

Attachment A

Draft Section 404(b)(1) Evaluation

DRAFT SECTION 404(b)(1) EVALUATION
Mississippi River Mainline Levee
Seepage Control Measures
Coahoma County, Mississippi

I. Project Description

a. Location

The proposed seepage control measures are located along the Mississippi River Mainline Levee (MRL) between MRL mile posts 85/86 and 93/94, along the left descending bank of the Mississippi River, west of the town of Sherard, in Coahoma County, Mississippi (Figure 1).

b. General Description

The U.S. Army Corps of Engineers (USACE), Memphis District (MVM), is proposing a seepage control project that involves constructing three earthen berms adjacent to the landside levee slope and existing berms within the project area. The proposed berm and borrow locations are presented in Figure 2. The existing areas proposed to be re-shaped, receive fill to provide back pressure and prevent sand boils are generally planted in pasture grass and subjected to routine mowing and/or cattle grazing. Although landcover analysis consistent with previous MRL projects does not reveal the presence of wetlands at the middle or southern berm locations, it is anticipated that approximately 2.2 acres of depressional wetlands within the northern berm location would be filled as a result of the proposed actions. Therefore, the following discussion contained in the Section 404(b)(1) Evaluation will be limited to the northern berm project area.

Utilizing values developed by the USACE Engineer Research and Development Center and consistent with previous use for MRL projects within MVM, it was determined that approximately 13.95 functional capacity units (FCU) are provided by the existing wetland area located within the proposed construction footprint of the northern berm (Figure 3).

Compensatory mitigation requirements for unavoidable impacts to wetlands would consist of reforesting 3.27 acres of prior converted cropland with bottomland hardwood species and restoring hydrology, if applicable. However, USACE has purchased and planted a mixture of bottom-land hardwoods on 5,094 acres of land for MRL construction items within the Vicksburg District, which tracks and provides mitigation for MVM MRL projects within the State of Mississippi. Currently, required wetland mitigation associated with the ongoing MRL program in Mississippi is less than the original expected amount for MRL construction projects. Therefore, required mitigation, considering the anticipated impacts of the proposed project, is 292.83 acres (1,235.49 FCU) less than the expected amount for MRL construction projects to date. Thus,

environmental impacts resulting from the recommended alternative are addressed through the ongoing mitigation plan for Mississippi River Levees and Seepage projects.

c. Authority and Purpose

The proposed action is authorized as part of the Flood Control Act of 1928, as amended. A 1998 Final Supplemental EIS (SEIS), *Mississippi River Mainline Levees Enlargement and Seepage Control*, addressed seepage control measures to be implemented along the MRL. Since publication of the SEIS, it has been determined that other seepage control measures need to be installed along the MRL to prevent continued seepage under flood conditions, potential degradation of the levee, or eventual levee failure which could result in property damage and cause human injuries and/or loss of life.

d. General Description of Dredged or Fill Material

1) General Characteristics of Material

Backfill – Excavated material from the borrow location would be placed landside of the levee to create the northern berm.

2) Quantity of Material

Backfill – Approximately 19,680 cubic yards of excavated material would be used as backfill to create the northern berm.

3) Source of Material

Backfill – Backfill would be obtained from the excavation of proposed borrow location (Figure 4).

e. Description of the Proposed Discharge Site(s)

1) Location – Excavated material from the borrow site would be placed along the landside of the MRL, adjacent to the levee toe and existing berm, to provide back pressure against seepage and prevent sand boils in the project area (Figure 2).

2) Size – It is anticipated approximately 2.2 acres of wetlands would be impacted at the northern berm location.

3) Type(s) of Habitat – The available habitat is seasonal throughout the project area as little flow occurs during dry periods. Drainage is predominately controlled by rain events. During dry years, the depressional area is maintained by mowing and used for cattle grazing.

- 4) Timing and Duration of Discharge – Construction is scheduled to commence in the immediate future, and would take place as soon as possible. However, every effort would be made to construct during periods of low water and dry conditions, and best management practices would be applied.

f. Description of Disposal Method

Excavated material from the proposed borrow location would be placed and graded with conventional earth moving equipment (e.g., bulldozers and excavators) within the proposed berm locations to provide back pressure, prevent sand boils, and remediate known seepage issues in the project area.

II. Factual Determinations

a. Physical Substrate Determinations

- 1) Substrate Elevation and Slope – The northern berm would be created by filling approximately 4.9 acres (154 feet NAVD88) for 1,100 feet and slope from the existing berm/levee toe (164 feet NAVD 88) to the adjacent agricultural field (158 feet NAVD88).
- 2) Sediment Type – Soils in the project area are predominately Commerce and Crevasse soils and Sharkey clay.
- 3) Dredged/Fill Material Movement – Material would be excavated from the proposed borrow source riverside of the MRL and deposited landside of the MRL.
- 4) Physical Effects on Benthos – Placement of fill material would have a minimal impact on benthos. Water flow within the project area landside of the MRL is dependent on heavy rainfall and seepage from the adjacent Mississippi River. However, during non-wet periods, the area is generally planted in pasture grass and subjected to routine mowing and/or cattle grazing.
- 5) Other Effects – N/A
- 6) Actions Taken to Minimize Impacts – The following best management practices would be implemented during construction to minimize impacts:
 - Effective erosion control will be in place prior to construction and maintained throughout the construction period.
 - Construction will take place during periods of low rainfall and low water stages.
 - All disturbed areas will be seeded within 30 days after construction is completed.
 - Construction debris will be kept from entering adjacent wetlands and shall be disposed of properly.

- Appropriate steps shall be taken to ensure safe handling of petroleum products or other chemical pollutants.

b. Water Circulation, Fluctuation, and Salinity Determinations

- 1) Water – No change in water quality is expected due to this action.
 - a) Salinity – N/A
 - b) Water Chemistry – Water chemistry of the project area would not be expected to change as a result of the excavation or placement of earthen material.
 - c) Clarity – There would be temporary increases in turbidity during fill placement. Turbidity within the project area would be expected to return to pre-construction levels shortly after construction is completed.
 - d) Color – No expected change.
 - e) Odor – No expected change.
 - f) Taste – No expected change.
 - g) Dissolved Gas Levels – No expected change.
 - h) Nutrients – No expected change.
 - i) Eutrophication – No expected change.
 - j) Others as Appropriate – No expected change.
- 2) Current Patterns and Circulation
 - a) Current Patterns and Flow – As the proposed berm area is located in a low area whose hydrologic regime is dictated by precipitation and high Mississippi River stages, it is not anticipated current patterns would be expected to change. Additional flow in the adjacent Mississippi River from the anticipated seepage protection would be negligible.
 - b) Velocity – Water velocity is not expected to change.
 - c) Stratification – No expected change.
 - d) Hydrologic Regime – Installation of the earthen berm would affect existing hydrology landside of the levees by preventing seepage waters from passing underneath the MRL. However, precipitation in the project area is anticipated to remain consistent in future conditions. Additionally, impacts to water quality

within the Mississippi River would be minimal, if any, due to the heavy sediment loads normally carried by the river. Thus, no significant impacts to water quality would occur as a result of the work.

- 3) Normal Water Level Fluctuations – Existing water levels landside of the MRL within the project area are determined by local rainfall and Mississippi River seepage. Although seepage is anticipated to be reduced, existing local rainfall amounts are anticipated to remain similar in future conditions. Therefore, water level fluctuations should be minimal.
- 4) Salinity Gradients – N/A
- 5) Actions Taken to Minimize Impacts – Actions that would be implemented during construction to minimize impacts have been previously described in the Physical Substrate Determinations section above.

c. Suspended Particulate/Turbidity Determinations

- 1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site – Minor increases in suspended particulates and turbidity levels are expected during construction. Best management practices will be used throughout the construction process to minimize the impact. Ambient conditions are expected to return shortly after completion of construction.
- 2) Effects on Chemical and Physical Properties of the Water Column
 - a) Light Penetration – Minor impacts are expected to light penetration due to an expected increase in turbidity levels during construction. Ambient conditions are expected to return shortly after completion of construction.
 - b) Dissolved Oxygen – No change is expected due to the shallow water depth and currents.
 - c) Toxic Metals and Organics – No effect on toxic metals and organics are expected.
 - d) Pathogens – N/A
 - e) Aesthetics – Aesthetics would be temporarily impacted during construction due to the presence of construction equipment.
 - f) Others as Appropriate – None noted.
- 3) Effects on Biota

- a) Primary Production – Project activities would remove approximately 2.2 acres of wetlands. As the area is planted in pasture grass and used for cattle grazing, aquatic vegetation is limited temporally to times of local high-water stages. Therefore, the proposed work should have minimal effect on project area primary production.
 - b) Suspension/Filter Feeders – Increased turbidity during berm construction to adjacent areas would be minimal and of short duration with the implementation of best management practices and proposed construction in low water periods.
 - c) Sight Feeders – Not applicable.
 - d) Actions Taken to Minimize Impacts – Actions that would be implemented during construction to minimize impacts have been previously described in the Physical Substrate Determinations section above.
- d. Contamination Determinations
- It is not expected that any contaminants would be introduced or translocated due to construction. A hazardous, toxic, and radioactive waste survey has been conducted on the area. No potential sources of contamination were found.
- e. Aquatic Ecosystem and Organism Determinations
- 1) Effects on Plankton – Planktonic organisms may be temporarily disturbed during construction, as increases in turbidity are expected. However, turbidity levels would be expected to return to pre-construction levels shortly after construction is completed. Therefore, there will be no significant impacts to plankton.
 - 2) Effects on Benthos – Benthic organisms may be disturbed with the turbidity increase, but no more than what would naturally occur during high flow events.
 - 3) Effects on Nekton – Nekton would be temporarily displaced during construction, but will return shortly after project completion.
 - 4) Effects on Aquatic Food Web – Temporary reductions in benthic and suspension/filter communities in such a small area should not significantly impact the aquatic food web during construction. These organisms would quickly colonize the adjacent area after construction.
 - 5) Effects on Special Aquatic Sites
 - a) Sanctuaries and Refuges – N/A

- b) Wetlands – Approximately 2.2 acres of wetlands would be impacted by the proposed project. Approximately 3.27 acres of mitigation is proposed to offset these impacts and fulfil mitigation requirements.
 - c) Mud Flats – N/A
 - d) Vegetated Shallows – N/A
 - e) Coral Reefs – N/A
 - f) Riffle and Pool Complexes – N/A
- 6) Threatened and Endangered Species – Pursuant to Section 7 of the Endangered Species Act, as amended, USACE has determined that the proposed project would have no effect on the northern long eared bat, wood stork, fat pocketbook, pallid sturgeon, or pondberry. Additionally, no evidence of bald eagles, or their nests, were observed at any project location. The bald eagle is no longer listed as a threatened species, but is still protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act.
- 7) Other Wildlife – Terrestrial wildlife would be minimally impacted by temporary displacement during project construction.
- 8) Actions Taken to Minimize Impacts – Actions that would be implemented during construction to minimize impacts have been previously described in the Physical Substrate Determinations section above.
- f. Proposed Disposal Site Determinations
- 1) Mixing Zone Determinations – N/A
 - 2) Determination of Compliance with Applicable Water Quality Standards – USACE, MVM, has requested water quality certification from the State of Mississippi, Department of Environmental Quality, with the draft environmental assessment and the Joint Public Notice
 - 3) Potential Effects on Human Use Characteristic
 - a) Municipal and Private Water Supply – N/A
 - b) Recreational and Commercial Fisheries – N/A
 - c) Water Related Recreation – N/A

- d) Aesthetics – Aesthetics would be temporarily impacted during construction due to the presence of construction equipment.
- e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves – N/A
- g. Determination of Cumulative Effects on the Aquatic Ecosystem

Approximately 2.2 of wetlands would be impacted by the proposed project. Approximately 3.27 acres of mitigation is proposed to offset the impact. The impacts associated with the proposed project activities should not have any significant adverse cumulative effects on the environment in addition to those reported in the 1998 Supplemental Environmental Impact Statement.

- h. Determination of Secondary Effects on the Aquatic Ecosystem

Not Applicable.

III. Findings of Compliance for MRL Seepage Control Measures

- a. Evaluation of Availability of Practical Alternatives to the Proposed Discharge Site Which Would have Less Adverse Impact on the Aquatic Ecosystem

A draft environmental assessment has been completed that addresses alternatives to the proposed action. The recommended plan was determined to be the most cost effective and least environmentally damaging of the alternatives studied in detail. The no action alternative was determined not to be practical. The proposed action would protect existing public infrastructure, and private homes and businesses. Without installation of seepage control measures, the integrity of the levee will be compromised. Seepage could potentially undermine the levee and cause it to fail during a flood event.

- b. Compliance with Applicable State Water Quality Standards

Application for State of Mississippi water quality certification has occurred with the draft environmental assessment and the Joint Public Notice. A determination concerning water quality certification has not been made to date. Those making comments to this 404(b)(1) evaluation are asked to furnish a copy of their comments to the Mississippi Department of Environmental Quality.

- c. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 Of the Clean Air Act

Coahoma County is in attainment for all air quality standards. No significant impacts to air quality are expected. Additionally, best management practices would be used throughout the construction to minimize air pollution.

d. Compliance with Endangered Species Act of 1973

No impacts are expected to federally listed or proposed threatened or endangered species. This project has been coordinated with the Department of Interior, U.S. Fish and Wildlife Service.

e. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972

Not applicable.

f. Evaluation of Extent of Degradation of the Waters of the United States

1) Significant Adverse Effects on Human Health and Welfare

- a) Municipal and Private Water Supplies – N/A
- b) Recreation and Commercial Fisheries – N/A
- c) Plankton – No significant impacts are expected.
- d) Fish – No significant impacts are expected.
- e) Shellfish – N/A
- f) Wildlife – No significant impacts are expected.
- g) Special Aquatic Sites – N/A

2) Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems – No significant impacts are expected.

3) Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity, and Stability – No significant impacts are expected.

4) Significant Adverse Effects on Recreational, Aesthetic, and Economic Values – No significant impacts are expected.

g. Appropriate and Practical Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem

Actions that would be implemented during construction to minimize impacts have been previously described in the Physical Substrate Determinations section above. Chiefly, best management practices will be implemented, construction will occur during low-flow periods, and impact areas will be limited to the extent necessary for construction.

h. On the Basis of the Guidelines, the Proposed Disposal Site(s) for the Discharge of Dredged or Fill Material is:

Specified as complying with the requirements of these guidelines; or,

Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem; or,

All conditions from the Mississippi Department of Environmental Quality would be adhered to.

Specified as failing to comply with the requirements of these guidelines.

Date

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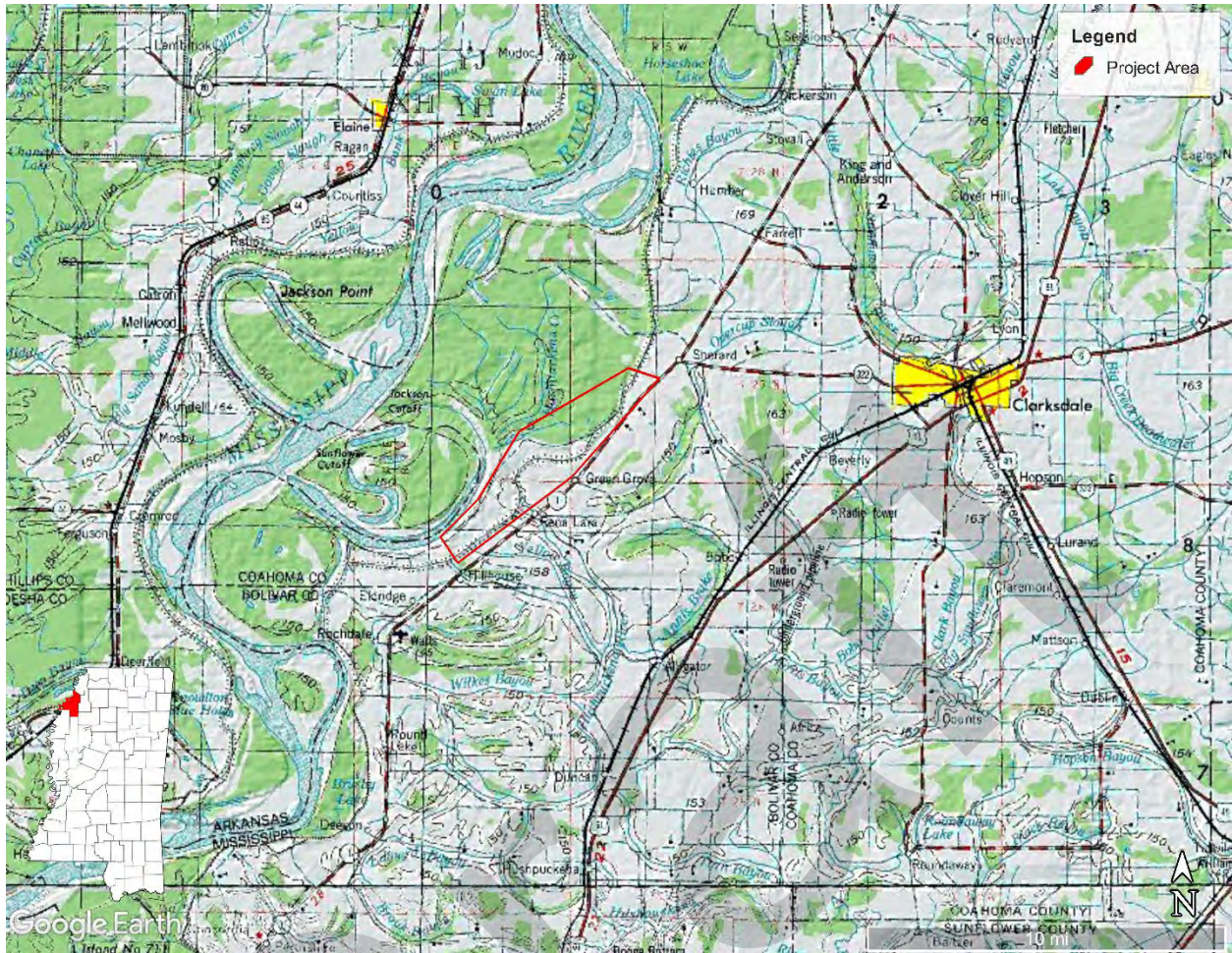


Figure 1. Proposed seepage control measures project area location along the Mississippi River mainline levee, Coahoma County, Mississippi.

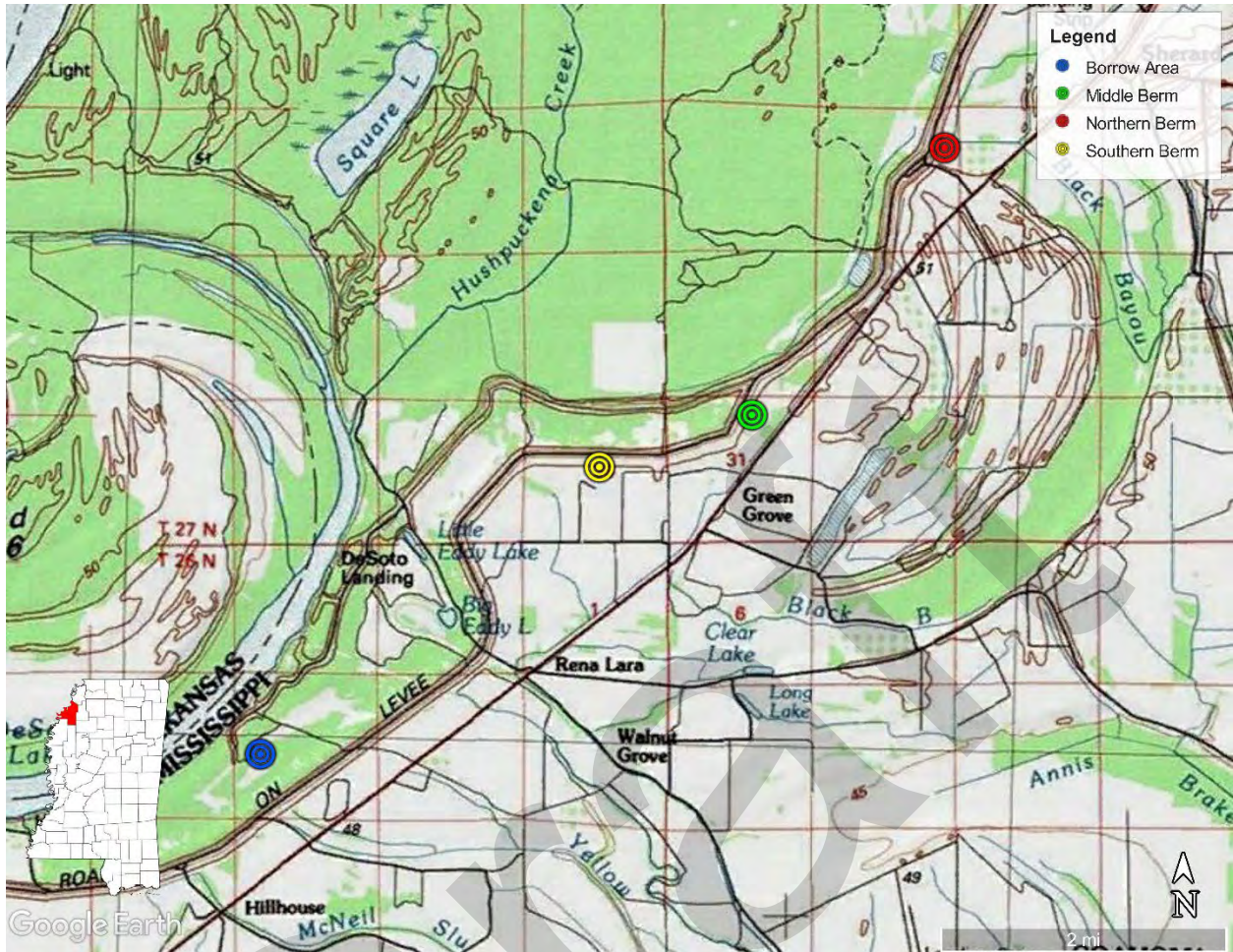


Figure 2. Location of proposed seepage control berm and borrow area along the Mississippi River mainline levee at the Sherard project area, Coahoma County, Mississippi.



Figure 3. Wetland area within the northern berm footprint at the Sheard seepage project area, Coahoma County, Mississippi.



Figure 4. Proposed borrow source location at the Sheard seepage project area, Coahoma County, Mississippi.