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

July 17, 2008

Planning, Programs, and Project Management
Environmental Branch

To whom it may concern:

A copy of the Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for the "*Levee Repair P.L. 84-99: Kaskaskia Island Drainage & Levee District, Randolph County, Illinois*" are enclosed for your review. Please note that the Draft Finding of No Significant Impact is unsigned. This document will be signed into effect only after having carefully considered comments received as a result of this public review. We invite your comments related to the technical content of the attached documents. Please address your comments or questions to Francis Walton, of the Environmental Branch (CEMVS-PM-E), at telephone number (314) 331-8487, facsimile number (314) 331-8806, or e-mail at <francis.j.walton@usace.army.mil>, by close of business on August 15, 2008.

Sincerely,

Thomas Keevin

Thomas M. Keevin
Chief, Environmental Branch

ENVIRONMENTAL ASSESSMENT
WITH DRAFT FINDING OF NO SIGNIFICANT IMPACT

LEVEE REPAIR (PL 84-99):
KASKASKIA ISLAND DRAINAGE AND LEVEE DISTRICT
RANDOLPH COUNTY, ILLINOIS

I. PURPOSE AND NEED FOR ACTION

A. Purpose and Need for Action:

The Kaskaskia Island Drainage and Levee District (DLD) is a Federal levee located in Randolph County, Illinois. The Kaskaskia Island DLD extends along the right descending bank of the Mississippi River from river mile 111 to 116 and is 14.8 miles in length and protects approximately 9,460 acres, mostly agricultural. The levee, as originally constructed under authority of the Flood Control Act of 28 June 1938, affords protection up to a 50-year flood (approximately Stage 45.7 on the Chester, IL gage) with a minimum of 2 foot of freeboard.

A March 2008 flood event damaged the levee and has compromised the level of protection provided by the levee, making the DLD vulnerable to flooding at more frequent intervals. If the levee damages are not repaired to the Federal standard, future economic losses could be extensive. The damage to the DLD consists of 14 slides in the riverside and landside levee embankment slopes. The levee district has pushed the material back into place. The depth of the slide material removal and the compaction effort applied during the replacement of the slide material is unknown. In its damaged state, the levee is estimated to provide only a 10-year level of protection.

The Corps of Engineers has been authorized by Public Law 84-99 (PL-99) to restore Federal DLDs to the pre-disaster level of protection when requested by a DLD. The Corps is proposing repairs to the14 levee slides on the Kaskaskia Island DLD's levees by mixing the levee slide material with lime and refilling the excavated slide voids.

B. Project Objective:

The project objective is to restore the Kaskaskia Island levee system to the pre-event/pre-disaster condition under the authorities of PL 84-99.

C. Relevant Law and Regulations

1. PUBLIC LAW 84-99

Repair of eligible Federal and non-Federal levees has been authorized by Congress through PL 84-99. This law authorizes emergency funds to be expended in preparation for, or in the repair or restoration of, any flood control work threatened or destroyed by flood, including the strengthening, or other modifications that may be necessary for adequate flood control. Under the memorandum of agreement between the Federal Emergency Management Agency (FEMA) and the Department of the Army, the USACE

is tasked to provide engineering, design, construction, and construction contract management in support of the emergency operation.

2. EXECUTIVE ORDER 11988 (FLOODPLAIN MANAGEMENT)

Under this Executive Order, Federal agencies are to "provide leadership and shall take action to reduce the risk of flood loss, to minimize the impacts of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

3. EXECUTIVE ORDER 11990 (PROTECTION OF WETLANDS)

Under this Executive Order, Federal agencies "shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities."

II. ALTERNATIVES

The following section describes the alternatives considered for repair of the slides in the Kaskaskia Island DLD.

A. No Action Alternative: Under this alternative, the Federal government would not assist the DLD in repairing the 14 slide areas. It is possible that the Drainage and Levee District would make repairs without Federal assistance. Environmental impacts of the DLD repairs would be similar to the recommended alternative; except that the time period required for repairs may be increased and the environmental protections may be reduced. However, because of the uncertainty of the Drainage and Levee District making repairs, this potential alternative was not addressed further.

Instead, the environmental impacts of allowing the slides to remain unrepaired are evaluated as the No Action Alternative. This would presumably perpetuate a state of reduced levee structural integrity. The levee would be susceptible to further erosion at the damage sites. It is estimated that in its damaged condition, the DLD would provide a 10-year level of protection instead of the 50-year level it was designed to provide. This reduced level of protection would increase the flood risk, threatening the livelihood of local landowners.

B. Preferred Alternative: Under this alternative, at the request of the DLD, the Federal government would repair the 14 slide areas to pre-flood elevations on the original levee alignment. Because this is a federal levee, the repair costs would be 100% federal.

Proposed Action:

The Kaskaskia DLD levee is constructed of clay with a 10-foot crown width and 1 vertical on 3 horizontal side slopes with stability berms. The system also includes seepage berms, relief wells, and gravity drain structures.

Heavy rains throughout south central Missouri and southern Illinois during March 2008 caused flooding along the Mississippi River drainage system within the USACE, St. Louis District, in Missouri and Illinois. Two day rainfall totals for March 17-19 ranged from 3 to 11 inches. This pattern continued through April exceeding the normal rainfall for that time period. Runoff was high during the event due to lack of ground cover and foliage. This resulted in major flooding on small tributaries and filled Corps reservoirs to their flood control pools. The Mississippi River at Cape Girardeau reached 9 feet over flood.

A survey of the Kaskaskia Island DLD levee after the flood revealed that there were 14 areas where slides occurred that produced damage. The final repairs would consist of reconstructing the levee to the pre-event grade and section at all the slides using the lime stabilization method of repair. The repairs would require the removal and restoration of the crushed stone road on the levee crown in most areas. The repairs would be completed in one construction season. There is no need for additional right of way or borrow to make the levee repairs.

Pictures of typical slides damage are shown in Attachment 1. Attachment 2 is a list of the slides with the GPS coordinates in Geographic WGS84, the number of the slide, measured length of the slide, and measured scarf of the slide. Most of the slides have occurred in the upper one-fourth of the slope and cover a large section of the slope. Several of the slides are into the roadway at the crown of the levee. Lime treatment of the slide material is the recommended repair. Attachment 3 is the basic scope for the lime treatment used in the recommended repair for this type of slide. All material would come from the levee slide and no borrow sites would be needed. Attachment 4 contains typical cross-sections indicating methods of repair of the slides and designates a 50 ft contractor work area on the levee berm adjacent to the slide area. If trees occur and impair the contractor's ability to use this space, the contractor would not remove these trees. The contractor would relocate to the closest area with no trees along the same side of the levee. Attachment 5 includes maps with the slide locations. The levee would be repaired to the pre-2008 flood condition

The slides involve minor repair which the Corps contractor would perform; and are considered to be repair and rehabilitation activities associated with previously authorized structures. The DLD will be responsible for acquiring all the necessary permits and rights-of-way to make repairs.

C. Non-structural Alternative: Section 73 of the WRDA of 1974 (PL93-251) requires Federal agencies to give consideration to non-structural measures to reduce or prevent flood damage. Nonstructural measures reduce flood damages without significantly altering the nature or extent of flooding. Damage reduction from nonstructural measures is accomplished by changing the use made of the floodplains, or by accommodating existing uses to the flood hazard. Examples are flood proofing, relocation of structures, flood warning and preparedness systems, and regulation of floodplain uses. A flood warning system would do little to reduce structural and agricultural damages. Flood proofing or relocation is not desirable to the DLD, would have large costs, and result in loss of

numerous acres of prime farmland. Therefore, the nonstructural alternative was eliminated from further consideration.

C. Comparison of Alternatives

Table 1 is a summary of the impacts associated with the Action and the No-Action alternatives. This table is based on the discussion in Sections 3 and 4.

Table 1 – Comparison of Project Alternatives		
Resources	Alternatives	
	No Action	Federal Repair
Physical Resources	Flooding may occur if slides are not repaired and the levee's integrity was compromised during a flood. Protection remains at 10 year flood.	Levees repairs would meet the Federal standard. The area inside levees would be flooded only when flood stages exceed levee design.
	Increased potential for levee erosion and sedimentation within DLD during flood events.	Temporary minor impacts to water and air quality during construction..
	Does not meet project objective of repairs to 50-year Federal standard.	Meets project objective.
Biological Resources	If levee is compromised, negative impact to flora and fauna, but also potential for beneficial impacts to aquatic habitat.	Construction would be confined to the levee and may result in minor temporary impacts.
	Federal T&E species would not be adversely impacted	There would be no tree clearing; therefore, proposed action should have no adverse affect on Indiana bat.
	Does not meet project objective of minimal environmental impacts.	Meets project objective.
Socioeconomic Resources	Unlikely cultural impacts, but no process in place to reconcile if encountered.	Unlikely cultural impacts; however, a process is in place to address if encountered.
	The DLD would be susceptible to future floods. Potential negative impacts to the DLD and regional economy if levee fails due to unrepaired slide damages.	Final repair of levee would result in the protection of croplands and structures from floods up to the design (50 year frequency) of the levee system.
	Does not meet project objective of protecting the socioeconomic value of the DLD.	Meets project of objective.

III. AFFECTED ENVIRONMENT

The Kaskaskia Island DLD protects approximately 9,460 acres of prime agricultural land. Soybeans and corn are the principle crops produced.

A. Physical Resources

The DLD is located on the floodplain of the Mississippi. Because of the fertility of the soil and moisture, the lands are prized for their agricultural productivity. Levees have been constructed to the Federal standard to keep out flood waters to the 50-year level flood and provide a reasonable amount of certainty of producing crops every year. Much of the area within the levee is considered prime farmland.

B. Biological Resources

a. Fish and Wildlife: Riparian zones adjacent to the Mississippi River support bottomland hardwood tree species such as cottonwood, ash, box elder, maples, sycamore, and oaks. This bottomland hardwood habitat and the adjacent aquatic habitats support a great variety of insects, crustaceans, mollusks, reptiles, amphibians, fish, birds, and mammals. Typical terrestrial species include turkey, white-tailed deer, beaver, raccoon, opossum, wood duck, and many songbirds. Aquatic species include catfish, crappie, freshwater drum, gar, shad, paddlefish, buffalo, carp, largemouth bass, other sunfish, and a variety of bivalves. The levees themselves are mowed grass areas that are managed to prevent shrub and tree growth and animals from making burrows. Federally listed species which may be found in the DLD project area include the Indiana bat, pallid sturgeon, and least tern.

b. Federal Threatened or Endangered Species: In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, the St. Louis District Corps of Engineers requested the U.S. Fish and wildlife Service (USFWS) provide a listing of Federally threatened or endangered species, currently classified or proposed for classification, that may occur in the vicinity of the Kaskaskia Island DLD. The USFWS provided species list for Randolph County, Illinois, as shown in Table 2:

Table 2 – Federal Listed Species

Classification	Common Name (Scientific Name)	Habitat
Endangered	Indiana bat *(Myotis sodalis*)	Caves, mines; small stream corridors with well developed riparian woods; upland and bottomland forests
Endangered	Least tern (*Sterna antillarum*)	Bare alluvial dredge spoil islands
Endangered	Pallid sturgeon (*Scaphirhynchus albus*)	Rivers

The endangered **Indiana bat** (*Myotis sodalis*) has been noted as occurring in several Illinois and Missouri counties. Indiana bats are considered to potentially occur in any area with forested habitat. Indiana bats migrate seasonally between winter hibernacula

and summer roosting habitats. Winter hibernacula include caves and abandoned mines. Females emerge from hibernation in late March or early April to migrate to summer roosts. Females form nursery colonies under the loose bark of trees (dead or alive) and/or in cavities, where each female gives birth to a single young in June or early July. A maternity colony may include from one to 100 individuals. A single colony may utilize a number of roost trees during the summer, typically a primary roost tree and several alternates. Some males remain in the area near the winter hibernacula during the summer months, but others disperse throughout the range of the species and roost individually or in small numbers in the same types of trees as females. The species or size of tree does not appear to influence whether Indiana bats utilize a tree for roosting provided the appropriate bark structure is present. However, the use of a particular tree does appear to be influenced by weather conditions, such as temperature and precipitation.

During the summer, Indiana bats frequent the corridors of small streams with well-developed riparian woods, as well as mature bottomland and upland forests. It forages for insects along stream corridors, within the canopy of floodplain and upland forests, over clearings with early successional vegetation (old fields), along the borders of crop lands, along wooded fence rows, and over farm ponds and in pastures. It has been shown that the foraging range for the bats varies by season, age and sex and ranges up to 81 acres (33 ha). Suitable Indiana bat habitat may be located in the forested riparian areas adjacent to the DLD.

The Federal endangered **pallid sturgeon** (*Scaphirynchus albus*) is present in the Mississippi River adjacent to the Randolph County project locations. Pallid sturgeons require large, turbid, free-flowing riverine habitat with rocky or sandy substrate (Federal Register 1989). Pallid sturgeon is adapted to large rivers with extensive micro-habitat diversity, turbid water, braided channels, irregular flows and flood cycles. Little is known of its micro-habitat preferences; however, it is suspected that sand/gravel bars and the mouths of major tributaries may be utilized for spawning. This species feeds on aquatic invertebrates and small fish.

The **least tern** (*Sterna antillarum*) is listed as endangered and occurs in several Illinois counties along the Mississippi and Ohio rivers. It nests on bare alluvial or dredge spoil islands and sand/gravel bars in or adjacent to rivers, lakes, gravel pits and power plant cooling ponds. It nests in colonies with other least terns and sometimes with the piping plover. This species forages in shallow water areas along the river and in backwater areas, such as side channels and sloughs. Foraging habitat must be located in close proximity to nesting habitat.

C. Socioeconomic Description

The levee primarily protects highly agricultural lands and the two villages of Kaskaskia and Pujol. Kaskaskia was the first capitol of Illinois and has several historical sites within the DLD. Two hundred people reside in the DLD.

IV. ENVIRONMENTAL IMPACTS OF PROPOSED ALTERNATIVES

A. No Federal Action Alternative:

1. Physical Resources: If the Kaskaskia Island DLD levees were not repaired to the Federal standard there would be an increased flood risk and more physical damages would occur within the DLD such as erosion, sedimentation and hazardous pollutants associated with industry. Air quality and noise pollution would not be affected by this alternative.

2. Biological Resources: Due to the possibility of more frequent flooding of the DLD under this alternative, some vegetation would be destroyed and some wildlife would be displaced more frequently. There would also be some beneficial impacts if agriculture use diminished and a more diverse environment developed especially for aquatic oriented wildlife.

3. Socicoeconomic Description:

a. Cultural Resources: Although erosion of the levee would not be likely to expose any cultural material, any material that was exposed by flooding in the DLD could potentially be adversely impacted. Several culturally important sites are located within the DLD and could be adversely impacted if the levee repairs are not made.

b. Economic: The flood protection is reduced under this alternative to the 10-year protection level and agriculture would be greatly diminished with negative regional economic impacts.

B. Preferred Alternative: Federal Assist with Levee Repairs

1. Physical Resources

a. Air Quality: Construction activities could cause a slight increase in suspended particulates (i.e., dust). Emissions from construction equipment would increase the carbon monoxide and carbon dioxide levels in the vicinity of the construction site. The expected increases would be very negligible relative to local agricultural activities and cease after construction.

b. Water Quality: Construction activities would only occur on the mowed grass levee berms and are not expected to adversely impact the water quality of the adjacent Mississippi Rivers. Levee repairs could cause a short-term increase in suspended solids in waterways at the immediate construction site if flooding or heavy rains were to occur during construction. All disturbed areas would be reseeded following construction to reduce the potential for erosion.

c. Noise: Construction activities would cause an increase in local noise levels. The expected increase would be short-term and negligible relative to normal agricultural activities.

d. Prime Farmland: All construction activities would occur on the levees, no prime farmland would be impacted.

2. Biological Resources

a. Fish and Wildlife: If heavy rain occurs during construction, washing soil into the rivers, there would be a short-term increase in turbidity in the immediate area, temporarily displacing fish and other mobile organisms. Following construction, aquatic species would be expected to return. Only limited impacts to fish and wildlife resources are expected.

b. Federal Threatened or Endangered Species: The USFWS provided a species list for Randolph County, Illinois, from which the following assessment was prepared:

There is no designated critical habitat in the project area.

The endangered **Indiana bat** has been noted as occurring in several Illinois and Missouri counties. The repair would take place within the footprint of the existing levee and no suitable Indiana bat trees would be impacted especially since construction would likely occur in the fall. The proposed project is not likely to adversely affect the Indiana bat.

The Federal endangered **pallid sturgeon**, and the **least tern** are associated with the habitats of the medium to large rivers. No habitat appropriate to these species is located in the vicinity of the proposed repair areas.

3. Socioeconomic Description

a. Cultural Resources: It is very unlikely that adverse impacts to cultural resources would occur. The project area is recently deposited material that is regularly maintained. However, in the unlikely event that potentially significant archeological/historic remains are discovered during construction activities, all earthmoving actions in the immediate vicinity of the remains would be held in abeyance until the potential significance of the remains is determined. The precise nature of such investigations would be developed by the SLD in concert with the State Historic Preservation Officer's representatives

b. Economic Resources: Local agricultural and agri-businesses would benefit from levee repair and subsequent flood protection. The proposed initial levee repairs would not require residential displacement. No impacts to life, health, or safety would result from levee repair.

V. CUMULATIVE IMPACTS

Although system-wide repairs to levees are currently underway due to flooding in the spring and summer of 2008, final repairs would involve repairs within the footprint of the levee. Projects that would require borrow may impact more habitat, but it is likely that most of it would be agricultural land. Projects that are infeasible to repair on original alignment (Vandalia) would be realigned with a new levee, again on farm ground. Some

acreage at Vandalia would be removed from agricultural use causing a minor loss to overall farm production. Thus overall, no adverse cumulative impacts from these levee repair projects are expected.

VI. COORDINATION WITH OTHER STATE AND FEDERAL AGENCIES

The proposed initial repairs will be coordinated with the respective State and Federal agencies to include the following:

U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency
Federal Emergency Management Agency
Illinois State Historic Preservation Officer
Illinois Department of Natural Resources

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

VII. RELATIONSHIP OF RECOMMENDED PLAN TO ENVIRONMENTAL REQUIREMENTS

Table 3 - Relationship of Recommended Plan to Environmental Requirements Environmental Act/Executive Order	Compliance
Bald Eagle Protection Act, 42 USC 4151-4157	FC
Clean Air Act, 42 USC 7401-7542	FC
Clean Water Act, 33 USC 1251-1375	FC
Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC 9601-9675	FC
Endangered Species Act, 16 USC 1531-1543	FC
Farmland Protection Policy Act, 7 USC 4201-4208	FC
Fish and Wildlife Coordination Act, 16 USC 661-666c	FC
Food Security Act of 1985, 7 USC varies	FC
Land and Water Conservation Fund Act, 16 USC 460d-4601	FC
National Environmental Policy Act, 42 USC 4321-4347	PC
National Historic Preservation Act, 16 USC 470 et seq.	PC
Noise Control Act of 1972, 42 USC 4901-4918	FC

Table 3 - Relationship of Recommended Plan to Environmental Requirements Environmental Act/Executive Order	Compliance
Resource, Conservation, and Rehabilitation Act, 42 USC 6901-6987	FC
Rivers and Harbors Appropriation Act, 33 USC 401-413	FC
Water Resources Development Acts of 1986 and 1990	FC
Floodplain Management (EO 11988 as amended by EO 12148)	FC
Federal Compliance with Pollution Control Standards (EO 12088)	FC
Protection and Enhancement of Environmental Quality (EO 11991)	FC
Protection and Enhancement of the Cultural Environment (EO 11593)	FC
Protection of Wetlands (EO 11990 as amended by EO 12608)	FC

FC = Full Compliance, PC = Partial Compliance (to be completed prior to constructioin)
Source*:* U.S. Army Corps of Engineers, St. Louis District.

Environmental Regulatory Constraints

The Preferred Alternative was subject to compliance review with all applicable environmental regulations and guidelines. The Preferred Alternative was determined to be in full compliance with all applicable acts and legislation, except for two that will be addressed prior to construction (Table 3).

According to EO 11988, The St. Louis District, Corps of Engineers has evaluated the proposed levee repairs at the slides which occurred in the Kaskaskia Island DLD during the spring flood of 2008. Based on the extent of property damage (roads, crops, and utilities) that currently exists, it is prudent to restore the levee to afford a level of flood protection that existed prior to the flooding event. By reducing the future risk of flood loss, minimizing the impacts on existing vegetation in the floodplain, and minimizing structural development in the floodplain, this proposed project is in full compliance with this Executive Order.

Environmental Justice: No environmental justice issues exist for any of the alternatives. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low- Income Populations, 59 Federal Register 7629 (1994), directs federal agencies to incorporate environmental justice in their decision making process. Federal agencies are directed to identify and address as appropriate, any disproportionately high and adverse environmental effects of their programs, policies, and activities on minority or low-income populations. No minority or low-income populations would be displaced or negatively affected in any way by the Alternatives.

The St. Louis District, Corps of Engineers has evaluated the levee repairs at the levee slides which occurred in the Kaskaskia Island DLD during the spring flooding of

2008. The proposed project involves the repair of the slide areas according to Attachment 3. Therefore, the proposed levee repairs are in full compliance with Executive Order 11990 by not requiring impacts to any wetlands.

VIII. LIST OF PREPARERS

Mr. Bruce Douglas, Civil Engineer Role: Project Manager
Mr. Chuck Frerker, Regulatory Specialist Role: Regulatory Permits
Dr. Terry Norris, District Archaeologist Role: Archaeological Compliance
Mr. Francis Walton, Biologist Role: Environmental Assessment

IX. REFERENCES

U.S. Fish and Wildlife Service. Official Correspondence 25 June 2008.

Attachment 1

Slide Number 3

Slide Number 4

Slide Number 12

ATTACHMENT 2

Kaskaskia Slides

Start		End		Slide Number	Length (ft)
-89.913233	37.94886672	-89.91285	37.94844997	1	160
-89.912917	37.94828331	-89.91275	37.94809997	2	65
-89.912567	37.94801664	-89.91195	37.94728339	3	396
-89.911567	37.94694997	-89.9113333	37.94663333	4	124
-89.9105	37.94566667	-89.9098667	37.94505	5	269
-89.9097	37.94490003	-89.9092667	37.94441664	6	242
-89.909183	37.94416667	-89.9088666	37.9439	7	130
-89.908883	37.94395006	-89.9086833	37.94378328	8	75
-89.908533	37.94360006	-89.90835	37.94343328	9	97
-89.90595	37.9403	-89.9055001	37.94005	10	100
-89.904833	37.93869997	-89.9045	37.9383	11	130
-89.904267	37.93803333	-89.9037167	37.93728328	12	320
-89.887783	37.91786669	-89.88745	37.91764997	13	105
-89.88655	37.91713333	-89.8855833	37.91671669	14	275
				Total Linear Feet	2488

ATTACHMENT 3

Lime Stabilization Process for Slide Repair

Identify slide area and remove 8" of topsoil. This material will not get treated with hydrated lime. Stockpile this topsoil.

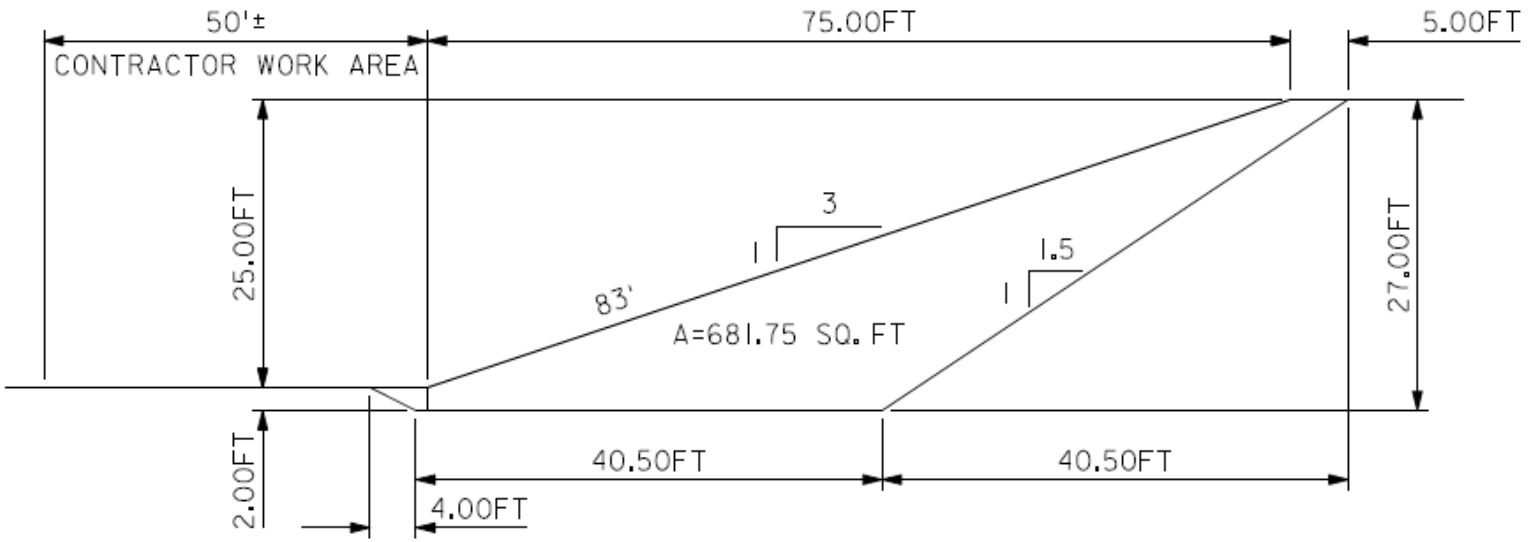
Dig an inspection trench to determine failure surface at each slide. Each slide will be excavated to a depth beyond the failure surface. Excavation will start at the top and proceed to the bottom of the slide.

Place excavated material in stockpiles within the right-of-way on berm. Material will be placed and spread in 10" lifts in the stockpile. Each lift shall receive the initial (first of two) lime treatments. Hydrated lime shall be applied to achieve 16 pounds per square yard over the entire stockpile for each lift. The lime shall be mixed with a pulverizer thoroughly to a depth of 10". The pulverizer shall be equipped with rotor and cutting teeth designed to blend additives with cohesive soils. It shall be capable of mixing to a minimum depth of 16" and have a minimum cutting speed of 170 rpm. The top layer in the stockpile shall "cure" for a minimum of 24 hours before receiving the final (second of two) lime treatments.

Prepare the bottom of the slide area with the same 16 pounds per square yard of hydrated lime and mix with foundation soils to a depth of 10". Compact this layer in place.

After the final lime treatment, remove the soil from the stockpile in 10" lifts and place and compact the material within 8 hours of treatment. The treated embankment material shall be placed and spread in lifts that are 6" thick after compaction. The material will be compacted to 95% of max dry density.

ATTACHMENT 4

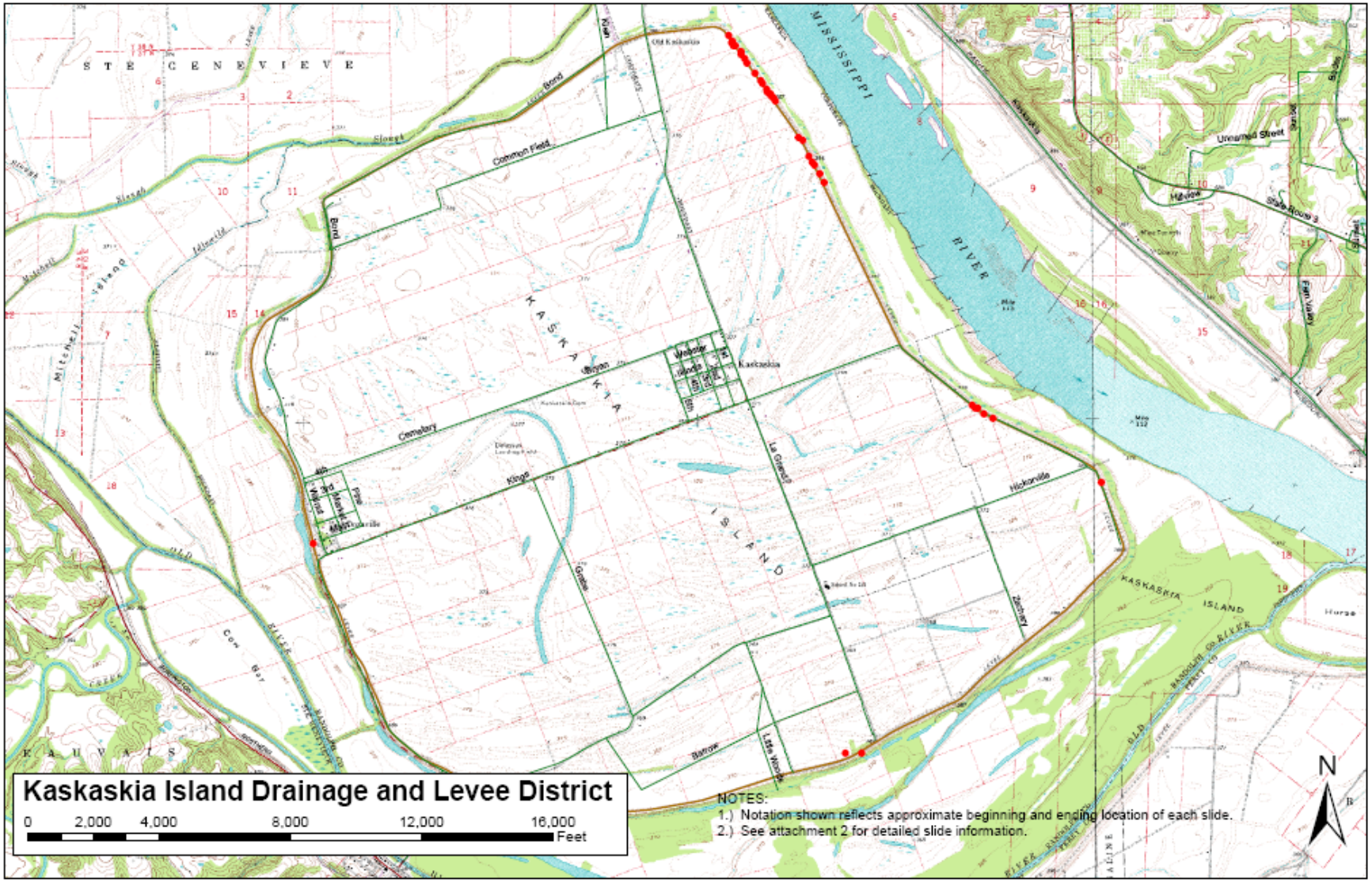


TYPICAL SECTION

NO SCALE

TYPICAL SETBACK SCOUR REPAIR

Attachment 5 – Slides indicated by red dots.



DRAFT FINDING OF NO SIGNIFICANT IMPACT

LEVEE REPAIR (PL84-99):
KASKASKIA ISLAND DRAINAGE AND LEVEE DISTRICT
RANDOLPH COUNTY, ILLINOIS

1. I have reviewed and evaluated the documents concerning the proposed repair of 14 slide areas in the Kaskaskia Island Drainage and Levee District (DLD), Randolph County, Illinois. These 14 slide areas reduce the ability of the system to provide the authorized level of flood protection. The St. Louis District proposes work that involves excavation of the slide area to 1 – 2 feet deeper than the failure surface. Excavated material would then be mixed with hydrated lime (approximately 6% by dry weight) on the levee berm. The material would then be placed back in the levee section and compacted in place. All work will be performed within the footprint of the existing levee and the levee restored to pre-flood levee grades, cross sections, and alignments.

2. I have also evaluated other pertinent data and information on these repairs. As part of this evaluation, I have considered the following project alternatives.

a. Providing Federal assistance with repairs to the levee system (Recommended Alternative).

b. No Federal Action ("No Action" Alternative).

c. Non-structural Alternative

3. The non-structural alternative was eliminated during preliminary planning because it is not desirable to the sponsor, would have large costs, and result in loss of numerous acres of prime farmland. The possible consequences of the remaining two alternatives have been studied for physical, biological, and socioeconomic effects, and engineering feasibility. Significant factors evaluated as part of my review include:

a. If no repairs are accomplished, the levee system could deteriorate to the point that protection would be jeopardized during the next significant flood event. The DLD would remain in its damaged state and provide an estimated 10-year level of protection instead of the 50-year level it was designed to provide. This reduced level of protection would increase flood risk and threaten the livelihood of local landowners.

b. Repair activities will cause temporary erosion, noise, and air pollution. Proper construction and soil management techniques will minimize this effect. Upon completion, all construction equipment will be removed and exposed areas will be stabilized by compaction and seeding. Impacts will be short term and minor.

c. Levee vegetation will be lost and wildlife disturbed during repair. These impacts will be both minimal and temporary. Seeding will restore vegetation and wildlife disturbance will end after construction completion.

d. No Federally endangered, threatened, or candidate species will be adversely impacted by the levee repairs.

e. The aesthetic and recreational quality of the area will be temporarily reduced by construction equipment and associate noise. Shortly after construction completion, aesthetic and recreational quality will return to pre-flood conditions.

f. Construction/repair activities associated with this project will have no effect upon significant archaeological remains or historic properties. As presently designed, earthmoving will be confined to areas previously disturbed during original levee construction.

g. No adverse socioeconomic impacts from the proposed levee repairs were identified.

h. The repair work will not require the permanent placement of additional fill material below ordinary high water. As such, the public will not be notified of the action by Public Notice under Section 404 or 401 of the Clean Water Act.

4. Based on my analysis and evaluation of the alternative courses of action presented in the Environmental Assessment, I have determined that the implementation of the recommended plan will not have significant effects on the quality of the environment. Therefore, an Environmental Impact Statement will not be prepared prior to proceeding with this action.

_____ _____

Date

Thomas E. O'Hara, Jr.
Colonel, U.S. Army
District Engineer