DRAFT 404(b)(1) EVALUATION
Mississippi River Channel Improvement
New Madrid Boat Ramp Repair
New Madrid County, Missouri

I. Project Description

a. Location

The proposed New Madrid boat ramp repair measures are located on the riverside of the Mississippi River Mainline Levee (MRL) along the right descending (western) bank, near river mile 889, of the Mississippi River, New Madrid County, Missouri (Figure 1).

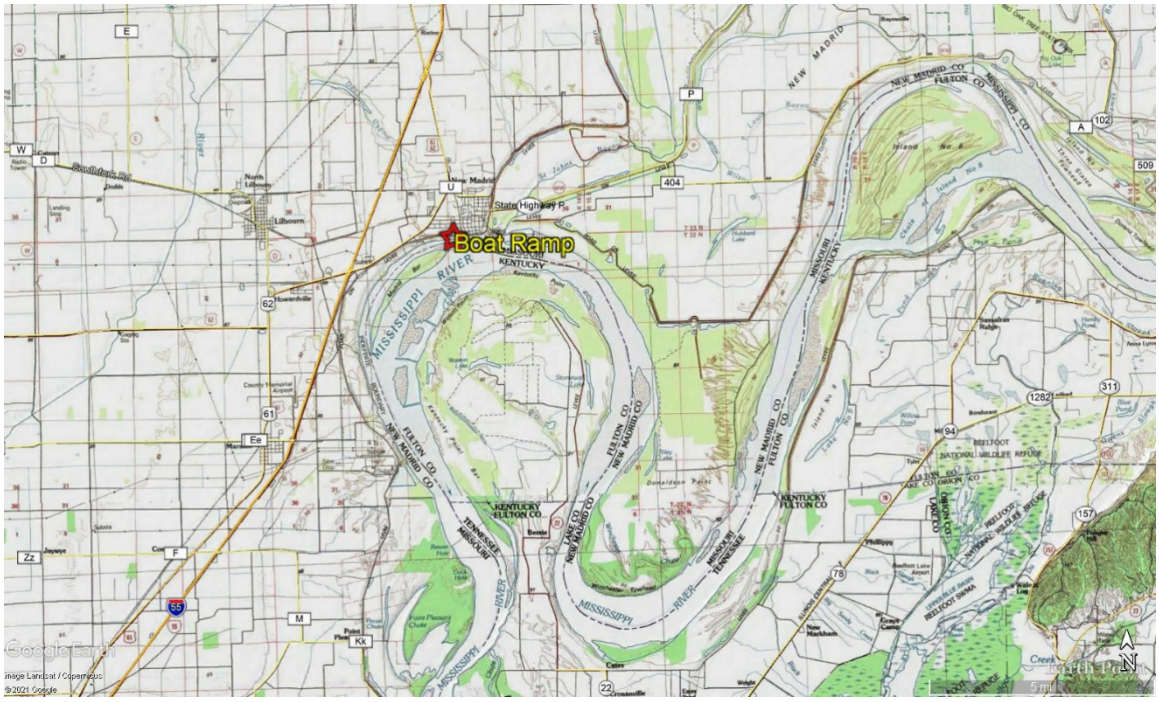

Figure 1: Location of the proposed New Madrid boat ramp repairs in New Madrid County, Missouri.

b. General Description

The U.S. Army Corps of Engineers (USACE), Memphis District (MVM) is proposing to restore the New Madrid boat ramp from damage and adjacent scour sustained during recent high-water conditions and high river velocities (Figure 2).

Figure 2: Concrete damage and scour conditions at the New Madrid boat ramp, New Madrid County, Missouri.

Proposed repairs include a new 12-inch slab overlaying the existing ramp with an upstream 3-foot by 3-foot turndown (Figure 3). Damaged areas would be removed, the existing cast-in-place slab would be cored, and grout would be placed to fill any voids in damaged areas. It is anticipated that a precast, push-in-place, slab would be used below the waterline and a cast-in-place slab above (Figure 3). Approximately 15,000 tons of R-400 Graded Stone C riprap would be placed on the upstream and downstream sides of the boat ramp. On the upstream side, riprap would be placed above ramp elevation, extend out 15 feet, and then sloped down at 2H:1V.

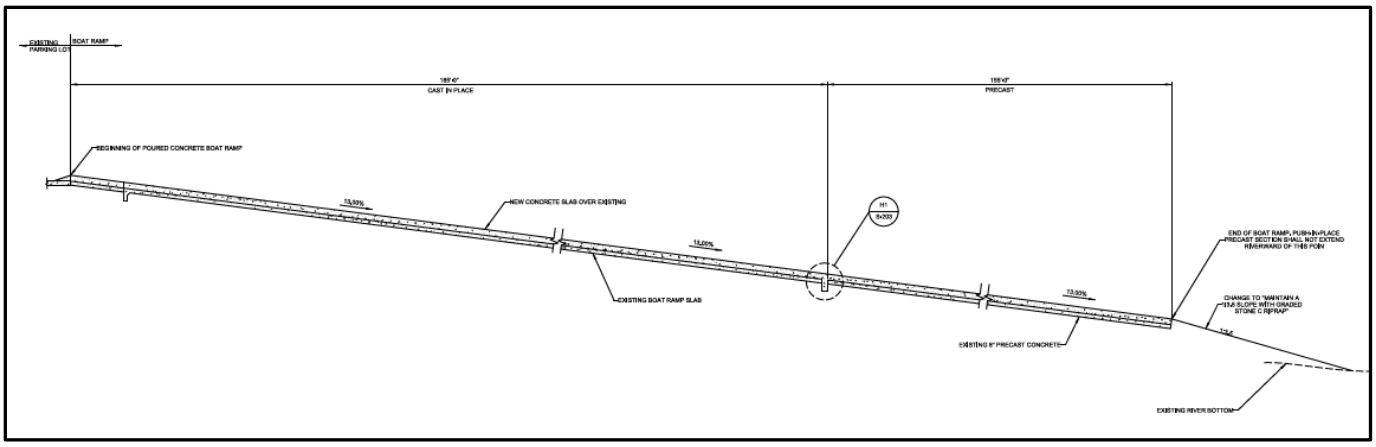

Figure 3: Proposed boat ramp repair profile, New Madrid County, Missouri.

To provide the anticipated required protection against future damage during high water and velocities, it was determined necessary to place riprap approximately 55 feet downstream and 95 feet upstream beyond the current riprap placement. Access to the project area would be from the existing Levee Road and the boat ramp parking lot used for staging areas. It is anticipated that no utilities would be disturbed as part of the proposed work.

c. Authority and Purpose

The proposed repair of the New Madrid boat ramp is authorized as part of the Mississippi River Levees (MRL) portion of the Mississippi River and Tributaries (MR&T) Project. The MR&T Project is authorized by the Flood Control Act of 15 May 1928, as amended.

d. General Description of Dredged or Fill Material

1) General Characteristics of Material

Riprap (R-400) would be used for armoring the banks. No filter material or geotextile filter fabric would be placed as bedding material.

2) Quantity of Material

Riprap – Approximately 15,000 tons of R-400 riprap would be required for the proposed project.

3) Source of Material – Riprap would be acquired from commercial sources.

e. Description of the Proposed Discharge Site(s)

1) Location – The proposed project area is the New Madrid boat ramp at Riverfront Park, New Madrid, Missouri.

2) Size –The project area is approximately 1.15 acres in total. This includes extending the riprap an additional 150 feet from its current placement.

3) Type(s) of Habitat –The project area is classified as open and urban. The project area is surrounded primarily by riprap and grass. The Mississippi River sediment load consists of shifty sands, silt, and clay. The immediate riparian zone is dominated by grasses and weed species with no trees or shrubs. Outside the immediate vicinity of the boat ramp, the surrounding area is dominated by commercial use buildings and other city infrastructure. The river substrate in the area consists largely of shifting sand, gravel, and silt.

4) Timing and Duration of Discharge – Construction is scheduled to commence in the immediate future, with an effort to conduct work during periods of low water and dry conditions, and best management practices would be applied.

f. Description of Disposal Method

Riprap would be unloaded and placed with conventional earth moving equipment (*e.g.*, bulldozers and excavators) within the existing project area. No vegetation is anticipated to be cleared for equipment access and no excavation would occur within project area.

II. Factual Determinations

a. Physical Substrate Determinations

1) Substrate Elevation and Slope – Slopes not steeper than 2H:1V would be created by the R-400 riprap on the upstream and downstream sides of the boat ramp. The boat ramp will be at a 15% slope.

2) Sediment Type – The majority of the proposed project area is composed of Commerce silt loam, Caruthersville silt loam, and Sharkey clay soils. Commerce soils consist of deep, somewhat poorly drained, moderately slowly permeable soils. Caruthersville soils consist of deep, moderately well drained, moderately permeable soils. Sharkey soils are poorly drained and more suitable for wetland vegetation such as bottomland hardwoods. The river substrate in the area consists largely of shifting sand, gravel, and silt.

3) Dredged/Fill Material Movement – No material would be excavated from the project area.

4) Physical Effects on Benthos –Placement of riprap would have a direct impact on any benthic macroinvertebrates existing in the footprint of the proposed riprap placement; however, this impact would be of short term and benthic communities would return to pre-existing conditions shortly after project completion.

5) Other Effects – not applicable.

6) Actions Taken to Minimize Impacts - The following best management practices would be implemented during construction to minimize impacts:

- Effective erosion control would be in place prior to construction and maintained throughout the construction period.
- Construction would take place during periods of low rainfall and low water stages.
- Discharge material would be clean and free of pollutants, contaminants, toxic materials, hazardous substances, waste metal, construction debris and trash, and other wastes.
- No vegetation would need to be cleared.
- Work would be accomplished from one side of the Mississippi River.
- Heavy equipment shall be kept out of free-flowing water.
- Construction debris would be kept from entering the channel and shall be disposed of properly.
- Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering the water.

b. Water Circulation, Fluctuation, and Salinity Determinations

1) Water. No change in water quality is expected due to this project.

a) Salinity – not applicable.

b) Water Chemistry – There would be no significant effects on water chemistry.

c) Clarity – There would be limited disturbances to water clarity during construction due to minor increases in suspended particulates and turbidity levels. Water clarity is 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 – No expected change.

b) Velocity – No expected change.

c) Stratification – No expected change.

d) Hydrologic Regime – No expected change.

3) Normal Water Level Fluctuations – No Expected change.

4) Salinity Gradients – not applicable.

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 would 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 water depth and currents.

c) Toxic Metals and Organics – No effect on toxic metals and organics are expected.

d) Pathogens – not applicable.

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 – Aquatic vegetation is limited within the existing project area. The proposed work is not anticipated to effect primary production.

b) Suspension/Filter Feeders – Increased turbidity would be of short duration, and any organisms that are impacted should repopulate the area after project completion.

c) Sight Feeders – Resident fish are adapted to turbidity increases that occur after every rainstorm. Project-related turbidity increases would be minor compared to these natural events. Since fish and other sight feeder are highly mobile, project impacts to sight-feeding organisms would be insignificant and short term.

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. Contaminant 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. The discharge material would be clean and free of pollution.

e. Aquatic Ecosystem and Organism Determinations

1) Effects on Plankton – Effect, if any, on plankton communities are expected to be insignificant and of short duration.

2) Effects on Benthos – Benthic organisms may be eliminated from the footprint of the riprap placement and disturbed by the turbidity increase and placement of riprap; however, this impact would be of short term and benthic communities would return to pre-existing conditions shortly after project completion.

3) Effects on Nekton – Nekton would be temporarily displaced during construction but would 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 recolonize the area after construction.

5) Effects on Special Aquatic Sites

a) Sanctuaries and Refuges – not applicable.

b) Wetlands – No wetlands exist within the project area.

c) Mud Flats – not applicable.

d) Vegetated Shallows – not applicable.

e) Coral Reefs – not applicable.

f) Riffle and Pool Complexes – not applicable.

6) Threatened and Endangered Species – Although the project area falls within range of the endangered Indiana bat, gray bat and threatened northern long-eared bat, the proposed project area is a developed boat ramp and vegetative clearing is not required. Additionally, no evidence of bald eagles, or their nests, were observed within the project vicinity. Due to the high traffic of large barges and smaller boat activities at this boat ramp location, it was concluded that this site would not be suitable habitat for the endangered pallid sturgeon. Therefore, USACE has determined that the proposed project may affect but is not likely to adversely affect any threatened or endangered species nor their critical habitats. The U.S. Fish and Wildlife Service concurred with this determination regarding federally listed threatened or endangered species on April 29, 2021.

7) Other Wildlife – not applicable.

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 – not applicable.

2) Determination of Compliance with Applicable Water Quality Standards – A state water quality certification is being requested from the State of Missouri, Department of Natural Resources, as part of this application process.

3) Potential Effects on Human Use Characteristic

a) Municipal and Private Water Supply – not applicable.

b) Recreational and Commercial Fisheries – not applicable.

c) Water Related Recreation – The boat ramp is highly trafficked and constructions activities would necessitate temporary ramp closure. However, the impacts would be considered minimal and the overall project beneficial as activities would return to safe operations once construction is completed.

d) Aesthetics – Any construction activities would have minimal impacts to the aesthetics of the area.

e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves – not applicable.

g. Determination of Cumulative Effects on the Aquatic Ecosystem – Approximately 1.5 acres of Waters of the United States will be impacted by the proposed project. 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 2002 EA titled "*Riverfront Improvements New Madrid, Missouri*".

h. Determination of Secondary Effects on the Aquatic Ecosystem – not applicable.

III. Findings of Compliance for Scour Control Measures

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

The original EIS and amendments direct that the completed projects are to be maintained to ensure the designed degree of protection. Without installation of additional scour control measures, the integrity of the boat ramp would continue to be compromised, which may result in injuries and economic damages.

b. Compliance with Applicable State Water Quality Standards

Application for State of Missouri water quality certification has occurred. 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 Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102.

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

New Madrid County is in attainment for all air quality standards. No significant impacts to air quality are expected.

d. Compliance with Endangered Species Act of 1973

A may affect but not likely to adversely affect determination was made regarding 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 – not applicable.

   b) Recreation and Commercial Fisheries – No significant impacts are expected.

   c) Plankton – No significant impacts are expected.

   d) Fish – No significant impacts are expected.

   e) Shellfish – not applicable.

   f) Wildlife – No significant impacts are expected.

   g) Special Aquatic Sites – not applicable.

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. No clearing of woody vegetation would occur and construction activities would have minimal impacts to the aesthetics of the area.

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 would be implemented, construction would occur during low-flow periods, and impact areas would 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:

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

2) _**X**_ 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 Missouri Department of Natural Resources would be adhered to.

3) __Specified as failing to comply with the requirements of these guidelines.

October , 2021
Date

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