**DEPARTMENT OF THE ARMY**
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
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CEMVS-PM-E 16 July 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 (PL 84-99): METRO EAST SANITARY DRAINAGE AND LEVEE DISTRICT MADISON AND ST. CLAIR COUNTIES, 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 Amanda Oliver of the Environmental Branch (CEMVS-PM-E), at telephone number (314) 331-8497, facsimile number (314) 331-8806, or e-mail at <amanda.j.oliver@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):
## METRO EAST SANITARY DRAINAGE AND LEVEE DISTRICT
## MADISON AND ST. CLAIR COUNTIES, ILLINOIS

### 1. PURPOSE AND NEED FOR ACTION

This document is an Environmental Assessment with an attached Draft Finding of No Significant Impact for levee repairs to the Metro East Sanitary Drainage and Levee District (MESD). It describes levee damage, repair alternatives, the existing environment, and potential environmental impacts associated with each alternative. Under PL84-99, Drainage and Levee Districts within the federal levee system can request federal assistance with flood damage repairs. The MESD levee system sustained slide damage as a result of flooding in spring of 2008. This damage reduces the level of protection provided by the levee, making the district vulnerable to flooding at more frequent intervals.

### 2. LOCATION

The levee is located in Madison and St. Clair Counties and runs along the left descending bank of the Mississippi river (Fig. 1). It extends from Mississippi River Mile 175 to River Mile 195. The repair area is located in the far southern portion of the levee in St. Clair County (Fig. 1).

### 3. AUTHORIZATION

The original MESD levee was authorized by the Flood Control Act of 22 June 1936. The project was modified by the 27 October 1965 Flood Control Act, by Public Law 89 – 293 and by the Water Resources Development Appropriations Act of 1988. An authorization based on the Energy and Water Development Appropriations Act of 1988, Public Law 100-202, includes the construction, repair, and rehabilitation of project components. Public Law 84-99 (PL-99), an amendment to the Flood Control Act of 1962, authorizes the US Army Corps of Engineers to assist the Drainage and Levee Districts in the repair of both federal (Corps constructed, locally operated and maintained) and non-federal (constructed by non-federal interests or by the Work Projects Administration) flood control projects damaged by flooding.

### 4. LEVEE SYSTEM DESCRIPTION

Metro East Sanitary Drainage and Levee District is in the federal levee system and protects approximately 61,000 acres. The levee system provides protection from a 500 year flood. The system consists of 16.7 miles of clay levee and 3.1 miles of concrete floodwall and includes pump stations, railroad and highway closures, seepage berms, relief wells, gravity drain structures, and service roads on the levee crown. It is an urban levee protecting the Metro East Region, including Granite City, Cahokia and East Saint Louis and approximately 25,000 acres of agricultural.

### 5. DESCRIPTION OF ALTERNATIVES

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

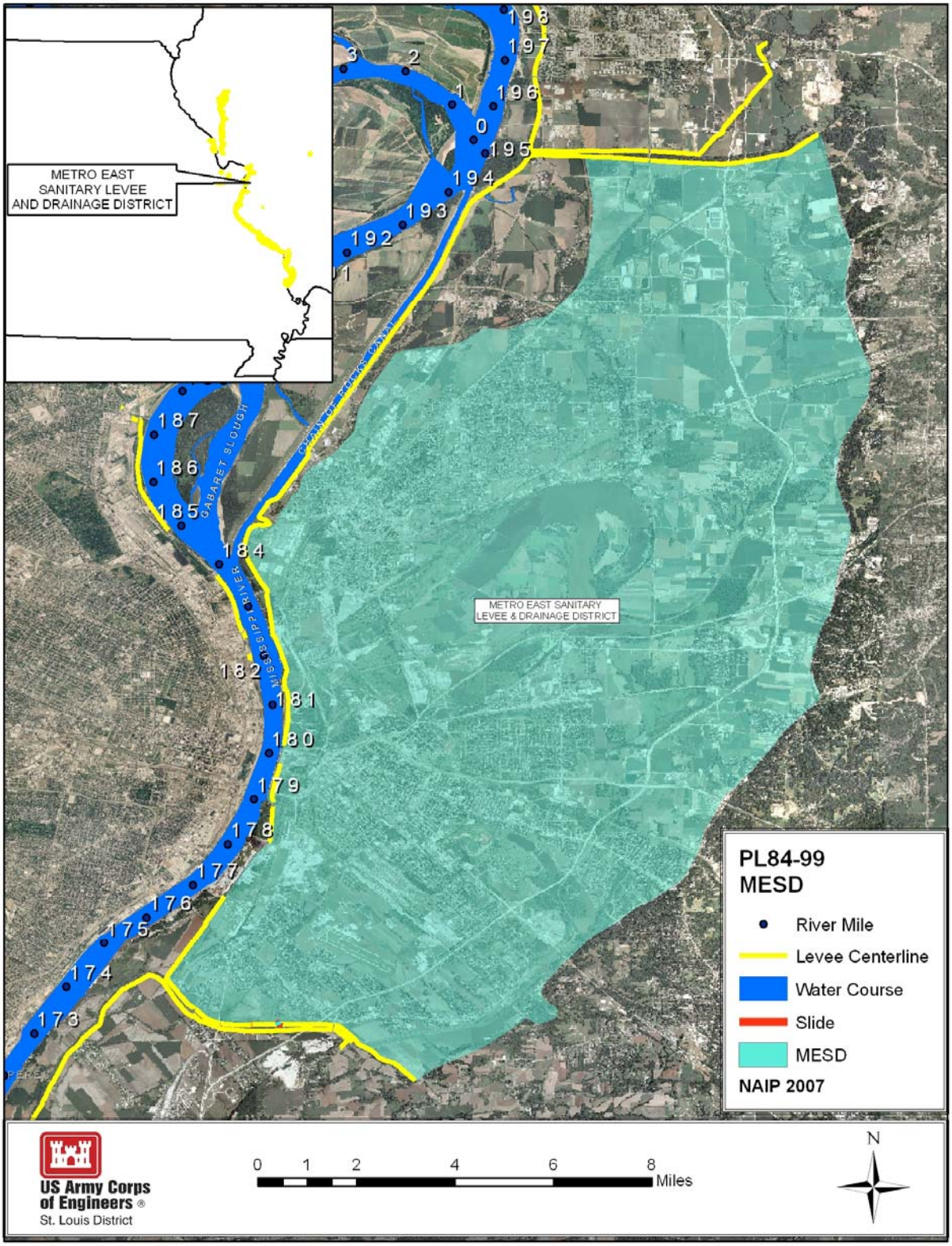


**Figure 1**. Metro East Sanitary Drainage and Levee District. Levee slides are signified in red.

## A. CAUSE OF DAMAGE

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 into their flood control pools. The Mississippi River at Cape Girardeau reached 9 feet over flood stage. Flooding in the Meramec basin resulted in a peak discharge of 53,600 cubic feet per second (cfs) at Eureka. This flow resulted in a peak stage 13 feet over flood stage at Valley Park. The Big Muddy River at Murphysboro recorded a flow of over 28,000 cfs, with a stage 15 ft. over flood stage.

The MESD Levee is constructed of highly plastic clay soils. These clays have very high Plastic Index values (in excess of 40) and very low shrinkage limits. These soils tend to exhibit a loss of strength with time and have a very high shrink-swell potential that allows for the formation of deep cracks in the levee during periods of low rainfall. These cracks tend to fill with water during high rain events producing internal hydrostatic pressures against which the levee was not designed.

## B. DAMAGE DESCRIPTION

As a result of high rainfall and the highly plastic clay soils, the MESD levee became saturated and unstable and sustained slide damage in two areas (Fig. 1). One slide occurred on the interior and one on the exterior of the levee. Both slides extended to the crown of the levee but did not cause crevassing (Fig 2.). MESD subsequently pushed the slide material back into place. Depth of the slide could not be recorded because of the MESD repairs; slide 1 is 240 ft. long and slide 2 is 88 ft. long (Fig. 2).

## C. ALTERNATIVES

NEPA requires that in analyzing alternatives to a proposed action a federal agency consider an alternative of "No Action." Likewise, Section 73 of the WRDA of 1974 (PL93-251) requires federal agencies to give consideration to nonstructural measures to reduce or prevent flood damage. 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, would have large costs, and result in loss of numerous acres of prime farmland. Therefore, a nonstructural alternative was eliminated from further consideration.

### 1) NO ACTION ALTERNATIVE

Under the No Action Alternative, the federal government would not repair the four slide areas on the Preston Levee. It is possible that the Drainage and Levee District would make repairs without Federal assistance. Environmental impacts of the Drainage and Levee District 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 Preston Levee provides a 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 threatening the livelihood of local landowners.


**Figure 2.** Images of the two slide areas in the southern section of the MESD Levee.

**2) RECOMMENDED ALTERNATIVE: REPAIR OF LEVEES WITH FEDERAL ASSISTANCE**

Under this alternative, the federal government would repair the two slide areas to pre-flood elevations on the original levee alignment. Because this is a federal levee, the repair costs would be 100% federal.

**Alternative Description**: To repair the slide areas and bring the levee up to pre-flood protection levels, the following actions would be required. Established roads and the levee crown would be used to move equipment to the slide area, including excavators, a bulldozer, a sheeps foot roller, a lime distribution truck, a water truck, a soil pulverizer, a road grader, and a small front end loader. The levee berm on the side of the slide would be used as a staging and work area. If trees occur and impair the ability to use this space, trees would not be removed. Instead, the staging area would be relocated to the closest

area with no trees along the same side of the levee. Work would begin by excavating and setting aside the top 8" of topsoil from the slide area. Hydrated lime would be mixed into the top 10" of the remaining slide material at an application rate of 16 lbs per square yard. Treated material would then be excavated and set aside on the levee berm. This procedure would be repeated at 10" increments until a depth 1 – 2 ft. greater than the failure surface is reached. All treated material would receive a second application of hydrated lime. After all material has been removed, the slide area would be treated with hydrated lime to a depth of 10". Stockpiled material would be placed and spread over the slide area in increments of 10" and compacted. Finally, top soil would be replaced and disturbed sections of the levee below the levee crown would be re-seeded. Geotextile followed by crushed stone would be placed on the crown to restore the existing road. The repaired sections would match the pre-flood levee grades, cross sections, and alignments. Approximately 8,060 cubic yards of semi-compacted impervious material would be removed and replaced in the levee.

### D. COMPARISON OF ALTERNATIVES

Under the Repair of Levees with Federal Assistance Alternative, damaged levees would be repaired to pre-flood conditions. Under the No Action Alternative, the levee system would remain in its damaged state with a reduced level of protection. This would increase the frequency and risk of monetary damages to residential and industrial areas and cropland in the event of future flooding. It is for these reasons that the Repair of Levees with Federal Assistance Alternative is the recommended alternative.

## 6. ANTICIPATED SCHEDULE OF WORK WITH PROJECT INFORMATION REPORT APPROVAL

The following is a tentative schedule for the completion of necessary steps for federal repair of the Metro East Sanitary Drainage and Levee District.

**Table 2.** Tentative schedule for actions associated with Metro East Sanitary Drainage and Levee District levee repair.

| Action | Proposed End Date |
|---|---|
| Project Information Report Completion & Submission | July 9, 2008 |
| MVD Project Information Report Review and Approval | R = project approval date |
| Completed Plans and Specifications & EA public review | R + 36 days |
| Contract Advertisement | R + 46 days |
| Contract Bid Opening | R + 50 days |
| Signed FONSI | R + 50 days |
| Contract Award | R + 54 days |
| Notice to Proceed | R + 56 days |
| Construction Start | R + 60 days |
| Construction Completion | R + 105 days |
| Construction Final Inspection | R + 105 days |
| Fiscal Closeout Complete | R + 120 days |

## 7. IMPACT ASSESSMENT

This section describes the existing environmental and socioeconomic conditions and consequences of both the No Action and the Action Alternatives on those conditions.

**Water Resources:**

Existing - The areas proposed for repair are located in the portion of the levee that runs south away from the Mississippi River along drainage canals and Prairie du Pont Creek.

No Action – Without repair, the damaged portion of the levee would slowly erode. During floods, the protected area would be more likely to flood. Flood water would deposit sediment on flooded lands resulting in a decrease in water turbidity and filling of wetlands. Additionally due to residential and industrial land use, receding flood water would be contaminated with household and industrial pollutants.

Federal Action - A temporary increase in water turbidity resulting from erosion may occur around repair operations. Repairs would be completed with federal money, design, and supervision ensuring water quality protection.

**Soils and Land Use:**

Existing - The levee protects approximately 61,000 acres. USGS land cover from 2000 indicates that this area is composed of 26% natural vegetation, 36% cropland and 38% development. Adjacent to the repair area is the southern edge of the town of Cahokia and agricultural land.

No Action - Without flooding, land use and soils would remain unchanged. With flooding, sedimentation and scour would occur and areas would be inaccessible until flood waters receded.

Federal Action – Until repair completion, impacts are similar to the No Action Alternative. After construction completion, flood risk would be returned to pre-flood condition reducing risk and associated impacts.

**Prime Farmland**:

Existing – MESD protects approximately 24,800 acres of prime farmland and 2000 Land Cover data indicates that 25,400 acres within the levee district is farmed.

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

Federal Action - Material for the levee repair would be excavated from the levee slide area. As such, no agricultural lands would be impacted by the project.

**Flora:**

Existing - Vegetation beyond the exterior toe of the levee is dominated by disturbance adapted species and floodplain forest species. Habitat along the landside of the levee is predominantly agriculture and developed land. An approximately 400 ft. corridor of floodplain forest is directly adjacent to the levee. The habitat on the levee is mowed cool season grasses.

No Action - Without flooding, the levee slide area would re-vegetate over time and no other impacts would occur. With flooding during the growing season, flood waters could kill vegetation behind the levees as flood water ponds on typically dry areas. However over time, wetland vegetation would establish.

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

**Fauna:**

Existing - Floodplain forest and wetlands support a great variety of insects, crustaceans, mollusks, reptiles, amphibians, fish, birds, and mammals. The proposed repair area does not provide quality wildlife habitat because of regular disturbances from mowing, burrowing mammal control, and other maintenance activities. Therefore, it is unlikely that the repair area supports significant wildlife populations.

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

Federal Action - Wildlife populations occupying the small remnant of natural habitat adjacent to the levee toe would be disturbed by noise, increased water turbidity, and exhaust. These impacts would cease shortly after construction completion resulting in no long term impact.

**Fisheries:**

Existing - Aquatic species that occur within the Mississippi River and associated tributaries and backwaters include catfish, crappie, Freshwater Drum (*Aplodinotus grunniens*), gar, shad, Paddlefish (*Polyodon spathula*), buffalo, carp, Largemouth Bass (*Micropterus salmoides*), and sunfish.

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

Federal Action - Species utilizing big river aquatic habitats typically inhabit a diversity of water velocities, depths, and turbidity levels during various life stages. Any temporary increase in turbidity should have no long term adverse impacts to fish or their habitat.

**Threatened and Endangered Species:**

Existing - In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, the St. Louis District, Environmental Branch requested the US Fish and Wildlife Service provide a listing of federally threatened or endangered species that may occur in the vicinity of the proposed project. In an electronic message, dated June 25, 2008, the USFWS provided a list of species and critical habitat (Table 1). Habitat requirements and impacts of the Federal Action Alternative are discussed for each species below.

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

**Table 1.** List of federally threatened and endangered species and their habitat provided by USFWS on June 25, 2008.

| **Common Name (Scientific Name)** | **Classification** | **Habitat** |
|---|---|---|
| Indiana Bat (*Myotis sodalis)* | Endangered | Caves, mines (hibernacula); small stream corridors with well developed riparian woods; upland forests (foraging) |
| Interior Least Tern (*Sterna antillarum*) | Endangered | Bare alluvial and dredge spoil islands |
| Pallid Sturgeon (*Scaphirhynchus albus)* | Endangered | Large rivers |
| Illinois Cave Amphipod (*Gammarus acherondytes*) | Endangered | Karst caves & streams |
| Decurrent False Aster (*Boltonia decurrens*) | Threatened | Disturbed alluvial soils |

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

Federal Action - Levee repairs would take place within the footprint of the levee and would not impact any Pallid Sturgeon habitat. The proposed project is not likely to adversely affect the Pallid Sturgeon.

**Interior Least Tern (*Sterna antillarum*)** historic breeding range includes the Mississippi River system (USFWS 1990b). Surveys of the Mississippi River have found the majority of breeding colonies occur south of Cairo, IL. However, breeding birds have been found in Scott and

Mississippi counties. The characteristics required for suitable breeding grounds include "bare alluvial islands or sandbars", food, and appropriate water regime. Interior Least Terns arrive at breeding grounds in late April and the breeding season is complete by early September (USFWS 1990b).

Federal Action - Levee repairs would take place within the footprint of the levee and would not impact any Interior Least Tern habitat. The proposed project is not likely to adversely affect the Interior Least Tern.

**Indiana Bat (*Myotis sodalis*)** forage on flying insects typically along the shorelines of rivers and lakes, in the canopy of trees in floodplains (Humphrey et al. 1977), and in upland forests (Brack and LaVal 1985). In summer, habitat consists of wooded or semi-wooded areas, mainly along streams. Females bear their offspring in hollow trees or under loose bark of living or dead trees. Trees standing in sunny openings are attractive because of warmer air spaces and crevices under the bark. Maternity sites have been reported in riparian areas, floodplain forests, and upland habitats. Limestone caves with pools are preferred for hibernacula during winter (Hall 1962).

Federal Action - The repair would take place within the footprint of the existing levee and it is unlikely that trees would be adversely impacted. The noise from construction may temporarily disturb roosting bats. This noise is unlikely to affect maternity colonies because any juveniles should be fully reared before construction occurs (Natureserve 2008). The presence of many suitable roosting sites in the area would also allow for the bats to temporarily roost in another area. The proposed project is not likely to adversely affect the Indiana Bat.

**Illinois Cave Amphipod (*Gammarus acherondytes*)** was historically known to occur in six cave systems within a 10 mile radius of Waterloo, IL (USFWS 1998). It is now found in three of the original six, all within Monroe County, IL (USFWS 1998).

Federal Action - The repair would take place within the footprint of the existing levee in St. Clair County. Although some erosion may occur, impacts to ground water in Monroe County would be non-existent or very minimal. The proposed project is not likely to adversely affect the Illinois Cave Amphipod.

**Decurrent False Aster (*Boltonia decurrens*)** is presently known from scattered localities on the floodplains of the Illinois River and Mississippi River from its confluence with the Missouri River south to Madison County, Illinois (USFWS 1990a). Its natural habitat was lake shores and stream banks. It appears to require abundant light and periodic flooding to remove competitors. Populations presently grow in natural habitat, but are more common in disturbed lowland areas where they appear to be dependent on human activity for survival (USFWS 1990a).

Federal Action - The repair would take place within the footprint of the existing levee. Prior to the 2008 flood damage, this area was vegetated with cool season grasses and regularly mowed. The dense turf formed by the cool season grass and regular mowing would prevent Decurrent False Aster from germinating. The proposed project is not likely to adversely affect the Decurrent False Aster.

**Air Quality:**

Existing – The Clear Air Act of 1963 requires the U.S. Environmental Protection Agency (EPA) to designate National Ambient Air Quality Standards (NAAQS). They have identified standards for seven pollutants: lead, sulfur dioxide, carbon monoxide, nitrogen dioxide, ozone, particulate matter less than 10 microns in diameter, and particulate matter less than 2.5 microns. St. Clair and Madison County do not meet EPA air quality standards for fine particulate matter (PM2.5) and ozone. The state is responsible for preparing a State Implementation Plan (SIP) with a plan to "attain" NAAQS. Federal actions occurring in the non-attainment zone must conform to the SIP and not prevent the state from achieving air quality goals.

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

Federal Action – With implementation of the proposed action, temporary increases in air pollution would occur due to particulate and combustible emissions from construction vehicles, mobile equipment, and their actions. Because emissions are from mobile sources, manufacturers are required to meet performance standards. The construction equipment would have catalytic converters and mufflers to reduce exhaust and emissions. Additionally, due to the short duration of construction, any increases or impacts on ambient air quality are expected to be short-term and minor. Therefore it is not necessary to quantify emissions given the lack of ambient emissions thresholds that could be used to make the determination of air quality impact. This project is not expected to cause or contribute to the violation of federal or state ambient air quality standards.

**Hazardous, Toxic and Radioactive Waste Sites:**

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

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

Federal Action - Impacts are the same as the No Action Alternative.

**Noise:**

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

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

Federal Action - The proposed project would be expected to temporarily increase noise levels near repair sites. The U.S. Environmental Protection Agency has set a limit of 85 decibels on the A scale (the most widely used sound level filter) for eight hours of continuous exposure to protect against permanent hearing loss. Based upon similar construction activities conducted in

the past, noise above this level would not be expected to occur for periods longer than eight hours.

**Recreation:**

Existing – A golf course and the city of Cahokia are near the repair area. Thus, popular recreational activities include backyard activities and golf.

No Action – Without flooding, there would be no change in recreation. With flooding, most recreation activities would not be possible until several months after flood waters receded.

Federal Action - Construction equipment and activities would cause temporary noise affecting and potentially disrupting recreation activities within the vicinity of the repair. Upon construction completion, all disruption would cease.

**Aesthetics:**

Existing - The levee repair area is adjacent to a thin corridor of natural vegetation bordered by development including a golf course, and residential area in the town of Cahokia.

No Action – Without flooding, there would be no aesthetic impacts. With flooding, flood damage, sedimentation and scour would cause degradation to the landscape.

Federal Action - Construction equipment and activities would cause short-term degradation of the landscape. Upon construction completion all equipment would leave the area, and the seeded repair area would re-vegetate to closely resemble pre-flood conditions.

**Socioeconomic:**

Existing – The area protected by the MESD levee provides 500-year level flood protection to approximately 85,000 acres containing residential, commercial, and industrial properties. These properties and related structures have an estimated structural value exceeding $3.5 billion.

No Action - Without flooding, there would be no socioeconomic impacts. With flooding, damage, sedimentation and scour would occur. This would displace large numbers of people and impair the ability of businesses and farmers to use their land resulting in economic losses.

Federal Action - Under the Federal Action Alternative, repairs would be 100% federal. Local residents, industry, and agriculture would benefit from levee repair and subsequent restoration to the pre-flood level of protection. The proposed initial levee repairs would not require residential displacement and could provide short-term employment for local contractors and laborers.

**Environmental Justice:**

Existing – The standard unit of analysis for environmental justice is the Census-designated Block Group. Due to the urban nature of the area, MESD protects all or part of 137 Block Groups.

These Block Groups include approximately 125,000 people. Census data from 2000 to 2005 suggest that population numbers are stable and that the population is ethnically diverse: 49% white, 45% black, and the remainder a multitude of other races.

No Action – Without flooding, there would be no change from current conditions. With flooding, damage, sedimentation and scour would occur. This would displace a large number of residents.

Federal Action - Residential, industry, and agriculture would benefit from levee repair and subsequent restoration of the pre-flood level of protection. The repairs would also provide short-term employment funded by federal money.

**Cultural Resources:**

Existing - The repair site and staging area is composed of recently deposited material and is unlikely to contain any culturally significant resources.

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

Federal Action - Under the current proposed plan to repair the slides with the existing slide material and stage equipment on the existing, previously disturbed, levee berm it is very unlikely that any cultural resources would be impacted. As a result, earthmoving / ground disturbance activities associated with the proposed repair are not anticipated to have any effect upon significant archaeological remains. 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 in the Illinois Historic Preservation Agency.

**Cumulative Impacts:**

Existing - System-wide repairs to levees are currently underway. Final repairs would involve returning most of the levee breaches to the same alignment and level of protection as existed prior to the flood of 1993. Temporary impacts from noise, air, and water pollution would occur; however, repair sites are widely scattered throughout the St. Louis District, and therefore, additive effects of these impacts would be negligible. Other PL84-99 projects currently being planned include projects that require borrow and some that are infeasible to repair on the original alignment, such as the damage to the Vandalia D&L District. Borrow would most likely come from agriculture areas or previously identified areas. For new levee alignments, some acreage would be removed from agricultural use causing a minor loss to overall farm production and increase in floodplain habitat. The widely scattered nature of repair sites and shallow excavation depth of borrow sites would reduce impacts.

No Action - No long term adverse impacts are expected.

Federal Action - No long term adverse impacts are expected.

**8. EXECUTIVE ORDER 11988 (FLOODPLAIN MANAGEMENT)**
Under this Executive Order, federal agencies are to "provide leadership and shall take action to reduce the risk of flood loss, to minimize the impacts of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains". The St. Louis District, Corps of Engineers has evaluated the proposed levee repairs at the slides which occurred in the MESD levee during the spring flooding of 2008. Not repairing the levee would increase the risk of flood damage and loss. Based on the extent of levee damage that currently exists, it is prudent to repair the levee to restore the level of flood protection that existed prior to the flood event.

By reducing the future risk of flood loss and minimizing the impacts on existing vegetation in the floodplain, this proposed project is in full compliance with this Executive Order.

**9. EXECUTIVE ORDER 11990 (PROTECTION OF WETLANDS)**
Under this Executive Order, federal agencies shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities.

The St. Louis District, Corps of Engineers has evaluated the proposed repairs at the slides which occurred in the MESD levee during the spring flooding of 2008. The proposed project work would be conducted within the footprint of the levee. Therefore, the proposed levee repairs are in full compliance with this Executive Order because no wetlands would be affected by this action.

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

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

The repair would take place within the footprint of the existing levee. Construction is currently scheduled to begin in September. Bald Eagles fledge young in August and begin nest building activities in late January. Therefore, the proposed project is not likely to disturb bald eagles.

**11. ENVIRONMENTAL REGULATORY CONSTRAINTS**

The Recommended Alternative was subject to compliance review with all applicable environmental regulations and guidelines. The Recommended Alternative was determined to be in full compliance with all applicable acts and legislation.

**12. RELATIONSHIP OF PLANS TO ENVIRONMENTAL LAWS AND REGULATIONS**

| **Federal Policies** | **Compliance** |
|---|---|
| Bald Eagle Protection Act, 42 USC 4151-4157 | Full |
| Clean Air Act, 42 USC 7401-7542 | Full |
| Clean Water Act, 33 USC 1251-1375 | Full |
| Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC 9601-9675 | Full |
| Endangered Species Act, 16 USC 1531-1543 | Full |
| Farmland Protection Policy Act, 7 USC 4201-4208 | Not applicable |
| Fish and Wildlife Coordination Act, 16 USC 661-666c | Full |
| Food Security Act of 1985, 7 USC varies | Full |
| Land and Water Conservation Fund Act, 16 USC 460d-4601 | Full |
| National Environmental Policy Act, 42 USC 4321- 4347 | Partial[1] |
| National Historic Preservation Act, 16 USC 470 *et seq.* | Partial[2] |
| Noise Pollution and Abatement Act, 42 USC 7691-7642 | Full |
| Resource, Conservation, and Rehabilitation Act, 42 USC 6901-6987 | Full |
| Rivers and Harbors Appropriation Act, 33 USC 401-413 | Full |
| Water Resources Development Acts of 1986 and 1990 | Full |
| Floodplain Management (EO 11988 as amended by EO 12148) | Full |

| | |
|---|---|
| Prevention, Control, and Abatement of Air and Water Pollution at Federal Facilities (EO 11282 as amended by EO's 11288 and 11507) | Full |
| Protection and Enhancement of Environmental Quality (EO 11991) | Full |
| Protection and Enhancement of the Cultural Environment (EO 11593) | Full |
| Protection of Wetlands (EO 11990 as amended by EO 12608) | Full |

Full compliance: having met all requirements of the statute for the current stage of planning
Not applicable: compliance with the statute not required
1 Full compliance to be achieved with the District Engineer's signing of the Finding of No Significant Impact
2 Full compliance to be achieved with the State Historic Preservation Officer's concurrence in the District's EA conclusions.

## 13. COORDINATION WITH OTHER STATE AND FEDERAL AGENCIES

This EA and Draft FONSI will be provided to the following state and federal agencies for their review, comments, and concurrence during the 30 day public comment period.

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

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

## 14. LIST OF PREPARERS

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|---|---|
| Mr. Bruce Douglas, Civil Engineer | Role: Project Manager |
| Mr. Chuck Frerker, Regulatory Specialist | Role: Regulatory Permits |
| Dr. Terry Norris, District Archaeologist | Role: Archeological Compliance |
| Mrs. Amanda Oliver, Biologist | Role: Environmental Assessment |

## 15. REFERENCES

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**DRAFT FINDING OF NO SIGNIFICANT IMPACT**

**LEVEE REPAIR (PL 84-99):**
**METRO EAST SANITARY DRAINAGE AND LEVEE DISTRICT**
**MADISON AND ST. CLAIR COUNTIES, ILLINOIS**

1. I have reviewed and evaluated the documents concerning the proposed repair of two slide areas in the Metro East Sanitary Drainage and Levee District, Madison and St. Clair County, Illinois. These two 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 ft. deeper than the failure surface. Excavated material would then be mixed with hydrated lime (approximately 16 lbs per $yd^2$) on the levee berm. The material would then be placed back in the levee section and compacted in place. All work would 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 Action ("No Action" Alternative).

c. Nonstructural Alternative

3. The nonstructural 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, environmental, cultural, social and economic 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 MESD Levee would remain in its damaged state and provide an estimated 25 year level of protection instead of the 500 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 would cause temporary erosion, noise, and air pollution. Proper construction and soil management techniques would minimize this effect. Upon completion, all construction equipment would be removed and exposed areas would be stabilized by compaction and seeding. Impacts would be short term and minor.

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

d. No federally endangered, threatened, or proposed species would be adversely impacted by the levee repairs.

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

f. Construction/repair activities associated with this project would have no effect upon significant archaeological remains or historic properties. As presently designed, earthmoving would 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 would not require the permanent placement of additional fill material below ordinary high water. As such, the public would 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 would not have significant effects on the quality of the environment. Therefore, an Environmental Impact Statement would not be prepared prior to proceeding with this action.

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Date

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