltation into surrounding waterways based on a pre-approved Environmental Protection Plan which includes provisions for erosion control and the protection of natural habitat.

c. The USACE would use fast germinating grass mixtures on restored levee areas to reduce any further erosion.

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

_____ _____

Date

Christopher G. Hall
Colonel, U.S. Army
District Commander