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

15 January 2014

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

RE: Winfield, Cap Au Gris and Foley Drainage and Levee District; Consolidated North County Levee District; and Elm Point Levee Association

Dear Sir or Madam:

We are providing for your review an Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for each of the three levee systems named above that will require repair due to damages incurred during the spring and summer 2013 flooding. An electronic copy can be obtained from the St. Louis District's website at http://www.mvs.usace.army.mil/Missions/ProgramsProjectManagement/PlansReports.aspx. Please note that each Draft 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.

Levees throughout the St. Louis District were damaged during flooding in April and July 2013. 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 assessments. Please address your comments or questions to Francis Walton of the Environmental Compliance Section (CEMVP-PD-C), at telephone number (314) 331-8102, facsimile number (314) 331-8606, or e-mail at <francis.j.walton@usace.army.mil>, by close of business on January 30, 2014.

Thank you,

Timothy K. George

Timothy K. George
Chief, Environmental Compliance Section

ENVIRONMENTAL ASSESSMENT
WITH
DRAFT FINDING OF NO SIGNIFICANT IMPACT

PUBLIC LAW 84-99
EMERGENCY FLOOD DAMAGE REPAIR FOR THE CONSOLIDATED NORTH COUNTY LEVEE DISTRICT ST. CHARLES COUNTY, MISSOURI MISSISSIPPI RIVER

JANUARY 2014

1. INTRODUCTION

This document is an Environmental Assessment (EA) with an attached Draft Finding of No Significant Impact (FONSI) for levee repairs to the Consolidated North County Levee District (CNCLD). The purpose of this EA is to address potential environmental impacts of the proposed rehabilitation, and to serve as a record of interagency coordination for the emergency rehabilitation actions.

1.1 Purpose and Need for Action: Consolidated North County Levee District is located in St. Charles County, Missouri and is adjacent to the Mississippi and Missouri Rivers at approximately Mississippi River Mile 201 to 214 and Missouri River Mile 3 to 25. See Figure 1, Project Location Map. The portion of the levee along the Missouri River is a Federal project. From the confluence up the Mississippi River, the levee is a Non- Federal levee "except for purposes of cost sharing" in accordance with the implementation letter from Mr. Stockton, dated 19 December, 2008.

The levee system protects primarily agricultural lands and six communities and provides flood risk reduction up to a 20-year flood. The system consists of 40.4 miles of levee constructed with a 10-foot crown width and 1 on 3 side slopes. The CNCLD is an urban levee system that protects 35,408 acres, approximately two-thirds of which are agricultural. Figure 1 shows the project location and Figure 2 shows the CNCLD.

Two high water events on the Mississippi River in 2013 between 18 April and 11 July damaged the CNCLD. Heavy rainfall in April and May saturated the Midwest causing much of the additional heavy rains in May to develop directly into runoff. The saturated soil combined with the heavy rains created near record river levels throughout the

northern portion of the St. Louis District. The St. Louis District declared a high-water emergency on 18 April 2013.

The CNCLD was impacted by high waters from both the Mississippi River and the Missouri River. The levee overtopped and breached close to the confluence after the adjacent Kuhs Levee had breached. In addition, a significant slide formed on the Mississippi River levee that will require complete removal of the levee section for repair. Two gravity drains were also damaged during the event. An aerial map indicating damage locations is in Figure 3.

The levee system has an authorized level of protection of 20 years. Due to the breach of the system there is a need for repairs, because flood damages have reduced the protection to the two-year level, making the district vulnerable to more frequent flooding and economic losses. Without federal involvement through the PL84-99 program, it is unlikely that the CNCLD has the financial ability to restore the level of protection according to Corps of Engineers standards.

The work would be contracted out by USACE and completed in the winter and spring of early 2014. The breach needs to be closed to the line of protection by March 15, 2014 to avoid high flood insurance premiums for the levee district occupants and businesses.

The project objective is to protect the CNCLD and its economic value by restoring the levees to the pre-flood 20-year Federal standard of protection with minimal environmental impacts.

1.2. 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 PL 84-99). USACE regulations covering these and other emergency rehabilitation activities are contained in the Rehabilitation Code 910-300 of ER 500-1-1 (33 Part 203).

The Code states that actions taken to *restore facilities to pre-disaster conditions* under PL 84-99 will not be construed to be either major federal actions or as having significant effects.

However, the effect of rehabilitation on the environment must be considered. This includes the effects of construction on endangered species (P.L. 93-205 and Appendix B of ER 1105-2-50) and archeological and historic properties (Chapter 3 of ER 1105-2-50). This EA is to address potential environmental impacts of the proposed

rehabilitation, and will serve as a record of interagency coordination for the emergency rehabilitation actions.

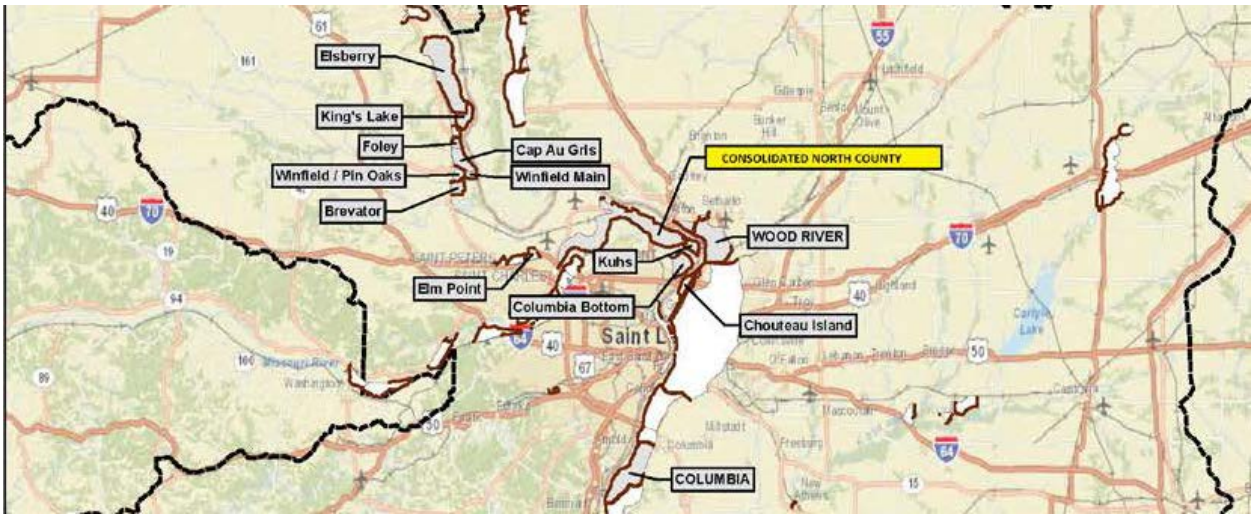


Figure 1 – Consolidated North County Levee District Project Location

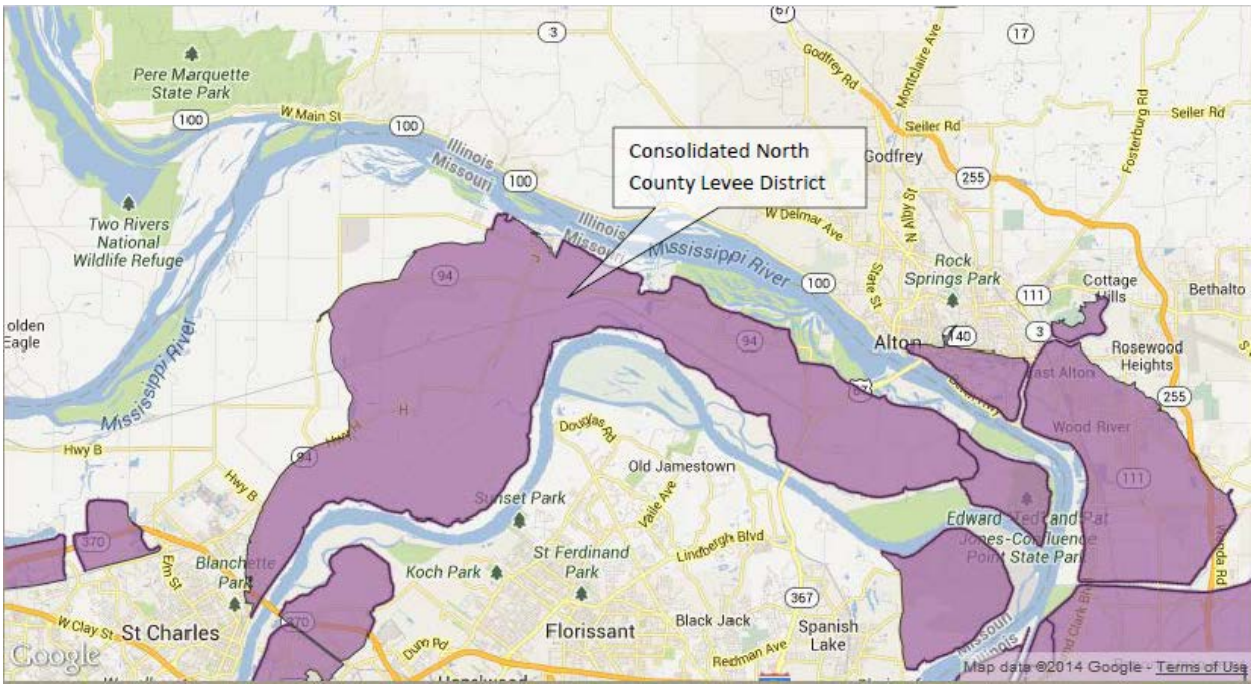


Figure 2 – Consolidated North County Levee District

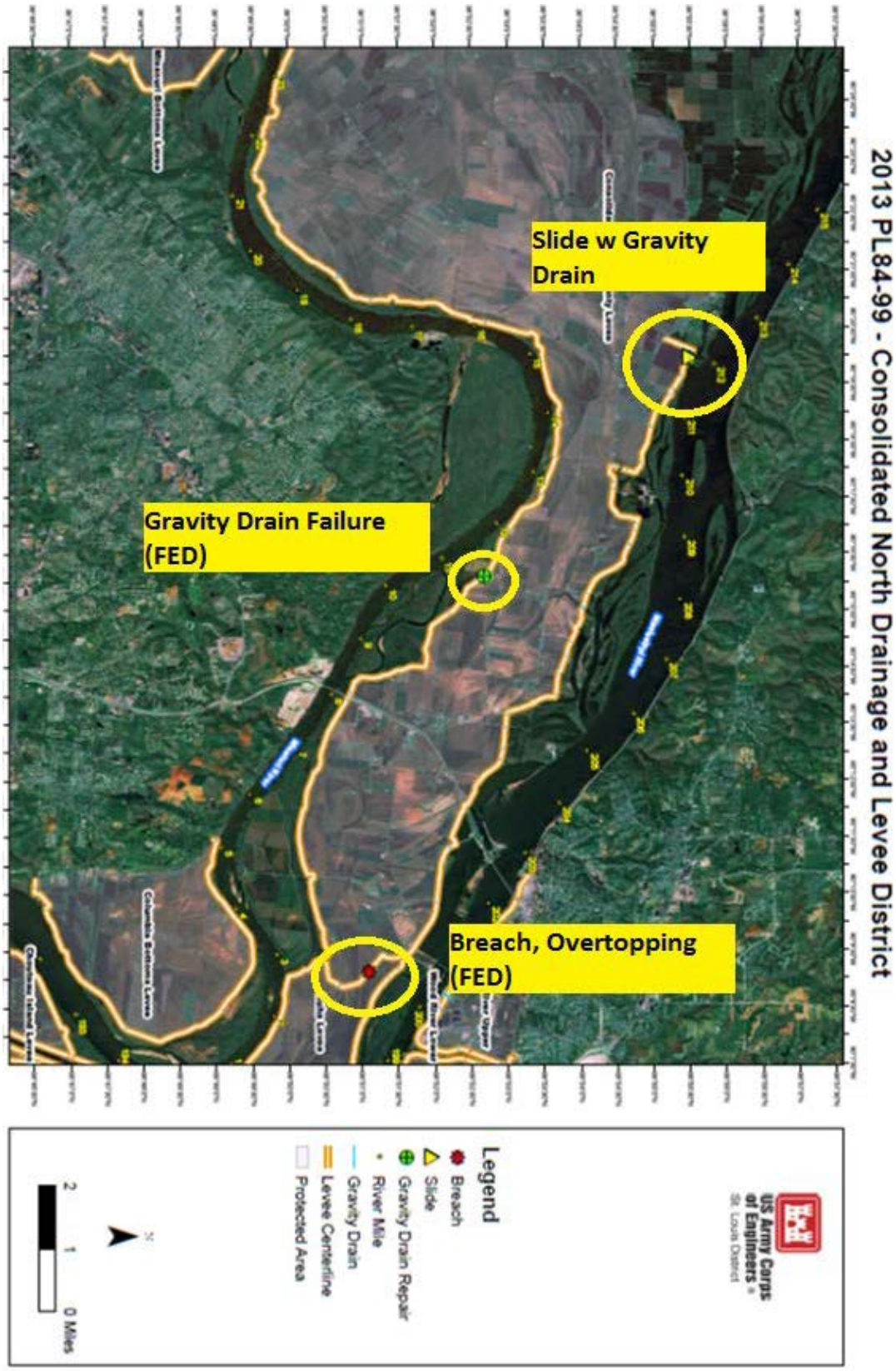


Figure 3 - Location of Damages in the CNCLD.

2. ALTERNATIVES

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

2.1. Alternative 1 - No Action (Future without Project)

Under the No Action Alternative, the federal government would not repair the damages to the CNCLD levee. It is possible that the CNCLD would make repairs without federal assistance. Environmental impacts of repairs made by the CNCLD would be similar to the preferred alternative, except that the repair duration may differ and the environmental protections may be reduced.

Therefore, due to the uncertainty of the CNCLD making 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 – Nonstructural Measures

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. Allowing the river to have greater access to the floodplain re-establishes some of the river's historic productivity by creating wetlands and by providing connection to wetlands that are essential to the long-term viability of aquatic and terrestrial communities.

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

> *"There is hereby authorized an emergency fund to be expended in preparation for emergency response to any natural disaster, in flood fighting and rescue operations, or in the repair or restoration of any flood control work threatened or destroyed by flood, including the strengthening, raising, extending, or other modification thereof as may be necessary in the discretion of the Chief of Engineers for the adequate functioning of the work for flood control, or in implementation of* ***nonstructural alternatives to the repair***

or restoration of such flood control work if requested by the non-Federal sponsor."

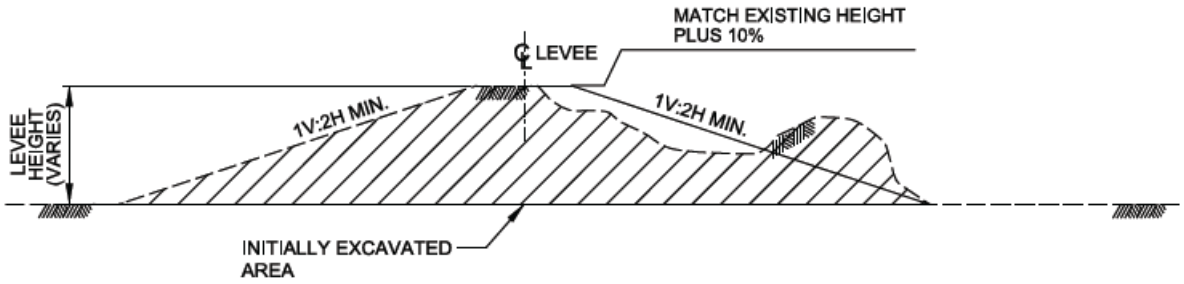
The CNCLD declined to request the pursuit of a non-structural alternative; therefore, this alternative was eliminated from further consideration.

2.3 Alternative 3 – Proposed Action: Repair of Levees with Federal Assistance

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

2.3.1 Embankment Slide Repair The embankment slide on the Mississippi River section of levee shown in Figure 4 (Non-Federal) would require approximately 2,750 CY of impervious fill. Included in the slide would be replacement of a 24" gravity drain that collapsed when the embankment slid. The drain would be replaced with 100 feet of new pipe and a flapgate. The slide area (Area 1) would be repaired by excavation of the damaged area, and replacement of embankment in compacted lifts, as necessary, until the original slope and grade of the levee is attained (Figure 5). In areas where filling is required, borrow material would be added to the repair sites to restore areas to pre-flood grade. All repair areas would then be reseeded when conditions are suitable for grass germination to prevent or minimize erosion. A small riverside coffer dam will be in place during construction to protect the construction site and CNCLD and then removed after construction.

Figure 4 – Embankment Slide (Area 1)



SECTION B-B

AREA 1 SLIDE REPAIR

NOT TO SCALE

Figure 5 – Typical Slide Repair Impacting Crown (Area 1)

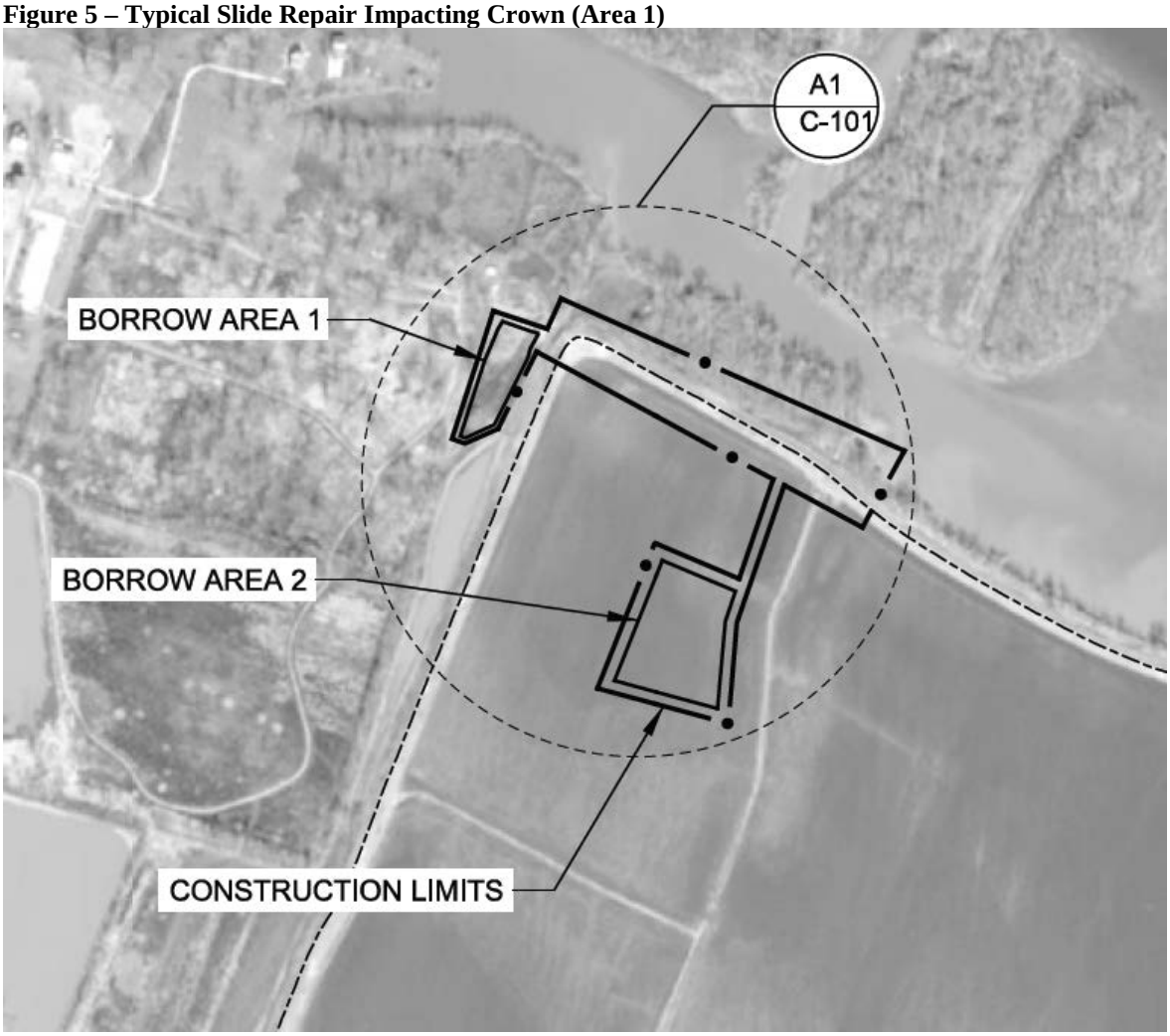


Figure 6 - Area 1: Embankment slide repair construction and borrow limits.

2.3.2 Breach Repair

The breach area (Area 2) would be repaired by pushing sand that was carried out of the levee when it was breached back into the 40-foot deep scour hole and replacement of

embankment in compacted lifts, as necessary, until the original slope and grade of the levee is attained.

The breach (Figure 7) is approximately 400’ in length with over 750’ of deep scour from riverside to landside. The depth of scour reached approximately 40’ below existing ground. Approximately 84,500 cubic yards of pervious and 55,600 impervious material are needed for the repair that would occur on the existing alignment. Sand from the breached levee would be removed from the field and used to fill in the breach (Figure 8) .

Figure 7 – Breach (Area 2)

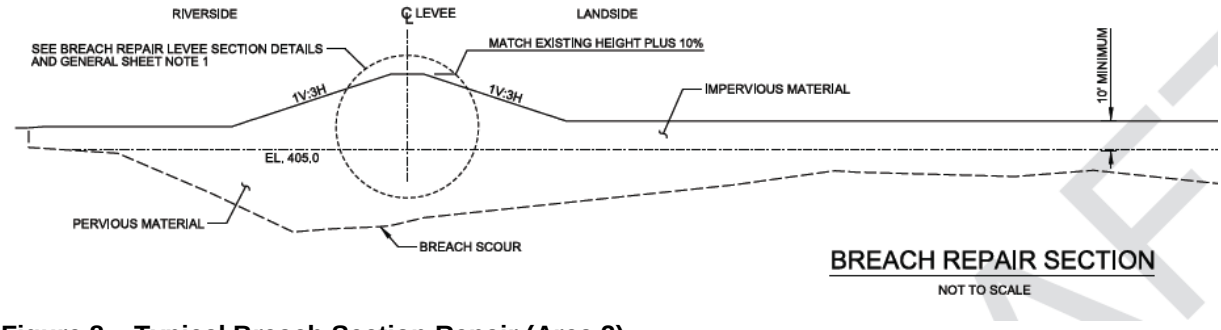


Figure 8 – Typical Breach Section Repair (Area 2)

Figure 9 – Area 2: Breach repair and borrow area 3.

2.3.3 Gravity Drain Repair A 24" gravity drain (Figure 10) on the Missouri River section of levee (federal) was damaged by flood debris eventually leading to collapse of the pipe and would need to be replaced. Replacement would include a 130' pipe and a new flapgate. The levee (Area 1) would be repaired by excavation of the damaged area and replacement of the embankment in compacted lifts, as necessary, until the original slope and grade of the levee is attained. In areas where filling is required, borrow material would be added to the repair sites to restore areas to pre-flood grade. All repair areas would then be reseeded when conditions are suitable for grass germination to prevent or minimize erosion.

Figure 10 –Gravity Drain Failure (Area 3)

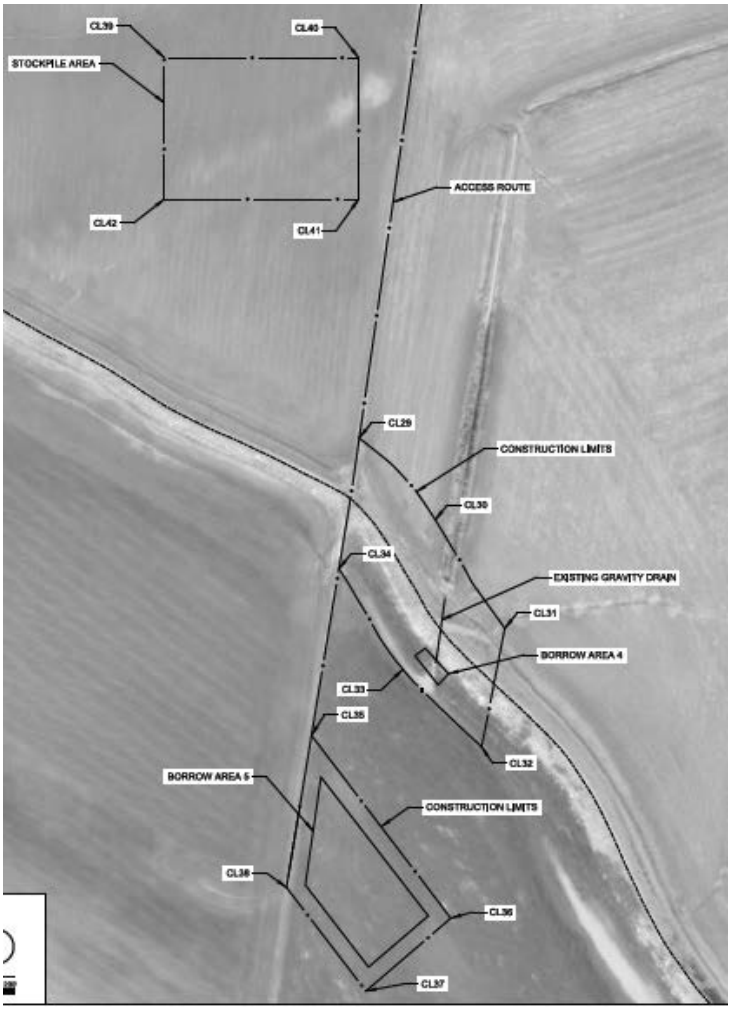


Figure 11 – Area 3: Gravity drain repair and borrow sites 4 and 5.

2.3.4 Borrow Material

Borrow material for repairs needing fill would come from borrow areas within the CNCLD. Figures 6, 9 and 11 show the proposed borrow site locations.

Five sites have been identified for borrow in or adjacent to the CNCLD. Borrow site 1 (Area 1 – Figure 6) is .53 acres and located in a low quality palustrine emergent wetland, showing hydric soil signatures. Borrow site 2 (Area 1) is 0.83 acres located in an agricultural field. Borrow site 3 (Area 2) is approximately 98 acres and is located in a agricultural field adjacent the breach and was mostly covered in sand from the breach. Borrow site 4 (.038 ac.) (Area 3 – Figure 9) is stockpiled material at the gravity drain repair site and borrow site 5 (0.83 ac.) is an agricultural field south of the gravity drain repair, respectively. A stockpile area for storing excavated material from the levee for Area 3 is located in an agricultural field north of the levee (Figure 11).

2.4 Evaluation and Comparison of Alternative Plans

Under Alternative 1 (No Action) the levee system would remain in its damaged state with a reduced level of protection. This would increase the frequency and risk of monetary damages to croplands, structures, and infrastructure in the event of future flooding. The levee district declined to request the pursuit of a Non-Structural Alternative; therefore, Alternative 2 (Nonstructural Alternative) is not included in the comparison of alternative plans. Under Alternative 3 (Repair of Levees with Federal Assistance) damaged levees would be repaired to pre-flood conditions. It is for these reasons that the Repair of Levees with Federal Assistance Alternative is the preferred alternative. Impacts of the No Action and Preferred Alternative to the physical, biological and socioeconomic resources are summarized in Table 1 of this EA.

Table 1. Summary and Comparison of Alternatives and Environmental Impacts

Alternatives	Socio-Economic Resources	Biological Resources	Physical Resources	Meets Project Objectives
No Action –	• Potential negative impacts to cultural resources if levee fails and historic properties or significant sites flood. • Approximately 35,408 acres of a variety of land areas may be susceptible to future floods. Potential negative impacts to regional economy if levee fails due to slide and drain damages. • Recreation would be curtailed during flood events if levee is compromised (access to Confluence St. Park)	• Potential for beneficial impacts to fish and wildlife, if levee is compromised. • Federal T&E species would not be adversely impacted • Meets project objective of minimal environmental impacts.	• Flooding may occur if slides are not repaired and the levee's integrity is compromised during a flood. Estimated that protection is reduced to 2-year flood level with current damages. • Water turbidity may be temporarily increased if slides continue to erode during flood events.	Does not meet project objective of protecting the socioeconomic value of the CNCLD and does not meet project objective of repairs to Federal standard.
B – Non-Structural	• Non-structural alternative not requested by the levee district.			
C – Proposed Repairs	• Cultural resource impacts are unlikely; however, a process is in place to address if encountered. • Final repair of levee would result in the protection of croplands and structures from floods up to the design (20-year frequency) of the levee system. • Recreation would be possible up to 20-year flood event.	• Construction would be confined to the levee and borrow sites and may result in minor temporary impacts to water and air quality. • There would be no tree clearing; therefore, proposed action should have no adverse affect on bat species.	• Levee and gravity drain repairs would meet the Federal standard. • The area inside levees would be flooded only when flood stages exceed levee design height. • Temporary minor impacts to water and air quality during construction. Meets project objective.	Meets project objective.

3. AFFECTED ENVIRONMENT

3.1 Physical

Water Resources: Water resources adjacent to the CNCLD include: the Mississippi River outside the northern portion and the Missouri River along the southern side, and various wetlands and drainage ditches. The levee district lies in the floodplain of the Mississippi and Missouri Rivers. 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.

Air Quality: St. Charles County is currently in non-attainment of U.S. Environmental Protection Agency criteria for the 8 hour ozone level and particulate matter 2.5.

Noise: Ambient noise in the study area is generated by human activities and vehicular traffic.

Hazardous Toxic Radioactive Waste: The levee sponsor indicated that there are six pipelines buried under the proposed site including: NuStar, Platte, Koch-Wood River, Conoco, Missouri Gas, and Shell. If any recognized environmental conditions are identified during the construction of the project features, the work would cease and the Environmental Quality office of the St. Louis District would be notified immediately to reassess the project area. The St. Louis District will conduct a modified Phase I assessment including a site investigation prior to construction to ensure that no HTRW contamination exists within the project area.

3.2 Biological

Vegetation along the outside of the levee is dominated by floodplain forest. This floodplain forest consists of a mix of cottonwood, willows, and silver maples. Vegetation in the levee-protected areas is predominately agriculture, floodplain forest and various wetlands. The farm ground in the vicinity of the levee breach has 1 ½ - 2 foot deposit of sand. This sand would be pushed back into the levee scour hole and used to build the levee. Vegetation on the levees consists of mowed cool season grasses. The floodplain forest, wet meadow, aquatic, and agricultural habitats in the area support a wide variety of insects, crustaceans, mollusks, reptiles, amphibians, fish, birds, and mammals.

Common fish species occurring within the Mississippi and Missouri Rivers and associated backwaters in the area include buffalo fishes (*Ictiobus* spp.), catfish, freshwater drum (*Aplodinotus grunniens*), crappie (*Pomoxis* spp.), gar (*Lepisosteus* spp.), gizzard shad (*Dorosoma cepedianum*), common carp (*Cyprinus carpio*), silver carp (*Hypophthalmichthys molitrix*), largemouth bass (*Micropterus salmoides*), emerald shiner (*Notropis atherinoides*), and sunfish (*Lepomis* spp.).

Threatened and Endangered Species (Table 2): The federally endangered Indiana bat (*Myotis sodalis*), pallid sturgeon (*Scaphirhynhcus albus*), least tern (*Sterna antillarum*), and running buffalo clover (*Trifolium stolonnifereum*) may occur in the project area. The proposed-for-listing northern long-eared bat (*Myotis septentrionalis)* and the federally protected bald eagle (*Haliaeetus leucocephalus*) also may occur in St. Charles County.

Table 2 – List of federally threatened and endangered species for St. Charles Co. and their habitat potentially occurring in the project area (USFWS website accessed on December 28, 2013)

Species	Status	
Indiana bat (*Myotis sodalis*)	Endangered	Hibernacula - Caves and mines; Maternity and foraging habitat - small stream corridors with well developed riparian woods; upland forests
Northern long-eared bat *Myotis septentrionalis*	Proposed as Endangered	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during spring and summer
Least tern (interior population) (*Sterna antillarum*)	Endangered	Large rivers. Nest on sandbars
Pallid sturgeon (*Scaphirhynchus albus*)	Endangered	Mississippi and Missouri Rivers
Decurrent false aster (*Boltonia decurrens*)	Threatened	Disturbed alluvial soils
Running buffalo clover (*Trifolium stolonifereum*)	Endangered	Disturbed bottomland meadows

Indiana bat (*Myotis sodalis*). According to USFWS (2007), 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.

The distribution of the Indiana bat in Missouri includes nearly the entire state (NatureServe 2008). Suitable maternity and foraging habitat is most likely present and would consist of floodplain forest along the Mississippi and Missouri rivers and forest fragments scattered within cropland.

The **northern long-eared bat** (*Myotis septentrionalis*) is a federal candidate for listing as an endangered species throughout its range (Federal Register 2 October 2013). 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. 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 maternity and foraging habitat is most likely present and would consist of floodplain forest along the Mississippi and Missouri rivers and forest fragments scattered within cropland.

Pallid sturgeon (*Scaphirhynchus albus)* are found in the Mississippi River downstream of its confluence with the Missouri River. Pallid sturgeon forage for fish along the bottom of large rivers (USFWS 1993). Little is known of adults' habitat preferences and even less is known about spawning locations. Pallid sturgeon are most frequently caught over a sand bottom, which is the predominant bottom substrate within the species' range on the Mississippi River. Recent tag returns have shown that the species may be using a range of habitats in off-channel areas and tributaries of the Mississippi River.

Running buffalo clover (*Trifolium stoloniferum*) is a native Missouri clover believed to have originally inhabited the ecotone between open forest and prairie in the eastern and central U.S. The species apparently depended on grazing and disturbance by large animals such as the buffalo for population viability, and partial shading also appears to have been an important component of its original habitat. Current habitats include disturbed bottomland meadows and areas with rich moist soils that are subjected to mowing, trampling, or grazing, especially disturbed areas in woodlands. Running buffalo clover is known from 24 counties in Missouri. The dense turf formed by the cool season grass, regular mowing or agricultural production would prevent Running Buffalo Clover from germinating.

Decurrent false aster (*Boltonia decurrens*) 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 (USFWS 1990). Its natural habitat is

lake shores and stream banks. 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 activity for survival (USFWS 1990). Suitable habitat is present in the CNCLD, but farming practices are preventing its growth.

The interior population of the **least tern** (*Sterna antillarum*) is characterized as a colonial, migratory waterbird, which resides and breeds along the Mississippi River during the spring and summer. Least terns arrive on the Mississippi River from late April to mid-May. Reproduction takes place from May through August, and the birds migrate to the wintering grounds in late August or early September. Sparsely vegetated portions of sandbars and islands are typical breeding, nesting, rearing, loafing, and roosting sites for least terns along the Middle Mississippi River (MMR). Least tern habitat is found in the project vicinity.

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) 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. No bald eagle nest trees are known to occur in the immediate vicinity of the project area at this time. If any nest trees are identified in the project area, the National Bald Eagle Management Guidelines will be implemented to minimize potential project impacts and appropriate coordination with the U.S. Fish and Wildlife Service will be conducted.

3.3 Socio-economic

Prime Farmland: The CNCLD is an urban levee system that protects primarily agricultural lands, conservation areas, and several small communities to include West Alton, Missouri. This levee district includes 35,408 acres (NLD figure) and protects approximately 23,147 acres of prime farmland from a 20-year flood. The system consists of 40 miles of levee constructed with a 10-foot crown width and 1 on 3 side slopes.

Cultural Resources: 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 and borrow site locations.

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 the Missouri and Mississippi rivers within the U.S. Army Corps of Engineers St. Louis District boundaries were damaged by flooding in 2013. 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.

Environmental Justice: Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low- Income Populations, 59 Federal Register 7629 (1994), directs federal agencies to incorporate environmental justice in their decision making process. Federal agencies are directed to identify and address as appropriate, any disproportionately high and adverse environmental effects of their programs, policies, and activities on minority or low-income populations. A large number of residents have been impacted by previous high water events.

Aesthetics: The levee repair areas are adjacent to agricultural areas, floodplain forest, wetlands, and open water. Borrow areas would all be located on agricultural land except for a half-acre of emergent wetland.

4. ENVIRONMENTAL IMPACTS

This section is organized by resources and impacts of the No Action and Proposed Action (Preferred Alternative) alternatives are combined under the resource headings.

4.1 Physical

Water Resources:
No Action: Without repair, the damaged portions of the levee would slowly erode. During floods, the protected area would be more likely to flood. Flood water would pond behind the levee and deposit sediment, decreasing flood water turbidity and filling wetlands.
Proposed Action - A temporary increase in water turbidity resulting from erosion may occur around repair operations. Repairs would be completed with federal money, design, and supervision ensuring water quality protection.

Air Quality:
No Action – There would be no change in air quality under this alternative.
Proposed Action - With implementation of the proposed action, temporary increases in air pollution would occur due to particulate and combustible emissions from construction vehicles, mobile equipment, and their actions. Because emissions are from mobile sources, manufacturers are required to meet performance standards. The construction equipment would have catalytic converters and mufflers to reduce exhaust and emissions. Additionally, due to the short duration of construction, any increases or

impacts on ambient air quality are expected to be short-term and minor. Therefore it is not necessary to quantify emissions given the lack of ambient emissions thresholds that could be used to make the determination of air quality impact. This project is not expected to cause or contribute to the violation of federal or state ambient air quality standards.

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

Hazardous, Toxic and Radioactive Waste Sites:
No Action – There would be no change under this alternative.
Proposed Action – There would be no expected impacts due to the presence of the petroleum pipelines because the excavation is not located in the area of the pipelines.

4. 2 Biological

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. Without flooding, fauna and associated habitat would remain unchanged. With flooding, fauna would be displaced and habitat would be impacted by flood waters. Without flooding, the damaged areas would re-vegetate over time and no other impacts would occur. With flooding during the growing season, flood waters could kill vegetation behind the levees as flood water ponds on typically dry areas dominated by upland species. However over time, wetland vegetation would establish.

Proposed Action – The proposed repair areas are not 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.

Five sites have been identified for borrow in or adjacent to the CNCLD. Borrow site 1 (Area 1) is located in a low quality palustrine emergent wetland, showing hydric soil signatures. Removing the borrow material would not be enough to cause permanent impacts to the wetland. The emergent species present would restore themselves naturally. Borrow site 2 (Area 1) is located in an agricultural field. Borrow site 3 (Area 2) is located in a farm field adjacent the breach and was mostly covered in sand from the breach. Borrow sites 4 and 5 (Area 3) are stockpiled material at the gravity drain repair site and an agricultural field south of the gravity drain repair, respectively. A stockpile

area for storing excavated material from the levee is located in an agricultural field north of the levee. No biological impacts were identified with use of these borrow sites or stockpile area. These repair actions and borrow removal would be covered under regulatory Army nationwide permits No. 3 (Maintenance) and No. 27 (Aquatic Habitat Restoration, Establishment and Enhancement Activities) valid until March 18, 2017.

Threatened and Endangered Species
No Action – Conditions for threatened and endangered species would remain the same.

The following federally listed species are currently listed for St. Charles Co. (http://www.fws.gov/midwest/endangered/lists/missouri-cty.html) as of December 28, 2013:

Indiana bat (*Myotis sodalis*).
Proposed Action – The proposed project would not affect any caves and the project does not include tree clearing. Thus, the St. Louis District has determined that the proposed project would have "no effect" on the Indiana bat.

The **northern long-eared bat** (*Myotis septentrionalis*)
Proposed Action - No caves or upland forests would be impacted by the proposed action; therefore, this project would have "no effect" on the northern long-eared bat.

Pallid sturgeon (*Scaphirhynchus albus)*
Proposed Action - Levee repairs would take place within the footprint of the levee and associated work areas and would be unlikely to impact any pallid sturgeon habitat. The proposed project may effect, but is not likely to adversely affect the pallid sturgeon.

Running buffalo clover (*Trifolium stoloniferum*)
Proposed Action - The repair would take place within the footprint of the existing levee, designated work areas, and on agricultural lands. Prior to the 2013 flood damage, this area was vegetated with cool season grasses and regularly mowed or in agriculture. The dense turf formed by the cool season grass, regular mowing or agricultural production would prevent Running Buffalo Clover from germinating. The proposed project is not likely to adversely affect Running Buffalo Clover.

Decurrent false aster (*Boltonia decurrens*)
Proposed Action - The repairs would take place within the immediate vicinity of the existing levee, designated work areas, and agricultural lands. The decurrent false aster is not located near the repair areas which have been in agriculture. The threatened decurrent false aster can be found within the County, but none are known to occur at the repair sites, borrow sites or in their immediate vicinity. The proposed project is not likely to adversely affect the decurrent false aster.

Interior least tern (*Sterna antillarum*)
Proposed Action - The repairs would take place within the immediate vicinity of the existing levee, designated work areas, and agricultural lands. No least tern habitat

would be affected by the levee repair, therefore the project should have “no effect” on the least tern.

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) 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. No bald eagle nest trees are known to occur in the immediate vicinity of the project area at this time. If any nest trees are identified in the project area, the National Bald Eagle Management Guidelines will be implemented to minimize potential project impacts and appropriate coordination with the U.S. Fish and Wildlife Service will be conducted.

4.3 Socioeconomic

No Action - Without flooding, there would be no socioeconomic impacts. If the CNCLD decides not to repair the damaged sections, the level of protection (LOP) would be decreased to a 2-year LOP from that provided by the design (pre-2013 flood event) levee of 20-year LOP. The previously leveed area would continue to be subject to flooding, making the area less suitable and possibly unsuitable for agriculture. This could result in a negative economic effect on the levee district and the local economy. With flooding, damage, sedimentation and scour would occur. This would impair the ability of farmers to use their land and would result in economic losses.

Proposed Action - Local agricultural and agri-businesses would benefit from levee repair and subsequent restoration to 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.

Cultural Resources:

No Action - 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.

Proposed Action - The proposed repairs to the levee within the CNCLD have the potential to affect unknown significant historic properties (archaeological remains) in two locations.

The borrow area associated with the slope erosion and gravity drain repair would come from an abandoned lot and road bed adjacent to the levee in Portage des Sioux, Missouri. The area has already been disturbed and a pedestrian survey found no indications of cultural remains. The use of this material will have no effect on historic properties.

The borrow area for the levee segment that was breached is at least partially covered by sand deposited by the flood event. A pedestrian survey of the borrow area not covered by sand found no cultural resources. In the area covered by sand, it was not possible to determine the presence of archaeological remains. The area has also not been previously surveyed for cultural resources. There are no previously recorded sites within the borrow area. During earthmoving activities associated with the breach repair, the excavated areas would be monitored for the presence of cultural remains. Should any remains be found, the protocol described below will be followed.

The borrow area for the gravity drain replacement could not be adequately surveyed due to the presence of mature soybeans. The area has not been surveyed for cultural resources and there are no previously recorded sites within the borrow area. As with the breach borrow area, this borrow area would be monitored during earthmoving activities to safeguard against adverse effects to historic properties. Should any archaeological remains be found, the protocol described below will be followed.

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

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 Missouri State Historic Preservation Office (SHPO). Any future actions will be coordinated with the Missouri SHPO.

Aesthetics:
No Action – Without flooding, there would be no aesthetic impacts other than the damaged levees. With flooding, flood damage, sedimentation and scour would cause further degradation to the landscape.
Proposed Action - Construction equipment and activities would cause short-term degradation of the landscape. Upon construction completion all equipment would leave the area and the seeded repair areas would re-vegetate to closely resemble pre-flood conditions. All borrow areas would return to agriculture with the exception of Borrow Site 1 which would remain an emergent wetland.

Economics:
No Action - Without flooding, there would be no socioeconomic impacts. With flooding, further damage, sedimentation and scour would occur. This would impair the ability of farmers to use their land and would result in economic losses and prevent the public from using the state park.
Proposed Action - Local agricultural and agri-businesses would benefit from levee repair and subsequent restoration to 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.

Environmental Justice:
No Action – Without flooding, there would be no change from current conditions. With flooding, damage, sedimentation and scour would occur and any minority or low-income populations may be affected, but not disproportionately.
Proposed Action - No minority or low-income populations would be directly displaced or negatively affected in any way by the Proposed Action.

5. CUMULATIVE IMPACTS

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 2013. Temporary impacts from noise, air, and water pollution would occur; however, repair sites are widely scattered throughout the St. Louis District and therefore additive effects of these impacts would be negligible. These repairs are not anticipated to decrease the post-flood productivity of lands riverward or landward of the levee systems. The CNCLD PL84-99 project along with several other levees will require borrow for levee repairs. Borrow sites have been examined and selected in order to avoid sensitive areas and resources. Borrow for the majority of these projects will come from agriculture areas, low quality farmed wetlands, and previously identified borrow areas. The widely scattered nature of repair sites and shallow excavation depth of borrow sites would reduce impacts and no long term adverse cumulative impacts are expected.

6. RELEVANT LAWS AND REGULATIONS

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 at the breach which occurred in the CNCLD during the spring and summer flooding of 2013. 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 levee damages which occurred in the CNCLD during the summer flooding of 2013. The proposed project work would be conducted within the footprint of the levee and in associated work areas. Impacts to the Area 1 wetland are expected to be temporary and minimal and ultimately enhance the wetland. Therefore, the proposed levee repairs are in full compliance with this Executive Order.

7. ENVIRONMENTAL REGULATORY CONSTRAINTS

The Preferred Alternative was subject to compliance review with all applicable environmental regulations and guidelines. The Preferred Alternative was determined to be in full compliance with all applicable acts and legislation. The construction activities are authorized under Section 404 of the Clean Water Act by existing Department of the Army nationwide permits for Maintenance (No. 3) and Aquatic Habitat Restoration, Establishment and Enhancement Activities (No. 27).

8. 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	Full
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

Federal Policies	Compliance
Land and Water Conservation Fund Act, 16 USC 460d-4601	Full
National Environmental Policy Act, 42 USC 4321- 4347	Partial[1]
National Historic Preservation Act, 16 USC 470 *et seq.*	Partial[2]
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
[1] Full compliance to be achieved with the District Engineer's signing of the Finding of No Significant Impact
[2] Full compliance to be achieved with the State Historic Preservation Officer's concurrence in the District's EA disclosures.

9. REFERENCES

NatureServe. 2008. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, Virginia. Available: http://www.natureserve.org/explorer. (Accessed: June 30, 2008).

USFWS. 1990. Decurrent False Aster Recovery Plan. Twin Cities, Minnesota: U.S. Fish and Wildlife Service.

USFWS. 1993. Pallid sturgeon recovery plan (9.65 MB). USFWS, Denver, Colorado. 55 pp

USFWS. 2007. 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: October 3, 2008).

10. COORDINATION, PUBLIC VIEWS, AND RESPONSES

This EA and Draft FONSI will be provided to state and federal agencies and the public for their review, comments, and concurrence during the 15 day public comment period. See Appendix A for the EA distribution list.

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

U.S. Fish and Wildlife Service
Federal Emergency Management Agency
Missouri Department of Conservation
Missouri State Historic Preservation Agency
Missouri Department of Natural Resources

11. ENVIRONMENTAL ASSESSMENT PREPARERS

Francis Walton, 13 years USACE biologist
Experience: 15 years Environmental Branch, USACE
Role: EA Coordinator, Environmental Impact Analysis, NEPA and Environmental Compliance

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

James E. Barnes, District Archaeologist
Experience: 8 years private sector; 17 years Center of Expertise, Curation and Maintenance of Archaeological Collections
Role: National Historic Preservation Act Analysis and Compliance

Greg Bergtoglio, Project Manager
Experience: 32 years USACE-MVS
Role: Project Manager

Daniel Linkowski, Economist
Experience: 5 years USACE
Role: Economist

Matt Shively, Regulatory Project Manager, Wildlife Biologist
Experience: 15 years, USACE-MVS Regulatory Office
Role: Section 404/401 permit review; NEPA and Environmental Compliance Coordination

DRAFT FINDING OF NO SIGNIFICANT IMPACT

PUBLIC LAW 84-99
CONSOLIDATED NORTH COUNTY LEVEE DISTRICT
ST. CHARLES COUNTY, MISSOURI
MISSISSIPPI RIVER
JANUARY 2014

1. I have reviewed the document concerned with the proposed levee repairs to the Consolidated North County Levee District. The purpose of this project is to repair levee sections damaged by an extended high water event during the spring and summer of 2013. 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. Repair of Levees with Federal Assistance (Preferred Alternative): Under this alternative, the federal government would repair the damaged areas to the pre-flood level of protection. Since the CNCLD is active in the USACE Rehabilitation and Inspection Program, it is eligible for Flood Control and Coastal Emergency funding authorized by PL 84-99.

3. The possible consequences of these alternatives have been studied for physical, biological, social and economic effects. 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 agriculture in the CNCLD.

b. Borrow for the final levee repair would come from the areas deemed acceptable by the borrow inspection team. The selected borrow site locations are shown in the Environmental Assessment (EA). Levee repairs would be seeded using a mixture of fast germinating perennial grasses when conditions are suitable for grass germination.

c. No appreciable effects to general environmental conditions (air quality, noise, water quality) would result from the preferred alternative.

d. The preferred alternative is not expected to cause significant adverse impacts to aesthetic quality, recreational use, or general fish and wildlife resources.

e. The preferred alternative is not expected to cause unacceptable adverse impacts to riparian habitat, bottomland hardwood forest, or other wetlands.

f. No Federally endangered or threatened species would be adversely impacted by the preferred alternative.

g. No prime farmland would be adversely impacted as a result of the preferred alternative.

h. No adverse impacts to historic properties (cultural resources) are anticipated as a result of the preferred alternative.

i. Under the preferred alternative, 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-2013 flood protection.

4. The following environmental commitments are part of the preferred alternative:

a. If any suspected hazardous materials are found, the USACE would notify the Illinois 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 environmental analysis of the preferred alternative, 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

APPENDIX A
EA Distribution List

U.S. Fish and Wildlife Service
Attn: Matt Mangan
Marion Illinois Sub-Office (ES)
8588 Rte 148
Marion, IL 62959

Missouri Department of Natural Resources
Sara Parker Pauley, Director
P.O. Box 176
Jefferson City, MO 65102

Honorable Blaine Luetkemeyer
1118 Longworth HOB
Washington, Dc 20515

Honorable Claire McCaskill
5850 A Delmar Blvd
St. Louis, MO 63112

Honorable Lacy Clay
6830 Gravois
St. Louis, MO 63116

Rep. Jim Hansen
201 West Capitol Avenue
Room 405a
Jefferson City MO 65101

Senator Brian Munzlinger
201 W Capitol Ave., Rm. 331a
Jefferson City, Missouri 65101

Honorable Sam Graves
906 Broadway
P.O. Box 364
Hannibal, MO 63401

Missouri Department of Conservation
Attn: Janet Sternburg
P.O. Box 180
Jefferson City, MO 65102

MDNR Division of State Parks
Planning and Development
P.O. Box 176
Jefferson City, MO 65102

Senator Jolie Justus
201 W Capitol Ave., Rm. 333
Jefferson City, Missouri 65101

Russell Cissell
1075 Lesieur
Portage Des Sioux, MO 63373

Rep. Ed Schieffer
201 West Capitol Avenue
Jefferson City, MO 65101-6806

Missouri Department of Conservation
Attn: Alan Leary
P.O. Box 180
Jefferson City, MO 65102

Honorable Roy Blunt
United States Senator
2502 Tanner Drive – Suite 208
Cape Girardeau, MO 63703

Missouri Dept. of Natural Resources
Water Protection Program
401 Unit
P.O. Box 176
Jefferson City, MO 65102-0176

State of Missouri
Emergency Management Agency
Logistics, Mitigation & Floodplain
Management Branch
Po Box 116
Jefferson City, MO 65102

Sierra Club
Missouri Chapter
7164 Manchester Ave.
Maplewood, MO 63143

Robert D. Shepherd
Izaak Walton League of America
16 Juliet Ave
Romeoville, Il 60446

Kathy Andria
American Bottoms Conservancy
P.O. Box 4242
Fairview Heights, Il 62208

The Nature Conservancy
2800 S. Brentwood Blvd.
St. Louis, MO 63144

Ken Sessa
Federal Emergency Management
Agency
9221 Ward Parkway, Suite 300
Kansas City, MO. 64114-3372

Consolidated North County
Levee District
Danny Kleusner
P.O. Box 186
Portage Des Sioux, MO 63373

Mr. Stanley Rolf
President, Board of
Commissioners
Winfield Drainage and Levee
District
1095 S. Highway 79
Winfield, MO 63389

Mr. Dennis Dove
Secretary/Treasurer
Foley Drainage District
2871 Highway P
Wentzville, MO 63385

Mr. Robert Jungermann
President, Board of
Commissioners
Cap Au Gris Levee and Drainage
District
1529 Rahmier Rd.
Moscow Mills, MO 63362

Mr. Larry Kluesner
Secretary
Elm Point Levee District
4768 Washeon Rd
St. Charles, MO 63301