U.S. Army Corps of Engineers - Kansas City District

Programmatic Environmental Assessment
&
Finding of No Significant Impact

PUBLIC LAW 84-99 EMERGENCY LEVEE REHABILITATION PROGRAM

January 2012

DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
600 FEDERAL BUILDING
KANSAS CITY, MISSOURI 64106-2896

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Summary

A major mission of the U.S. Army Corps of Engineers - Kansas City District is the Emergency Levee Rehabilitation Program authorized by Public Law 84-99 (33 U.S.C. 701n)), Emergency Response to Natural Disasters. This law allows the U.S. Army Corps of Engineers (USACE) to provide assistance to rehabilitate levees following flood events. This assistance may be provided to both Federal and non-Federal levee sponsors active in the Public Law 84-99 (PL 84-99) Emergency Levee Rehabilitation Program. Presently, there are 140 levees within the Kansas City District that are active in the PL 84-99 program. Significant flooding has occurred within the Kansas City District's jurisdiction six times between the years 1993 and 2011. Because of this, the Kansas City District has implemented several procedures to expedite the environmental and cultural compliance process for the PL 84-99 Emergency Levee Rehabilitation Program. A Programmatic Environmental Assessment (PEA) builds on these previous efforts and further expedites the environmental and cultural review process for levee repairs. This approach also allows for a more comprehensive environmental review of the program.

Alternatives

A total of five alternatives for the PL 84-99 Emergency Levee Rehabilitation Program were evaluated in terms of individual and cumulative effects and are addressed below.

Alternative 1 - "No-Action" Alternative: The "No-Action" alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. Selection of the "No-Action" alternative is expected to result in a "predictable action by others", as discussed by CEQ (1981). This "predictable action" would consist of the public sponsor repairing the levee without assistance through the PL 84-99 program.

Alternative 2 - Repair Levee within Existing Alignment: This alternative would repair flood damaged Federal and non-Federal levees in the PL 84-99 program within their existing alignments. Levee repairs would be made using a variety of heavy equipment to obtain, move, and compact earthen materials. The levee would be reseeded following construction to minimize soil erosion. Selection of this alternative may or may not provide the most economical option to repair a levee, depending on the type of damage that has been sustained.

Alternative 3 - Repair Levee with a New Alignment: This plan would repair flood damaged levees by realigning the levee landward, or further away from the river. These repairs would be made using a variety of heavy equipment to obtain, move, and compact earthen materials. The levee would be reseeded following construction to minimize soil erosion. Selection of this alternative may or may not provide the most economical option to repair a levee, depending on the type of damage that has been sustained.

Alternative 4 - Non-Structural Options: This alternative would reduce flood risk and typically improve flow conveyance by modifying structures and property to reduce damages during flood events. This would normally result in removing the flood protection provided by a levee and providing a more natural connection between the river and the floodplain. Examples of non-structural options include relocating structures, elevating structures, constructing ring levees around individual structures, and acquiring buildings, easements, and/or property. Through the PL 84-99 Emergency Levee Rehabilitation Program, non-structural options to levee repair must be requested by the public sponsor. Non-structural options would not be limited to the authority of the PL 84-99 program.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): The Recommended Plan would provide the greatest flexibility to repair levees and offer non-structural options through the PL 84-99 Emergency Levee Rehabilitation Program. It would include all of options described for Alternatives 2 – 4. Unless a non-structural option was requested by the public sponsor, each non-Federal levee would be repaired either within the existing alignment or along a new alignment based on what was most technically feasible and cost effective for a particular damaged area. This alternative was selected as the Recommended Plan because it would best meet the technical, economic, and environmental objectives.

Summary of Environmental Impacts

The rehabilitation of levees usually consists of repairs through minor levee setbacks, and repairing existing structures to their previous condition. These projects typically result in minor short-term construction related impacts resulting from noise, visual, and land disturbances to wetlands, terrestrial habitat, and fish and wildlife resources. These minor adverse impacts would be greatly offset by restoring the levee flood risk management capability and its associated social and economic benefits.

Mitigation Measures

The Recommended Plan would avoid and/or minimize and impacts to the environment by following the guidelines in the Standard Operating Procedures for the Selection of Borrow Sites, Missouri River and Tributaries, following the conditions of General Permit 41or an applicable Nationwide Permit and incorporating Best Management Practices as required for Clean Water Act Section 401 and 402 permits. If a proposed action to repair an individual levee did not meet the conditions described in the Recommended Plan, and/or required compensatory mitigation, a stand-alone NEPA document would be prepared. If a proposed action met the conditions described in the PEA, then a tiered EA would be prepared to document that an environmental and cultural review was completed. This would state that the conditions described in this Programmatic EA have been met, and that no compensatory mitigation was necessary.

Public Availability

Prior to a decision on whether to prepare an Environmental Impact Statement, the USACE circulated a Notice of Availability (Notice) for the Draft Programmatic Environmental Assessment (PEA) and Finding of No Significant Impact (FONSI), dated November 2, 2011, with a thirty-day comment period that ended on December 1, 2011 to the public and resource agencies. Comments were received from several state and federal agencies during the comment period. The Kansas City District summarized the comments and provided responses in Section 7.0 of the Final Programmatic Environmental Assessment. Original comments are included as Appendix VI of the Final Programmatic Environmental Assessment.

Conclusion

After evaluating the anticipated environmental, economic, and social effects of the PL 84-99 Levee Rehabilitation Program, it is my determination that this program does not constitute a major Federal action that would significantly affect the quality of the human environment; therefore, preparation of an EIS is not required.

Date: 10 JAN 2012

Anthony J. Hofmann
Colonel, Corps of Engineers
District Commander

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1.0 Introduction

A major mission of the U.S. Army Corps of Engineers - Kansas City District is the Emergency Levee Rehabilitation Program authorized by Public Law 84-99 (33 U.S.C. 701n)), Emergency Response to Natural Disasters. This law allows the U.S. Army Corps of Engineers (USACE) to provide assistance to rehabilitate levees following flood events. This assistance may be provided to both Federal and non-Federal levee sponsors active in the Public Law 84-99 (PL 84-99) program. Federal levees are those constructed or incorporated into a Federal system by a specific Congressional action (i.e., United States law). Non-Federal levees are not authorized by Congress, or under Federal agency authority, and are managed by a legally constituted public sponsor that has enrolled the levee in the PL 84-99 program. Public sponsors include local levee or drainage districts, cities, counties, or other taxing districts. All levees that are incorporated into the PL 84-99 program are routinely inspected, and must meet construction and maintenance standards to remain active in the program (USACE, 2001). All levee rehabilitation under the authority of PL 84-99 is limited to restoring the levee to provide the same level of flood risk management that existed prior to being damaged. This authority cannot be used to increase the level of flood risk management. Other conditions required to be eligible for rehabilitation assistance through the PL 84-99 program are found in Engineering Regulation (ER) 500-1-1, Civil Emergency Management Program (USACE, 2001). Within the Kansas City District, levees active in the PL 84-99 program are operated as individual units by public sponsors.

Levees provide a structural method to provide flood risk management to people, property, and infrastructure. Presently, there are 140 levees within the Kansas City District that are active in the PL 84-99 program, providing flood risk management to over a half million acres of land (Appendix I, Figures 1- 4). Nearly 100,000 people are protected by these levees (FEMA, 2011). Also protected are over 50,000 buildings with an estimated value that exceeds 10 billion dollars (FEMA, 2011). Additionally, approximately 426,000 acres of crop land are protected (USDA, 2006).

Federal levees can provide flood risk management to either rural/agricultural or urban locations. With one exception, Federal levees within the Kansas City District have been designed to provide a minimum of a 100-year level of protection, meaning that they have a 1% chance of failing to provide flood protection in any given year. MRLS L-246, a Federal levee in Chariton County, Missouri, only provides a 50-year level of protection. Federal levees are designed with a greater degree of engineering compared to non-Federal levees. Federal Levee rehabilitation is performed at 100% Federal cost.

Non-federal levees typically provide flood risk management to rural/agricultural areas, although they may also protect urban areas. These levees typically provide a 5 to 10-year level of protection, meaning they have a 10 to 20% chance of failing to provide flood protection in any given year. Non-Federal levee rehabilitation is performed at 80%

Federal cost, and 20% sponsor cost. Assistance through the PL 84-99 Levee Rehabilitation Program is dependent on available funding.

Significant flooding has occurred within the Kansas City District's jurisdiction six times between the years 1993 and 2011. This includes 1993, 1995, 2007, 2008, 2010, and 2011. Between the years 2007 and 2009, for which data is readily available, the Kansas City District has provided assistance through the PL 84-99 program on 37 instances. Damage to levees from flooding typically includes lost protective vegetative cover, side wash, slope failures, toe failures, erosion of the slope and/or toe, damaged drainage structures, and sand boils. These types of damages are usually considered minor, and are typically repaired in-place. Major damages result when a levee is breached or overtopped. This often results in large-scale erosion and deposition of sediment. When this occurs, it may be more economical to realign the levee, rather repairing it in-place. Particularly if a large scour hole has formed along the existing alignment.

Because many levees within the Kansas City District have a 10 to 20 % chance in a given year to experience damage, several procedures to expedite and correlate the environmental and cultural compliance process for PL 84-99 Emergency Levee Rehabilitation Program have been implemented. This has been possible because levee rehabilitation projects typically share a strong similarity in terms of construction methods and expected environmental impacts. In cooperation with the U.S. Fish and Wildlife Service and the Missouri Department of Conservation, the Kansas City District has developed Standard Operating Procedures (SOP) for the selection of borrow sites (USACE, 1995) (Appendix II). This SOP provides guidelines on the selection of borrow locations to minimize impacts to the environment. Preferred borrow locations are those located riverward of the levee in open prior converted croplands or farmed wetlands, and old borrow areas and scour holes that have filled in with sediment. Tree clearing is generally avoided. However, if preferred borrow locations are not available within the riverward areas, selective clearing of trees less than 9 inches diameter at breast height (dbh) may occur. Efforts are made to avoid clearing any den trees and trees with the potential for cavity nesting. Landward borrow areas in open agricultural fields may be used as an alternative to suitable riverward areas. In unusual cases when greater than one-half acre of timber with trees greater than 9 inches dbh, the U.S. Fish and Wildlife Service and state resource agencies are consulted to determine appropriate measures to minimize environmental impacts. To streamline compliance with Section 404 of the Clean Water Act (33 USC 1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) within the states of Missouri and Kansas, the Kansas City District has issued General Permit (GP) 41. This permit is located in Appendix III, and describes specific activities that are authorized. Levee repairs completed through the PL 84-99 program typically meet the description of work and conditions of this permit. A Programmatic Agreement has also been established between the USACE and the Nebraska, Iowa, Missouri, and Kansas State Historic Preservation Officers (SHPOs) to

expedite compliance with Section 106 of the National Historic Preservation Act (Appendix IV).

This Programmatic Environmental Assessment is intended to further expedite the environmental review process for levee repairs under the PL 84-99 Emergency Levee Rehabilitation Program. At the same time, this document allows for a more comprehensive evaluation of potential environmental impacts that may result from the levee repairs within the Kansas City District. Following implementation, individual levee repair projects would be evaluated on a case-by-case basis to determine if they meet the conditions of this programmatic document. If they do, a tiered EA would be prepared to document that all applicable laws, regulations, and district procedures have been met. If a proposed action to repair a levee does not meet the conditions described in this programmatic NEPA document, a separate, stand-alone NEPA document would be prepared. Criteria that would result in an individual EA or EIS being prepared include:

1. Proposed projects where it is not feasible to follow the guidelines presented in the SOP for the Selection of Borrow Sites;
2. Projects that do not meet the work description or conditions of General Permit 41 or an applicable Nationwide Permit, and would need an project specific Clean Water Act Section 404 authorization;
3. Projects that would result in the need for compensatory mitigation;
4. Projects that may adversely affect any threatened or endangered species, including their critical habitat; or
5. Other circumstances as described in Section 4, Environmental Consequences.

This document provides the necessary information to fully address the potential environmental impacts of Kansas City District's PL 84-99 Emergency Levee Rehabilitation Program as required under the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code [USC] 4321 et seq.); the President's Council of Environmental Quality (CEQ) Regulations (40 Code of Federal Regulations [CFR] 1500 – 1508) (CEQ, 1992); and the U.S. Army Corps of Engineers ER 200-2-2 (33 CFR 230) (USACE, 2008). This Programmatic Environmental Assessment will be reviewed on a regular basis to ensure compliance with applicable laws and regulations, and that circumstances have not changed that would impact the analysis and conclusions reached in the document.

1.1 Purpose and Need for Action

The purpose of the PL 84-99 Emergency Levee Rehabilitation Program is to provide assistance to project sponsors to repair levees following flood events as directed by Congress (33 U.S.C. 701n). This program is described in detail in ER 500-1-1 (USACE, 2001). Previously, environmental impacts resulting from levee repairs projects authorized under the PL 84-99 Levee Rehabilitation Program have been evaluated on a

project-by-project basis. This Programmatic Environmental Assessment evaluates the environmental impacts of the PL 84-99 program on a programmatic scale. It builds on previous efforts to expedite the environmental and cultural review process for levee repairs. At the same time, it allows for a more comprehensive evaluation of potential environmental impacts that may result from multiple levee repair projects within the Kansas City District. A programmatic approach is appropriate because levee rehabilitation projects typically share a strong similarity in terms of construction methods and environmental impacts. Experience from levee rehabilitation efforts in 1993, 1995, and 2007 – 2009 has provided extensive knowledge of damages sustained during flood events, and environmental impacts that may result through repair activities.

1.2 Project Location

The Kansas City District boundary consists of the portion of the Missouri River watershed that extends from Rulo, Nebraska, to the St. Charles and St. Louis county line in Missouri (Appendix I, Figures 1 - 4). Currently, there are 140 levees throughout Kansas City District that are enrolled in its PL 84-99 program. The majority of the levees, nearly 70%, are located along the Missouri River.

2.0 Recommended Plan and Alternatives

The alternatives in this Programmatic EA were developed based on past experience of typical damages sustained by levees during flood events, and repair methods that have been proven to be technically, economically, and environmentally acceptable. If a proposed action to repair an individual levee does not meet the conditions described in this programmatic NEPA document such that a tiered EA could be prepared, a separate, stand-alone NEPA document would be prepared. Criteria to determine if an individual EA or EIS would be necessary include:

1. Projects where it is not feasible to follow the guidelines presented in the SOP for the Selection of Borrow Sites;

2. Projects that do not meet the work description or conditions of General Permit 41 or an applicable Nationwide Permit, and would need an project specific Clean Water Act Section 404 authorization;

3. Projects that would result in the need for compensatory mitigation;

4. Projects that may adversely affect any threatened or endangered species, including their critical habitat; or

5. Other circumstances as described in Section 4, Environmental Consequences.

Other elements consisting of the size of the project footprint or amount of necessary borrow material were also considered when determining criteria to prepare a stand-alone NEPA document. These elements will often be relevant and will be considered as they are tied to the criteria listed above. However, these elements may not always indicate whether or not a project would have the potential for environmental impacts. For example, a project that obtained borrow to repair a levee by grading the soil from a shallow depth over a large agricultural field would likely have minimal environmental impacts, while obtaining borrow from a comparatively small but environmentally sensitive area could result in significant environmental impacts. While a project with a large footprint or the need for a large amount of borrow would increase the probability of environmental impacts, these potential impacts would be evaluated on a case-by-case basis using the selected criteria. A tiered EA would be prepared if a proposed action meets the conditions described in this Programmatic EA have been met (Appendix V).

2.1 Alternative 1 - "No-Action" Alternative: The "No-Action" alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. Selection of the "No-Action" alternative is expected to result in a "predictable action by others", as discussed in Information Memorandum to Agencies Containing Answers to 40 Most Asked Questions on NEPA Regulations (46 FR 18026-38) (CEQ, 1981). This "predictable action" would consist of the public sponsor repairing the levee without assistance through the PL 84-99 program. It is typically in the sponsor's best financial interest to repair the levee, with or without Federal assistance. As demonstrated by past repairs through the PL 84-99 Emergency Levee Rehabilitation Program, the benefit cost ratios for levee repair has resulted in justification for repair. Often, this is due to the value of the land and infrastructure that the levees protect. It also anticipated that based on the same benefit cost rationale, repairs to levees outside the program (i.e. via private funding) would also be made. If private funds were used, there may be greater risk of adverse impacts to the environment. For example, if a sponsor were not required to obtain a Clean Water Act Section 404 permit to complete the repair, there would be no requirements to comply with Section 106 of the National Historic Preservation Act.

2.2 Alternative 2 - Repair Levee within Existing Alignment: This alternative would repair flood damaged Federal, and non-Federal levees in the PL 84-99 program within their existing alignments. Examples of typical levee damages include lost protective vegetative cover, side wash, slope failures, toe failures, erosion of the slope and/or toe, damaged drainage structures, and sand boils. These types of damages are usually considered minor. Major damages can result when a levee is breached or overtopped. This can completely destroy portions of the levee and result in large-scale erosion and deposition of earthen materials. With this alternative, both minor and major damage types would be repaired along the existing alignment. This could involve filling large scour holes, along the existing alignment, that can result when levees are breached or overtopped. Levee repairs would be made using a variety of heavy equipment to obtain, move, and compact earthen materials. The levee would be reseeded following

construction to minimize soil erosion. Repairs would be limited to restoring the same level of flood risk management to an area that existed prior to any flood damage.

All guidelines presented in the Standard Operating Procedures for the Selection of Borrow Sites, work description and conditions of General Permit 41 or an applicable Nationwide Permit, and procedures to protect cultural resources presented in the Cultural Resources Programmatic Agreement with the Nebraska, Iowa, Missouri, and Kansas SHPOs would be followed. Selection of this alternative may or may not provide the most economical option to repair a levee, depending on the type of damage that has been sustained.

2.3 Alternative 3 - Repair Levee with a New Alignment: This plan would repair flood damaged levees by realigning the levee landward, or further away from the river. Examples of typical levee damages include lost protective vegetative cover, side wash, slope failures, toe failures, erosion of the slope and/or toe, damaged drainage structures, and sand boils. These types of damages are usually minor. Major damages can result when a levee is breached or overtopped. This can completely destroy portions of the levee and can result in large-scale erosion and deposition of earthen materials. With this alternative, both minor and major damage types would be repaired with levee realignments. Borrow for new levee alignments would be obtained from remnants of the existing levee, suitable depositional materials left by the flood, and/or from borrow locations in accordance with the Standard Operating Procedures for the Selection of Borrow Sites, Missouri River and Tributaries. These repairs would be made using a variety of heavy equipment to obtain, move, and compact earthen materials. The levee would be reseeded following construction to minimize soil erosion. Levee realignments often benefit the environment by returning small portions of land to the floodplain. However, as described in ER 500-1-1, habitat restoration cannot be considered as a principal purpose of a structural alternative through PL 84-99. Through the PL 84-99 program, repairs would be limited to restoring the same level of flood risk management that existed prior to any flood damage. Both Federal and non-Federal levees can be realigned through the PL 84-99 Emergency Levee Rehabilitation Program. Levee realignments that would return large portions of the floodplain to the riverward side of the levee for the purpose of habitat restoration could be made outside the authority of the PL 84-99 Emergency Levee Rehabilitation Program. This type of realignment could potentially be implemented through other programs, such as those discussed for Alternative 4 - Non Structural Options. Any realignment of a Federal levee outside the scope of the PL 84-99 program would require approval of the Chief of Engineers in accordance with 33 U.S.C. Section 408 “Taking possession of, use of, or injury to harbor or river improvements”. Selection of this alternative may or may not provide the most economical option to repair a levee, depending on the type of damage that has been sustained.

2.4 Alternative 4 - Non-Structural Options: This alternative would reduce flood risk and typically improve flow conveyance by modifying structures and property to reduce

damages during flood events. This would normally result in removing the flood protection provided by a levee and providing a more natural connection between the river and the floodplain. Examples of non-structural options include relocating structures such as buildings and infrastructure, elevating structures, constructing ring levees around individual structures, and acquiring buildings, easements, and/or property. Through the PL 84-99 Emergency Levee Rehabilitation Program, non-structural options to levee repair must be requested in writing by the project sponsor. The U.S. Army Corps of Engineers does not have the authority to require a non-structural option.

Funding could be provided through the PL 84-99 program to implement a non-structural option up to the amount that would be equal to a structural repair. Once a non-structural option has been implemented, the USACE would not provide any flood-related assistance within the formerly protected area, except for rescue operations. One of the principal purposes of providing a non-structural option would be to reduce future flood damages and associated repair costs. As described in ER 500-1-1, habitat restoration is recognized as being a significant benefit that can be achieved with non-structural options, but it is not considered to be a principal purpose through the PL 84-99 Emergency Levee Rehabilitation Program.

Non-structural options would not be limited to the authority of the PL 84-99 program. Other programs also exist for to implement non-structural options. After large flood events on the lower Missouri River in 1993 and 1995, various agencies purchased fee title, or easements, on large acreages of land in the Missouri River floodplain from willing sellers. Examples of these programs include the Big Muddy National Wildlife Refuge (USFWS), the U.S. Natural Resources Conservation Service's (NRCS) Wetland Reserve Program, the Missouri River Fish and Wildlife Mitigation Project (USACE), and lands purchased by the Missouri Department of Conservation. After the 1993 flood, the Federal Emergency Management Agency (FEMA) also bought out damaged structures and provided grants to assist elevating structures to above the 1% annual flood risk level of the floodplain.

Following large flood events, the USACE has authority to establish an Interagency Levee Task Force to coordinate levee repairs with other Federal agencies such as the Natural Resources Conservation Service, the U.S. Fish and Wildlife Service, and the Environmental Protection Agency. Through this task force, these agencies can offer non-structural options to levee sponsors through programs that they manage.

2.5 Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): The Recommended Plan would provide the greatest flexibility to repair levees and offer non-structural options through the PL 84-99 Emergency Levee Rehabilitation Program. It would include all of options described for Alternatives 2 – 4. This alternative was selected as the Recommended Plan because it would be the best way to meet the

technical, economic, and environmental objectives and allow the flexibility to utilize the most appropriate method on a case-by-case basis.

Unless a non-structural option was requested by the public sponsor, each non-Federal levee would be repaired either within the existing alignment or along a new alignment based on what was most technically feasible and cost effective for a particular damaged area. Examples of levee damage that would typically be repaired along the existing alignment include lost protective vegetative cover, side wash, slope and/or toe failures, erosion along the slope and/or toe, damaged drainage structures, minor scour holes, and minor breaches (Appendix I, Figures 5 - 7). It would not be considered technically feasible to repair a levee within the existing alignment if damage would be probable at that location during future flood events. In these situations, levee realignment would be the preferred repair method. Often, it is more economical to realign a levee when there is major damage located along the existing alignment (Appendix I, Figures 8 and 9). Damaged areas with substantial foundation scour, generally greater than 10 feet in depth, would often be repaired along a new alignment. This is because filling the scour would take more earthen material than it would to realign the levee in a new location. Large scour holes often develop when a levee is breached or overtopped. Federal levees would also be repaired either within the existing alignment or along a new alignment depending on what is most economical. Any realignment of a Federal levee outside of the PL 84-99 repair would need to be approved by the Chief of Engineers as described in 33 U.S.C. 408, “Taking possession of, use of, or injury to harbor or river improvements”.

Habitat restoration is recognized as being a significant benefit that can be achieved with non-structural options and landward levee realignments. However, as described in ER 500-1-1, habitat restoration cannot be considered as a principal purpose for either non-structural options or landward levee realignment through the PL 84-99 Emergency Levee Rehabilitation Program. USACE may utilize an Interagency Levee Task Force, following major flood events to coordinate levee repairs with other Federal agencies that can offer non-structural options, or other opportunities to benefit fish and wildlife, to levee sponsors beyond those available through the PL 84-99 program.

3.0 Affected Environment

Because of the number and geographic extent of levees within the Kansas City District’s PL 84-99 Emergency Levee Rehabilitation Program, it is not practical to describe the affected environment for each levee. Instead, this section describes the existing conditions in a general sense with a focus on the Missouri River, and in some instances the Kansas River, as this is where the majority of the levees active in the PL 84-99 program are located. Some of the information used to describe the affected environment has been summarized from the Final Supplemental Environmental Impact Statement for the Missouri River Fish and Wildlife Mitigation Project (USACE, 2003).

Primary resources of concern identified for this Programmatic Environmental Assessment included: water quality, wetlands, terrestrial habitat, fish and wildlife, threatened and endangered species, invasive species, floodplain, land use, economics, and cultural resources.

3.1 Water Quality

Individual states have jurisdiction for managing water quality within their states. Section 303(d) of the Clean Water Act requires each state to identify waters for which existing required pollution controls are not stringent enough to meet state water quality standards. States are required to establish total maximum daily loads (TMDLs) for these waters (see 40 CFR 130.7). Within the State of Kansas, portions of the Kansas River are listed as impaired by total phosphorus, total suspended solids, biology, copper and lead for aquatic life, fecal coliform and *E. coli* for recreation, chloride and sulfate for water supply, and polychlorinated biphenyl's for food procurement . The State of Missouri has placed the Missouri River on the 303(d) List of Impaired Water Bodies for bacteria from Atchison through Jackson counties, and from Gasconade through St. Louis counties. Also, the Missouri River along its entire length in Missouri has a Total Maximum Daily Load approved by the U.S. EPA for aquatic life impairments due to chlordane and polychlorinated biphenyls. Historically, the water quality of the Missouri River was much different than it is today. Prior to the 1930's when major river modifications began, the Missouri River contained 70 – 80 times as much suspended sediment as it does currently (Blevins, 2006). Consequently, the Missouri River is no longer as turbid as it was previously (Blevins, 2006).

3.2 Wetlands

Wetlands are lands that are transitional between terrestrial and aquatic systems (Cowardin et al., 1979). Wetlands are characterized by three attributes: hydric soils, vegetation adapted to such soils, and soils that are saturated with water or covered by shallow water at some point during the growing season (Cowardin et al., 1979). Wetlands serve a variety of important functions, including wildlife habitat, fish breeding and foraging habitat, nutrient/sediment trapping, flood control, and recreation. Beginning in 1912, the Missouri River has been channelized through the construction of the Bank Stabilization and Navigation Project (BSNP) which was completed in the early 1980s. The BSNP stabilized the river and allowed accreted land to form in the old active channel and created a narrow channel with few islands, backwaters, or side channels. As a result, the number of wetlands has been significantly reduced along the Missouri River. Hesse et al. (1988) estimated that there was a 39% decline in the amount of wetlands within the Missouri River floodplain between 1892 and 1982. In 1995, it was estimated using Landsat satellite images that nearly 75,000 acres of wetlands were present in Missouri River floodplain within the Kansas City District (USACE, 2003). The majority of the wetlands were classified as either forested or emergent.

3.3 Terrestrial Habitat

The terrestrial habitats along the major rivers within the Kansas City District have changed drastically during the last century. The historic terrestrial habitat consisted of grasslands and bottomland forest ecosystems. In many instances, native floodplain habitats have been converted to crop land or developed for other uses. Much of the conversion of riparian habitat to agriculture lands occurred prior to construction of levees with nearly 50 percent of the Missouri River floodplain being in agricultural production by 1937 (Bragg and Tatschl, 1977). On the lower 100 miles of the Missouri River, nearly 70 percent of the existing floodplain was in agricultural production by 1826 (Bragg and Tatschl, 1977). Hesse et al. (1988) estimated that along the Missouri River between 1892 and 1982 deciduous vegetation declined by 41%, grasslands by 12 %, wetlands by 39 %, and sandbars by 97 %. During the same time period, agriculture increased by 4,278 %.

3.4 Fish and Wildlife

Roughly 200 native fish species are known to exist within the boundary of the Kansas City District. Impoundment, channelization, degradation, and unnatural hydrologic conditions have changed the fish species composition in many rivers. Along the Missouri River, construction of dikes and revetments has narrowed and deepened the channel into a fixed location. The ecological impact of these river changes has negatively impacted native riverine fishes (National Research Council, 2002).

The increases in agriculture, along with the effects of bank stabilization and channelization, have also reduced the wildlife habitat in the floodplain. However, remnant riparian areas and agricultural fields provide habitat for mammals such as gray squirrel, fox squirrel, cottontail rabbit, red fox, gray fox, and coyote. Common furbearers along river banks include mink, muskrat, beaver, otter, and raccoon. White-tailed deer is a common big game species found in the floodplain.

Many reptile and amphibian species have also been negatively impacted as a result of the reduction of wetland habitat within the floodplain. Amphibian species such as eastern tiger salamander, smallmouth salamander, great plains toad, Woodhouse's toad, and plains spadefoot toad require ephemeral wetland habitats to successfully reproduce. Wetlands within the floodplain also support numerous reptilian species such as diamondback water snake, northern water snake, and the western hog-nosed snake and eastern hog-nosed snake in certain geographic reaches. The floodplain also provides important habitat for turtles, such as false map turtles, smooth softshell turtles, and spiny softshell turtles. Additionally, the Missouri River floodplain provides habitat for the western massasauga rattlesnake.

The Lower Missouri River is located within the Central and Mississippi North American migratory waterfowl flyway (USACE, 2001). Waterfowl use the Missouri River and its floodplain for resting, feeding, and nesting. Numbers of waterfowl are greatest during the spring and fall migration seasons. Common dabbling duck species include mallard, wood duck, northern shoveler, northern pintail, gadwall, blue-winged teal, green-winged teal, and American widgeon. Wood ducks are probably the most common nesting species in the study area (USFWS, 1999). Common species of diving ducks are ring-necked, lesser scaup, ruddy, redhead, common golden-eye, and bufflehead (USFWS, 1999). Other waterfowl in the study area include hooded merganser, common merganser, red-breasted mergansers, Canada geese, snow geese, and white-fronted geese. During migration stops, dabbling ducks and geese rest on islands and sandbars and forage in grain fields, whereas diving ducks use large open water areas for loafing and foraging. Other migratory birds that can be found in the study area include wading birds, shorebirds, passerines, and raptors. Wading birds such as the great blue heron, black-crowned and yellow-crowned night heron, and green heron use the river corridor to forage for fish, amphibians, and invertebrates (USFWS, 1999). Shorebirds that are regular breeders in the area include killdeer and American woodcock. Passerines are the largest group of migratory bird species within the study area and include thrushes, warblers, flycatchers, vireos, hummingbirds, swallows, wrens, tanagers, orioles, sparrows, as well as others (USFWS, 1999). Floodplain forests and wetlands are important breeding and migratory habitats for passerines. Hawks, falcons, eagles, vultures, and owls are also found in floodplain habitats. Within the Kansas City District, most migratory bird nesting activities occur during the period of April 1 to July 15. Bald eagles have become increasingly common within much of the Kansas City District. They utilize riparian woodlands along rivers, lakes, and streams for nesting, perching, and roosting sites. Bald eagles are no longer listed as a Federally-threatened species. However, bald eagles are still protected by the Bald and Golden Eagle Protection Act.

3.5 Threatened or Endangered Species

Federally-listed threatened or endangered species known to occur in and along rivers in the Kansas City District are the pallid sturgeon (*Scaphirhynchus albus*), Indiana bat (*Myotis sodalis*), interior least tern (*Sterna antillarum)*, and piping plover (*Charadrinus melodus*). The Federally endangered pallid sturgeon primarily found in the Missouri River and the Mississippi River downstream of the junction with the Missouri River. Modification of the natural Missouri River hydrograph, habitat loss, fish migration blockage, pollution, hybridization, and overharvesting are some of the possible causes for pallid sturgeon decline (USFWS, 1993).

The Indiana bat is a Federally-listed endangered species. This species population has declined due to habitat loss and human disturbance. The Indiana bat is a temperate, insectivorous, migratory bat that occurs in 20 States in the eastern half of the United States, including portions of Missouri. The Indiana bat hibernates colonially in caves and mines during winter. In spring, reproductive females migrate and form maternity

colonies where they bear and raise their young in wooded areas, specifically behind exfoliating bark of large, usually dead, trees. Both males and females return to the caves and mines in late summer or early fall to mate and enter hibernation.

The interior least tern and piping plover were Federally-listed as endangered and threatened, respectively, in 1985 and 1986. These two migratory species rely heavily on sandbar and island habitat for nesting habitat. The interior population of the least tern has declined due to loss of habitat from dam construction and river channelization on major rivers throughout the Mississippi, Missouri, and Rio Grande River systems. Because of dams, river flows are often managed in a non-historic fashion, not conducive to the creation and maintenance of sandbars with sparse vegetation. Human disturbance is also a problem. The only locations within the Kansas City District where interior least terns and piping plovers are known to nest are along the Kansas River in Pottawatomie, Wabaunsee, and Shawnee counties in Kansas. These counties also have levees active in the PL 84-99 program, however these levees are not directly adjacent to any known nesting colonies.

3.6 Invasive Species

Invasive species have the potential to displace native plants and animals. According to Executive Order 13122, Federal agencies may not authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of invasive species. Invasive aquatic species that are a concern that have the potential to be introduced into new water bodies by contaminated construction equipment include zebra mussels (*Dreissena polymorpha*), quagga mussels (*Dreissena bugensis*), New Zealand mudsnails (*Potamogyrpus antiposarum*), purple loosestrife (*Lythrum salicaria*), and Eurasian watermilfoil (*Myriophyllum spicatum*), among others. Invasive terrestrial species often flourish on land that has recently been disturbed. They may also be transported to new locations on construction equipment. Examples of invasive terrestrial species of concern include Johnson grass (*Sorghum halepense*), reed canary grass (*Phalaris arundinacea*), musk thistle (*Cardus nutans*), and bromegrass (*Bromus sterilis*).

3.7 Floodplain

Floodplains along the Missouri, Kansas, and other rivers within the Kansas City District have been significantly altered over the past century. In many areas, flood control, bank stabilization, and channelization of rivers have either completely or partially removed the connectivity of rivers with the floodplain. The majority of the floodplains are now used for either agriculture or urban development. It is expected that over time, more agricultural areas will be converted to urban/suburban uses, as urban populations continue to grow.

3.8 Land Use

There are 140 levees within the Kansas City District that are active in the PL 84-99 program, providing flood risk management to over a half million acres of land. Approximately 71% of this land is used for cultivated crops, 5% for pasture or hay, and 11% consist of trees, shrubs, or herbaceous cover. Around 12% of the areas protected by levees have been developed for urban uses (USDA, 2006).

3.9 Economics

Presently, there are 140 levees within the Kansas City District that are active in the PL 84-99 program, providing flood risk management to over a half million acres of land. Nearly 100,000 people are protected by these levees (FEMA, 2011). Also protected are over 50,000 buildings with an estimated value that exceeds 10 billion dollars (FEMA, 2011). Additionally, approximately 426,000 acres of crop land are protected (USDA, 2006). At $5,000 per acre, crop land alone is valued at 2.1 billion dollars.

Repairing damaged levees are typically in the sponsor's best financial interest, with or without Federal assistance. As demonstrated by past repairs through the PL 84-99 Emergency Levee Rehabilitation Program, the benefit cost ratios for levee repair are almost always greater than one. Because many levees within the Kansas City District only provide 5 or 10-year levels of protection, repairing these levees on a regular basis is common. It is more economical to repair theses levees on a regular basis than to construct larger levees that provide higher levels of flood risk management and would require fewer repairs.

3.10 Cultural Resources

Cultural resources are a broad pattern of material and non-material sites or objects that represent contemporary, historic, and pre-historic human life ways or practices. The Missouri River floodplain contains a variety of cultural resource types that span from the earliest Native American inhabitants of North America to the present. Common cultural resource sites include prehistoric Native American archeological sites, historic archeological sites, ship wrecks, and structures such as bridges and buildings.

Projects involving federal land, funds, or permitting are subject to compliance with the National Historic Preservation Act (NHPA). Following the major flooding event of 1993, a Programmatic Agreement was established between the USACE and the Nebraska, Iowa, Missouri, and Kansas State Historic Preservation Officers (SHPOs) to expedite the Section 106 process. A copy of that agreement is included in Appendix IV.

4.0 Environmental Consequences (Impacts)

The impact analyses in this Programmatic EA were developed based on past experience. If a proposed action to repair an individual levee would result in impacts in excess of what is described in this section, a stand-alone EA or EIS would be prepared for that project. Criteria to determine if an individual EA or EIS would be necessary include:

1. Projects where it is not feasible to follow the guidelines presented in the SOP for the Selection of Borrow Sites;

2. Projects that do not meet the work description or conditions of General Permit 41 or an applicable Nationwide Permit, and would need an project specific Clean Water Act Section 404 authorization;

3. Projects that would result in the need for compensatory mitigation;

4. Projects that may adversely affect any threatened or endangered species, including their critical habitat; or

5. Other circumstances as described below.

4.1 Water Quality

Alternative 1 - "No-Action" Alternative: The "No-Action" alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. Selection of the "No-Action" alternative is expected to result in a "predictable action by others", as discussed by CEQ (1981). This "predictable action" would consist of the public sponsor repairing the levee without assistance through the PL 84-99 program.

Most levee repairs have the potential for minor, short-term construction related impacts to water quality due to stormwater runoff. This could result in increased turbidity to adjacent water bodies. Any construction related increases in turbidity would be unlikely to negatively impact water quality. As shown by Blevins (2006), the turbidity levels in the Missouri River are far below what they were historically as a result of reservoirs and the Bank Stabilization and Navigation Project. Even without assistance through the PL 84-99 program, the sponsor may still be required to obtain National Pollutant Discharge Elimination System (NPDES) permits for compliance with Section 402 of the Clean Water Act if the size of any land disturbance were to exceed one acre. Furthermore, the sponsor may be required to obtain an individual Clean Water Act (CWA) Sections 404 and 401 permits if repairing the levee would impact any jurisdictional waters of the United States and was not covered by General Permit 41(Appendix IV) or an applicable Nationwide Permit. However, there may be greater risk of adverse impacts to the

environment if levee repairs were completed without Federal assistance. For example, if the sponsor were to undertake the work themselves, they may unknowingly violate environmental regulations, or they may have less experience implementing Best Management Practices (MDNR, 2011) to protect water quality.

Alternative 2 - Repair Levee within Existing Alignment: This alternative would have the potential for short-term, minor adverse impacts to water quality during project construction due to stormwater runoff. The most likely impact to water quality would be increased turbidity during levee repair activities. Any construction related increases in turbidity would be unlikely to negatively impact water quality. As shown by Blevins (2006), the turbidity levels in the Missouri River are far below what they were historically as a result of constructing the main stem reservoirs and the Bank Stabilization and Navigation Project.

Any changes to the existing water quality would be avoided and/or minimized to the greatest extent possible by the implementation of Best Management Practices and measures required under the National Pollutant Discharge Elimination System (NPDES) permit. Best Management Practices would minimize potential adverse sedimentation into aquatic resources during construction and would minimize the introduction of fuel, petroleum products, or other deleterious material from entering the waterway. Such measures may consist of erosion control fences; storing equipment, solid waste, and petroleum products above the ordinary high water mark and away from areas prone to runoff; and requiring that all equipment be clean and free of leaks. To prevent fill from reaching water sources by wind or runoff, fill would be covered, stabilized or mulched, and silt fences would be used as required. Either the Kansas City District or the on-site contractors would be responsible for obtaining a NPDES permit to comply with Section 402 of the Clean Water Act. General Permit 41 would be applicable to comply with Clean Water Act Section 404 authorization within the states of Missouri and Kansas. State Water Quality Certifications, to comply with Clean Water Act Section 401, have been issued for General Permit 41 (Appendix IV). Any levee repairs outside the states of Missouri or Kansas would need other Clean Water Act Section 404 and Section 401 authorizations and permits. Applicable Nationwide Permits, such as Nationwide Permit 3 for the maintenance of existing structures, and the associated Section 401 water quality certification would be applicable in these cases.

Alternative 3 - Repair Levee with a New Alignment: This alternative would have the potential for short-term, minor adverse impacts to water quality during project construction due to site runoff. The most likely impact to water quality would be increased turbidity. Any construction related increases in turbidity would be unlikely to negatively impact water quality. As shown by Blevins (2006), the turbidity levels in the Missouri River are far below what they were historically as a result of constructing the main stem reservoirs and the Bank Stabilization and Navigation Project.

There would likely be more land disturbances associated with realigning a levee compared to repairing a levee along the existing alignment. Because of this, the potential for short-term, minor impacts may be greater than Alternative 2. Any changes to the existing water quality would be avoided and/or minimized by implementing Best Management Practices as described for Alternative 2. General Permit 41 would be applicable to comply with Clean Water Act Section 404 authorization within the states of Missouri and Kansas. State Water Quality Certifications, to comply with Clean Water Act Section 401, have been issued for General Permit 41. Any levee repairs outside the states of Missouri or Kansas would need other Clean Water Act Section 404 and Section 401 authorizations and permits. Nationwide Permits, such as Nationwide Permit 3 for the maintenance of existing structures, and the associated Section 401 water quality certification would be applicable in these cases.

Alternative 4 - Non-Structural Options: If non-structural options require construction, such as building ring levees around structures, or elevating or relocating buildings, there could be minor, short-term impacts to water quality, particularly turbidity, resulting from stormwater runoff. The extent of these impacts would vary depending on the type and extent of the non-structural option. Any construction related increases in turbidity would be unlikely to negatively impact water quality. As shown by Blevins (2006), the turbidity levels in the Missouri River are far below what they were historically as a result of constructing the main stem reservoirs and the Bank Stabilization and Navigation Project.

Similar to the other alternatives, construction activities may require permits and authorizations to comply with Sections 401, 402, and 404 of the Clean Water Act. Compliance with existing authorizations/permits would depend on the specific non-structural option that was implemented and would be evaluated on a case-by-case basis. If a non-structural option would not require any construction, there would not be any expected adverse impacts to water quality. For example, a land acquisition where the area was allowed to undergo natural succession would not be likely to negatively impact water quality.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): This alternative may result in potentially minor, short-term construction-related impacts to water quality as described for Alternatives 2 through 4. The most likely impact to water quality would be an increase in turbidity to adjacent water bodies during any construction activities. Any construction related increases in turbidity would be unlikely to negatively impact water quality. As shown by Blevins (2006), the turbidity levels in the Missouri River are far below what they were historically as a result of reservoirs and the Bank Stabilization and Navigation Project. However, any changes to the existing water quality would be avoided and/or minimized to the greatest extent possible by the implementation of Best Management Practices. Compliance with Clean Water Act Sections 401, 402, and 404 would be as outlined in Alternatives 2 – 4.

4.2 Wetlands

Alternative 1 - "No-Action" Alternative: The "No-Action" alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. Selection of the "No-Action" alternative is expected to result in a "predictable action by others", as discussed by CEQ (1981). This "predictable action" would consist of the public sponsor repairing the levee without assistance through the PL 84-99 program.

This alternative may or may not adversely impact existing wetlands, depending on the circumstances of the repair and the source of borrow material. Wetlands are generally not utilized for borrow material because the soils contain a large amount of organic material which is not a desirable component of fill. Also, wetlands usually do not provide a suitable foundation for levee realignments. If the conditions of General Permit 41(Appendix IV) or an applicable Nationwide Permit were met, the repairs would be in compliance with the Clean Water Act Section 404. However, there may be greater risk of adverse impacts to wetlands if levee repairs were completed without assistance through the PL 84-99 program because the selection of borrow sites may not comply with the Standard Operating Procedures for the Selection of Borrow Sites.

Alternative 2 - Repair Levee within Existing Alignment: This alternative would have no significant adverse impact on wetlands. Wetlands are usually not a suitable source of borrow material. The conditions of General Permit 41, or an applicable Nationwide Permit, would be met for all repairs under this alternative. General Permit 41 expires in 2013, but is expected to be renewed for another 5-year period. In addition to compiling with conditions of this permit, guidelines in the Standard Operating Procedures for the Selection of Borrow Sites would be followed. These guidelines recommend using old riverward borrow sites that have filled with depositional material from past high river stages. By removing the sediment deposits from these previous borrow sites, wetland values are often restored or enhanced. New riverward borrow areas would generally have steep side slopes and be excavated to the maximum depth practical to reduce the area of disturbance and to maximize the potential for creating aquatic habitat.

Alternative 3 - Repair Levee with a New Alignment: This alternative would have no significant adverse impact on wetlands. Wetlands are usually not a suitable source borrow material. In addition, wetlands usually do not provide a suitable foundation for levee realignments. The conditions of General Permit 41, or an applicable Nationwide Permit, would be met for all repairs under this alternative. General Permit 41 expires in 2013, but is expected to be renewed for another 5-year period. The guidelines presented in the Standard Operating Procedures for the Selection of Borrow Sites would also be followed as described for Alternative 2. This alternative would likely have beneficial impacts to wetlands by reconnecting a portion of the floodplain to the river, especially in situations where scour and erosion areas would be left undisturbed riverward of the new levee alignment.

Alternative 4 - Non-Structural Options: All non-structural options would be evaluated on a case-by-case basis to determine if wetlands would be impacted by the project and the applicability of General Permit 41, or an applicable Nationwide Permit. If General Permit 41 did not apply, Clean Water Act Section 404 authorization would need to be obtained by either meeting the conditions of a different General Permit, a suitable Nationwide Permit, or with an individual 404 authorization. Any non-structural option would generally have beneficial impacts to wetlands if it improved the connection between the river and a portion of the floodplain.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): The Recommended Plan would have no significant adverse impacts any wetlands if levee repairs occurred within the existing alignment, or along a new alignment. As described for Alternatives 2 and 3, the conditions of General Permit 41 and the guidelines in the Standard Operating Procedures for the Selection of Borrow Sites would be followed. Any non-structural options, as discussed in Alternative 4, would be evaluated on a case-by-case basis to determine any potential impacts to wetlands. Clean Water Act Section 404 compliance would be required for any non-structural option. It is expected that a non-structural option would have beneficial impacts to wetlands.

4.3 Terrestrial Habitat

Alternative 1 - "No-Action" Alternative: The "No-Action" alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. As described by CEQ (1981), this is expected to result in a "predictable action by others". It is expected the public sponsor would repair the levee without assistance through the PL 84-99 program. This may present a greater risk of adverse impacts to the terrestrial habitat because the selection of borrow sites may not comply with the SOP for the Selection of Borrow Sites. At a minimum, there would be minor, short-term impacts to the terrestrial habitat as a result of land disturbance during project construction.

Alternative 2 - Repair Levee within Existing Alignment: This alternative would have minor short-term impacts to terrestrial habitat resulting from land disturbance during construction activities. Construction typically involves the use of heavy equipment to obtain, move, and compact earthen materials. Guidelines presented in the SOP for the Selection of Borrow Sites would be followed. The first choice for obtaining borrow would be from riverward areas in open prior converted croplands or farmed wetlands and old borrow areas. Tree clearing would generally be avoided. In unusual cases when greater than one-half acre of timber, or trees greater than 9 inches diameter at breast height (dbh) would be removed, the U.S. Fish and Wildlife Service and/or state resource agencies would be consulted to determine appropriate measures to minimize environmental impacts.

Alternative 3 - Repair Levee with a New Alignment: This alternative would have minor short-term impacts to terrestrial habitat resulting from land disturbance during construction activities similar to those described for Alternative 2. The construction footprint is often larger for a levee realignment compared to making a repair along the existing alignment. Because of this, the potential for short-term, minor adverse impacts may be greater than Alternative 2. Guidelines presented in the SOP for the Selection of Borrow Sites would be followed to minimize impacts to the terrestrial habitat. Long-term, levee realignments often increase the quality of the terrestrial habitat by increasing the riparian corridor along the river.

Alternative 4 - Non-Structural Options: Non-structural options are not expected to have significant adverse long-term impacts on terrestrial habitat. Non-structural options such as land acquisitions could have significant beneficial impacts to the terrestrial habitat on a local scale. Other non-structural activities, such as ring levees and elevating structures could result in improvements to the terrestrial habitat particularly if there were land use changes associated with the non-structural option that would result in the establishment of a more natural habitat.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): The Recommended Plan would have no significant adverse impacts any terrestrial habitat if levee repairs occurred within the existing alignment, or along a new alignment. As described for Alternatives 2 and 3, the guidelines in the SOP for the Selection of Borrow Sites would be followed to minimize impacts to the terrestrial habitat. Any non-structural options, as discussed in Alternative 4, would be expected to significantly benefit the terrestrial habitat, at least on a local scale.

4.4 Fish and Wildlife

Alternative 1 - "No-Action" Alternative: The "No-Action" alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. As described by CEQ (1981), this would be expected to result in a "predictable action by others". It is expected the public sponsor would repair the levee without assistance through the PL 84-99 program. This may present a greater risk of adverse impacts to the fish and wildlife because the selection of borrow sites may not comply with the Standard Operating Procedures for the Selection of Borrow Sites, Missouri River and Tributaries. At a minimum, there would be minor, short-term impacts to fish and wildlife as a result of noise, visual, and land disturbances during project construction. This would result from the use of heavy construction equipment to obtain, move, and compact earthen materials.

Alternative 2 - Repair Levee within Existing Alignment: This alternative would result in minor short-term construction related impacts to fish and wildlife resources. The

potential impacts to fishery and other aquatic resources would primarily be related to changes in water quality that could occur during project construction. Specifically, an increase in the turbidity of the water could be negatively impact aquatic species that are not tolerant of these conditions. However, most of the large rivers within the Kansas City District have lower turbidity levels than they did historically, and most of the native fish and wildlife would be tolerant of any short-term increases in turbidity.

As described in Section 4.1, Best Management Practices would minimize impacts to water quality, therefore minimizing any impacts to aquatic life. Impacts to wildlife resources would be related to noise, visual, and land disturbance from construction activities. This would result from the use of heavy construction equipment to obtain, move, and compact earthen materials. These impacts would be minimized by following the Standard Operating Procedures for the Selection of Borrow Sites, as previously discussed.

To comply with the Migratory Bird Treaty Act, the taking of migratory birds, their eggs, parts and nests would be avoided. This would be accomplished by conducting field surveys if construction were to take place during the migratory bird nesting season from April 1 to July 15. If active nests are identified during the survey that could not be avoided, either temporally or spatially, the U.S. Fish and Wildlife Service would be consulted. To avoid disturbing nesting bald eagles and their young, U.S. Fish and Wildlife Service guidelines would be followed. This includes maintaining a buffer of at least 660 feet between the project and any nest, or restricting construction to August through mid-January when bald eagles are not nesting. If these conditions could not be met, the U.S. Fish and Wildlife Service would be consulted for further guidance.

Alternative 3 - Repair Levee with a New Alignment: This alternative would result in minor short-term construction related impacts to fish and wildlife resources, similar to Alternative 2. The potential impacts to fishery and other aquatic resources would primarily be related to changes in water quality that could occur during project construction. Best Management Practices would minimize impacts to water quality, therefore minimizing any impacts to aquatic life. Impacts to wildlife resources would be related to noise, visual, and land disturbance from construction activities. This would result from the use of heavy construction equipment to obtain, move, and compact earthen materials. These impacts would be minimized by following the Standard Operating Procedures for the Selection of Borrow Sites, as previously discussed. The same measures to comply with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act would be followed as described for Alternative 2. Long-term, this alternative would likely benefit fish and wildlife by returning land riverward of the levee where it would be more likely to support fish and wildlife. For example, flooding between 2007and 2009 resulted in 17 levee repair projects that involved realignments. These realignments returned approximately 135 acres of land to the riverward side of the levee.

Alternative 4 - Non-Structural Options: Non-structural options are not expected to have significant adverse long-term impacts on fish and wildlife. There could be minor, short-term impacts to fish and wildlife if the non-structural alternative requires any construction activities. These impacts would likely be similar to those described in Alternatives 2 and 3, and be related to construction noise, visual and land disturbances. Long term, non-structural options, such as land acquisitions, ring levees, and elevating structures could significantly benefit fish and wildlife, especially if it resulted in periodic inundation of the floodplain and allowed for more natural habitat conditions. Measures to comply with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act would be the same as for Alternative 2.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): The Recommended Plan would result in minor short-term construction related impacts to fish and wildlife resources if levee repairs occurred within the existing alignment, or along a new alignment similar to those discussed for Alternative 2. Measures to minimize these impacts would include utilizing Best Management Practices to protect water quality, following the guidelines in the SOP for the Selection of Borrow Sites. Additionally, measures to comply with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act would be the same as the other alternatives.

4.5 Threatened or Endangered Species

Alternative 1 - "No-Action" Alternative: The "No-Action" alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. Selection of the "No-Action" alternative is expected to result in a "predictable action by others", as discussed by CEQ (1981). This "predictable action" would consist of the public sponsor repairing the levee without assistance through the PL 84-99 program. This would result in land disturbances, visual impacts, and noise from construction equipment. If the sponsor used a different source of Federal funding, measures as required by the Endangered Species Act to protect listed species would be implemented and therefore no adverse affects would likely occur to any listed species or any designated critical habitat. However, if Federal funds were not used, private landowners may not follow the guidelines in the SOP for the Selection of Borrow Sites. If trees were indiscriminately cleared, it could negatively impact summer roost sites and maternity colonies of Indiana bats. This alternative would not be expected to adversely impact pallid sturgeon, least terns, or piping plovers because construction activities typically occur away from habitat used by these species.

Alternative 2 - Repair Levee within Existing Alignment: With this alternative, each project would be evaluated on a case-by-case basis to determine if it would potentially adversely affect any threatened or endangered species. These determinations would be coordinated with the appropriate U.S. Fish and Wildlife Service Ecological Services Field Offices. Generally, repairing a levee along the existing alignment would not be

expected to impact any Federally-listed species. Repairing levees involves the use of heavy construction equipment to obtain, move, and compact earthen materials. This would result in land disturbances, visual impacts, and noise from construction equipment. These impacts would not negatively impact pallid sturgeon or their habitat. Also, these impacts would not be expected to result in habitat loss or degradation, or disturb the nests of least terns or piping plovers. To avoid adversely affecting Indiana bats, the removal of trees larger than 9 inches dbh with the potential to provide habitat for roosting or maternity colonies would be avoided. If these trees could not be avoided, or if a specific project would adversely affect any threatened or endangered species, including designated habitat, the U.S. Fish and Wildlife Service would be consulted.

Alternative 3 - Repair Levee with a New Alignment: With this alternative, each project would be evaluated on a case-by-case basis to determine if it would adversely affect any threatened or endangered species. These determinations would be coordinated with the appropriate U.S. Fish and Wildlife Service Ecological Services Field Offices. Repairing levees involves the use of heavy construction equipment to obtain, move, and compact earthen materials. This would result in land disturbances, visual impacts, and noise from construction equipment. These impacts would not negatively impact pallid sturgeon or their habitat. Also, these impacts would not be expected to result in habitat loss or degradation, or disturb the nests of least terns or piping plovers. To avoid adversely affecting Indiana bats, the removal of trees larger than 9 inches dbh with the potential to provide habitat for roosting or maternity colonies would be avoided. If these trees could not be avoided, or if a specific project would adversely affect any threatened or endangered species, including designated habitat, the U.S. Fish and Wildlife Service would be consulted.

Alternative 4 - Non-Structural Options: Any non-structural options would be evaluated on a case-by-case basis to determine if it would adversely affect any Federally-listed species. If a non-structural option would result in any construction activities, there could be minor, short-term impacts to the environment resulting from land disturbances and noise from construction equipment. As discussed in Alternatives 2 and 3, these impacts would be unlikely to adversely impact pallid sturgeon, least terns, or piping plovers. Measures to avoid Indiana bats summer habitat for roosting or maternity colonies would also be the same as Alternatives 2 and 3. Long term, non-structural options, such as land acquisitions, ring levees, and elevating structures could benefit threatened and endangered species. The U.S. Fish and Wildlife Service would be consulted if it was likely a specific project would adversely affect any threatened or endangered species.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): With the Recommended Plan, each project would be evaluated on a case-by-case basis to determine if it would adversely affect any threatened or endangered species. As described in Alternatives 2 - 4, any environmental impacts resulting from this alternative

would be unlikely to adversely affect to pallid sturgeon, least terns, or piping plovers. Measure to avoid habitat for roosting or maternity colonies of Indiana bat would also be the same as Alternatives 2- 4. Any non-structural options could potentially benefit threatened and endangered species. The U.S. Fish and Wildlife Service would be consulted if it was likely a specific project would adversely affect any threatened or endangered species.

4.6 Invasive Species

Alternative 1 - "No-Action" Alternative: The "No-Action" alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. As described by CEQ (1981), this would be expected to result in a "predictable action by others". It is expected the public sponsor would repair the levee without assistance through the PL 84-99 program. This would result from the use of heavy construction equipment to obtain, move, and compact earthen materials. These actions could result in the introduction of invasive species if adequate measures were not taken to ensure that all equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, plant seeds, and aquatic nuisance species prior to its use.

Alternative 2 - Repair Levee within Existing Alignment: This alternative is not expected to introduce any new invasive species to levee repair sites. All previously used construction equipment is required to be cleaned prior to being brought onto construction sites. As part of their contract, construction companies are also required to ensure that all equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, plant seeds, and aquatic nuisance species prior to its use on the project. Levees would be seeded with a fescue (*Festuca elatior* var. *arund inaceal*), brome (*Bromus inermis*), and ryegrass (*Lolium perenna* and *Lolium multiforum*) mixture and mulched to minimize the likelihood that invasive plants would become established on soils that have been disturbed.

Alternative 3 - Repair Levee with a New Alignment: Similar to Alternative 2, this plan would not be expected to introduce any new invasive species to levee repair sites. All previously used construction equipment is required to be cleaned prior to being brought onto construction sites. As part of their contract, construction companies are also required to ensure that all equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, plant seeds, and aquatic nuisance species prior to its use on the project. Levees would be seeded with a fescue (*Festuca elatior* var. *arund inaceal*), brome (*Bromus inermis*), and ryegrass (*Lolium perenna* and *Lolium multiforum*) mixture and mulched to minimize the likelihood that invasive plants would become established on soils that have been disturbed.

Alternative 4 - Non-Structural Options: All non-structural activities would likely have no significant impact on the introduction or spread of invasive species. If any non-

structural options involved construction equipment, the construction contractor would be required to clean the equipment prior to bring it on the site as described in Alternatives 2 and 3. If lands were acquired and left undisturbed to return to riparian habitat, may support the growth of invasive plants in the short-term. However, within a few years, these areas would rapidly grow up in native cottonwood and willow species.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): As described for Alternatives 2 – 4, the Recommended Plan would be unlikely to introduce or spread any invasive species. An exception to this may be if lands were acquired and left undisturbed to return to riparian habitat, may support the growth of invasive plants in the short-term. However, within a few years, these areas would rapidly grow up in native cottonwood and willow species.

4.7 Floodplain

Alternative 1 - "No-Action" Alternative: The "No-Action" alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. As described by CEQ (1981), this would be expected to result in a "predictable action by others". It is expected the public sponsor would repair the levee without assistance through the PL 84-99 program. It is expected that the sponsor would repair the levee to provide a similar level of flood risk management that existed prior to any flood damage.

Alternative 2 - Repair Levee within Existing Alignment: This alternative would maintain the same level of flood risk management which existed prior to any flood damage as required by ER 500-1-1, Civil Emergency Management Program (USACE, 2001). Repairing the levee within the existing alignment would not support more development in the floodplain or encourage additional occupancy and/or modification of the base floodplain. USACE has determined that structural repairs to levees damaged during flood events comply with the intent of Executive Order 11988.

Alternative 3 - Repair Levee with a New Alignment: This alternative would maintain the same level of flood risk management which existed prior to any flood damage as required by ER 500-1-1. With levee repairs that included setbacks, land is returned to the floodplain. Repairing the levee with a new alignment would not support more development in the floodplain or encourage additional occupancy and/or modification of the base floodplain. USACE has determined that structural repairs to levees damaged during flood events comply with the intent of Executive Order 11988.

Alternative 4 - Non-Structural Options: Non-structural options may or may not result in a change in the level of flood risk management provided within the floodplain. Land acquisitions that would result in the levee no longer being maintained would likely result in beneficial impacts to the natural environment, although it may negatively impact the

people, infrastructure, and existing land use. Negative impacts to these resources could be minimized by things such as elevating or relocating structures and/or infrastructure, or constructing ring levees around individual structures. If a non-structural option were likely to result in any long-term adverse impacts to the floodplain, the project would be evaluated in more detail with a stand-alone NEPA document.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): As discussed in Alternatives 2 and 3, repairing the levee along an existing alignment or a new alignment would not result in any significant impact to the floodplain, or changes in levels of flood risk management. Non-structural options may or may not result in a change in the level of flood risk management provided within the floodplain. If a non-structural option were likely to result in any long-term adverse impacts to the floodplain, the project would be evaluated in more detail with a stand-alone NEPA document.

4.8 Land Use

Alternative 1 - "No-Action" Alternative: This alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. As described by CEQ (1981), this would be expected to result in a "predictable action by others". It is expected the public sponsor would repair the levee without assistance through the PL 84-99 program. It is expected that the sponsor would repair the levee to provide a similar level of flood risk management that existed prior to any flood damage, and that would not be any significant long-term impacts to land use.

Alternative 2 - Repair Levee within Existing Alignment: This alternative would maintain the same level of flood risk management which existed prior to any flood damage, as required by ER 500-1-1, Civil Emergency Management Program (USACE, 2001). This could result in minor, short-term impacts to land use during project construction, depending on the extent of any repairs. Long-term, repairing the levee along the existing alignment would not result in any significant impacts to land use.

Alternative 3 - Repair Levee with a New Alignment: As required by ER 500-1-1, repairing the levee with a new alignment would maintain the same level of flood risk management that existed prior to any flood damage. This alternative could result in minor short-term impacts to land use during project construction, and minor long-term impacts by returning land previously protected by the levee to the riverward side of the levee. For example, levee damages from 2007 through 2009 that were repaired with levee realignments resulted in approximately 135 acres of land being returned riverward of the levee.

Alternative 4 - Non-Structural Options: Non-structural options may or may not result in a change in land use. Land acquisitions that would result in the levee no longer being

maintained would likely result in negative impacts to some people, infrastructure, and agriculture, but positive impacts for fish and wildlife. These negative impacts could be minimized to some extent by measures such as elevating or relocating structures and/or infrastructure, or constructing ring levees around individual structures. This alternative could result in minor long-term beneficial impacts to recreation if acquired lands were made available for public use. If a non-structural option were likely to result in any long-term adverse impacts to land use, the project would be evaluated in more detail with a stand-alone NEPA document.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): As described in Alternatives 2 and 3, repairing the levee along an existing alignment or a new alignment would not result in any significant impact to existing land use. Non-structural options may or may not result in a change in land uses. If a non-structural option were likely to result in any long-term adverse impacts to the existing land use, the project would be evaluated in more detail with a stand-alone NEPA document.

4.9 Economics

Alternative 1 - "No-Action" Alternative: This alternative would result in the public sponsor not receiving any assistance through the PL 84-99 Emergency Levee Rehabilitation Program. As described by CEQ (1981), this would be expected to result in a "predictable action by others". It is expected the public sponsor would repair the levee without assistance through the PL 84-99 program. This would likely result in no change in economic conditions from that which existed prior to the flood event and resulting levee damage.

Alternative 2 - Repair Levee within Existing Alignment: This alternative would maintain the same level of flood risk management which existed prior to any flood damage, as required by ER 500-1-1, Civil Emergency Management Program (USACE, 2001). This would result in no long-term changes in economic conditions as a result of the levee repair. Public and private infrastructure protected by the levee prior to the flood damage would continue to have the same flood risk as existed prior to the levee being damaged and no change in land use would likely occur.

Alternative 3 - Repair Levee with a New Alignment: This alternative would maintain the same level of flood risk management which existed prior to any flood damage, as required by ER 500-1-1. This would result in no long-term changes in economic conditions as a result of the levee repair. Public and private infrastructure protected by the levee prior to the flood damage would continue to have the same flood risk as existed prior to the levee being damaged and no change in land use would likely occur.

Alternative 4 - Non-Structural Options: Non-structural options may or may not result in a change in the existing economic condition, depending on how it would impact

existing infrastructure and land use. If the levee was no longer maintained, this would likely result in negative economic impacts to people, infrastructure, and agriculture. Negative impacts to buildings and other infrastructure could be minimized by measures such as elevating or relocating structures and/or infrastructure, or constructing ring levees around individual structures. The purchase of land in fee title by government agencies can also cause a loss of state, county, and/or local tax revenue. However, if acquired lands were made available for public recreation there could be some minor long-term economic benefits. If a non-structural option were likely to result in any long-term adverse economic impacts, the project would be evaluated in more detail with a stand-alone document meeting the requirements of NEPA.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): As described in Alternatives 2 and 3, repairing the levee along an existing alignment or a new alignment would maintain the existing economic conditions. Non-structural options may or may not result in a change in the existing economic condition. If a non-structural option were likely to result in any adverse economic impacts, the project would be evaluated in more detail with a stand-alone NEPA document.

4.10 Cultural Resources

Alternative 1 - "No-Action" Alternative: As described by CEQ (1981), this alternative would be expected to result in a "predictable action by others". It is expected the public sponsor would repair the levee without assistance through the PL 84-99 program. If Federal funds are used, or if a Clean Water Act Section 404 permit is required, compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended would be required. However, actions undertaken and entirely funded by private landowners, and that do not require Federal permits, are not subject to NHPA compliance.

Alternative 2 - Repair Levee within Existing Alignment: This alternative is not expected to adversely affect any cultural resources. Generally, repairing a levee along the existing alignment would have no adverse effects on historic properties because the work is limited to the existing structure. However, new borrow areas have the potential to impact cultural resource sites. The Kansas City District would continue to coordinate individual levee repairs for the PL 84-99 program with the SHPO per the existing 1993 Programmatic Agreement (Appendix IV). Federally recognized Native American tribes (Tribes), with ties to the area, would be notified of proposed projects by letter. This notification would include the results of archeological background reviews conducted by the District Archeologist, archeological field investigations (if required), and coordination with the State Historic Preservation Officer (SHPO). In addition, in the unlikely event that archeological material was discovered during project construction, work in the area of the discovery would cease until the discovery is investigated by a qualified archeologist and the find is coordinated with SHPO and the Tribes.

Alternative 3 - Repair Levee with a New Alignment: This alternative would be unlikely to adversely affect any cultural resources. Generally, repairing a levee with a new alignment would have no adverse effects on historic properties because realignments typically occur on accreted lands with low potential of containing archeological material. However, each project would be reviewed on a case-by-case basis to determine the potential of impacts to cultural resource. If new borrow locations were used, this could potentially impact archeological sites. The Kansas City District would continue to coordinate individual levee repairs for the PL 84-99 program with the SHPO per the existing 1993 Programmatic Agreement (Appendix IV). Federally recognized Native American tribes (Tribes), with ties to the area would be notified of proposed projects by letter. This notification would include the results of archeological background reviews conducted by the District Archeologist, archeological field investigations (if required), and coordination with the State Historic Preservation Officer (SHPO). In addition, in the unlikely event that archeological material was discovered during project construction, work in the area of the discovery would cease until the discovery is investigated by a qualified archeologist and the find is coordinated with SHPO and the Tribes.

Alternative 4 - Non-Structural Options: This alternative would be unlikely to adversely affect any cultural resources. The Kansas City District would coordinate any non-structural options that would be funded through the PL 84-99 program with the SHPO per the existing 1993 Programmatic Agreement (Appendix IV). Federally recognized Native American tribes (Tribes), with ties to the area would be notified of the proposed projects by letter. This notification would include the results of archeological background reviews conducted by the District Archeologist, archeological field investigations (if required), and coordination with the State Historic Preservation Officer (SHPO). In addition, in the unlikely event that archeological material was discovered during project construction, work in the area of the discovery would cease until the discovery is investigated by a qualified archeologist and the find is coordinated with SHPO and the Tribes.

Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan): This alternative is not expected to adversely affect any cultural resources. Cultural impacts for this alternative are similar to those described for Alternatives 2 – 4. USACE would continue to coordinate individual levee repairs for the PL 84-99 program with the SHPO per the existing 1993 Programmatic Agreement (see Appendix IV). Federally recognized Native American tribes (Tribes), with ties to the area would be notified of the proposed projects by letter. This notification would include the results of archeological background reviews conducted by the District Archeologist, archeological field investigations (if required), and coordination with the State Historic Preservation Officer (SHPO). In addition, in the unlikely event that archeological material was discovered during project construction, work in the area of the discovery would cease until the

discovery is investigated by a qualified archeologist and the find is coordinated with SHPO and the Tribes.

5.0 Cumulative Impacts

The Council on Environmental Quality Regulations defines cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (CEQ, 1997).

The Missouri River and its tributaries have been altered by past actions such as bank stabilization, dams, roads/bridges, agricultural and urban levees, channelization, farming, water withdrawal for human and agricultural use, urbanization and other human uses. These activities have substantially altered the terrestrial and aquatic ecosystem within these watersheds. Some examples of the alterations that have occurred include: wetland losses, development of the floodplain, conversion of riparian habitat to agriculture and development, and the cut-off of the floodplain from the river. Much of the conversion of riparian habitat to agriculture lands occurred prior to construction of levees with nearly 50 percent of the Missouri River floodplain being in agricultural production by 1937 (Bragg and Tatschl, 1977). On the lower 100 miles of the Missouri River, nearly 70 percent of the existing floodplain was in agricultural production by 1826 (Bragg and Tatschl, 1977). In 1912, the U.S. Army Corps of Engineer’s started constructing the Missouri River Bank Stabilization and Navigation Project (BSNP) which channelized and stabilized the Missouri River. It is estimated that 522,000 acres of aquatic and terrestrial habitat was lost in and along the Missouri River, between 1912 and 2003, due to the construction and operation of the BSNP (USACE, 1981). The U.S. Army Corps of Engineers is authorized in the Water Resources Development Acts of 1986 and 1999 to mitigate for these impacts by purchasing and developing fish and wildlife habitat on 166,750 acres of land. To date, approximately 50,000 acres have been purchased and 40,000 acres of habitat developed.

After large flood events on the lower Missouri River in 1993 and 1995, various environmental restoration programs purchased fee title, or easements, on large acreages of land in the Missouri River floodplain from willing sellers. These programs included the Big Muddy National Wildlife Refuge (USFWS), the Wetland Reserve Program (NRCS), and land acquisitions by the Missouri Department of Conservation. In some cases, these programs acquired entire levee districts and levees were left abandoned. These levee districts typically contained very few landowners and often only had a single landowner. Many of the remaining levee districts now contain multiple landowners, many of which are not willing to sell their land for a non-structural alternative.

It is important to note that existing condition of the natural environment along the Missouri River and its tributaries have been historically altered by past actions and that the existing levees are owned by private landowners and operate independently. After the Great Flood of 1993, the "Galloway Report" (IFMRC, 1994) noted a lack of coordination of floodplain management activities and concluded that the states would be the best able to coordinate these activities. A recommendation of the "Galloway Report", to allow coordination of levee construction and operation, was to "increase the state role in all floodplain management activities including, but not limited to, flood fighting, recovery, hazard mitigation, buyout, floodplain regulation, levee permitting, zoning, enforcement, and planning". However, to date, no action has been taken by any of the states to allow this.

The USACE, which administers Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, has issued and will continue to evaluate permits authorizing the placement of fill material in the Waters of the United States and/or work on, in, over or under a navigable water of the United States including the Missouri River and its tributaries. Of the reasonably foreseeable projects and associated impacts that would be expected to occur, future development of the floodplain would probably have the greatest impact on these resources in the future. The possibility of wetland conversion and the clearing of riparian habitat are ever present, and these activities also tend to impact these resources. Most of the floodplain is already protected by either agricultural levees, in rural areas, or urban levees, in metropolitan areas. There is a trend towards converting agricultural levees to urban levees as metropolitan areas continue to grow. Substantial, environmental restoration efforts are occurring on the Missouri River and structures that provide flood risk management have been removed and natural floodplain habitat restored, in some areas. No new major reservoir construction is likely on the Missouri River or its' tributaries in the foreseeable future.

Large-scale flooding has occurred within the Kansas City District's jurisdiction six times between the years 1993 and 2011. This includes 1993, 1995, 2007, 2008, 2010, and 2011. Damage to levees from flooding typically include lost protective vegetative cover, side wash, slope failures, toe failures, erosion of the slope and/or toe, damaged drainage structures, sand boils. These types of damages are usually considered minor, and have been typically repaired in-place. Major damages result when a levee is breached or overtopped. This often results in large-scale erosion and deposition of sediment. When this occurs, it may be more economical to realign the levee, rather repairing it in-place. This is often the situation if a large scour hole has formed along the existing alignment.

The Kansas City District considered all known cumulative impacts including minor and major levee repair projects affecting the action area in the cumulative impact analysis using the best available information. The Kansas City District also assessed reasonably foreseeable future impacts from such projects. Between the years 2007 and 2009, for which data is readily available, the Kansas City District has provided assistance through

the PL 84-99 program on 37 instances. Three Federal levees were damaged on more than one instance during this time period. These include MRLS R-460-471 located in Doniphan County Kansas and Buchanan County Missouri, and MRLS L-488 and MRLS L-497, both in Holt County, Missouri. Two non-Federal levees were damaged on more than one instance. These were Garden of Eden Section 2, and Garden of Eden Section 3, both located along the Grand River in Chariton County, Missouri. The remaining 26 levees that were repaired were only damaged on single incidences. Levee realignments were utilized 17 times to repair levees between 2007 and 2009. This resulted in approximately 135 acres of land being returned to the riverward side of the levees. No public sponsors requested a non-structural option during this time period. Levee repairs occurred along 447 miles of the Missouri River within the Kansas City District. Only evaluating levee repairs along the Missouri River, this is equal to one levee being repaired every 43 miles on an annual basis during years with flood events. Considering this, it is unlikely that the frequency of minor, short-term impacts associated with levee repairs when added to other present and future actions would result in any significant cumulative impacts. Any discussion of impacts that would result from a project that did not meet the criteria established in this PEA would vary greatly from project to project based on individual circumstances. It would be highly speculative to guess what these impacts may be at this time. For this reason, individual stand-alone NEPA documents would be prepared for these types of projects. Any stand-alone NEPA document would utilize the cumulative impacts analysis included in this PEA. Similarly, if new information becomes available from any subsequent analysis that would change the analysis presented in the PEA, the document would be updated.

The Recommended Plan would continue to provide rehabilitation assistance to Federal and non-Federal levee sponsors along the Missouri River and its tributaries which participate in the PL 84-99 Program. The Recommended Plan would not involve new or increased obstructions to the floodway through new structures or heightened levels of protection to existing levees. The rehabilitation of these levees usually consists of repairs through minor levee setbacks, and repairing existing structures to their previous condition. These projects typically result in minor short-term construction related impacts resulting from noise, visual, and land disturbances to wetlands, the terrestrial habitat, and fish and wildlife resources.

These minor, short-term adverse affects on natural resources are out-weighed by the long-term beneficial effects associated with the enhancement of the aquatic ecosystem through borrow activity, reconnecting the floodplain through levee realignments, and restoring the levee flood risk management capability. Any non-structural options implemented through the Recommended Plan would likely benefit the existing environmental conditions. Thus, no significant cumulative impacts associated with the Recommended Plan have been identified. If new information becomes available that would change the analysis presented in this document, the PEA would be updated.

6.0 Conclusion

The alternatives in this Programmatic EA were developed based on past experience of typical damages sustained by levees during flood events, and repair methods that have been proven to be technically, economically, and environmentally acceptable. If a proposed action to repair an individual levee does not meet the conditions described the Recommended Plan, a stand-alone NEPA document would be prepared. Examples that would result in an individual EA or EIS being prepared include: proposed projects where it is not feasible to follow the guidelines presented in the SOP for the Selection of Borrow Sites; projects that do not meet the work description or conditions of General Permit 41, or an applicable Nationwide Permit; or projects that may adversely affect any threatened or endangered species, including their critical habitat. If a proposed action meets the conditions described in this programmatic document, then a tiered EA would be prepared. A tiered EA for would consist of an environmental and cultural review indicating that the conditions described in this Programmatic EA have been met (Appendix V).

The rehabilitation of levees usually consists of repairs through minor levee setbacks, and repairing existing structures to their previous condition. These projects typically result in minor short-term construction related impacts resulting from noise, visual, and land disturbances to wetlands, the terrestrial habitat, and fish and wildlife resources. These minor adverse impacts would be greatly offset by restoring the levee flood risk management capability and its associated social and economic benefits.

7.0 Coordination and Comments

Prior to a decision on whether to prepare an Environmental Impact Statement, the USACE circulated a Notice of Availability (Notice) for the Draft Programmatic Environmental Assessment (PEA) and Finding of No Significant Impact (FONSI), dated November 2, 2011, with a thirty-day comment period that ended on December 1, 2011 to the public and resource agencies. The Draft PEA and FONSI was e-mailed to individuals, agencies, and businesses contained on the USACE Regulatory public notice list. Copies were also available on the USACE Regulatory webpage, and hard copies were available upon request. Comments were received from several state and federal agencies and are included as Appendix VI. These comments are summarized along with the Kansas City District's responses in Table 1.

Table 1: Summary of comments received during public comment period and Kansas City District's responses.

Agency	Comment	USACE Response
Kansas State Historic Preservation Officer	No objections to document with understanding that cultural resources coordination will continue as in past.	None
USFWS Missouri Ecological Services Office	Massasauga's in Missouri are now considered part of the Western species and are no longer candidates.	PEA was updated.
USFWS Missouri Ecological Services Office	Typo in Section 4.5, Alternative 3.	Typo was corrected.
USFWS Kansas Ecological Services Office	No further comments.	None
MDNR Water Protection Program	Ask for clarification if PEA is utilized if mitigation is required.	PEA was updated to clarify that any project that required compensatory mitigation would require an individual NEPA document.
MDNR Water Protection Program	Missouri River within Missouri is on 303(d) list for chlordane and polychlorinated biphenyls. TMDL was approved by EPA in 2006.	Section 3.1 Water Quality has been updated to include this information.
MDNR Water Protection Program	Suggestion to include a statement concerning the association between increased turbidity and nutrient concentrations.	The Kansas City District will utilize Best Management Practices to minimize any increases in turbidity as required by General Permit 41, 401 water quality certification, and any necessary NPDES permits.

Agency	Comment	USACE Response
EPA	EPA believes that a comprehensive programmatic review of the PL 84 - 99 program and the results of its implementation are appropriate and serves the purpose of NEPA.	The Kansas City District concurs that a Programmatic Environmental Assessment of levee rehabilitation project for the PL 84-99 Emergency Levee Rehabilitation Program is important to fully assess potential impacts of these projects and meet the requirements of NEPA.
EPA	Scale of Project(s) and Threshold Criteria – EPA recommends inclusion of significance criteria or benchmarks regarding the size of the breach, the amount of borrow necessary to accomplish the restoration and the amount of setback.	The Kansas City District agrees that it is important to include significance criteria that would result in an individual, stand-alone NEPA document rather than a tiered EA. As discussed in Section 2.0, the district believes that the determination to prepare an individual NEPA document should be based on potential environmental impacts of a proposed project. The Kansas City District concurs that the suggested elements will often be important in considering significance, and they are captured in the chosen significance criteria. Set quantitative thresholds for these criteria have been determined to not be an accurate measurement of environmental impacts. For example, a project that obtained borrow to repair a levee by grading the soil from a shallow depth over a large agricultural field would likely have minimal environmental impacts, while obtaining borrow from a comparatively small area of forested land riverward of the levee could result in significant environmental impacts. The Kansas City District believes that the chosen criteria will capture similar circumstances for individual NEPA evaluation as those recommended by EPA.
EPA	Scale of Project(s) and Threshold Criteria – EPA states that the PEA adequately addresses the impacts of minor levee repair projects, but does not address the impacts of major levee repair projects. Major levee repair projects may be candidates for an individual NEPA document.	The Kansas City District agrees that major restoration projects would be more likely to meet the criteria that would result in an individual stand-alone NEPA document as described in Section 2.0. From a cumulative impacts standpoint, the PEA has captured known information about minor and major levee repairs to date as well as those that are reasonably foreseeable. Any new individual stand-alone NEPA document would evaluate cumulative impacts of the project as it relates to the other past, present, and reasonably foreseeable future actions, including other levee repair projects.

Agency	Comment	USACE Response
EPA	Project Purpose and Need for Action and Purpose of the PEA – EPA believes there is a significant philosophical difference on the need for levee repair/replacement and that flood risk reduction can be secured by many practices outside of restoring past levee design in every instance.	PL 84-99 was approved by Congress to authorize emergency levee repairs to the level of protection that existed prior to a flood event. PL 84-99 allows for financial credit towards non-structural options, in lieu of a structural repair, however this must be requested by the project sponsor. As described for Alternatives 4 and 5 of the PEA, other Federal and state programs, in addition to the PL 84-99 program, are available for landowners who may desire a non structural alternative to levee repair.
EPA	Project Location – EPA states the Clean Water Act section 401 certification issued by the State of Missouri only applies to projects along the Missouri River.	The Missouri DNR provided a revised Clean Water Act Section 401 Certification, dated April 7, 2008, which corrected the reference that the certification only applied to projects along the Missouri River. The draft PEA inadvertently included the original Section 401 Certification. The corrected version of the certification is now included in the Final Programmatic Environmental Assessment.
EPA	Alternative Analysis – Reiteration and expansion of previous comment concerning threshold criteria. Recommendation that an individual NEPA document be prepared if borrow material is obtained from the Missouri River.	The Kansas City District intends to use GP-41 for projects that would result in the preparation of a tiered EA. Special Condition e of GP-41 prohibits dredging or excavation of material from either the Missouri or Kansas Rivers to obtain borrow material. Furthermore, the Kansas City District will follow the Standard Operating Procedures for the Selection of Borrow Sites. Obtaining borrow through dredging is not included in this document. Therefore, an individual NEPA document and CWA Section 404 authorization would need to be prepared for any proposed dredging of borrow material from either these rivers.
EPA	Alternative Analysis – EPA asks if the assumption that no compensatory mitigation is necessary is valid for major restoration projects.	The Kansas City District agrees that any project that would result in the need for compensatory mitigation should be evaluated separately in a stand-alone NEPA document, regardless of the type of repair. By following the Standard Operating Procedures for the Selection of Borrow Sites, compensatory mitigation usually is not required for levee repair projects. The Kansas City District makes efforts to avoid negative environmental impacts through project design and the use of Best Management Practices, following the “avoid, minimize, mitigate” mantra. As stated in the PEA, a project that would require compensatory mitigation would not be covered under this PEA.

Agency	Comment	USACE Response
EPA	No Action Alternative – EPA questions whether this alternative allows "the environmental impacts of the proposal and alternative in comparative form, thus sharply defining the issues and providing a clear basis for choice among option by the decision-maker and the public" per 40 CFR 1502.14. EPA believes that the repair of flood damage for public sponsors without federal assistance is not predictable.	A "no project" approach to levee repair is evaluated as part of Alternative 4 - Non-Structural Options as part of acquiring buildings, easements, and/or property. The Kansas City District believes it is very reasonable to assume that private interests or other public agencies would repair levees because of the value of the crops and other assets located behind the levees and the need to protect life as part of the No-Action Alternative. The USACE is not aware of any primary levees that have been abandoned in the past within the Kansas City District because of flood damage. This is likely the result of the economic benefits provided by levees. As a result of 2011 flood damages, several levee districts are expected to receive funding through the State of Missouri Community Development Block Grant program to assist with their cost share for assistance through the PL 84-99 program, indicating that repairing levees apparently is in the best interest of the state of Missouri.
EPA	Repair Levee within Existing Alignment – EPA believes environmental impacts from minor and major repair within the existing alignment results in fundamentally distinct impacts and should be assessed differently under NEPA.	The Kansas City District concurs that "fundamentally distinct impacts" resulting from any proposed levee repair project beyond the impacts described in the PEA should be analyzed through an individual stand-alone NEPA document. As discussed in Section 2.0 of the PEA, the Kansas City District has selected criteria that are based on the potential of environmental impacts when determining whether to prepare a tiered EA or prepare an individual NEPA document.
EPA	Repair Levee with a New Alignment – EPA ask for explanation why the Corps regards levee setbacks as a non-structural alternative and why this would be treated as a one-time, non-structural response. EPA states that the Corps does not distinguish between different types of levee setbacks.	The Kansas City District agrees with EPA and does not consider levee setbacks to be a non-structural alternative. To distinguish the different "types" of levee setbacks, the sentence in Alternative 3 (page 6) that previously stated "More substantial levee realignments that would return large portions of the floodplain to the riverward side of the levee could be made outside the authority of the PL 84-99 Emergency Levee Rehabilitation Program" has been corrected to state "Levee realignments that would return large portions of the floodplain to the riverward side of the levee for the purpose of habitat restoration could be made outside the authority of the PL 84-99 Emergency Levee Rehabilitation Program." Also, Section 2.3 states that repairs through the PL 84-99 program would be limited to restoring the same level of flood risk management that existed prior to any flood damage. Therefore, The distinction between "types" of levee setbacks is based on the purpose of the setback and is not arbitrary.

Agency	Comment	USACE Response
EPA	Recommended Plan – The PEA does not explain how it determines whether levee realignment is "outside of the PL 84-99 repair" or how the Corps determines which realignments are "more substantial"	This comment is addressed with the correction to Alternative 3 previously stated. Levee realignments outside of the PL 84-99 program are those that do not meet the criteria of this program as described in ER 500-1-1.
EPA	Affected Environment – EPA lists examples of information that would improve the affected environment description of the PEA.	The Kansas City District agrees with EPA that information on the total length of levees and the amount of floodplain protected along the Missouri River would improve the description of the affected environment. Information on the various levees along the Missouri River is being collected as part of the National Levee Database (http://nld.usace.army.mil/egis/f?p=471:1:676635496431195). However, information on all of the levees along the Missouri River is not yet available. In particular, there is limited information on primarily and secondary levees outside of the PL 84-99 Program. Information on specific levees that have been damaged on multiple instances within the past several years is provided in the Cumulative Impacts Section of the PEA. Information in the PEA will be revisited if new information or program changes affect its conclusions.
EPA	Environmental Consequences – EPA recommends identify benchmarks for borrow quantities, above which a separate EA or EIS would be conducted.	The Kansas City District agrees that it is important to include significance criteria that would result in a separate, stand-alone NEPA document rather than a tiered EA. As discussed in Section 2.0, the district believes that the determination to prepare an individual NEPA document should be based on potential environmental impacts of a proposed project.
EPA	Environmental Consequences – EPA believes the baseline for assessing the consequences to floodplain resources should be the reconnected floodplain.	The Kansas City District believes the baseline condition should be the pre-flood condition of the levees. Because levees are engineered to provide a certain level of protection (e.g. 1% or 10% chance of failing to provide protection in any particular year) it is expected that all levees will breach at some point in time and provide a direct connection between the river and the floodplain. Repairing levees is considered an emergency action per 33 U.S.C 701n for the protection of life and property. Any breaches in the levee are considered a temporary condition until repairs can be made.

Agency	Comment	USACE Response
EPA	Cumulative Impacts Analysis – EPA states that cumulative impacts do not distinguish between minor and major repairs. EPA also states that impacts are not assessed at a reach scale.	The Kansas City District considered all known cumulative impacts including minor and major levee repair projects affecting the action area in the cumulative impact analysis using the best available information. The Kansas City District also assessed reasonably foreseeable future impacts from such projects Locations where multiple levee repairs have been completed in recent years have been indicated in the cumulative impacts section. Any discussion of impacts that would result from a project that did not meet the criteria established in this PEA would vary greatly from project to project based on individual circumstances. It would be highly speculative to guess what these impacts may be at this time. For this reason, individual stand-alone NEPA documents would be prepared for these types of projects. Any stand-alone NEPA document would utilize the cumulative impacts analysis included in this PEA. Similarly, if new information becomes available from any subsequent analysis that would change the analysis presented in the PEA, the document would be updated.
EPA	Cumulative Impacts Analysis – EPA comments that GP- 41 requires cumulative impacts to be evaluated every 5 year and suggests the PEA discuss how this is accomplished.	Cumulative impacts resulting from the issuance of GP - 41 were evaluated when this General Permit was issued in 2008. They will be re-evaluated in 2013 when the permit is considered for renewal.

8.0 Agency Compliance with Other Environmental Laws

Compliance with other environmental laws is listed below.

Federal Polices	Compliance
Archeological Resources Protection Act, 16 U.S.C. 470, et seq.	Not Applicable
Clean Air Act, as amended, 42 U.S. C. 7401-7671g, et seq.	Full Compliance
Clean Water Act (Federal Water Pollution Control Act), 33 U.S.C. 1251, et seq.	Full Compliance
Coastal Zone Management Act, 16 U.S.C. 1451, et seq.	Not Applicable
Endangered Species Act, 16 U.S.C. 1531, et seq.	Full Compliance
Estuary Protection Act, 16 U.S.C. 1221, et seq.	Not Applicable
Federal Water Project Recreation Act, 16 U.S.C. 4601-12, et seq.	Full Compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq.	Full Compliance
Land and Water Conservation Fund Act, 16 U.S.C. 4601-4, et seq.	Not Applicable
Marine Protection Research and Sanctuary Act, 33 U.S.C. 1401, et seq.	Not Applicable
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	Full Compliance
National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470a, et seq.	Full Compliance
Rivers and Harbors Act, 33 U.S.C. 403, et seq.	Full Compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	Full Compliance
Wild and Scenic River Act, 16 U.S.C. 1271, et seq.	Not Applicable
Farmland Protection Policy Act, 7 U.S.C. 4201, et. seq.	Full Compliance
Protection & Enhancement of the Cultural Environment (Executive Order 11593)	Full Compliance
Floodplain Management (Executive Order 11988)	Full Compliance
Protection of Wetlands (Executive Order 11990)	Full Compliance
Environmental Justice (Executive Order 12898)	Full Compliance
Invasive Species (Executive Order 13122)	Full Compliance

NOTES:

a. Full compliance. Having met all requirements of the statute for the current stage of planning (either preauthorization or post authorization).
b. Not applicable. No requirements for the statute required.

9.0 References

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10.0 List of Preparers

This draft EA and draft FONSI were prepared by Mr. Jesse Granet, Environmental Resources Specialist, and Mr. Glenn Covington, Senior Biologist, with cultural resource assistance provided by Mr. Timothy Meade, District Archeologist. The address of the preparer is: U.S. Army Corps of Engineers, Kansas City, District; PM-PR, Room 529, 601 E. 12th Street, Kansas City, Missouri 64106.

11.0 Appendices

APPENDIX I

Figures

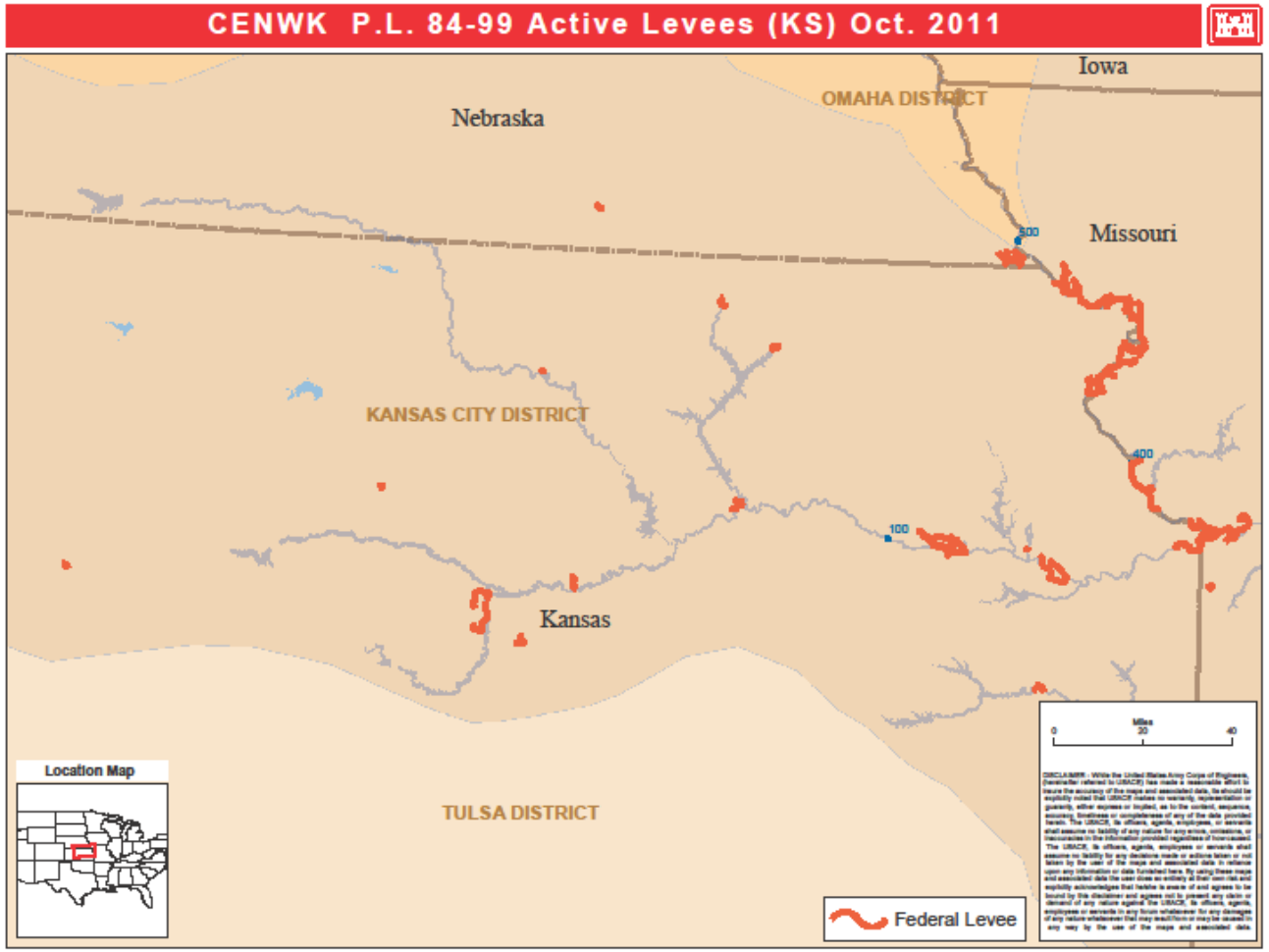

Figure 1: Federal Levees in Nebraska and Kansas active in the Kansas City District PL 84-99 Program.

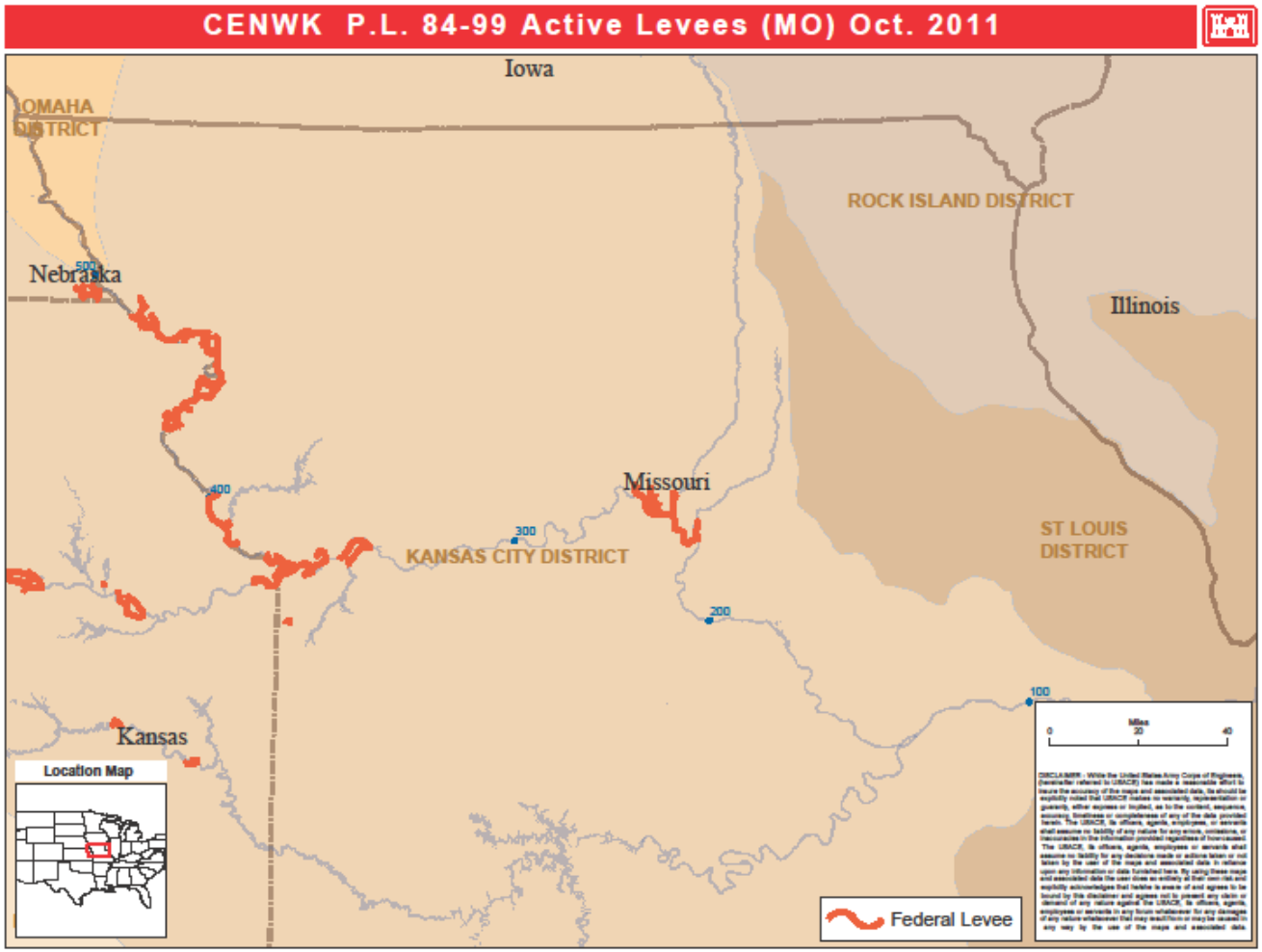

Figure 2: Federal Levees in Missouri active in the Kansas City District PL 84-99 Program.

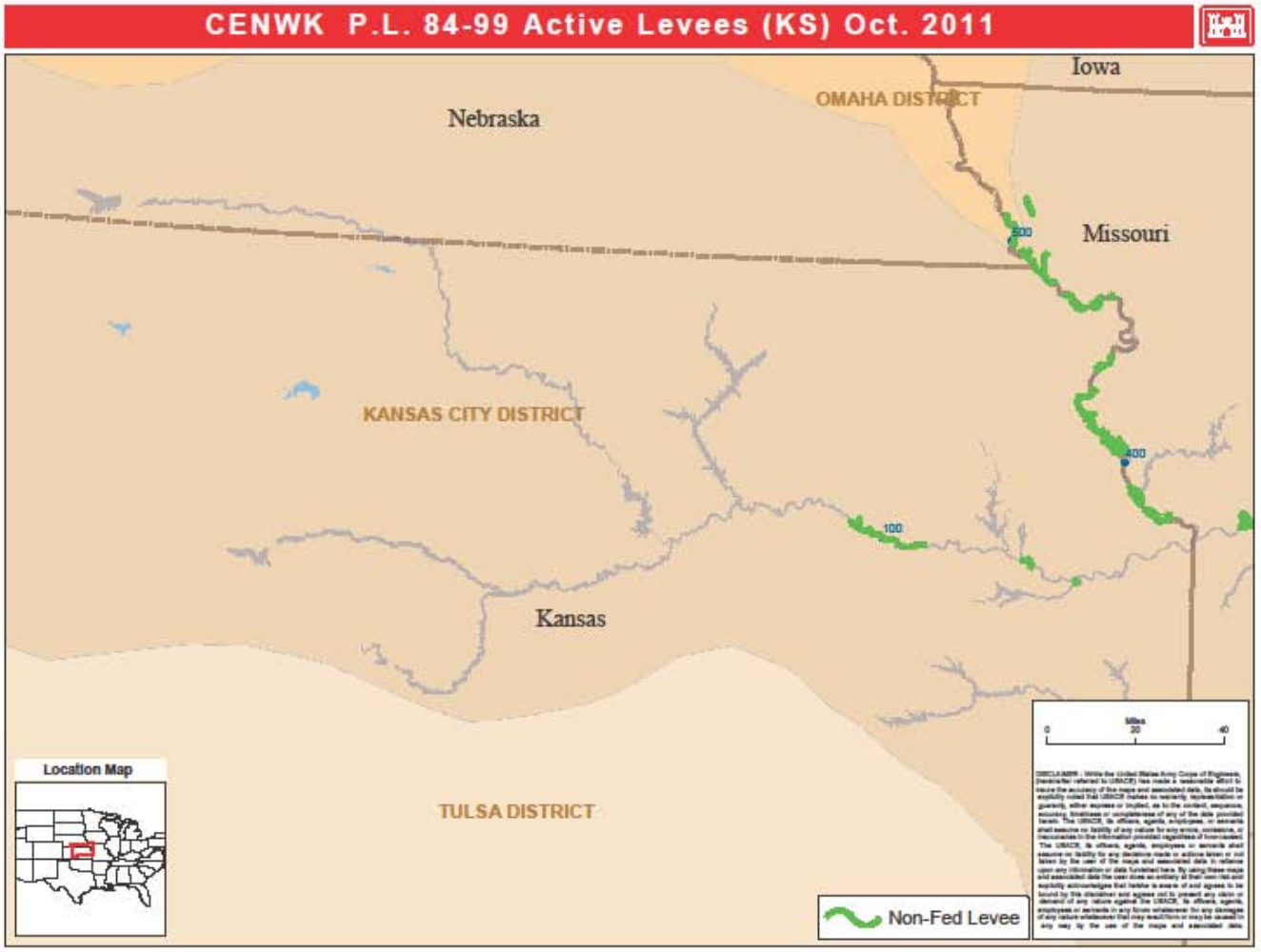

Figure 3: Non-Federal Levees in Nebraska and Kansas active in the Kansas City District PL 84-99 Program.

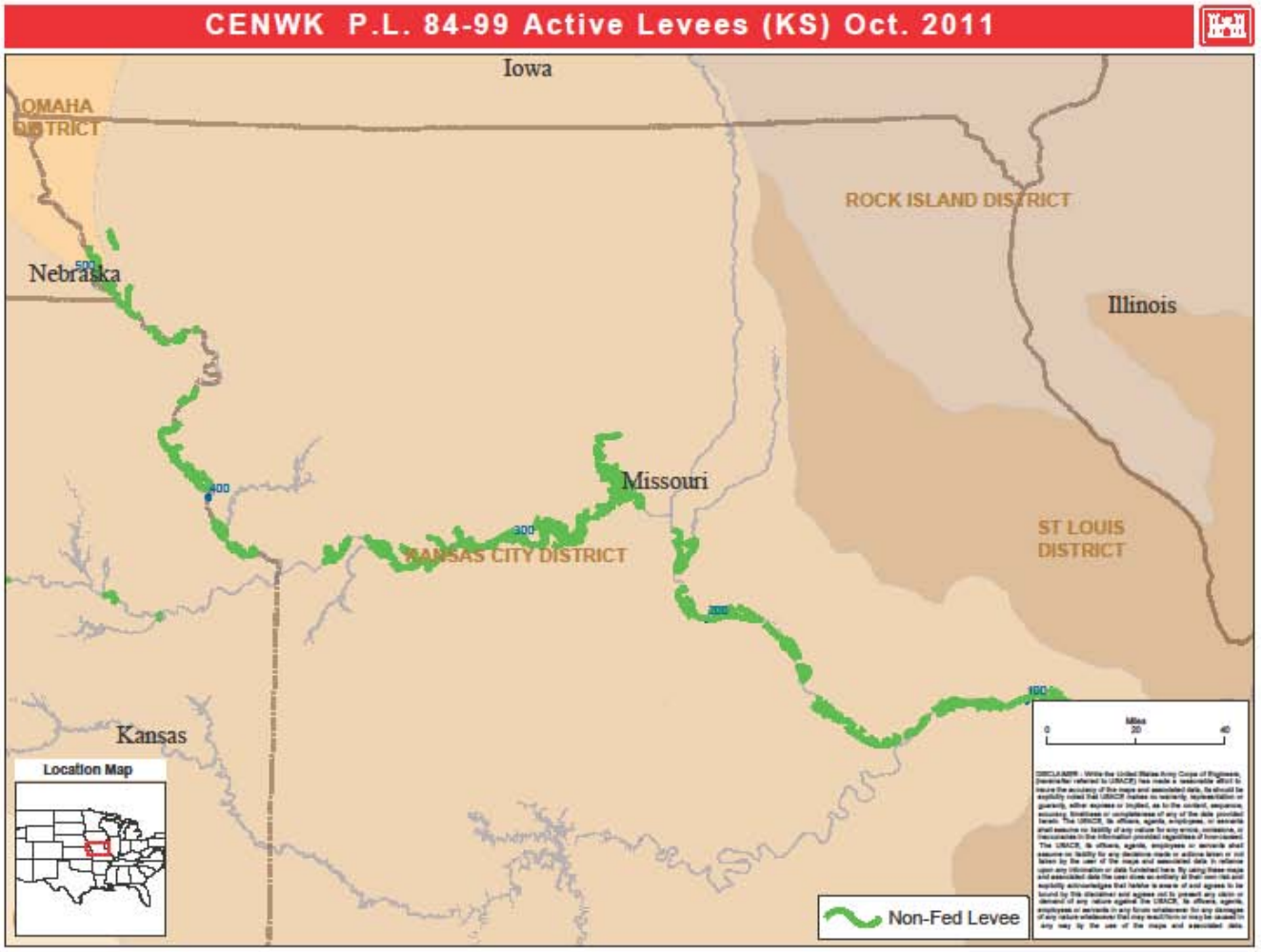

Figure 4: Non-Federal Levees in Missouri active in the Kansas City District PL 84-99 Program.

Figure 5: Slope failure along Lower Chariton Levee as a result of 2009 flooding.

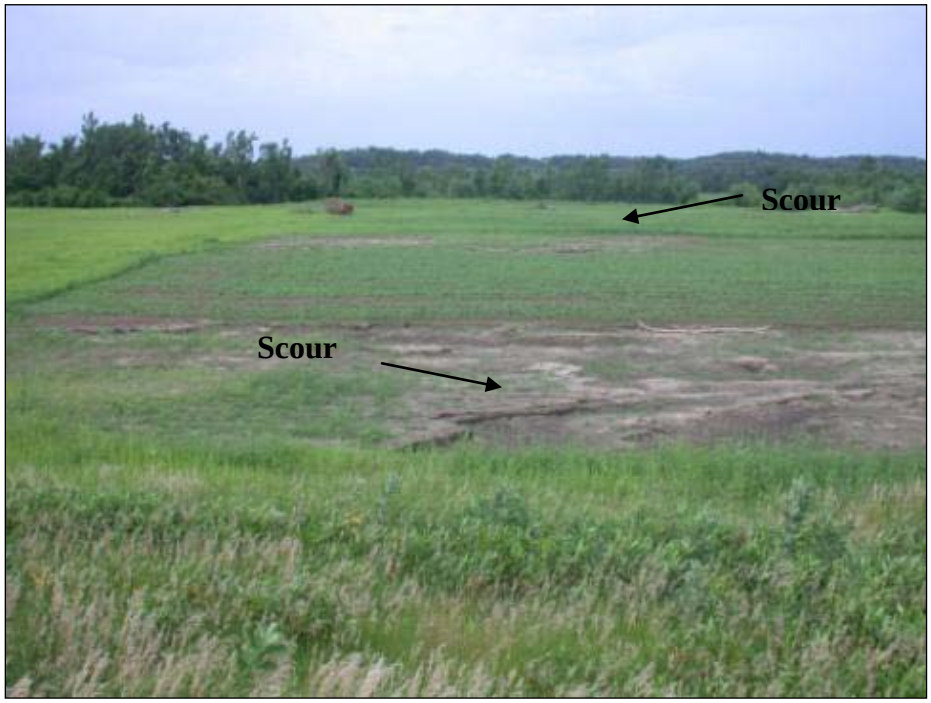

Figure 6: Scouring near MRLS L-497 levee resulting from 2008 flooding.

Figure 7: Flood damage to a drainage structure along the Lower Chariton Levee in 2008.

Figure 8: Garden of Eden Section 1 Levee breach from 2008 flooding.

Figure 9: Wolcott Section 1 severe slope and tow erosion from 2009 flood event.

APPENDIX II

SOP for the Selection of Borrow Sites

Glen

28 August 1995
CEMRK-FO-MO

Standard Operating Procedures for the Selection of Borrow Sites Missouri River and Tributaries 1995 Levee Repair

1. Borrow Area Determination. It is the responsibility of the Corps of Engineers (Corps) to design and implement Public Law 84-99 levee repair projects that protect jurisdictional wetlands, Federally listed threatened and endangered species and their habitats (i.e., bald eagle, Indiana bat, and pallid sturgeon), and other important riverine and floodplain habitats. It is also the Corps' responsibility to complete levee repairs in a timely and economical fashion without placing undue hardship on landowners and local levee districts.

These Standard Operating Procedures (SOP) are not intended to be absolute. This document should be viewed as a flexible guideline which field personnel and borrow negotiators may apply to meet landowners, levee districts, and environmental concerns and objectives.

a. **Riverward borrow areas** in open prior converted croplands or farmed wetlands (within 1,000 feet of a levee break) and old borrow areas and scour holes that are filled with sediment are preferred borrow locations. Tree clearing will generally be avoided; however, riverward areas with woody vegetative cover of less than 9 inches diameter at breast height (dbh) may be used if prior converted croplands, farmed wetlands, or old borrow areas and scour holes are not available. Selective clearing in these wooded areas may be accomplished ~~to maintain or enhance riparian habitat. At least an 80-100 foot wide band of timber should~~ be maintained between the levee and the river bank. Riverward areas with stands of timber that died as a result of the 1993 flood event may be used as borrow sources. In these borrow areas, if possible, some large potential cavity nesting or den trees should be preserved on the edge of the borrow site, especially in localities adjacent to live forested areas. Wooded areas may be classified as wetlands and environmental regulations may apply (see Paragraph 8 - **Wetlands Protection**). Use of mature or dense timbered areas as borrow sites may be cost prohibitive because of the additional expense incurred to clear and grub the timber, the large amount of borrow material that would be unusable because of the undesirable woody material (roots, stumps, etc.) contained in the borrow, and the larger borrow area needed to obtain the required amount of usable material.

Riverward borrow will be used to lessen disruption to flood-protected agricultural lands; however, the levee district should be informed that use of riverward borrow may delay levee repairs because the riverward borrow areas are often wet and difficult to access. To avoid delays in awarding construction contracts, alternate landward borrow areas should also

be identified and made available for use if the riverward borrow areas are too wet immediately and prior to construction.

b. **Landward borrow areas** in open agricultural fields will be used as an alternative to suitable riverward areas. Landowners should be informed that the planting or presence of crops will not eliminate an area from consideration as a potential borrow site. The removal of any vegetation on the landward side to repair the levee will be subject to the same guidelines as previously outlined.

Borrow will not be taken from within 30 feet of the levee toe unless taken to repair minor sidewash damage. Borrow will not be taken from within 30 feet of the high bank of the river. The cut slopes of borrow areas in landward prior converted croplands will not be steeper than 1 vertical (V) to 3 horizontal (H) measurement unit. **Riverward borrow areas** should generally have steeper side slopes and be excavated to the maximum depth practical to reduce the area of disturbance and to maximize the potential for creating aquatic habitat (see Paragraph 8 - **Wetlands Protection**).

c. **In unusual cases**, levee repairs may not be feasible without the removal of trees larger than 9 inches dbh. In these situations, the borrow areas will be delineated by Corps regulatory personnel or field biologists to lessen adverse impacts and reduce the number of trees removed. Decisions concerning proposed levee repairs or borrow areas affecting one-half acre or more of timber averaging in excess of 9 inches dbh will be made in consultation with the U.S. Fish and Wildlife Service (FWS) and the Missouri Department of Conservation (MDC). The following actions will be considered during borrow negotiations to lessen impacts.

1. **Levees repaired along the original alignment.** Borrow sites in wooded areas will be small in size and scattered randomly. The size of the borrow area should remain small in relation to the size of the existing timber stand (approximately 20 percent). The depth of the borrow pit should be as deep as possible to minimize timber clearing. Where the existing riparian timber resources are narrow, borrow areas would be a minimum of 200 to 300 feet apart. A minimum band of timber 80-100 feet wide from the high bank should be maintained. Every effort will be made to avoid any dominant trees, large cavity nesting or den trees, or trees greater than 9 inches dbh. In most cases, destroyed timber mitigation will be through natural succession of borrow areas or through non-forested buffer areas around scour features or setbacks. However, if mast-producing trees are removed, replacement plantings will be considered.

2. **Levees repaired with landward realignments.** Where scour features were created by the flood event and the proposed remedy is a landward realignment,

landowners should be encouraged to maintain the scour feature. If the scour feature created or expanded is considered a water of the U.S., landowners will be informed that filling of the scour feature (in most cases holes) would be an adverse action and a Clean Water Act regulatory violation. However, the natural filling of the scour feature when caused by river sedimentation would not be considered a regulatory violation. Borrow material may be taken from the scour feature to create shallow water habitat. A 100 foot (average) buffer strip will be maintained between the scour feature and the reconstructed levee. Riverward borrow areas will be hydraulically connected to the scour feature if located in the immediate vicinity of the scour feature but not necessarily connected to the river.

d. **The preferred borrow area for repair of minor topwash and sidewash** will be agricultural fields adjacent to the levee where the damage has occurred. Borrow for severe topwash and sidewash will be designated and negotiated in the same manner as outlined above.

2. **Borrow Negotiations.** The levee district has the responsibility to furnish the borrow areas and easements required for the levee repairs. If the Levee District chooses to use the Corps recommended borrow areas, the amount of time required to negotiate and repair the levee should be reduced. The borrow site identification and negotiation process will begin during the first on-site contact with the levee district representative(s). This contact should be made prior to the borrow area assessment conducted by a Corps field biologist or borrow negotiator. An on-site meeting will take place to provide the landowners with a set of written criteria that will be used for identifying borrow (see attached **BORROW SITE SELECTION CRITERIA**). All landowners where damage occurred will be requested to be present. **The criteria will be discussed and the landowners will be requested to delineate, on a map, the borrow areas they prefer.** When the damage survey and field assessments are complete, a second meeting will take place with the levee district representative(s) to discuss proposed borrow areas. Again, it will be the responsibility of the levee districts' to obtain borrow area easements from landowners. The landowners that sign borrow easements will be informed by letter of any mitigation requirements (e.g., not filling scour features or borrow sites, maintaining designated buffers around borrow areas). After borrow negotiations are completed, a detailed map will be prepared defining specific borrow areas based upon the volume of material required for repairs and the criteria contained in this SOP.

3. **Damage Surveys.** Survey crews will follow a standard reporting procedure to provide data on the location of reported damage. The survey data will provide an estimate of the damage, stationing, yardage, and alternate methods of repair. Survey crews will not be responsible for any negotiations on borrow sources with the sponsor. **Landowners will undoubtedly ask survey crews questions about the source of borrow, but they should be told to contact their levee district point-of-contact representative.**

4. Cultural Surveys. The 1993 Midwest flood event Programmatic Agreement for cultural resources compliance for Public Law 84-99 projects is still in effect and will be followed for repair of projects damaged by the 1995 flood event. Many areas were surveyed for cultural resources and cleared with the Missouri State Historic Preservation Officer (SHPO) during the 1993 flood event levee repair effort. Maps/cultural resource assessments prepared for 1993 levee repairs will be utilized to the greatest extent possible.

Cultural resources field work/surveys will not be required in proposed construction work areas or borrow sites if no known sites are present and any of the following apply: (1) excavation depth in agricultural fields is not greater than 8 inches; (2) the subject sites were cleared for cultural resources for the 1993 flood event repair work; (3) subject sites are located within the boundaries of old river channels as shown on Corps' maps of the historic Missouri River channel; or, (4) borrow and/or construction activity remains 150 feet away from any visible structure or building remains.

Cultural resources surveys will be required if there is a potential for cultural resources, such as, but not limited to, areas where the above conditions do not apply, where construction or borrow activities are adjacent to or on the bluff, if there is a known archeological site nearby, or the area was not surveyed in 1993.

However, coordination with the SHPO will be conducted for every levee, as required by the Programmatic Agreement. In those instances where cultural field work is required, the ground surface must be visible, i.e., not inundated, before the area may be surveyed for cultural resources materials.

5. Field Survey. Potential borrow areas (both landward and riverward) within 1,000 feet of levee damage and scour features, and any landowner-identified "preferred" borrow areas outside this band, will be evaluated and mapped during the initial site visit. Significant environmental and cultural resources features, including mature trees, wooded wetlands, farmed wetlands, and potential cultural resource sites, will be accurately outlined and labeled on the map.

6. Fish and Wildlife Agency Coordination. This SOP was coordinated with the FWS and the MDC prior to any borrow designation or negotiation. The FWS and MDC have been provided with a list of levees to be repaired and a set of floodplain maps with highlighted levees. Further coordination will take place on a case-by-case basis if mitigation for the loss of mast-producing trees is warranted or when proposed actions would impact one-half acre or more of trees averaging greater than 9 inches dbh. The agencies will be contacted to discuss appropriate mitigation and/or a proposed mitigation action. The FWS and the MDC will also

be invited to assist and advise the Corps in periodic management and field reviews of the application of this SOP.

7. Toxic and/or Hazardous Substances. The Environmental Protection Agency (EPA) provided a database list of known releases, storage, and/or disposal of toxic and/or hazardous substances (Toxic Release Inventory, National Priorities, etc.) within the State of Missouri. In the application for assistance or the initial site visit, the levee district representative (usually the president) will be asked to provide a list (with addresses) of known businesses, factories, feedlots, etc., where spills may have occurred. This information will be used, along with field surveys, to verify the presence of hazardous substances. The presence of toxic and/or hazardous substances will eliminate a site from borrow consideration.

8. Wetlands Protection. Most wetland borrow areas will be located in prior converted croplands, farmed wetlands, and adjacent to riparian habitat. Naturally vegetated wetlands will be avoided. If naturally vegetated wetlands or riparian timber are impacted, appropriate mitigation will follow. The following is a list of conditions/stipulations that will be used for borrow activities in wetlands and in riparian habitat with wetland potential.

a. Farmed wetlands riverward of the levee should be dug as deep as possible, and, where applicable, connected to scour features, if present. The borrow areas should be configured so that one side has a slope of 1V:4H; the other slopes may be as steep as 1V:1.5H. Landward farmed wetlands can be dug to any depth and must have 1V:5H maximum side slopes. Farmed wetlands used for borrow should not be back filled.

b. Any uniform stand of timber that died as a result of the 1993 flood event may be used for borrow without mitigation for loss of riparian timber. However, riverward areas with stands of timber that died as a result of the 1993 flood event may be used as borrow sources. In these borrow areas, if possible, some large potential cavity nesting or den trees should be preserved on the edge of the borrow site in localities generally adjacent to live forested areas. Riverward borrow areas should be dug as deep as possible. Depths of 5 feet or more are preferred. The borrow areas should be constructed so that one side that has a slope of 1V:4H, the other slopes may be as steep as 1V:1.5H. The borrow areas should be allowed to revegetate naturally.

c. Riparian timbered areas with trees greater than 9 inches dbh may be used for borrow if cost effective and if old borrow areas, or wooded areas with trees less than 9 inches dbh, and riverward agricultural fields are not available. When riparian areas are used for borrow, regardless of timber size, they should be dug as deep as possible to minimize the amount of timber clearing. The borrow areas should be constructed so that one side that has a slope of 1V:4H, the other slopes may be as steep as 1V:1.5H. Borrow areas should be

allowed to revegetate through natural succession unless significant mast-producing trees are lost, then replacement plantings will be considered.

d. Levee repairs will be authorized under the 1995 Corps' General Permit (MRKGP-33M) which is currently under preparation (Permanent Protection and/or Repair of Flood Damaged Structures and/or Fills in the state of Missouri). The General Permit is expected to be finalized by early September 1995, i.e., before construction would begin on any levee repairs. Until finalized, any construction work involving waters of the U.S. must be authorized by individual permit. The 1995 General Permit will be in effect for 5 years.

e. Currently, agricultural land wetland delineations are the responsibility of the Natural Resources Conservation Service (NRCS). The Corps is responsible for wetland delineations on non-agricultural lands (e.g., areas that haven't been farmed in 5 years or more). When damage survey reports are complete, the NRCS will be sent aerial photographs with the locations of levee damage shown on them. The NRCS will delineate agricultural wetlands on the photographs. They will also identify any potential conflicts with land enrolled in the Conservation Reserve Program (CRP), Emergency Wetlands Reserve Program (EWRP), Wetlands Reserve Program (WRP), "minimal effects with mitigation", or other U.S. Department of Agriculture Programs. The marked-up photographs and U.S. Department of Agriculture Program information will be provided to the Corps. Final wetland delineations for all utilized agricultural and non-agricultural borrow sites will be drawn on aerial photographs and furnished to the NRCS.

f. Non-agricultural land wetland delineations will be performed by Corps regulatory personnel or field biologists. Off-site wetland screening will be performed using maps, photographs, and historical records to narrow the area of potential wetlands on non-agricultural lands. The findings of this off-site screening will be verified on-site prior to finalizing borrow negotiations. A short on-site observation report documenting the on-site delineations and a photo/map containing wetland delineations for both agricultural and non-agricultural land will be attached to the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) and/or placed in the official project files. Landowners will be informed by letter if borrow will be taken from a designated wetland and any potential Food Security Act or Swampbuster Program implications of using wetland borrow sites.

Attachment

28 August 1995
CEMRK-FO-MO

BORROW SITE SELECTION CRITERIA

The Corps of Engineers has prepared a list of factors to be used in the selection of borrow sites for levee repairs. Please consider these when recommending sites so that approval can be accomplished as quickly as possible.

- Borrow sites consisting of clay, sandy clay and silty loam are the most desirable.

- Riverward borrow areas located in open agricultural fields will be used when available.

- Tree clearing, especially involving mature trees, will be avoided. However, areas with small to medium size trees may be used for borrow if riverward agricultural fields are not available. Old borrow sites will also be considered for use. The borrow areas will be dug as deep as possible to minimize tree clearing.

- Riverward areas which are frequently wet should be avoided because the selection of these areas may result in construction delays. If wet areas are proposed as borrow sites, drier alternate areas should also be proposed. In most cases, special restrictions may apply if borrow areas have been delineated as wetlands.

- Agricultural lands which are selected for borrow should not be planted to crop, if the crop can not be harvested before construction begins. No compensation for crop damage due to levee repair construction activities will be paid by the Government.

- Borrow will not be taken within 30 feet of the levee toe unless the borrow is taken to repair minor sidewash and/or topwash.

- No borrow will be taken within 30 feet of the high bank of the river.

- Borrow sites should be located within 1,000 feet of the repair. Borrow for minor topwash and sidewash should be within 200 feet adjacent to the levee where the damage has occurred.

- Borrow and/or construction activity should remain 150 feet away from any visible structure or building remains.

- Cultural resource surveys will be required where there are known or potential archeological sites.

- Borrow sites with known or suspected to have hazardous substance contamination will not be considered for use.

APPENDIX III

General Permit 41
and
Section 401 Water Quality Certification

PUBLIC NOTICE

Permit No. GP-41 (2007-2078)
Issue Date: March 21, 2008

US Army Corps
of Engineers
Kansas City District

STATES OF MISSOURI AND KANSAS - Including INDIAN COUNTRY
ISSUANCE OF GENERAL PERMIT (GP) 41
FLOOD RECOVERY AND REPAIR ACTIVITIES

The U.S. Army Corps of Engineers, Kansas City District **HAS ISSUED** GP-41 (copy enclosed) for protection and repair of existing flood damaged structures, damaged land areas and damaged fills, under authority of Section 10 of the Rivers and Harbors Act of 1988 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

Duration of this General Permit: This GP is issued and is in effect for five (5) years, from March 21, 2008 until March 21, 2013, unless revoked or specifically extended.

Notification Procedures (Post and Preconstruction): Preconstruction notification is required by the General Public for all activities involving obtaining borrow from forested wetlands, borrowing material from potential migratory bird nesting areas, clearing trees along stream channels, working in areas with known exotic species, and/or if the proposed repair activity includes restoration of a stream channel back to the original, pre-flood location. Other authorized activities that meet the terms and limits of this GP may proceed without preconstruction notification to the Corps of Engineers. However, post construction reporting is required for all activities undertaken under this GP. See GP Special condition "d" and Appendix I for more information on notification requirements.

APPLICANT: General Public

PROJECT LOCATION: In waters of the United States in the States of Missouri and Kansas, including Indian Country within Kansas boundaries that are declared flood disaster areas by the Governor of either state and/or the President of the United States of America.

AUTHORITY: Section 10 of the Rivers and Harbors Act of 1988 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

ACTIVITY: Excavation or placement of fill material for protection and/or repair of existing flood damaged structures, damaged land areas and/or damaged fills as follows: a. Repair of levees to existing elevations and cross-section, including breach closures and borrow operations, b. Bridge embankment protection (armoring) and/or repair, c. Repair of pre-existing highway or railroad embankments and the addition or repair of stone (armoring) protection, d. Repair of pre-existing utility protection structures, e. Placement of rock and/or earth materials for stream/ditch bank protection and/or stream/ditch bank restoration, f. Drainage channel/ditch restoration to

pre-flood capacity and flow line unless the flow line must be altered due to other damage associated with the flood event, g. Restoration of creek channels to pre-flooding alignment and capacity, and h. Construction of temporary roads and temporary fills to facilitate the completion of any of the listed activities.

Note: Maintenance of existing flood damaged structures and/or flood damaged fills, which have been previously authorized, may be authorized by Nationwide Permit No. 3 or exempted by Part 323.4 of Federal regulations 33 CFR 320-331. The repair of uplands damaged by storms, floods or other discrete events may be authorized by Nationwide Permit No. 45 upon notification and review by the appropriate Corps of Engineers District, Regulatory Branch.

INDIAN COUNTRY: Work under this permit is not authorized in Indian Country until the applicant obtains individual Section 401 Water Quality Certification from the U.S. Environmental Protection Agency (EPA), Region VII, Watershed Planning and Implementation Branch, 901 North 5th Street, Kansas City, Kansas 66101 (913-551-7003).

EPA may issue programmatic water quality certification during the authorization period of this permit which ends December 31, 2013. If issued, the Corps of Engineers will announce by public notice and post that certification to the Regulatory Program webpage: http://www.nwk.usace.army.mil/regulatory/regulatory.htm.

SECTION 401 WATER QUALITY CERTIFICATION: Conditions of any individual or programmatic Section 401 Water Quality Certifications issued by the Missouri Department of Natural Resources (MDNR - for Missouri), Kansas Department of Health and Environment (KDHE - for Kansas), and EPA (for Indian Country) are conditions of this GP. General Condition 5 of the GP states: "If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit."

ADDITIONAL INFORMATION: Additional information about this general permit may be obtained by contacting Mr. Douglas R. Berka, Regulatory Project Manager, Kansas City District Regulatory Branch (ATTN: OD-R) 700 Federal Building, Kansas City, Missouri 64106, at 816-389-3657 or via email at Douglas.R.Berka@usace.army.mil. All inquiries concerning this public notice should be directed to the above address.

Enclosure

DEPARTMENT OF THE ARMY PERMIT

Permittee General Public

Permit No. NWK GP-41

Issuing Office U.S. Army Corps of Engineers, Kansas City District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To excavate or place fill material for protection and/or repair of existing flood damaged structures, damaged land areas and/or damaged fills as follows:

a. Repair of levees to existing elevations and cross-section, including breach closures and borrow operations
b. Bridge embankment protection (armoring) and/or repair
c. Repair of pre-existing highway or railroad embankments and the addition or repair of stone (armoring) protection
d. Repair of pre-existing utility protection structures
e. Placement of rock and/or earth materials for stream/ditch bank protection and/or stream/ditch bank restoration
f. Drainage channel/ditch restoration to pre-flood capacity and flow line unless the flow line must be altered due to other damage associated with the flood event
g. Restoration of creek channels to pre-flooding alignment and capacity
h. Construction of temporary roads and temporary fills to facilitate the completion of any of the listed activities

Note: Maintenance of existing flood damaged structures and/or flood damaged fills, which have been previously authorized, may be authorized by Nationwide Permit No. 3 or exempted by Part 323.4 of Federal regulations 33 CFR 320-331. The repair of uplands damaged by storms, floods or other discrete events may be authorized by Nationwide Permit No. 45 upon notification and review by the appropriate Corps of Engineers District, Regulatory Branch.

Project Location: In Waters of the United States, (rivers, lakes, streams, and wetlands) within the State of Kansas, including Indian Country, and within the State of Missouri that are declared flood disaster areas by the Governor of either state and/or the President of the United States.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2013. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

See continuation sheets, pages 4, 5, and 6 of this document.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(x) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(x) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorization required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

General Public – Signature Not Required

_____ _____

(PERMITTEE) (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

21 March 2008

(DISTRICT COMMANDER) (DATE)
ROGER A. WILSON, JR.
BY: MARK D. FRAZIER
Chief, Regulatory Branch
Operations Division

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

(TRANSFEREE) (DATE)

Special Conditions:

a. You must sign and return the attached "Compliance Certification" after the authorized work and any required mitigation is completed. Your signature will certify that you completed the work in accordance with this permit, including the general and the special conditions, and that any required mitigation was completed in accordance with the permit conditions.

b. (**Activities occurring in navigable waters under Section 10 of the Rivers and Harbors Act of 1899 Only**) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

c. If any part of the authorized work is performed by a contractor, before starting work you must discuss the terms and conditions of this permit with the contractor; and, you must give a copy of this entire permit to the contractor.

d. You must contact the Corps of Engineers, submit application materials outlined in Appendix I, and you must submit a mitigation plan prior to completing any flood recovery/repair activity when the repair involves obtaining borrow from forested wetland, borrowing material from potential migratory bird nesting areas, clearing trees along stream channels, working in areas with known exotic species, and/or if the proposed repair activity includes restoration of a stream channel back to the original, pre-flood location. All other flood repair activities, including all repairs supervised by the Corps of Engineers, pursuant to Public Law 84-99 and/or all repairs supervised by the United States Department of Agriculture, pursuant to the Emergency Watershed Protection Program or to the Emergency Conservation Program can be completed without pre-construction notification to the Corps of Engineers. However, all completed flood repair work, authorized by this permit, must be reported to the Corps of Engineers, Regulatory Branch, within 60 days of completing the project. The report must include the location of the work, as-built drawings of the structure(s) and/or fill(s), and a discussion of the avoidance and minimization measures incorporated into the project and mitigation measures employed.

e. You must NOT dredge or excavate from the Missouri River or from the Kansas River in order to obtain borrow material for any flood repair project authorized by this permit.

f. You must employ measures to prevent spilled fuels, lubricants, excessive suspended solids including dredged material, and/or wet concrete from entering the waters of the United States and formulate a contingency plan to be effective in the event of a spill.

g. You must use clean, uncontaminated materials for fill in order to minimize excessive turbidity by leaching of fines, as well as to preclude the entrance of deleterious and/or toxic materials into the waters of the United States by natural runoff or by leaching. Use of small aggregate material less than 20 lbs per aggregate, such as creek gravel, for stabilization and erosion control is prohibited.

h. You must excavate or fill in the watercourse so as to minimize increases in suspended solids and turbidity which may degrade water quality and damage aquatic life outside the immediate area of operation. Activities should be conducted during low water periods and outside major spawning season for fish, unless a waiver is obtained from the Corps of Engineers. Crossings of waterways and use of construction machinery in waterways should be limited to the minimum extent necessary.

i. You must immediately remove and properly dispose of all debris during every phase of the project in order to prevent the accumulation of unsightly, deleterious and/or toxic materials in or near the water body. All construction debris must be disposed of in an upland site, outside the floodplain, and in such a manner that it cannot enter into a waterway or into a wetland.

j. You must store all construction materials, equipment, and/or petroleum products, when not in use, above anticipated high water levels.

Special Conditions (continued):

k. You must restrict the clearing of timber and other vegetation to the absolute minimum required to accomplish the work. You must avoid the removal of mature trees to prevent potential impacts to bald eagle roost sites. Work should be limited to one side of the channel only. However, work from both sides of the channel is permitted if it is demonstrated that it results in minimizing tree clearing. Vegetated riparian buffer areas should be included along both sides of any channel restoration projects. All wooded areas cleared for site access must be allowed to return to forested habitat. Mitigation may be required for other timber clearing.

l. Upon completion of earthwork operations, you must seed, replant or otherwise protect from erosion all fills in the water or on shore, and other areas on shore disturbed during construction. If seeding does not successfully stabilize the disturbed soil areas by the end of the first growing season, you must implement alternate measures, such as placing riprap, slope terracing with untreated railroad ties, gabions or concrete blocks, or additional vegetative plantings, to protect the disturbed areas from further erosion. Clearing, grading, and replanting should be planned and timed so that only the smallest area is in a bare soil condition. You must contact the Corps of Engineers prior to beginning work on any additional erosion control measures so that we can determine if additional authorization is required.

m. You must dispose of excess concrete and wash water from concrete trucks and other concrete mixing equipment in an upland area above the ordinary high water mark and at a location where the concrete and wash water cannot enter the water body or an adjacent wetland area.

n. You must not dispose of any construction debris or waste materials below the ordinary high water mark of any water body, in a wetland area, or at any location where the materials could be introduced into the water body or an adjacent wetland as a result of runoff, flooding, wind, or other natural forces.

o. You must use only graded rock, quarry-run rock and/or clean concrete rubble for riprap. The material must be reasonably well graded, consisting of pieces varying in size from 20 pounds up to and including at least 150 pound pieces. Generally, the maximum weight of any piece should not be more than 500 pounds. Gravel and dirt should not exceed 15% of the total fill volume. If you use concrete rubble, you must break all large slabs to conform to the well graded requirement, and remove all exposed reinforcement rods, trash, asphalt, and other extraneous materials before you place the rubble in the waters of the United States. Size and gradation requirements can be changed provided approval is received from the Corps' Regulatory Branch prior to placement.

p. You must completely remove all temporary fills, including sand bags (to the extent practicable), in the Waters of the United States within 30 days of the end of the flood emergency and disposed of in accordance with special condition "h" above, unless the temporary fill is to be incorporated in the final repair of the structure. If sand bags are needed for a longer duration until permanent repairs are made, you must request a waiver of this condition in writing. Temporary construction of levees to protect agricultural land in areas where no levees previously existed, are not authorized.

q. You must avoid impacts to wetlands to the fullest extent practicable. When wetlands impacts are unavoidable, borrow site selection will be based on the following order of preference: upland (non-wetland) sources, areas riverward of the levee previously used for borrow, open prior converted cropland, farmed wetlands, or other authorized excavation sites. You must mitigate for all unavoidable proposed wetland excavation or fill activities authorized by this permit. You must develop mitigation plans on a case-by-case basis which must be approved by the Corps. This permit does not authorize actions designed to drain or otherwise convert wetlands to other uses, nor actions where a practicable alternative to impacting wetlands is available unless the Corps of Engineers, in consultation with other resource agencies, determine that sediment removal from existing wetlands will restore wetland functions and create valued habitat diversity. All borrow areas should have 5:1 horizontal to vertical side slopes and the water depth should be three feet deep or less under normal circumstances.

r. You must place all fills and structures such that they do not result in stream channel constriction or in redirection of flows in such a way as to cause upstream or downstream erosion. Channelization projects or shortening of waterways, other than restoration of creek channels to pre-flood alignment, are not authorized.

s. You must not undertake actions that are likely to jeopardize the existence of a threatened or endangered species or a species proposed for such designation as defined in the Federal Endangered Species Act, nor actions which are likely to destroy or adversely modify the critical habitat of such species. If the project requires the removal of mature trees along stream channels or from forested wetland you must contact the Corps of Engineers prior to any tree clearing activity.

Special Conditions (continued):

t. You must avoid activity in the proximity of a property listed in or eligible for listing in the National Register of Historic Places unless, after coordination with the State Historic Preservation Office of the affected state and/or the Advisory Council on Historic Preservation, a determination of "no effect" or "no adverse effect" is made in accordance with criteria established by 36 CFR 800. If an inadvertent discovery of any cultural or archaeological resource occurs you must immediately contact this office and you should suspend work in the area until a determination of eligibility for listing on the National Register of Historic Places is completed and any necessary consultation under Section 106 of the National Historic Preservation Act is completed.

u. You must not undertake any activity that results in a new structure or replacement of a previously authorized structure with an increase in scope or design of the original structure. Small changes that do not affect elevations, such as the reconstruction of a levee around a scour hole at pre-existing elevations, and that do not convert wetland to upland (non-wetland) or a different wetland use beyond what is unavoidable such as to go around a scour hole, may be authorized upon notification to the Corps. Levee breach repairs constructed on new alignments must be setback farther from the stream channel than the original alignment.

v. You must contact the Missouri Department of Natural Resources, Water Pollution Control Program, P.O. Box 176, Jefferson City, Missouri 65102-0176, or the Kansas Department of Health and Environment, Bureau of Water, Curtis State Office Building, 1000 Southwest Jackson, Topeka, Kansas 66612, in order to determine the need for a state permit for land disturbance, return water, or other activities that normally require such permits. Use of GP-41 shall not be construed or interpreted to imply the requirements for other permits are replaced or superseded. Any national pollutant discharge elimination system (NPDES) permits, general permits for land disturbance, or other requirements shall be complied with.

w. You must notify the Corps of Engineers if one of the following common exotic species occurs in the project area. The zebra mussel *(Dreissena polymorpha)*, Eurasian watermilfoil *(Myriophyllum spicatum)*, purple loosestrife *(Lythrum salicaria)*, Johnson grass *(Sorghum halepense)*, sericia lespedeza *(Lespedeza cuneata)*, salt cedar *(Tamarix spp.)*, and reed canary grass *(Phalaris arundinacea)*. You must take appropriate actions to insure the prevention of the spread of any exotic species. The following best management practice can help prevent the spread of these species. Equipment brought on the project site should be washed to remove dirt, seeds and plant parts. If the equipment has been used in a body of water in the last 30 days it can be washed at a commercial car wash or dried for five or more days before using the equipment in another body of water. In addition, before transporting equipment from the project site visible water, mud, plants and animals should be removed. Waters that the zebra mussel is known to inhabit in Kansas and in Missouri can be found at the following website: http://nas.er.usgs.gov/queries/zmbyst.asp

x. For activities occurring in Indian Country, you must request and obtain individual Section 401 Water Quality Certification from the Environmental Protection Agency (EPA). You may contact the EPA by writing US EPA, Region 7 Tribal Coordinator, 901 North 5th Street, Kansas City, Kansas 66101, or by calling (913) 551-7498. You must receive Section 401 Water Quality Certification, and comply with the conditions of that certification, during performance of any work under this permit. Should EPA issue programmatic certification for this GP during the term of the GP, the Corps will issue a supplemental public notice and General Condition 5 of the permit applies.

APPENDIX I

Criteria for Authorization by General Permit NWKGP-41

1. This general permit authorizes activities proposed by the general public, railroads, transportation departments, pipeline and utility companies, and government agencies.

2. If you propose to work under the authority of this General Permit and the project requires preconstruction notification as outlined in special condition "d" of the permit, you must notify the appropriate Corps of Engineers district within 18 months of the end of the flood emergency (when the nearest river gauge drops below flood stage for two months), and receive authorization prior to starting work in the Corps jurisdiction. You must submit the following information:

a. A completed application form ENG 4345 or a letter which includes all information required by form ENG 4345. The ENG 4345 is available at: www.nwk.usace.army.mil/regulatory/regulatory.htm

b. You must clearly describe the proposed work so we can clearly and readily determine whether or not the proposed work complies with the General Permit.

c. The flood repair activities must be in counties declared disaster areas by the Governor of the State of Kansas, the Governor of the State of Missouri and/or the President of the United States.

d. An 8 1/2" x 11" drawing(s) showing the details of the proposed work.

e. An 8 1/2" x 11" map with the location of the proposed project clearly marked, including the Section, Township, and Range or the Latitude and Longitude location (decidegrees).

f. Discussion of possible alternatives and why they were not selected.

g. Also, as project proponent, you must send copies concurrently to the following addresses, but we will not necessarily solicit comments from these agencies. We will give these agencies an opportunity to request that we take discretionary authority to require that you apply for an individual permit, if a potential significant problem is identified.

1. For projects in Missouri contact:

U.S. Fish and Wildlife Service
Columbia Field Office
101 Park DeVille Drive, Suite A
Columbia, Missouri 65203
(573) 234-2132

U.S. Environmental Protection Agency
Watershed Planning and Implementation Branch
901 North Fifth Street
Kansas City, Kansas 66101.
(913) 551-7003

Missouri Department of Natural Resources
Water Pollution Control Branch
P.O. Box 176
Jefferson City, Missouri 65102
1-800-361-4827 or (573) 751-1300

Missouri Department of Natural Resources
Historic Preservation Program
P.O. Box 176
Jefferson City, Missouri 65102
(573) 751-7958

APPENDIX I (continued)

Missouri Department of Conservation
Policy Coordination
P.O. Box 180
Jefferson City, Missouri 65102-0180
(573) 522- 5115

* Federal Emergency Management Agency
Region VII
9221 Ward Parkway, Suite 300
Kansas City, Missouri 64114-3372
(816) 283-7063

2. For projects in Kansas contact:

U.S. Fish and Wildlife Service
Manhattan Field Office
2609 Anderson Avenue
Manhattan, Kansas 66502
(785) 539-3474

Kansas Department of Health and Environment
Bureau of Water
Curtis State Office Building
1000 Southwest Jackson Street
Topeka, Kansas 66612
(785) 296-1500

Kansas Department of Wildlife and Parks
512 Southeast 25th Avenue
Pratt, Kansas 67124
(620) 672-5911

* Federal Emergency Management Agency
Region VII
9221 Ward Parkway, Suite 300
Kansas City, Missouri 64114-3372
(816) 283-7063

* You must contact FEMA for all proposed development located in the 100-year floodplain of a National Flood Insurance Program (NFIP) participating community in order to comply with local floodplain management regulations and secure a floodplain development permit from that community.

3. For projects not requiring pre-construction notification, a report of the completed repair activities must be submitted that includes the location of the work, as-built drawings of the structure(s) and/or fill(s), and a discussion of the avoidance and minimization measures incorporated into the project and mitigation measures employed.

4. We may reevaluate the cumulative impacts of this general permit at our discretion at any time. We will reevaluate cumulative impacts at least every five (5) years.

5. The following is a list of flood damaged structures, damaged land areas and/or damaged fills authorized to be repaired under this general permit:

a. Repair of levees to existing elevations, including breach closures and borrow operations

b. Bridge embankment protection (armoring) or repair

c. Repair of pre-existing highway and/or railroad embankments and armor protection

d. Repair of pre-existing utility protection structures

e. Placement of rock and/or earth materials for emergency bank protection or restoration

f. Drainage ditch restoration to pre-flood capacity and flow line unless the flow line must be altered due to other damage associated with the flood event

g. Restoration of creek channels to pre-flooding alignment, capacity and flow line

h. Construction of temporary haul roads to facilitate any of the above listed activities

6. The District Engineer may require an individual permit on a case-by-case basis for any activity authorized herein.

7. You must complete the authorized work within the five year issuance period of the GP. If you need additional time to complete repairs or if flood damage occurs within the last year of the GP applicants must contact the appropriate Corps District for an extension of the authorization to complete the needed work. Contact should be made at least one month in advance of the GP expiration date.

8. Flood repair activities, supervised by the U. S. Army Corps of Engineers, pursuant to Public Law 84-99, and/or supervised by the United States Department of Agriculture, pursuant to the Emergency Watershed Protection Program or the Emergency Conservation Program, do not require notification to the Corps of Engineers, Regulatory Branch. It is the responsibility of these federal agencies to comply with all environmental laws and Presidential Executive Orders.

COMPLIANCE CERTIFICATION

Special condition "a" of this permit document requires that you submit a signed certification regarding the completed work and any required mitigation. This certification page satisfies this condition if it is provided to the Kansas City District at the address shown at the bottom of this page upon completion of the project.

APPLICATION NUMBER: General Permit No. 41 (NWK 2007-02078)

APPLICANT (Enter name and mailing address):

PROJECT LOCATION (Enter latitude & longitude (decidegrees) or Section, Township and Range, County, State):

a. I certify that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions.

b. I certify that any required mitigation was completed in accordance with the permit conditions.

c. Your signature below, as permittee, indicates that you have completed the authorized project as certified in paragraphs a and b above.

_____ _____

(PERMITTEE) (DATE)

Return this certification to:

U.S. Army Corps of Engineers
700 Federal Building
601 East 12th Street
Kansas City, MO 64106-2896
ATTN: OD-R

KANSAS

Kathleen Sebelius, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

Division of Environment

January 31, 2008

Mr. Douglas R. Berka
U.S. Army Corps of Engineers
Kansas City Field Office; 700 Federal Building
601 East 12th Street
Kansas City, Missouri 64106-2896

Section 401 Water Quality Certification

RE: (2007-0078) PROPOSED REGIONAL GENERAL PERMIT NO. 41 FOR EXCAVATION OR PLACEMENT OF FILL MATERIAL FOR THE PERMANENT PROTECTION AND/OR REPAIR OF FLOOD DAMAGED STRUCTURES, DAMAGED LAND AREAS AND/OR DAMAGED FILLS IN THE STATES OF KANSAS AND MISSOURI. PERMITTEES: General Public, Railroads, Transportation Departments, Pipeline and Utility Companies and Government Agencies

Dear Mr. Berka:

The Kansas Department of Health and Environment has received your request for Section 401 Water Quality Certification. The KDHE has determined the project has the following water pollutant discharge sources:

a. Repair of levees to existing elevations and cross-section, including breach closures and borrow operations

b. Bridge embankment protection (armoring) or repair

c. Repair of pre-existing highway or railroad embankments and the addition or repair of stone (armoring) protection

d. Repair of pre-existing utility protection structures

e. Placement of rock and/or earth materials for stream/ditch bank protection and/or stream/ditch bank restoration

f. Drainage ditch restoration to pre-flood capacity and flow line unless the flow line must be altered due to other damage associated with the flood event

g. Restoration of creek channels to pre-flooding alignment and capacity

h. Construction of temporary haul roads to facilitate the completion of any of the listed activities

Discharges from these sources if not minimized or otherwise controlled may cause violations of the provisions of Kansas Water Quality Standards found at KAR 28-16-28 et seq.

Pursuant to Section 401and KAR 28-16-28(c) the Kansas Department of Health and Environment finds this project will not result in a violation of Kansas Water Quality Standards and herewith issues a Water Quality Certification for execution and subsequent operation of the project subject to the following conditions:

I. **Limitations of this Certification:** All Section 404 activities within the borders of Indian owned and operated lands are not covered by this certification. Individuals proposing projects which impact those waters are responsible for contacting the appropriate individual at the following numbers:

Prairie Band Pottawatomie Indians, Planning Department, 785/966-2946

Kickapoo Tribe in Kansas, Environmental Office, 785/486-2601

Iowa of Tribe of Kansas and Nebraska, 785/595-3258

Sac and Fox Tribe of Missouri, 785/742-4707

Environmental Protection Agency Region VII Indian Lands Contact, 913/551-7498

II.

General Conditions

1. **Certification Retention:** The applicant shall retain this water quality certification on the project site through the duration of the project to accommodate inspection.

2. **Kansas Water Pollution Control General Permit for Stormwater Runoff from Construction Activities**: This certification does not relieve the applicant of the responsibility to determine if the project is subject to the requirements of **General NPDES Permit** and to secure such permit as necessary. Questions and inquiries may be directed to:

Mr. Larry Hook
Kansas Department of Health and Environment
Bureau of Water Industrial Program Section
1000 SW Jackson Street, Suite 420
Topeka, Kansas 66612-1367
Phone 785/296-5549; FAX:785/296-5509
www.kdheks.gov/stormwater

3. **Project Water Quality Protection Plan:** Any person wishing to use a Section 404 GP 41 Permit shall prepare and follow a written project water quality protection plan (PWQPP.) The PWQPP shall identify components of the permitted activity (i.e. solid waste handling, fuel storage and leaks, sediment from construction etc.) which may or will result in the discharge of pollutants to waters of the state. For each component which may discharge pollutants to waters of the state, the plan shall set out the physical, structural and management measures to be implemented to prevent or minimize the discharge of pollutants to waters of the state. (Activities requiring a construction stormwater permit, as described above, also require a stormwater pollution prevention plan which will serve as the PWQPP.)

The permittee is required to submit the PWQPP to KDHE only if the project impacts Outstanding National Resource, Exceptional State or Special Aquatic Life Use Waters per condition #4 below.

4 **Outstanding National Resource Waters, Exceptional State and Special Aquatic Life Support Use Waters:** In the event the permitted activity occurs in or within one half (2) mile of an Outstanding National Resource Water as defined pursuant to **K.A.R. 28-16-28b(pp)** and **K.A.R. 28-16-28c(a)B(3)**, an Exceptional State Water pursuant to **K.A.R. 28-16-28b(y)** and **K.A.R. 28-16-28c(a)B(2)**, or a Special Aquatic Life Support Use Water designated pursuant to **K.A.R. 28-16-28d(b)(2)(A), the person responsible for initiating the activity shall submit a copy of the PWQPP to:**

Kansas Department of Health and Environment
Bureau of Water - Watershed Management Section
1000 SW Jackson Street, Suite 420
Topeka, Kansas 66612-1367
nps@kdhe.state.ks.us

A table and state map of **Outstanding National Resource Waters, Exceptional State and Special Aquatic Life Support Use Waters** can be found at: http://www.kdheks.gov/nps/resources/specwaterinfo.pdf .

The permittee should also be aware of the following Kansas water quality protection regulations associated with special waters:

K.A.R. 28-16-28c(a)B(2)-AWherever state surface waters constitute exceptional state waters, discharges shall be allowed only if existing uses and existing water quality are maintained and protected.@

K.A.R. 28-16-28c(a)B(3)-AWherever state surface waters constitute an outstanding national resource water existing uses and existing water quality shall be maintained and protected. New or expanded discharges shall not be allowed into outstanding national resource waters.@

5. **Solid Waste Disposal:** All solid waste materials produced during the execution of the project shall be disposed in accordance with the provisions of Kansas Solid Waste Management Statutes and regulations and applicable local regulations. Direct inquiries to:

KDHE, Bureau of Waste Management
1000 SW Jackson Street, Suite 320
Topeka, Kansas 66612-1366
Phone: 785/296-1600; FAX: 785/296-1592
www.kdhe.state.ks.us/waste/index.html

6. **Equipment Staging Areas and Project Closure:** Upon completion of the project, disturbed areas shall be expeditiously stabilized with temporary and permanent vegetation, bio-artificial ground cover or other appropriate non-polluting material. Fertilizer application to establish and maintain vegetation shall be done in a manner that will not contribute to the current nutrient load to any of the surface waters impacted by the project. The person responsible for the permitted activity shall monitor and maintain cover materials until such time as the site is stabilized. Project closure procedures shall be documented in the Project Water Quality Protection Plan per condition No. II. 3.

7. **Riparian Areas:** Minimize removal or disturbance of riparian areas (areas adjacent to water bodies). KDHE encourages the use of vegetation consistent with adjoining vegetation materials to minimize impacts from improper handling of fertilizers and pesticides.

8. **Discharge of Floatable Materials:** Pursuant to K.A.R. 28-16-28b (uu)(1), (3) and (4), the person responsible for executing the permitted activity shall assure good house keeping is practiced at the site to minimize the discharge of floatable materials such as personal refuse including food containers, packing materials, and other litter. Appropriate measures shall be taken to capture and/or recover any floatable materials discharged to waters of the state originating with the permitted project.

9. **Fuel, Chemical and Materials Storage:** Fuel, chemical and other materials stored at the project site shall be stored in a manner that minimizes the discharge of product to waters of the state. Spill minimization and prevention measures and procedures shall be documented in the Water Quality Protection Plan.

10. **Spill Response and Reporting:**

    1.) **Spill response and cleanup:** In the event a spill of fuel, chemical or other water quality degrading materials stored or transported on the site occurs, the permittee shall or with the assistance of professional response personnel, expeditiously control or contain the spill and initiate clean up procedures. The applicant shall immediately contact 911. Spill response and cleanup actions shall be documented in the PWQPP. The applicant should also contact the appropriate Kansas Department of Health and Environment **www.kdhegov/befs/#districts or look in your local phone directory**) to confirm cleanup activities. Finally, KDHE strongly encourages the permittee to establish and post a sign that includes phone contact numbers for the appropriate local emergency response unit, KDHE district office, and the project manager/owner.

    2.) **Reporting:** The Kansas Department of Health and Environment shall be notified of all fuel spills or unauthorized discharge of pollutants immediately. Contact KDHE at 785/296-1679, anytime for spill reporting requirements. The Kansas Adjutant Generals Office should also be contacted (785/296-8013) as well as the National Spill Response Center (1-800-424-8802).

11. **Drinking Water Intakes:** The person responsible for the permitted activity shall avoid adverse impacts on public water supplies. Whenever permitted activities occur within one mile upstream of a public drinking water supply - surface water intake, the applicant shall contact the official in charge of the public drinking water supply to apprize the drinking water supply official of the permitted activity. The person responsible for the permitted activity shall consider the suggestions and recommendations of the public water supply official when preparing the PWQPP.

12. **Treated Wastewater Effluent Mixing Zones:** As a general guideline any Section 404 activity within one-half (2) mile upstream or one-half (2) mile downstream of a permitted wastewater effluent discharge may impact the effluent mixing zone. The person responsible for the permitted activity shall determine if the project will adversely impact the wastewater effluent mixing zones and take appropriate measures to avoid altering or changing the mixing zone. This may include but is not limited to:

1) The construction or placement of a recreation oriented facility or structure (i.e. boat ramp, walkway) which may require modification of the beneficial use designation to accommodate contact or non-contact recreation, thereby increasing the effluent limitations for the permit.

2) Any activity which may alter or remove the stream channel geometry or natural oxygenation abilities of the stream such as bridge construction, channelization, stream channel substrate modification etc.

The person responsible for the permitted Section 404 activity shall advise and describe to the waste water discharge permittee and KDHE any potential mixing zone impacts and the measures the person responsible for the Section 404 activity will take to minimize adverse impacts on the mixing zone. Inquiries should be directed to:

Kansas Department of Health and Environment
Bureau of Water - Municipal Programs Section
1000 SW Jackson Street, Suite 420
Topeka, Kansas 66612-1367
Phone: 785/296-5527; FAX: 785/296-5509

13. **Total Maximum Daily Load:** Any Section 404 activity within a watershed with a Total Maximum Daily Load (the amount of pollution a water body can receive and maintain its designated uses: see http://www.kdheks.gov/tmdl/index.htm) is strongly encouraged to contact the assigned KDHE watershed field coordinator. A service area map for the three watershed field coordinators is attached (see www.kdheks.gov/nps) once construction is started.

III. Special Conditions for Specific Nationwide Permits

1. **Outfall Structures and Maintenance (construction):**
Controls shall be in place to stabilize all areas of the bed and bank around the pipe or adjacent to the outfall structure and associated intake structures that may be affected by outfall or stream flows, respectively.

2. **Maintenance; Utility Line Activities; and -Minor Discharges (pipelines included):**
Hydrostatic tests for pipeline activities shall be approved prior to discharge of water used for the test. Please contact:

Kansas Department of Health and Environment
Bureau of Water - Industrial Program Section
1000 SW Jackson Street, Suite 420
Topeka, Kansas 66612-1367
Phone 785/296-5553; FAX: 785/296-5509

3. **Aquatic Habitat, Restoration, Establishment and Enhancement Activities and Stormwater Management Facilities):** Measures shall be implemented to assure impounded waters, created by activities within the framework of these permits, avoid becoming public health threats, nuisances, generate complaints, and potentially discharge degraded water. The applicant shall prepare and implement an Operations and Maintenance Plan for Facilities and Landscapes (O&M), which at the minimum incorporate the following:

   A. Identify individual and public property owners and their potential for being the source of nonpoint source pollution. This could include but is not limited to: commercial grounds, streets, right-of-ways, parking areas, conservation easement and **proposed** mitigation areas etc.

   B. For each property as described in item A. above, water quality protection measures for each category of artificial source of pollution identified. The identified water quality protection measure for each category of artificial source of pollution shall be designed to ***reduce to the maximum extent practicable, the level of pollution resulting from identified pollutant sources***. Identified water quality protection quality protection measures shall be at least as effective as those set out by the Kansas Nonpoint Source Pollution Management Plan (http://www.kdheks.gov/nps/resources/2000update.pdf), prepared and maintained by the Kansas Department of Health and Environment.

   C. Strategies to assure implementation of the water quality protection measures identified under item II. 3-10 which may include but are not limited to prohibition or restriction of activities, utilization of alternative technologies or products, information and education, financial assistance, technical assistance, enforcement and penalties. Additionally, an in-house reporting form used by staff to document degraded property conditions potentially impacting the property and needs to address them should be developed, if applicable.

   D. Organizations and individuals responsible for assuring implementation of the identified water quality protection measures.

IV. Enforcement and Penalties

This certification does not relieve the applicant of the responsibility for any discharge to waters of the state or allow for any inappropriate discharge to occur. As provided for by K.S.A. 65-171(f), failure to comply with the conditions of this certification may subject the responsible party to fines of $10,000 per violation with each day the violation occurs constituting a separate violation.

V. Variance

If the applicant believes the conditions of this certification will result in impairment of important widespread social and economic development, the applicant is advised of the variance provisions of KAR 28-16-28b(lll) and KAR 28-16-28f(e).

VI. Additional Information

The KDHE website contains the following information to assist the applicant in preparing a project water quality protection plan:

*Construction practices: http://www.dnr.mo.gov/env/wpp/wpcp-guide.htm

*Project Water Quality Protection Plan Form and Instructions:
http://www.kdheks.gov/nps/resources/nwpwqppfrm.doc or
http://www.kdheks.gov/nps/resources/nwpwqppfrm.pdf

*Kansas Surface Water Register:
http://www.kdheks.gov/befs/download/Current_Kansas_Water_Register.pdf

*Kansas Surface Water Maps:
http://www.kdheks.gov/befs/download/2006_Surface_Water_Register_Maps.pdf

Surface Water Quality Standards- http://www.kdheks.gov/water/28_16_28b_g.pdf

*KDHE District Offices- http://www.kdheks.gov/directions/index.html

The Kansas Department of Health and Environment, Bureau of Water-Watershed Management Section at: 785/296-4195 or FAX 785/296-5509. This information can also be obtained by written communication directed to:

Kansas Department of Health and Environment
Bureau of Water - Watershed Management Section
1000 SW Jackson Street, Suite 420
Topeka, Kansas 66612-1367 or email: **nps@kdhe.state.ks.us**

STATE OF MISSOURI
Matt Blunt, Governor • Doyle Childers, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

APR 7 2008

Colonel Roger A. Wilson, Jr.
U.S. Army Corps of Engineers
Kansas City District
601 E. 12th Street, Suite 700
700 Federal Building
Kansas City, MO 64106-2896

GP-41 Statewide
NWKGP-41/PN07-2078/CEK004650
Revision

RE: GP 41, All Districts

Dear Colonel Wilson:

The Missouri Department of Natural Resources' Water Protection Program (department) has reviewed Public Notice General Permit (GP) 41 (PN07-588) CEK004650 in which the applicant proposes to issue regional GP-41 to authorize certain discharges of dredged or fill material in conjunction with the permanent protection and/or repair of flood damaged structures, damaged areas, and/or damaged fills in waters of the United States within the states of Missouri and Kansas.

The proposed General Permit would be applicable to all Army Corps of Engineers' Districts in Missouri (Kansas City - 2007-2078/GP-41; Little Rock - 2008-00066/GP-41, Memphis – 2007-588/GP-41; Rock Island - 2007-2061/GP-35; and St. Louis).

This is a revision of the February 25, 2008, Water Quality Certification to include all water bodies of the state. These projects are located along waterways throughout Missouri. For any water body that is listed as impaired pursuant to Section 303(d) of the Clean Water Act; if activities are located upstream of a designated outstanding state or national resource area (10 CSR 20-7.031); or if the activities are located in a designated metropolitan no-discharge stream, extreme caution shall be exercised so that the project does not impact outstanding state or national resource area or further impair 303(d) listed water bodies.

This office certifies that the proposed project will not cause the general or numeric criteria to be exceeded nor impair beneficial uses established in the Water Quality Standards, 10 CSR 20-7.031, provided the following conditions are met:

1. This general permit shall not be used for channelization or channel modification purposes.

2. Only the repair of structures due to flood damage is authorized with this permit. The construction of new structures will need additional review and issuance of a separate water quality certification.

3. Representatives from the department shall be allowed to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the letters and conditions of the permit.

4. Care shall be taken to keep machinery out of the waterway as much as possible. Fuel, oil and other petroleum products, equipment and any solid waste shall not be stored below the ordinary high water mark at any time or in the adjacent floodway beyond normal working hours. All precautions shall be taken to avoid the release of wastes or fuel to streams and other adjacent water bodies as a result of this operation.

5. Petroleum products spilled into any water body or on the banks where the material may enter waters of the state shall be immediately cleaned up and disposed of properly.

6. Only clean, nonpolluting fill shall be used. The following materials are not suitable for bank stabilization and shall not be used due to their potential to cause violations of the general criteria of the Water Quality Standards, 10 CSR 20-7.031 (A) – (H):
   a. Earthen fill, gravel, broken concrete where the material does not meet the specifications outlined below, and fragmented asphalt, since these materials are usually not substantial enough to withstand erosive flows;
   b. Concrete with exposed rebar;
   c. Tires, vehicles or vehicle bodies, construction or demolition debris are solid waste and are excluded from placement in the waters of the state;
   d. Liquid concrete, including grouted riprap, if not placed as part of an engineered structure; and
   e. Any material containing chemical pollutants (for example: creosote or pentachlorophenol).

   Recycled or broken concrete may be used provided that it is reasonably well graded, consisting of pieces varying in size from 20 pounds up to and including at least 150 pound pieces. Applicants must break all large slabs to conform to the well-graded requirement. Generally, the maximum weight of any piece shall not be more than 500 pounds. Gravel and dirt shall not exceed 15 percent of the total fill volume. All protruding reinforcement rods, trash, asphalt and other extraneous materials must be removed from the broken concrete prior to placement.

   Recycled or broken concrete being used simply as fill need not conform to the well-graded requirement. It shall, however, be free from extraneous materials and shall be placed to eliminate voids within the fill.

7. Clearing of vegetation/trees shall be the minimum necessary to accomplish the activity. A vegetated corridor shall be maintained from the high bank on either side of the jurisdictional channel to protect water quality and to provide for long-term stability of the stream channel, unless physical barriers prevent such a corridor.

8. The riparian area, banks, etc., shall be restored to a stable condition to protect water quality as soon as possible. Seeding, mulching and needed fertilization shall be within three days of final contouring. On-site inspections of these areas shall be conducted as necessary to ensure successful re-vegetation and stabilization, and to ensure that erosion and deposition of soil in waters of the state is not occurring from these projects.

9. Best Management Practices shall be used during construction and/or repair to limit the amount of sedimentation into adjacent water bodies.

10. Temporary fills shall be removed promptly and the fill site restored immediately following construction.

11. The attendant Water Quality Certification for this permit shall not be construed or interpreted to imply the requirements for other permits are replaced or superseded. Any National Pollutant Discharge Elimination System (NPDES) Permits, Land Disturbance General Permits, or other requirements shall be complied with.

12. After avoidance and minimization for projects, impacts must be compensated for. Mitigation for the loss of aquatic stream resources shall be in conformance with the *Missouri Stream Mitigation Method.* This document may be found at the following link: *www.mvs.usace.army.mil/permits/permits.asp*.

You may appeal to have the matter heard by the administrative hearing commission. To appeal, you must file a petition with the administrative hearing commission within thirty (30) days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission.

Water Quality Standards must be met during any operations authorized by these permits. If you have any questions, please contact Ms. Carrie M. Schulte of the NPDES Permits and Engineering Section by phone at (573) 751-7023, by e-mail at carrie.schulte@dnr.mo.gov, or by mail at Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65109.

Sincerely,

WATER PROTECTION PROGRAM

Robert K. Morrison, P.E., Chief
Water Pollution Control Branch

RKM:csp

c: Mr. Bill Goodwin, Missouri Department of Conservation
Mr. Doyle Brown, Missouri Department of Conservation
Ms. Janet Sternburg, Missouri Department of Conservation
Mr. Mike Smith, Missouri Department of Conservation
Mr. Stuart Miller, Missouri Department of Conservation
Mr. Doug Berka, Army Corps of Engineers, Kansas City District
Mr. Keith McMullen, Army Corps of Engineers, St. Louis District
Mr. Larry Watson, Army Corps of Engineers, Memphis District
Mr. Wayne Hannel, Army Corps of Engineers, Rock Island District
Army Corps of Engineers, Kansas City District, MO State Regulatory Office
Army Corps of Engineers, Kansas City District, Truman Satellite Office
Army Corps of Engineers, Little Rock District
Mr. Carl Stevens, U.S. Environmental Protection Agency
Mr. Rick Hansen, U.S. Fish and Wildlife Service
DNR – KCRO, SLRO, NERO, SERO, SWRO

APPENDIX IV

Cultural Resources Programmatic Agreement

Advisory
Council On
Historic
Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, KANSAS CITY DISTRICT;
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE IOWA STATE HISTORIC PRESERVATION OFFICER,
THE MISSOURI STATE HISTORIC PRESERVATION OFFICER,
THE KANSAS STATE HISTORIC PRESERVATION OFFICER,
AND THE NEBRASKA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE IMPLEMENTATION
OF THE
PUBLIC LAW 84-99 PROGRAM IN THOSE STATES

WHEREAS, the U.S. Department of the Army, Corps of Engineers, Kansas City District (Corps), proposes to administer a program of emergency repair and restoration of damaged flood control works in Iowa, Missouri, Kansas, and Nebraska as authorized by Public Law 84-99; and,

WHEREAS, the Corps has determined that the Public Law 84-99 Program (Program) may have an effect upon properties included in or eligible for inclusion in the National Register of Historic Places and has consulted with the Advisory Council on Historic Preservation (Council), the Iowa State Historic Preservation Officer, Missouri State Historic Preservation Officer, the Kansas State Historic Preservation Officer, and the Nebraska State Historic Preservation Officer pursuant to Section 800.13 of the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and,

NOW, THEREFORE, the Corps, the Council, the SHPOs agree that the Program shall be implemented in accordance with the following stipulations to satisfy the Corps' Section 106 responsibility for all individual emergency repair and restoration projects involving damaged flood control works in those states.

Stipulations

The Corps will ensure that the following measures are carried out for each emergency repair and restoration project:

1. The Corps will consult the National Register of Historic Places, the state site files in the appropriate state, and other

pertinent sources for information on historic properties in the area of potential effect, as defined in the Council's regulations at 36 CFR § 800.2(c) and shall include the levee to be repaired and sources of borrow for such repairs. Based on this information, the Corps will assess the potential for the existence of historic properties in the project's area of potential effects. An area may be considered to have low potential for historic properties if no properties are suspected within the project's area of potential effects and:

a. the area is low and so prone to flooding that it is not likely to have been used, or,
b. the area was created by modern alluvium; or,
c. the area has been extensively disturbed by modern activities to such an extent that additional disturbance will not impact any remaining historic properties.

2. If the Corps concludes that an area has a low potential for historic properties, the Corps will provide notice of its conclusion, including a brief discussion of why this conclusion was reached, to the appropriate SHPO. Unless the SHPO objects within 10 days of receipt of the notice, the Corps may proceed with the project.

3. If the Corps concludes that an area has potential to contain historic properties, or such properties are known within the project's area of potential effects, the Corps will conduct an archaeological investigation to identify historic properties. The survey will be conducted by, or under the direct supervision of, an archeologist meeting the "Secretary of the Interior's Professional Qualifications Standards" (48 FR 44738-39). The survey will be conducted in a manner consistent with the "Secretary of the Interior's Standards and Guidelines for Identification" (48 FR 44720-23) and take into account NPS publication, "The Archeological Survey: Methods and Uses" (1978: GPO stock # 024-016-00091). If the Corps determines that identified properties are not eligible for the National Register, the Corps will provide notification of its determination to the appropriate SHPO. If the SHPO does not object within 5 days of receipt of the notice, the Corps may proceed with the project. If no properties are discovered, the Corps may proceed with the project.

4. If the Corps identifies a property that may be eligible, or if the SHPO objects to the Corps determination pursuant to Stipulation 3, the Corps will evaluate the property against the National Register Criteria (36 CFR Part 60.4) and will request the SHPO's comments within 5 days of receipt of the evaluation.

5. If a property is determined eligible, the Corps will attempt to relocate the project to avoid affecting the property.

6. If the Corps cannot avoid a historic property, and the property is not a mound, and is not likely to contain human remains or to be a grave or cemetery, then the Corps will develop a data recovery plan. The plan will be consistent with the Secretary of the Interior's "Standards and Guidelines for Archeological Documentation" (48 FR 44734-37) and take into account the Council's publication, "Treatment of Archeological Properties" (Advisory Council on Historic Preservation, 1980), subject to any revisions the Council may make. It shall specify, at a minimum:

o the property, properties, or portions of properties where data recovery is to be carried out;

o any property, properties, or portions of properties that will be destroyed without data recovery;

o the research questions to be addressed through the data recovery, with an explanation of their relevance and importance;

o the methods to be used, with an explanation of their relevance to the research questions;

o the methods to be used in analysis, data management, and dissemination of data, including a schedule;

o the proposed disposition of recovered materials and records; and,

o proposed methods for disseminating results of the work to the interested public.

7. The data recovery plan will be submitted by the Corps to the appropriate SHPO for 15 days review. Unless the SHPO objects within 15 days after receipt of the plan, the Corps will ensure that the plan is implemented.

8. The Corps will ensure that a final report resulting from the data recovery will be provided, within a time agreed upon by the Corps and the appropriate SHPO, to the SHPO for review. The report will be consistent with contemporary professional standards, and the Department of the Interior's "Format Standards for Final Reports of Data Recovery Program" (42 FR 5377-79).

9. If the historic property is located on federal, or tribal, land, and is likely to contain human remains, grave-associated goods, or items of cultural patrimony, the Corps will make every attempt to avoid the historic property. If the property cannot be avoided, the Corps will comply with the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA). If the historic property is located on non-federal or non-tribal land, and the Corps cannot avoid the historic property, the Corps

shall comply with the state burial laws as applicable. Proposed plans developed by the Corps, in compliance with either NAGPRA or a state burial law, will be fully coordinated with the Council and the appropriate SHPO pursuant to 36 CFR Section 800.5(e).

10. Once a year, and within four (4) months following the end of the Fiscal Year, the Corps will provide each SHPO with a report documenting all activities carried out in the appropriate state pursuant to this Programmatic Agreement to determine if revisions to the Programmatic Agreement are needed. The Corps will also provide the Council with informational copies of these reports. If revisions to the Programmatic Agreement are needed in a particular state, the Corps, the Council, and the appropriate SHPO will consult in accordance with 36 CFR Section 800 to make such revisions.

11. The Council and the SHPOs may monitor activities carried out pursuant to this Programmatic Agreement, and the Council will review such activities if so requested. The Corps will cooperate with the Council and each SHPO in carrying out their monitoring and review responsibilities.

12. Should the Council or the appropriate SHPO object within the time frames provided for in this Programmatic Agreement to any plans provided for review or any proposed actions pursuant to this Programmatic Agreement, the Corps will consult with the objecting party to resolve the objection. If the Corps determines that the objection cannot be resolved, the Corps will request the further comments of the Council. Any Council comment provided in response to such a request will be taken into account by the Corps in accordance with 36 CFR Section 800.6(c)(2) with reference only to the subject of the dispute; the Corps' responsibility to carry out all actions under this Programmatic Agreement that are not the subjects of the dispute will remain unchanged.

13. The Corps, the Council, or a SHPO may terminate the Programmatic Agreement for a particular state by providing 30 days written notice to the other parties, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, the Corps will comply with 36 CFR Sections 800.4 through 800.6 with regard to individual undertakings in that state covered by this Programmatic Agreement.

14. In the event that the Corps does not carry out the terms of this Programmatic Agreement, the Corps will comply with 36 CFR Sections 800.4 through 800.6 with regard to individual undertakings covered by this Programmatic Agreement.

Execution and implementation of this Programmatic Agreement evidences that the Corps has satisfied its Section 106 responsibilities for all individual undertakings of this PL 84-99 program in Iowa, Missouri, Kansas, and Nebraska.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: Robert D. Bush Date: 8/16/93
Robert D. Bush, Executive Director

U.S. ARMY ENGINEER DISTRICT, KANSAS CITY DISTRICT

By: for COL, CE Date: 20 AUG 93
Colonel Richard H. Goring, District Engineer

IOWA STATE HISTORIC PRESERVATION OFFICER

By: David Crosson Date: 8/27/93
David Crosson, State Historic Preservation Officer

MISSOURI STATE HISTORIC PRESERVATION OFFICER

By: Claire L Blackwell Date: 24 Aug. 93
~~Claire F.~~ Blackwell, Deputy State Historic Preservation Officer

KANSAS STATE HISTORIC PRESERVATION OFFICER

By: Ramon S. Powers Date: Aug. 26, 1993
Ramon S. Powers, State Historic Preservation Officer

NEBRASKA STATE HISTORIC PRESERVATION OFFICER

By: Lawrence Sommer Date: 8/29/93
Lawrence Sommer, State Historic Preservation Officer

APPENDIX V

Tiered Environmental Assessment/FONSI Form

US Army Corps
of Engineers
Kansas City District

U.S. Army Corps of Engineers - Kansas City District

Tiered Environmental Assessment
&
Finding of No Significant Impact

PUBLIC LAW 84-99 EMERGENCY LEVEE REHABILITATION PROGRAM

PROJECT **DATE**

Tiered Environmental Assessment
&
Finding of No Significant Impact

Public Law 84-99 Emergency Levee Rehabilitation Project

Introduction

A major mission of the U.S. Army Corps of Engineers - Kansas City District is the Emergency Levee Rehabilitation Program authorized by Public Law 84-99 (33 U.S.C. 701n)), Emergency Response to Natural Disasters. This law allows the U.S. Army Corps of Engineers (USACE) to provide assistance through cooperative agreements with public sponsors to rehabilitate levees following flood events. A Programmatic Environmental Assessment was prepared for these levee rehabilitations, which concluded in a Finding of No Significant Impact (FONSI). The FONSI was signed in December 2011 for the Public Law 84-99 Emergency Levee Rehabilitation Program. The purpose of this Tiered Environmental Assessment is to verify that the proposed levee rehabilitation project fits the description and analysis of the Recommended Plan in the Programmatic Environmental Assessment and FONSI. If it does not, then a stand-alone NEPA document meeting the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code [USC] 4321 et seq.); the President's Council of Environmental Quality (CEQ) Regulations (40 Code of Federal Regulations [CFR] 1500 – 1508) (CEQ, 1992); and the U.S. Army Corps of Engineers ER 200-2-2 (33 CFR 230) (USACE, 2008) will be prepared.

Project Specific Information (To be completed by Environmental Resources Specialist)

Name of Levee Unit:

Location of Levee Unit:

Location and Description of Damages (Approximate Station Number or Nearby Landmark):

Recommended Repair:

Description of Affected Environment:

Description of any Impacts to Environmental or Cultural Resources:

Compliance with Programmatic EA and Applicable Environmental Laws
(To be completed by Environmental Resources Specialist)

NWK Programmatic EA	**Yes**	**No**
SOP for Selection of Borrow Sites	____	____
Cultural Resources Programmatic Agreement	____	____
General Permit #41 or applicable Nationwide Permit	____	____
Section 401 State Water Quality Certification	____	____
Section 402 Stormwater NPDES Permit	____	____
Federal Laws and Polices		
Clean Air Act, as amended, 42 U.S. C. 7401-7671g, et seq.	____	____
Clean Water Act (Federal Water Pollution Control Act), 33 U.S.C. 1251, et seq.	____	____
Endangered Species Act, 16 U.S.C. 1531, et seq.	____	____
Federal Water Project Recreation Act, 16 U.S.C. 4601-12, et seq.	____	____
Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq.	____	____
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	____	____
National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470a, et seq.	____	____
Rivers and Harbors Act, 33 U.S.C. 403, et seq.	____	____
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	____	____
Farmland Protection Policy Act, 7 U.S.C. 4201, et. seq.	____	____
Protection & Enhancement of the Cultural Environment (Executive Order 11593)	____	____
Floodplain Management (Executive Order 11988)	____	____
Protection of Wetlands (Executive Order 11990)	____	____
Environmental Justice (Executive Order 12898)	____	____
Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.	____	____
Invasive Species (Executive Order 13122)	____	____

Conclusion

After evaluating the anticipated environmental, economic, and social effects of the proposed levee repair project, it is my determination that the project fits the description and scope of analysis of the Recommend Plan presented in the Programmatic Environmental Assessment and FONSI for the Public Law 84-99 Emergency Levee Rehabilitation Program. Therefore, the project does not constitute a major Federal action that would significantly affect the quality of the human environment; therefore, preparation of an EIS is not required.

Date: _____ _____

Anthony J. Hofmann
Colonel, Corps of Engineers
District Commander

APPENDIX VI

Agency and Public Comments

KSR&C No. 11-03-272

6425 SW 6th Avenue
Topeka, KS 66615

Kansas

phone: 785-272-8681
fax: 785-272-8682
email@kshs.org

Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

November 9, 2011

Jennifer Switzer
Chief, Environmental Resources Section
Kansas City District, Corps of Engineers
600 Federal Building
Kansas City, MO 64106-2896

RE: Programmatic Environmental Assessment
P.L. 84-99 Emergency Levee Rehabilitation Program
Atchison, Doniphan, Leavenworth, and Wyandotte Counties

Dear Ms. Switzer:

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed a document entitled *Programmatic Environmental Assessment and Finding of No Significant Impact for the Public Law 84-99 Emergency Levee Rehabilitation Program* that accompanied your public notice dated November 2, 2011. Our office commented on a draft version of the document (in a letter dated March 18, 2011) and found it to be acceptable. As noted then, evaluating levee repairs on a larger programmatic scale seems to us to be an appropriate course of action. We further agree that the recommended alternative (#5) that combines levee structural repairs within either existing or new alignments and/or non-structural responses would be most effective. Borrow areas are always our main concern whenever levee repairs are proposed. However, since it is our office's understanding that cultural resource coordination for borrow areas would continue as in the past, we continue to have no objections to the document as presented.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 (ext. 225).

Sincerely,

Jennie Chinn, Executive Director and
State Historic Preservation Officer

Timothy Weston for

Patrick Zollner
Deputy SHPO

From: Jane_Ledwin@fws.gov
To: Granet, Jesse J NWK
Subject: RE: FW: Public Announcement - U.S. Army Corps of Engineers, Kansas City District (UNCLASSIFIED)
Date: Wednesday, November 23, 2011 12:59:15 PM

Hi Jesse -

I was able to review the Noticed Draft PEA on the Corps website and have the following comments for your consideration. I'll email them in the interest of time and efficiency.

Page 10 - Massasauga's in MO are now considered part of the Western species and are no longer candidates, although we continue to conserve them and their habitats when possible.

http://www.fws.gov/midwest/endangered/candidate/pdf/cnor2011.pdf (pgs 66374&66375)

Page 21, Alternative 3 - I think this section needs revision to address a levee repair along a new (rather than existing) alignment.

I think your treatment of I. bat and avoidance and/or coordination procedures are adequate. If the Corps comes across a bald eagle nest, please notify our office as we are also trying to keep track of them, but no longer conduct winter nesting surveys in Missouri.

Thank you for your efforts on this. We appreciates the coordination. If you need additional information, please contact me.

Happy Thanksgiving -

Jane

****

Jane Ledwin
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
101 Park DeVille Drive
Columbia, Missouri 65203
Phone 573/234-2132, extension 109
email jane_ledwin@fws.gov

****

From: Susan_Blackford@fws.gov
To: Granet, Jesse J NWK
Subject: PL 84-99 Emergency Levee Rehab Program Draft EA & FONSI
Date: Tuesday, November 29, 2011 4:10:20 PM

Hi Jesse,

We have reviewed the Draft EA and FONSI. We reviewed the preliminary draft and provided comments in a letter dated April 5, 2011. As most of our concerns have been addressed in this document we have no further comments.

Thank you for the opportunity to review and comment on the Draft EA and FONSI.

Susan Blackford
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
2609 Anderson Ave.
Manhattan, KS 66502
785-539-3474 ext. 102
Susan_Blackford@fws.gov

From:	WPSC.Water Quality Certification
To:	Granet, Jesse J NWK
Cc:	Bax, Stacia; Rustige, John
Subject:	Programmatic Environmental Assessment and Draft Finding of No Significant Impact for the Public Law 84-99 Emergency Levee Rehabilitation Program Public Comment Period
Date:	Friday, December 02, 2011 11:32:59 AM

The Missouri Department of Natural Resources' Water Protection Program (Department) is providing comments on Programmatic Environmental Assessment and draft Finding of No Significant Impact for the Public Law 84-99 Emergency Levee Rehabilitation Program which was public noticed for 30 days starting on November 2, 2011. The Department is providing these comments to the U.S. Army Corps of Engineers (Corps) as a result of our Clean Water Act Section 401 Water Quality Certification responsibilities.

Programmatic Environmental Assessment Summary

A major mission of the Corps' Kansas City District is the Emergency Levee Rehabilitation Program authorized by Public Law 84-99 (33 U.S.C. 701n), Emergency Response to Natural Disasters. This law allows the Corps to provide assistance to rehabilitate levees following flood events. This assistance may be provided to both federal and non-federal levee sponsors active in the Public Law 84-99 (PL 84-99) Emergency Levee Rehabilitation Program. There are presently 140 levees within the Kansas City District that are active in the PL 84-99 Program. Significant flooding has occurred within the Kansas City District's jurisdiction six times between the years 1993 and 2011. Because of this the Kansas City District has implemented several procedures to expedite the environmental and cultural compliance process for the PL 84-99 Emergency Levee Rehabilitation Program. A Programmatic Environmental Assessment (PEA) builds on these previous efforts and further expedites the environmental and cultural review process for levee repairs. This approach also allows for a more comprehensive environmental review of the program.

A total of five alternatives for the PL 84-99 Emergency Levee Rehabilitation Program were evaluated in terms of individual and cumulative effects:

· Alternative 1 - "No-Action" Alternative;

* Alternative 2 - Repair Levee within Existing Alignment;
* Alternative 3 - Repair Levee with a New Alignment;
* Alternative 4 - Non-Structural Options; and
* Alternative 5 - Repair Levee within Existing Alignment, Repair Levee with a New Alignment, and/or Non-Structural Options (Recommended Plan).

Water Protection Program Comments

Please clarify if the PEA is used when wetland impacts occur and mitigation is required. The text seems to suggest that if wetlands are impacted or mitigation is required, then the project would not qualify under the PEA. However, this wasn't explicitly stated if that is true. Is there a threshold for the amount of wetland impacts allowed such as a 1/10th of an acre within General Permit 41?

In Section 3.1 Water Quality on Page 8 the text identifies the impairments listed on each state's respective 303(d) list. There is no mention of the total maximum daily load studies that have been completed. The Missouri River along its entire length in Missouri has a Total Maximum Daily Load approved by the U.S. Environmental Protection Agency on November 3, 2006, for aquatic life impairments due to Chlordane and Polychlorinated Byphenyls.

The repeated reference to Blevins' paper regarding lower turbidity levels now than in the past seems somewhat out of place considering nutrient levels and Gulf Hypoxia issues. I do not know a great deal about the Gulf Hypoxia, but nutrients are often associated with soil erosion and storm water runoff. An

additional statement regarding the nutrient association with any soil and water runoff might further explain that regardless of lower turbidity levels, nutrient pollution may be currently or may become an issue. Missouri does not yet have water quality criteria for specific nutrient pollutants within our water quality standards.

Figure 4's title should read "Non-Federal Levees..." Currently, it states "Federal Levees" while the legend notes that the map displays Non-Federal Levees.

Thank you for the opportunity to comment on the Programmatic Environmental Assessment and draft Finding of No Significant Impact for the Public Law 84-99 Emergency Levee Rehabilitation Program. If you have any questions, please contact Stacia Bax by phone at (573) 526-4586, or by e-mail at stacia.bax@dnr.mo.gov.

SB/pc

Missouri Department of Natural Resources
Water Protection Program

P.O. Box 176

Jefferson City, MO 65102-0176

Phone (573) 751-1300 Fax (573) 526-1146
e-mail: wpsc401cert@dnr.mo.gov <mailto:wpsc401cert@dnr.mo.gov>
web site: www.dnr.mo.gov/env/wpp/401 <http://www.dnr.mo.gov/env/wpp/401>

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

DEC 02 2011

Jennifer L. Switzer, Chief
Environmental Resources Section
U.S. Army Corps of Engineers
Kansas City District
601 E. 12th Street
Kansas City, Missouri 64106

Dear Ms. Switzer:

Thank you for the opportunity to review the draft Programmatic Environmental Assessment and Finding of No Significant Impact for the Public Law 84-99 Emergency Levee Rehabilitation Program as implemented within the Kansas City District (the District). This draft PEA assesses the impacts associated with levee repair projects funded through PL 84-99. As stated within the draft FONSI, significant flooding has occurred within the Kansas City District six times in the last nineteen years. The District has provided assistance through PL 84-99 in 37 instances between 2007 and 2009. Noting that the Corps repeatedly repairs or replaces many of the same levees, we believe that a comprehensive review of the program and the results of its implementation in terms of flood risk reduction and environmental impact on a basin scale would be appropriate and would help the communities of the basin and serve the purposes of the National Environmental Policy Act. The current draft of a comprehensive PEA for PL 84-99 projects within the District represents an important step in that process.

The draft PEA and FONSI identify five alternatives, including a 'no action' alternative and the District's recommended plan. The District has made good progress through this draft PEA towards the "comprehensive environmental review" of PL 84-99 projects targeted in the FONSI. EPA makes the following observations on the draft in the interest of further informing your decisions.

Scale of Project(s) and Threshold Criteria

In our review of this draft PEA, we have identified aspects of the assessment which, we believe, limit the comprehensiveness of an assessment of levee rehabilitation and the PEA's applicability to large scale rehabilitation projects which represent a portion of the total number of PL 84-99 responses. The impacts associated with the restoration of levees breached over multiple river miles are of a different scale than in-place repair of damaged levees, particularly regarding large federal levees designed to provide a 100 year level of flood protection or greater. The restoration of a breached levee, in-place or with only a minor setback, may not be supported by the assumptions underlying this PEA and may confound tiering from the PEA. EPA recommends inclusion of 1) significance criteria or benchmarks regarding the size of the breach, the amount of borrow necessary to accomplish the restoration and the amount of setback and 2) a more complete assessment of cumulative impacts on a specific length of

river reach. As stated in the draft PEA, "A programmatic approach is appropriate because levee rehabilitation projects typically share a strong similarity in terms of construction methods and environmental impacts." A programmatic approach to NEPA compliance for PL 84-99 should consider the scope and scale of projects and their impacts rather than solely their program or funding basis. As drafted, the PEA appears to adequately address the impacts associated with minor, in-place levee repair projects, but does not adequately assess the impacts of major levee restoration projects. These may be candidates for an individual EA or an EIS. Comments offered below are specific to either individual alternatives or significant components of the environmental assessment process.

Project Purpose and Need for Action and Purpose of the PEA

A significant philosophical, if not regulatory, caution expressed in EPA's previous comment letters on past EAs for individual PL 84-99 projects addressed the need for levee repair/replacement. Flood risk reduction can be secured by many practices outside of restoring past levee design in every location in every instance. The Interagency Levee Task Force has addressed this issue by stating that "alternatives for reducing vulnerabilities will be considered for all levees to be repaired under the Corps PL 84-99 program." The October 2009 USACE National Flood Risk Management Program Initial Guidance also states that the Corps is "transitioning from the concept of flood damage reduction to a broader focus on flood risk management defined as managing both floodwaters to reduce the probability of flooding (that is, structural approaches such as levees and dams) and floodplains to reduce the consequences of flooding." We recognize that, under PL 84-99, the Corps has been directed to provide federal assistance to damaged or destroyed levees within the PL 84-99 program; however, we would be remiss if we did not address the continual expansion of levee construction along the Missouri River, repeated restoration of frequently destroyed levees and a reliance on larger and larger levees to provide differing levels of flood risk reduction throughout the basin. As characterized later in these comments, Corps implementation of the PL 84-99 program does not differentiate among minor and major project impacts and its assessment of cumulative impacts uses a narrow project or site-specific scope rather than a broader geographic scope of river reach. If the intent of PL84-99 is to maintain an acceptable level of risk across the federal levee system, including federal and non-federal levees, then the assessment of risk and impact should be conducted at the same system or reach scale. This concept is important to the PL 84-99 program because flood risk could be displaced to other locations and the likelihood of repeated replacement of poorly performing federal and non-federal levees is high and important to the PEA because a cumulative assessment of project impacts is meaningless without it. If the NEPA analysis is performed at a scope defined only by each individual levee district, the range of alternatives available to address flood risk is biased toward the repair of each levee over other alternatives.

Project Location

Although a majority of the levees included within the PL 84-99 program are located along the Missouri River, it appears that this PEA would include PL 84-99 eligible levee repair projects throughout the watershed and within the District's boundaries. The State of Missouri, in its Clean Water Act section 401 certification, specifically limits its certification to "projects located along the Missouri River throughout Missouri." EPA recommends clarification of the geographic scope.

Alternatives Analysis

The assumption that every PL 84-99 project shares a "strong similarity in terms of construction methods and environmental impacts" is not supported in this draft PEA. The criteria identified in the draft PEA

upon which the Corps would determine whether to develop an individual EA or EIS should include criteria such as the length of the breach, the amount of material needed for levee restoration, the source of the borrow (e.g., the Missouri River) and the extent of the floodplain opened by setback. The last criterion would address whether the assumption that no compensatory mitigation is necessary is valid for major restoration projects.

No Action Alternative

As proposed in the draft PEA, the "no action" alternative is defined by the private rehabilitation of a levee without federal assistance based on the concept of "predictable action by others." Although both "no change" and "no project" approaches are provided for by Council on Environmental Quality guidance, the spirit of the regulatory requirement to include "no action" among the range of alternatives analyzed under NEPA is dependent upon the PEA presenting "the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public" (40 CFR 1502.14). Although CEQ guidance allows for the interpretation of 'no action' as dependent upon "predictable actions by others", we believe that the repair of flood damage by public sponsors without federal assistance for all 140 levees is not predictable, particularly given current economic conditions and possibly conditions through 2016. It is also reasonable to assume that some areas previously protected by levees are presently so badly damaged that land owners might be interested in buyout (i.e., non-structural alternative) rather than restoration, particularly if PL 84-99 funding was not provided. Secondly, the assessment of impacts across a range of alternatives does not offer separation of alternative characteristics, essentially duplicating the actions taken in two separate alternatives, i.e., Alternatives 1 and 2.

Repair Levee within Existing Alignment

Although both in-place repairs to damaged levees (e.g., lost cover, side wash, slope or toe failures, erosion damage, damaged drainage structures, minor scour holes and minor breaches) along existing alignment and major rehabilitation of breached levees along existing alignment or involving setbacks are considered within the PEA to be structural in nature, we consider these actions to be significantly different regarding potential environmental impact and, therefore, appropriate treatment within this PEA. Any determination as to whether this PEA provides NEPA coverage for a specific project should be quite different when evaluating 'repair' and 'rehabilitation.' The draft PEA evaluates these actions as possessing "a strong similarity in terms of construction methods and likely environmental impact." Projects ranging from repairs to damaged levees (e.g., figures 5, 6 and 7) to restoration of lengthy breaches (e.g., figure 8, L-575, L-550 in the Omaha District) are fundamentally distinct in their impacts and should be assessed differently under NEPA. We believe that this latter class of PL 84-99 project should be better characterized by this draft PEA or should be evaluated in a separate EA/EIS document.

Repair Levee with a New Alignment

Regarding levee rehabilitation, the PEA should explain why the Corps regards levee setbacks to be a non-structural alternative and, consequently, why this form of reconstruction of the damaged levee could be treated as a "one-time, non-structural response" ineligible for future funding purposes. This funding impediment would most likely render this ecologically beneficial structural alternative undesirable to local sponsors. Despite the reference to ER 500-1-1, a levee setback decreases the flood risk to the system by allowing greater floodplain area for flood attenuation. These setbacks represent another

structural approach to flood risk reduction and might or might not have any useful habitat value. The PEA does not describe how the Corps distinguishes "levee setbacks" from "levee setbacks for purposes of restoring the floodplain and floodway." The approach proposed in the draft PEA under Alternatives 3 or 5 does not provide criteria for distinguishing among levee setbacks, does not describe which setbacks would be considered outside the authority of PL 84-99 funding, is passive and is arbitrary. We believe any levee setback intended to reduce the flood risk to the river reach constitutes a structural alternative available to the Corps in restoring a specified level of flood risk reduction under PL 84-99.

The PEA should also address how the Corps would proceed with levee realignment in those instances where soil type or geology in the new landward location might not be suitable or not serviceable as a stable site for levee construction.

Recommended Plan

The combination of structural repairs and non-structural responses has been identified in the draft PEA as the alternative constituting the Corps' Recommended Plan. The draft PEA states under this alternative that "Both Federal and non-Federal levees can be realigned through the PL 84-99 Emergency Levee Rehabilitation Program." Treatment of any restoration of levees, regardless of the extent of setback or realignment, as a one-time, non-structural response ineligible for future funding purposes, again, as stated in the previous paragraph, would likely be undesirable to local sponsors. The PEA does not explain how it determines whether levee realignment is "outside of the PL 84-99 repair" or how the Corps determines which realignments are "more substantial."

Affected Environment

The PEA would be improved if, in this section, it included descriptions of the riverine environment such as:

- the total length of levees along the Missouri River within NWK;
- the percentage of river length in levees and the percentage not in levees;
- the amount and percentage of floodplain protected by levees and those open to the river;
- a characterization of levee-specific flood frequency and categories of flood risk management (i.e., frequency of flooding and levee failure);
- changes over time of the stage/flow relationship along river reaches;
- categories of levee failure frequency within reaches; and
- a general accounting of habitat restoration projects among river reaches in the NWO.

This information would also inform decisions regarding the most effective and economical approach to flood risk reduction. The characterization of the river's levee environment should also include a description of how this environment has changed over time. It would also be very helpful to include an analysis of any location-specific 'hot spots' of levee failure or pinch points along the river as possibly continuous areas of vulnerability. As the District plans to review and reissue this PEA every 5 years, this information should be updated for each PEA.

Environmental Consequences

We recommend that the PEA identify benchmarks for borrow quantities, above which a separate EA or EIS would be conducted. Limiting the amount of borrow material used in levee repair under the PEA is particularly important for new borrow sites within the Missouri River floodplain. Recognizing and consistent with special condition 'e' contained in General Permit 41 (GP 41), we recommend that any use of sediment dredged from the Missouri River main channel for levee repair under an individual permit beyond an established *de minimus* amount, as set by the Corps, be covered under a separate EA or EIS. Given the impacts documented in the recent EIS for commercial sand and gravel dredging in the lower river and the amounts dredged for the construction of L-385 in 2002, we believe main channel dredging should be assessed under a separate NEPA process to ensure that this action does not exacerbate river bed degradation in vulnerable reaches.

Assumptions supporting the determination that no significant adverse impacts would be expected for floodplain resources (i.e., wetlands, terrestrial habitat, fish and wildlife, etc.) from the execution of projects included within this PEA appear reasonable only for levee repair projects and restoration projects at locations where a breach has not resulted in the reconnection of river and floodplain. As we have stated in comments to the District on previous draft PEAs, a useful baseline for assessing the consequences to floodplain resources from levee restoration would be the reconnected floodplain. This draft PEA does not address the consequences of restoring the barrier to floodplain reconnection. As a result of high water moving past levees into the floodplain of the Missouri River, new habitat for fish and wildlife has been created. This newly established floodplain habitat will be destroyed with the restoration of breached levees. We would agree that damaged levees without breaches and minor breaches which did not result in a significant movement of river water into the floodplain likely do not constitute a significant aquatic/semi-aquatic resource warranting assessment beyond the scope of this PEA. However, with regard to major breaches creating significant floodplain resources which serve as the current baseline, the loss of these resources and the connection to the river are not adequately assessed in this draft PEA and should be assessed in an individual EA or EIS.

Cumulative Impacts Analysis

This section largely repeats the general description of historical changes to the river environment and the implementation of Federal programs affecting the river. The PEA provides a basic accounting of levee repairs within the District, but does not characterize nor distinguish among minor repairs and major restorations. This is an issue which is best suited to analysis within this PEA rather than individual EAs. Although the PEA references that "these projects typically result in minor short-term construction related impacts resulting from noise, visual, and land disturbances to wetlands, the terrestrial habitat, and fish and wildlife resources," it does not then provide an assessment of the cumulative impacts at a reach scale. It simply dismisses these cumulative impacts, without analysis, as being "out-weighed by the long-term beneficial effects associated with the enhancement of the aquatic ecosystem through borrow activity, reconnecting the floodplain through levee realignments, and restoring the levee flood risk management capability." Given that the current decision and funding structure operates against alternatives which include anything more than minimal levee setback, assigning ecosystem benefits to PL 84-99 projects which are rarely significant (e.g., 135 acres over 3 years and 17 repair projects) might be an overstatement. In addition, the cumulative construction of levees along the mainstem Missouri River along with changes in land use/land cover and precipitation patterns through the basin could result in an increase in flood risk throughout the basin, at a reach scale and at individual structure locations. A restoration of existing structures previously designed to provide a certain level of flood risk might not

provide that same level of risk protection under contemporary conditions. General Permit 41, Appendix I, includes a criterion giving the Corps the discretion to evaluate cumulative impacts and requires this evaluation every five years. The PEA should specifically discuss how this has been done in the past and how the District intends to satisfy this requirement for all projects authorized using this PEA. This level of assessment should be performed by the District in NEPA documentation available for public review, particularly if it is to address major levee restoration efforts, every five years as is required under GP 41 and suggested in section 1 of the draft PEA.

Programmatic environmental assessment of projects federally funded through PL84-99 authority is the most appropriate vehicle to evaluate the cumulative impacts of multiple levee replacement. This portion of the PEA should be greatly expanded in order to document and communicate the environmental impacts of multiple levee restorations at a scale that reflects more than the immediate vicinity of the project area. Information suggested earlier regarding a more thorough characterization of the affected environment would support the assessment of cumulative impacts.

We recommend that PL 84-99 projects which address levee breaches of a specific size or larger based on formal criteria addressing repair length, amount of borrow material required and amount of floodplain removed from connection to the river be assessed under separate NEPA compliance documentation rather than this PEA. In addition, where borrow material is dredged from the Missouri River for levee repair; those projects would also require separate NEPA analysis.

Thank you for the opportunity to comment on the draft PEA. If you have any questions regarding these comments, please contact me at (913) 551-7441 or shepard.larry@epa.gov.

Sincerely,

Larry Shepard
NEPA Reviewer
Environmental Services Division

cc: Jesse Granet, U.S. Army Corps of Engineers, Kansas City, MO
Matthew Vandenberg, U.S. Army Corps of Engineers, Omaha, NE