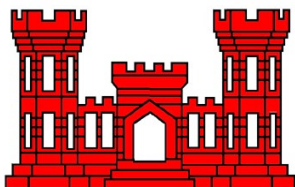


DRAFT ENVIRONMENTAL ASSESSEMENT

Greenbelt Park Enhancements Memphis, Shelby County, Tennessee EAXX-202-00-MVM-1726735718

DRAFT



**Greenbelt Park Enhancements
Memphis, Tennessee
EAXX-202-00-MVM-1726735718**

U.S. Army Corps of Engineers

Mississippi Valley Division

Regional Planning and Environmental Division South

**U.S. Army Corps of Engineers
Memphis District**

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Draft Environmental Assessment Greenbelt Park enhancements Memphis, Shelby County, Tennessee EAXX-202-00-MVM-1726735718

1 - INTRODUCTION

The United States Army Corps of Engineers (USACE) Mississippi River Valley Regional Planning and Environmental Division South, Environmental Compliance Branch prepared this draft environmental assessment (EA) to evaluate impacts associated with proposed recreation enhancements at Greenbelt Park in Memphis, Tennessee.

This draft EA provides sufficient information on the potential environmental effects to allow the District Commander, USACE, Memphis District, to make an informed decision on the appropriateness of an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI) for the proposed recreational enhancements at Greenbelt Park. This document has been prepared in accordance with the National Environmental Policy Act of 1969 and the Council on Environmental Quality's Regulations (40 CFR 1500§1508), as reflected in USACE Engineering Regulation ER 200-2-2.

1.1 PROPOSED ACTION

The proposed recreational project includes repairs to the existing boat ramp, construction of an additional boat ramp, installation of deadman anchors along the top bank on the northern end of the park, modification of the existing parking lot for the Americans with Disabilities Act (ADA) compliance, landscaping, and additional lighting and signage for security near the boat ramps.



Figure 2: Magnified view of proposed project area – Greenbelt Park, Memphis, Shelby County, TN



Figure 3: Proposed enhancements to Greenbelt Park

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose and need for the project is to improve recreation opportunities for the City of Memphis and area underserved communities at Greenbelt Park by expanding boat launch access to the Mississippi River; increasing mooring space for cruise, fishing and small watercraft vessels along top bank of the river; enabling wider public use of the park by making the parking area ADA compliant; and making the park safer for all users by installing improved lighting and signage.

1.3 AUTHORITY

The Flood Control Act (FCA) of 1928, as amended, authorized the Lower Mississippi River and Tributaries (MR&T) Project, including the Mississippi River Channel Improvement component, which includes construction and maintenance of the Loosahatchie-Memphis Revetment on which the Project is being constructed, and Section 4 of the FCA of 1944, Public Law 534, 78th Congress, 2nd Session, as amended, (16 U.S.C. 460d), authorizes the construction, maintenance, and operation of public parks and recreational facilities on the Project and permits the maintenance and operation of such facilities by local interests. Additionally, the Fiscal Year 2022 Consolidated Appropriations Act identified Community Directed Funding for the Project within the Workplan under the MR&T navigation business line, originally identified as Tom Lee Park, and reallocated to Greenbelt Park.

1.4 PRIOR REPORTS

Subsequent legislation resulted in many modifications to the 1928 Flood Control Act resulting in several studies and appurtenant documents. Of particular significance, the 1976 Environmental Impact Statement (EIS) for the Mississippi River and Tributaries, Mississippi River Levees and Channel Improvement Project (USACE 1976) addressed the mainstem flood risk management and navigation features of the MR&T Project located in the Lower Mississippi River Valley, between Cairo, Illinois and Venice, Louisiana. The project, as disclosed in the EIS, is designed to make the Mississippi River more navigable and manage risks associated with flooding by utilizing channel training devices, levees, and maintenance and construction of the mainstem levees and key harbors. The Greenbelt Park project requires an EA under Title 33, Code of Federal Regulations (CFR), § 230.7(d) as a change in environmental impact not considered at the time of the 1976 EIS.

1.5 PUBLIC CONCERNS

The City of Memphis expressed concerns over existing facilities at Greenbelt Park in terms of underutilization and safety. Specifically, insufficient lighting in the park poses security risks that deter use; substandard parking facilities do not comply with the ADA and further deter use; and the existing boat ramp requires repair and does not provide adequate access for multiple large vessels that would increase use of the park, including tourism commerce for underserved communities.

2 - ALTERNATIVES TO THE PROPOSED ACTION

For purposes of the National Environmental Policy Act (NEPA), the no-action alternative serves as the baseline against which impacts and benefits of the action alternatives are evaluated. As a community directed funding project focused on recreational use, only the No Action and Proposed Action alternatives were considered.

2.1 NO ACTION

The no-action alternative is defined as termination of the proposed project. If the no-action alternative is selected, then additional recreational improvements will not be completed, and the park will remain in its current condition of inhibiting adequate public and commercial access. No action will result in zero anchors installed; the existing boat ramp will remain in disrepair; insufficient boat ramp and mooring areas to accommodate larger vessels will deter public and commercial use; inadequate parking and security lighting will discourage public and commercial use; and the park will not improve access to recreational opportunities for an underserved community. No other planned alternatives to the proposed project exist due to the recreational focus; thus, there will be no significant environmental impact if no action is taken, and the project is terminated.

2.2 PREFERRED ALTERNATIVE/PROPOSED PROJECT

The preferred alternative is the proposal to enhance Greenbelt Park by adding deadman anchors, repair of the existing boat ramp, installing a new boat ramp, expanding mooring space, providing additional lighting and new signage for security and safety, and revamping the parking lot to comply with the ADA and accommodate expanded public use capacity.

These enhancements will provide additional recreational possibilities within the project area. Repair of the existing boat ramp and installation of a larger boat ramp, as well as expanding mooring space, will enable an increased number and size of vessels to operate at the park, including vessels dedicated to commercial and private tourism. Moreover, expanded and accommodating access via the improved parking area along with improved security and safety measures involving lighting and signage will protect current public and private users while encouraging increased visitation and use. In sum, this preferred and proposed action is superior to the no action alternative because these recreational improvements will not significantly impact the health and quality of the environment within the area of consideration.

3 - AFFECTED ENVIRONMENT

3.1 ENVIRONMENTAL SETTING

The proposed project area is within the boundaries of Greenbelt Park, Memphis, Shelby County, Tennessee. Greenbelt Park is situated along the east bank of the Mississippi River, between approximate river miles 738.7 to 737.1 above head of passes (AHP). The project area will be

located on the north end of the park, just south of the confluence of the Wolf and Mississippi rivers.



Figure 4: East bank of the Mississippi River, within the project site, facing downstream from the north end of the project area.



Figure 5: East bank of the Mississippi River, within the project area, facing upstream from south end of project area.



Figure 6: Existing parking lot, showing potholes and cracks in asphalt. Facing north, from south end of project area.



Figure 7: Typical vegetation as observed along east bank of Mississippi River. ACM and riprap are below the tree, downslope toward river. Facing west from middle of project area.

3.2 DESCRIPTION OF WATERSHED AND GEOLOGY

The project area is in the Tennessee portion of the Mississippi River Watershed, Hydrologic Unit Code (HUC) TN08010100001_1000 (TDEC 2024). Greenbelt Park is situated within the Northern Holocene Meander Belts Ecoregion (EPA Level IV Ecoregion 73A) of the Mississippi Alluvial Plain. This region is dominated by Mississippi River alluvial deposits, with land use in the project area consisting primarily of urban and suburban development (EPA 2024a). Soils within the project area are listed as Robinsonville fine sandy loam and filled land (sandy, Udorthent loamy) (NRCS 2019).

3.3 CLIMATE

The climate of the proposed project area is characterized by long hot summers, comparatively short mild winters, and abundant rainfall. Snow is rare and most winter precipitation falls as rain, but occasional cold fronts can bring temperatures near or below freezing. The average annual

precipitation is approximately 51 inches. Average daily maximum and minimum temperatures are approximately 70 degrees and 49 degrees Fahrenheit, respectively.

3.4 RELEVANT RESOURCES

This section contains a description of those resources that could be impacted by the proposed project. The important resources described in this section (Table 1) are those recognized by laws, executive orders, regulations, and other standards of national, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the public.

The following resources have been considered and found to not be affected by the alternatives under consideration: prime and unique farmlands and essential fish habitat.

Resource	Institutionally Important	Technically Important	Publicly Important
Terrestrial Resources and Wildlife	Fish and Wildlife Coordination Act of 1958, as amended; the Migratory Bird Treaty Act of 1918; and Bald and Golden Eagle Protection Act of 1940, as amended	They are a critical element of many valuable aquatic and terrestrial habitats; they are an indicator of the health of various aquatic and terrestrial habitats; and many species are important commercial resources.	The high priority that the public places on their aesthetic, recreational, and commercial value.
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; EO 11988, and Fish and Wildlife Coordination Act.	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The public places a high value on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes and other wetlands.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended and the Bald Eagle Protection Act of 1940.	Federal and state wildlife agencies cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.

Resource	Institutionally Important	Technically Important	Publicly Important
Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979	State and Federal agencies document and protect important sites because of their association or linkage to past events, to historically important persons, to design and construction values, and for their ability to yield important information about prehistory and history.	Preservation groups and private individuals support protection and enhancement of historical resources.
Socio- Economic Resources	River and Harbor Act and Flood Control Act of 1970 (PL 91-611), National Environmental Policy Act of 1969	Effects on the human environment may include the interrelation of economic or social and natural or physical environmental effects.	Social concerns and items affecting area economy are of significant interest to community.
Environmental Justice	Executive Order 12898 and the Department of Defense's Strategy on Environmental Justice of 1995.	The social and economic welfare of minority and low-income populations may be positively or disproportionately impacted by the tentatively selected plans.	Public concerns about the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of federal laws, regulations, policies, and actions.
Air Quality	Clean Air Act of 1963	State and Federal agencies recognize the status of ambient air quality in relation to the National Ambient Air Quality Standards (NAAQS).	Virtually all citizens express a desire for clean air.

Resource	Institutionally Important	Technically Important	Publicly Important
Aquatic Resources/ Fisheries	Fish and Wildlife Coordination Act of 1958, as amended	They are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of the various freshwater and marine habitats; and many species are important commercial resources.	The public places a high priority on their aesthetic, recreational, and commercial value.
Greenhouse Gases	Executive Order 13990, Executive Order 14008	Federal agencies consider the effects of greenhouse gas emissions and climate change when evaluating Federal actions.	The reduction of greenhouse gas emissions and effects of climate change are of interest to the public.
Recreation	Federal Water Project Recreation Act of 1965 as amended and Land and Water Conservation Fund Act of 1965 as amended	Provide high economic value to local, state, and national economies.	Public places high demands on recreational areas. There is a high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Tennessee and the large per-capita number of recreational boat registrations in Tennessee.0168411
Aesthetics	The National Environmental Policy Act of 1969; the National and Local Scenic Byway Program; and USACE ER 1105-2-100.	Visual accessibility to unique combinations of geological, botanical, and cultural features that may be an asset to a study area.	Environmental organizations and the public support the preservation of natural pleasing vistas.

3.4.1 TERRESTRIAL RESOURCES AND WILDLIFE

Existing Conditions

The project area is situated within an existing park owned by the City of Memphis and lies upon the east bank of the Mississippi River. A site visit on August 12, 2024, revealed thick undergrowth along the riverbank. Species observed included black willow, *Vitis* sp., redvine, cottonwood, and Johnsongrass. Articulated concrete mattress (ACM) exists along the bank to prevent erosion and stabilize the bank, along with riprap placed on top of the ACM. Vegetation

grows through the ACM. Expected wildlife in the area include common mesopredators such as raccoon, opossum, skunk, and coyote. Other possible species include white-tailed deer, cottontail rabbit, a variety of reptiles and amphibians, as well as migratory songbirds, raptors, waterfowl, and shorebirds. Some species covered by the Migratory Bird Treaty Act of 1918 (MBTA) or the Bald and Golden Eagle Protection Act of 1940 (BGEPA) may be present in the project area. No invasive species were noted during the site visit.

3.4.2 WETLANDS

Existing Conditions

A records search of the National Wetlands Inventory showed that no wetlands existed in the project area (USFWS 1981).

3.4.3 THREATENED AND ENDANGERED SPECIES

Existing Conditions

Coordination with the U.S. Fish and Wildlife Service (USFWS) revealed two species of concern within the project area: the alligator snapping turtle (*Macrochelys temminckii*) which is a proposed threatened species, and the monarch butterfly (*Danaus plexipus*), which is a candidate species.

Alligator snapping turtle

The alligator snapping turtle was proposed for federal listing under the Endangered Species Act (ESA) in 2021 (86 FR 62434). The alligator snapping turtle (*Macrochelys temminckii*) may be found in large rivers, canals, lakes, oxbows, and swamps adjacent to large rivers. It is most common in freshwater lakes and bayous, but also found in coastal marshes and sometimes in brackish waters near river mouths. Typical habitat is mud-bottomed waterbodies having some aquatic vegetation.

A site visit by a USACE biologist on August 12, 2024, showed habitat conditions consisting of a sloped bank covered in rock and thick undergrowth from top of bank to the edge of the Mississippi River. The site visit resulted in no evidence of the alligator snapping turtle.

Monarch butterfly

The monarch butterfly (*Danaus plexipus*) is a candidate species and is neither listed nor proposed for listing. Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. The black border has a double row of white spots, present on the upper side of the wings. Adult monarchs are sexually dimorphic, with males having narrower wing venation and scent patches. The bright coloring of a monarch serves as a warning to predators that eating them can be toxic.

During the breeding season, monarchs lay their eggs on their obligate milkweed host plant primarily *Asclepias* spp.), and larvae emerge after two to five days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately two to five weeks; overwintering adults enter reproductive diapause (suspended reproduction) and live six to nine months. In many regions where monarchs are present, monarchs breed year-round. Individual monarchs in temperate climates, such as eastern and western North America, undergo long distance migration, and live for an extended period. In the fall, in both eastern and western North America, monarchs begin migrating to their respective overwintering sites. This migration can take monarchs distances of over 3,000 km and last for over two months. In early spring (February-March), surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds and their offspring start the cycle of generational migration over again.

The monarch butterfly lives in a variety of habitats throughout North America and require milkweed for breeding. A site visit conducted by USACE biologists on 12 August 2024 revealed no milkweed within the proposed project area nor evidence of the monarch butterfly.

The Greenbelt Park area does not lie within any designated critical habitats for listed or proposed species.

3.4.4 CULTURAL RESOURCES

Existing conditions

Greenbelt Park is situated on Mud Island. Mud Island was formed by a buildup of silt, gravel and sand by 1899. It was originally referred to as City Island until the 1950s. Mud Island became the location of the Memphis Downtown Airport in 1959 and was used primarily by wealthy businessmen to access Downtown Memphis. In 1960, the Wolf River Levee was used to divert the flow of the Wolf River. The airport was shut down in 1970 due to the construction of the Interstate 40 bridge. In 1976, the architect responsible for the Memphis International Airport and Memphis College of Art came up with a project to turn 50 acres (20 hectares) of property owned by the city into a destination designed to attract locals and tourists alike. The proposed name for the park was Volunteer Park, but it was later named Mud Island Park when it was opened on July 4, 1982. A cultural resources reconnaissance survey was conducted in the project's area of potential effect in 2024 and no historic properties were located.

3.4.5 SOCIO-ECONOMIC RESOURCES

Existing Conditions

The project area is in Shelby County, Tennessee. The population estimate for this county in 2020 was 929,744 people. The 2022 median household income is \$61,516. The dominant industries for the employed population 16 years old and over is educational services, health care, and social assistance (23.5%) followed by transportation, warehousing, and utilities (14.4%) and professional, scientific, management and administrative and waste management services (11.5%) (USCB 2022)

3.4.6 ENVIRONMENTAL JUSTICE

Existing Conditions

The Department of Defense’s Strategy on Environmental Justice of 1995 directs Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions on minority and/or low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, and Pacific Islander. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population.

Two tools were used to analyze a 0.5 mile buffer around the project area: the Climate and Economic Justice Screening Tool (CEJST) – developed by the White House Council on Environmental Quality and the Environmental Protection Agency’s Environmental Justice screening and mapping tool (EJScreen, Version 2.3). A portion of the 0.5-mile buffer maps as a underserved community; however, this portion does not contain any residential housing.

3.4.7 AIR QUALITY

Existing Conditions

The U.S. Environmental Protection Agency (EPA) currently designates carbon monoxide at a “maintenance” level within Shelby County, TN. Other factors are described as “within attainment.” This indicates that air quality, except for carbon monoxide, within the project area meets National Ambient Air Quality Standards (NAAQS) set by the EPA (EPA 2024b).

3.4.8 WATER QUALITY AND HYDROLOGY

Existing Conditions

The Mississippi River is currently assessed as impaired for Fish & Aquatic Life designated use due to dredging activities by the Tennessee Department of Environment and Conservation. There is a fishing advisory due to legacy contaminants (PCBs, mercury, chlordane, dioxin). Recreational use is not supported. (TDEC 2024)

3.4.9 AQUATIC RESOURCES AND FISHERIES

Existing Conditions

The proposed work reach is along the east bank of the Mississippi River, immediately south of the confluence of the Wolf River. A diverse community of fish ranging from slack water to flowing water species use this area.

3.4.10 GREENHOUSE GASES

Existing Conditions

Carbon dioxide (CO₂) is the primary greenhouse gas emitted from human activities, chiefly through combustion of fossil fuels. Greenhouse gases (GHG) absorb reflected energy from the sun and warm Earth's atmosphere. Increases in GHG have resulted in measurable warming of the Earth's surface and ultimately changes to some ecosystems. Trees can reduce the amount of CO₂ in the atmosphere by sequestering the gas during photosynthesis and returning oxygen to the atmosphere as a byproduct.

3.4.11 RECREATION RESOURCES

Existing Conditions

The project area consists of a boat ramp linking the Mississippi River and an associated parking lot. The City of Memphis installed three "deadman" anchors so that larger vessels may dock at the ramp. Access to the river by foot is limited, due to heavy vegetative growth along the bank. Paths to the water exist, but these do not appear to be maintained trails.

3.4.12 AESTHETICS

Existing Conditions

The parking lot contains no markings for individual parking spots. Cracked pavement and potholes are present throughout the parking lot. Paint on the curbs is worn and not easily visible. Signage for the park has limited visibility.

3.5 NAVIGATION

Existing Conditions

The Memphis District maintains a commercial navigation channel along 355 miles of the Mississippi River from Cairo, Illinois, near River Mile 954, to the mouth of the White River at Rosedale, Mississippi, River Mile 599, which includes Greenbelt Park. Over 250 million tons of goods pass through the Memphis District boundaries annually. The major commodities include

petroleum and petroleum products, crude materials, food and farm products, chemicals and related products, primary manufactured goods, and coal.

4 - ENVIRONMENTAL CONSEQUENCES

4.1.1 TERRESTRIAL RESOURCES AND WILDLIFE

Future conditions with no action: There is no change in wildlife expected if the proposed action is not constructed.

Future conditions with proposed action: Disturbance during construction will likely temporarily reduce the amount and diversity of species located within the park. Current ground cover along the riverbank will be removed via chemical or mechanical means. Post-construction, it is expected that most species will return to the area. Maintenance of newly planted vegetation within the park will be required, especially along the riverbank, otherwise species found within the seed bank will likely overtake any previous landscaping. No significant negative impact is expected on wildlife from the increased recreational opportunities that result from the boat ramp repair and addition, deadman anchor installation, parking lot improvements and additional lighting and signage for security and safety. In fact, some species may see increased habitat opportunities after construction is completed. In order to comply with MBTA and BGEPA, construction dates should be selected that do not interfere with nesting or breeding activities of species covered under the Act – see Appendix A for more information. The proposed action does not reasonably anticipate a taking, killing, or possession of a species covered by the MBTA or BGEPA. The proposed action may cause temporary dispersal or disturbance to terrestrial resources and wildlife due to noise from construction and groundcover, but the terrestrial resources and wildlife are expected to return to the project area.

4.1.2 WETLANDS

Future conditions with no action: There are no wetlands located within the project area and no effect is expected on this resource if the proposed action is not constructed.

Future conditions with proposed action: There are no wetlands located within the project area; thus, the proposed action will not significantly impact wetlands resources.

4.1.3 THREATENED AND ENDANGERED SPECIES

Future conditions with no action: There are currently no threatened or endangered (T&E) species within the project area, and none are expected to inhabit the area if the proposed action is not constructed.

Future conditions with proposed action: The USFWS Information for Planning and Conservation (IPAC) tool was used to search for documented T&E species along with critical habitat within the project (Appendix A). The search revealed two species of concern within the

project area: the alligator snapping turtle (*Macrochelys temminckii*) which is a proposed threatened species, and the monarch butterfly (*Danaus plexipus*), which is a candidate species. No critical habitat exists within the project area for T&E species, nor are any T&E species currently known to be present. The proposed project will have no effect upon either species, and no significant impact upon any T&E species.

4.1.4 CULTURAL RESOURCES

Future conditions with no action: If the proposed action is not constructed, there will be no significant impact to historic properties or cultural artifacts or resources.

Future Conditions with proposed action: Pursuant to 36 CFR 800.3(a)(1), the District Archaeologist determined that this project has no potential to cause effects to historic properties eligible for the National Register of Historic Places. Thus, no further Section 106 consultation is required. However, if prehistoric or historic artifacts, human remains, or other archaeological materials subject to the Native American Graves Protection and Repatriation Act (NAGPRA) are found during construction, all activities would cease immediately in that area and the Memphis District Archaeologist would be contacted. The State Historical Preservation Office (SHPO) and tribal NAGPRA representatives, the local sheriff, etc., would be contacted as required by state and federal law. The proposed project will not result in a significant impact to historical properties or cultural resources.

4.1.5 SOCIO-ECONOMIC RESOURCES

Future conditions with no action: Socio-economic resources within the project area will not be impacted if the proposed action is not constructed.

Future conditions with proposed action: No significant impact to socio-economic resources is expected if the proposed action is taken. The proposed action may result in increased recreational use of the park, which may result in some increased tourism and public use of the park.

4.1.6 ENVIRONMENTAL JUSTICE

Future conditions with no action: There are no expected impacts to environmental justice communities if the proposed action is not constructed.

Future conditions with proposed action: No significant impact to environmental justice communities is expected if the proposed action is taken. Noting that the surrounding area includes underserved communities, recreational improvements promote the environmental justice policy objectives even if not obtaining a finding of significant impact.

4.1.7 AIR QUALITY

Future conditions with no action: If the proposed action is not constructed, air quality in the area will remain unchanged.

Future conditions with proposed action: Per 40 CFR 93 §153(b)(1), the *de minimus* level for carbon monoxide (CO) in areas of nonattainment is 100 tons per year. Data from the California Emissions Factor (EMFAC) model utilizing 2015 emissions estimates and the U.S. Army Corps of Engineers Net Emissions Analysis Tool (NEAT) Version 1.1 were used to estimate the production of CO associated with project construction. The amount of CO estimated to be produced by construction is approximately 0.46 tons, which is below the authorized *de minimus* level (Table 2). This results in a finding of no significant impact due to the proposed action.

	Gross Emissions			Net Emissions		
Estimated CO Production						
Pollutant Emissions (Clean Air Act)	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons
Carbon Monoxide (CO)	460,713	1,016	0.46	460,713	1,016	0.46

Table 2 – Estimated carbon monoxide production during project construction

4.1.8 WATER QUALITY AND HYDROLOGY

Future conditions with no action: If the proposed action is not constructed, there will be no disturbance of water resources and no impact.

Future conditions with proposed action: An Aquatic Resources Alteration Permit (ARAP) issued by the Tennessee Department of Environment and Conservation (TDEC) was obtained by the City of Memphis to comply with Section 401 of the Clean Water Act. Coverage under permit number NRS23.078 was issued on 28 September 2023 (Appendix B). All operations conducted by USACE will comply with the requirements of this permit. A 404(b)(1) evaluation was conducted and there is no significant impact expected to water quality or hydrology within the project boundaries (Appendix C).

4.1.9 AQUATIC RESOURCES AND FISHERIES

Future conditions with no action: Aquatic resources will not be disturbed if the project is terminated, and no significant impact is expected.

Future conditions with proposed action: A 404(b)(1) evaluation was conducted to assess the impact on resources within the project area. Minor turbidity may occur during project construction. Resident fish are adapted to turbidity increases that occur with high water events. Project-related turbidity increases would be minor compared to these natural events. Since fish and other sight feeders are highly mobile, project impacts to sight-feeding organisms would be insignificant and short term. (Appendix C). This results in a finding of no significant impact due to the proposed action.

4.1.10 GREENHOUSE GASES

Future conditions with no action: If the proposed action is not constructed, no additional greenhouse gas emissions (GHG) are expected to affect the area beyond normal usage of current park visitors.

Future conditions with proposed action: Consideration of effects of GHG emissions were conducted using the recommendations of the Council on Environmental Quality (CEQ) guidance of January 2023 (88 FR 1196). These analyses quantify the projected GHG emissions from the burning of fossil fuels by construction equipment. The GHG emissions were calculated for the proposed action of enhancing Greenbelt Park, using the type, quantity, horsepower, total hours, and associated emission factors of the equipment utilized in project construction. Data from the California Emissions Factor (EMFAC) model utilizing 2015 emissions estimates and the U.S. Army Corps of Engineers Net Emissions Analysis Tool (NEAT) Version 1.1 were used to estimate the production of GHG associated with project construction. Additional context is provided for GHG emissions using best available social cost of GHG (SC-GHG) estimates to translate climate impacts into the more accessible metric of dollars (Table 3). This project does not prevent the Federal 2050 Net-Zero GHG Emissions Reduction Goal from being met (USCEQ 2024); thus, this project does not significantly impact the human health and environment concerning GHG.

Social Costs of Greenhouse Gas Emissions in 2020 Dollars (\$)					
Alternative 1 - No Action Alternative	Construction Costs	O&M	Wetlands and Aquatic Habitat	Embodied Carbon	Total Social Costs by GHG
Carbon Dioxide (CO ₂)	\$0	\$0	\$0	\$0	\$0
Methane (CH ₄)	\$0	\$0	\$0	N/A	\$0
Nitrous Oxide (N ₂ O)	\$0	\$0	\$0	N/A	\$0
Total Social Costs By Activity	\$0	\$0	\$0	\$0	
Alternative 1 - No Action Alternative Gross Total					\$0
Alternative 1 - No Action Alternative Net Total					\$0

Social Costs of Greenhouse Gas Emissions in 2020 Dollars (\$)					
Alternative 2	Construction Costs	O&M	Wetlands and Aquatic Habitat	Embodied Carbon	Total Social Costs by GHG
Carbon Dioxide (CO ₂)	\$17,334	\$0	\$0	\$0	\$17,334
Methane (CH ₄)	\$16	\$0	\$0	N/A	\$16
Nitrous Oxide (N ₂ O)	\$33,903	\$0	\$0	N/A	\$33,903
Total Social Costs By Activity	\$51,253	\$0	\$0	\$0	
Alternative 2 Gross Total					\$51,253
Alternative 2 Net Total					\$51,253

Table 3 – Estimated Social Cost of Greenhouse Gas Emissions for Greenbelt Park enhancement project.

4.1.11 RECREATION RESOURCES

Future conditions with no action: If the proposed action is not constructed, large vessels will be limited to the existing boat ramp and will continue to tie off to trees. This will negatively affect those trees as bark will be removed, resulting in damaged trees. Recreational opportunities will also be affected, as the existing boat ramp will not provide sufficient access to the Mississippi River for boaters. Moreover, potential visitors may find the park inaccessible due to noncompliance with the ADA and inadequate lighting and signage affecting safety and security.

Future conditions with proposed action: An additional boat ramp will provide increased access to both the Mississippi and Wolf rivers. This will allow for an increase in recreational boating and associated activities. The added deadman anchors will allow larger vessels, such as cruise ships touring the Mississippi River, to dock at the landing and provide increased access to the ships by the public. Walking paths will be added to the park, where none currently exist. The improved parking lot will enable ADA accessibility, and the additional lighting and signage will enhance safety and security for visitors during varying visitation and use periods.

4.1.12 AESTHETICS

Future conditions with no action: If the proposed action is not constructed, current concerns regarding safety and security involving lighting and parking accessibility will remain unaddressed.

Future conditions with proposed action: Park aesthetics will be enhanced if the proposed action is taken. The parking lot will be redesigned to allow for a bus lane, pedestrian lane, and bus parking, as well as ADA compliance. The Non-Federal Sponsor plan includes greenery throughout the park via tree planting. A golf cart path will be added, along with a storage facility to facilitate safety and security of maintenance and operations. A dumpster enclosure will be added and enhanced signage will be designed and placed at the park entrance.

4.2 NAVIGATION

Future conditions with no action: Current navigation conditions within the project area will not be impacted if the proposed action is not constructed.

Future conditions with proposed action: There is no significant impact to navigation expected if the proposed action is taken. The scope of the project is not anticipated to impede river navigation during the period of construction, nor will the expanded mooring and additional boat ramps negatively impact navigation once the project is complete. A public notice soliciting comments on the project and effects on Section 10 of the River and Harbors Act of 1899 will be posted online.

4.3 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HRTW)

A search of EPA databases on superfund sites (CERCLIS), toxic release inventory (TRI), Resource Conservation and Recovery Act (RCRA), and water discharge permits (PCS) revealed that no releases or spills occurred within the proposed work limits. A site visit was conducted on 12 August 2024 and revealed no evidence of HTRW. No additional HTRW investigations are recommended unless new information is revealed or HTRW is discovered during construction. If a recognized environmental condition is identified in relation to the project site, the USACE - Memphis District, would take the necessary measures to avoid the recognized environmental condition. If any HTRW is encountered during construction activities, the proper handling and

disposal of these materials would be coordinated with the Tennessee Department of Environment and Conservation.

4.4 CUMULATIVE EFFECTS

The CEQ's regulations (40 CFR §§1500-1508) implementing the procedural provisions of the NEPA of 1969, as amended (42 U.S.C. 4321 et seq.) define cumulative effects as "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR §1508.1)". Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Federal efforts to improve navigation on the Mississippi River began as early as 1820 (USACE 1976). Surveys, maps, and charts were developed for the river, and USACE began the removal of stumps, snags, and other hazards to navigation in 1824. By the middle of the nineteenth century, growing river commerce and increased destruction from flooding created the need for more Federal participation in improvements for navigation and flood control. In 1879, the Mississippi River Commission was created by an Act of Congress to prepare a plan to permanently locate and deepen the navigation channel, stabilize the banks, prevent destructive floods, and promote commerce along the river. Following the disastrous flood of 1927, the Flood Control Act of 1928 was passed committing the Federal Government to a definite program of flood control, channel stabilization, and river regulation, known as the MR&T Project. The MR&T project has four major features: 1) levees and floodwalls for flood protection, 2) floodways to divert excess flows past critical reaches, 3) channel improvement and stabilization for both navigation and flood control, and 4) tributary basin improvements for flood protection and drainage.

The MR&T project is responsible for many of the physical, hydraulic, and ecological features that presently exist in the LMR (Baker et al. 1991). Dikes, revetment, and bendway weirs found throughout the Lower Mississippi River (LMR) have resulted in a mosaic of artificial and natural habitats utilized by aquatic organisms and wildlife, including at least 91 species of freshwater fishes (Baker et al. 1991). Bendway cutoffs constructed between 1929 and 1960 shortened the river by approximately 150 miles (Winkley 1977). Levee construction has greatly reduced the amount of seasonally inundated floodplain throughout the region. Keeping the channel from naturally meandering has reduced the formation of new slackwater habitats in the floodplain. Since 1960, channel engineering has resulted in a loss in the number of secondary channels and associated habitats (Williams and Clouse 2003). The primary environmental effects of the MR&T project and channel improvement activities include the physical loss of channel habitat quantity, a growing disconnect with the relict floodplain during low to moderate river stages, and a general loss of riverine habitat complexity (USACE 2013, Killgore et al. 2014). Efforts to maintain, restore, and improve habitat values in the LMR have increased in recent years. In 2012 and 2013, ten thousand acres of batture, an area of active floodplain riverward of the levees, were placed under easement and reforested to increase the contiguous forested wetlands along the LMR (IEC 2014). Over 873,000 acres of wetlands have been restored as part of the Wetland

Reserve Program in the LMR corridor encompassing lands both within and outside of the levee system (IEC 2014). A programmatic conservation plan was developed in 2013 detailing the actions and mechanisms by which the Channel Improvement Program of the MR&T project implements conservation measures to maintain and improve habitat values within the LMR (USACE 2013, Killgore et al. 2014). The number and condition of secondary channels are monitored on the LMR and opportunities to maintain and restore connectivity are discussed and implemented annually.

Maintenance dredging and construction and maintenance of channel improvement structures on the LMR, as part of the MR&T program, are conducted annually. The preferred alternative would result in some minor alterations to the environment; however, no significant adverse cumulative impacts are expected due to the proposed action. Maintaining the navigation channel is part of an overall comprehensive plan for the MR&T Project. The direct, indirect, and cumulative impacts for other portions of the MR&T and associated project were previously addressed in the Prior Reports Section, above. The discussions of potential cumulative impacts contained in the cited documents are incorporated herein by reference. Overall, the project, in comparison to past, present, and reasonably foreseeable future projects, will not incrementally contribute adversely to the general project area.

5 – COORDINATION

Comments were solicited from the public; federal, state and local agencies and officials; federally recognized Tribes; and other interested parties in order to consider and evaluate the impacts of the proposed activity. All comments received were considered by USACE to determine whether to modify the project. The following agencies, as well as other interested parties, received copies of the draft EA and the draft finding of no significant impact (FONSI):

U.S. Department of the Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency, Region IV
Tennessee Wildlife Resources Agency
Tennessee Department of Environment and Conservation
Tennessee State Historic Preservation Officer

6 – MITIGATION

The CEQ regulations (40 CFR§1508.1) implementing the procedural provisions of NEPA, as amended (42 U.S.C. § 4321 et seq.) define “mitigation” as including a) avoiding the impact altogether by not taking a certain action or parts of an action; b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

e) compensating for the impact by replacing or providing substitute resources or environments. No adverse impacts have been identified that would require compensatory mitigation.

7 – COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action was achieved as detailed below:

Date to be determined: A public notice from the USACE was issued for the proposed project and associated activities. Comments were solicited from the public; federal, state and local agencies and officials; federally recognized Tribes; and other interested parties, pursuant to Section 10 of the Rivers and Harbors Act, the National Environmental Policy Act of 1969, Section 401 of the Clean Water Act, and Section 7 of the Endangered Species Act.

- An informal consultation with the U.S. Fish and Wildlife Service was performed using the online tool IPAC on August 13, 2024 (Appendix A). USACE determined there would be no effect to the proposed threatened alligator snapping turtle and the candidate monarch butterfly.
- Aquatic Resources Alteration Permit #NRS2378 was issued on September 28, 2023 (Appendix B).
- A draft 404(b)(1) evaluation was conducted on September 13, 2024 and a public notice posted concurrently with the public notice for this draft Environmental Assessment. Both notices were posted online for public review and comment (Appendix C).

8 – CONCLUSION

This office has assessed the environmental impacts of various project alternatives. No significant impacts to terrestrial resources and wildlife, wetlands, threatened and endangered species, cultural resources, socio-economic resources, environmental justice, air quality, water quality and hydrology, aquatic resources and fisheries, greenhouse gases, navigation, and HTRW are expected. There are no foreseen cumulative effects that would have a significant negative impact on human health or the environment. Therefore, an environmental impact statement is not warranted. A FONSI was prepared for signature.

9 – PREPARED BY

This draft EA, draft FONSI, and Section 404(b)(1) evaluation were prepared by Wes Prebeck, biologist, with cultural resources input provided by Pam Lieb, archaeologist. The address of the preparer is:

U.S. Army Corps of Engineers
Memphis District
Environmental Compliance Branch, Regional Planning and Environmental Division South
Attn: Wes Prebeck
167 North Main St.
Memphis, TN 38103-1894.

Appendix A

Information for Planning and Consultation (IPAC) report United States Fish and Wildlife Service

DRAFT

Endangered Species Documentation

Public Comments

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Tennessee Ecological Services Field Office 446 Neal Street
Cookeville, TN 38501-4027
Phone: (931) 528-6481 Fax: (931) 528-7075

In Reply Refer To:

08/13/2024 19:14:23 UTC

Project Code: 2024-0129923

Project Name: Greenbelt Landing

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and

implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:
<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

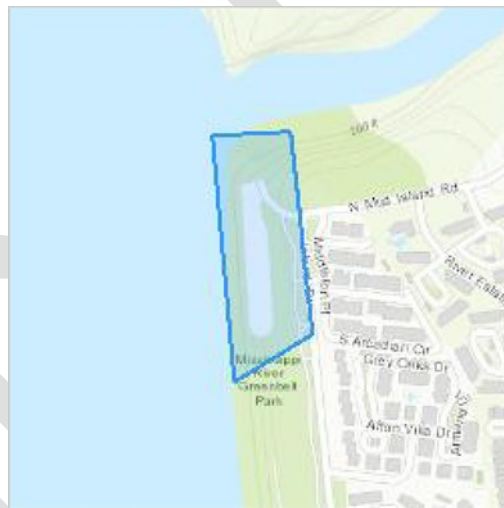
This list is provided pursuant to Section 7 of the Endangered Species Act and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
(931) 528-6481

PROJECT SUMMARY

Project Code: 2024-0129923
Project Name: Greenbelt Landing
Project Type: Boat Ramp - New Construction
Project Description: Adding new boat ramp, repairing existing boat ramp, adding new deadman anchors, revamping parking lot and adding features in lot.
Project Location: The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.180855550000004,-90.05671440183461,14z>



Counties: Shelby County, Tennessee

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

REPTILES

NAME	STATUS
Alligator Snapping Turtle (<i>Macrochelys temminckii</i>) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly (<i>Danaus plexippus</i>) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

-
1. The Bald and Golden Eagle Protection Act of 1940.
 2. The Migratory Birds Treaty Act of 1918.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle (<i>Haliaeetus leucocephalus</i>) This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sept 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars: the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

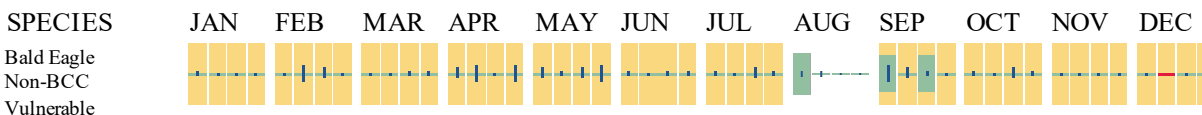
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines: the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

1. The Migratory Birds Treaty Act of 1918.

2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

NAME	BREEDING SEASON
American Golden-plover (<i>Pluvialis dominica</i>) This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Bald Eagle (<i>Haliaeetus leucocephalus</i>) This is not a Bird of Conservation Concern (BCC) in this area but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Chimney Swift (<i>Chaetura pelagica</i>) This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Least Tern (<i>Sternula antillarum antillarum</i>) This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11919	Breeds Apr 25 to Sep 5
Lesser Yellowlegs (<i>Tringa flavipes</i>) This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Little Blue Heron (<i>Egretta caerulea</i>) This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9477	Breeds Mar 10 to Oct 15
Pectoral Sandpiper (<i>Calidris melanotos</i>) This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prairie Warbler (<i>Setophaga discolor</i>) This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	Breeds May 1 to Jul 31
Prothonotary Warbler (<i>Protonotaria citrea</i>) This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31

NAME	BREEDING SEASON
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>) This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Rusty Blackbird (<i>Euphagus carolinus</i>) This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Semipalmated Sandpiper (<i>Calidris pusilla</i>) This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9603	Breeds elsewhere
Wood Thrush (<i>Hylocichla mustelina</i>) This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars: the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

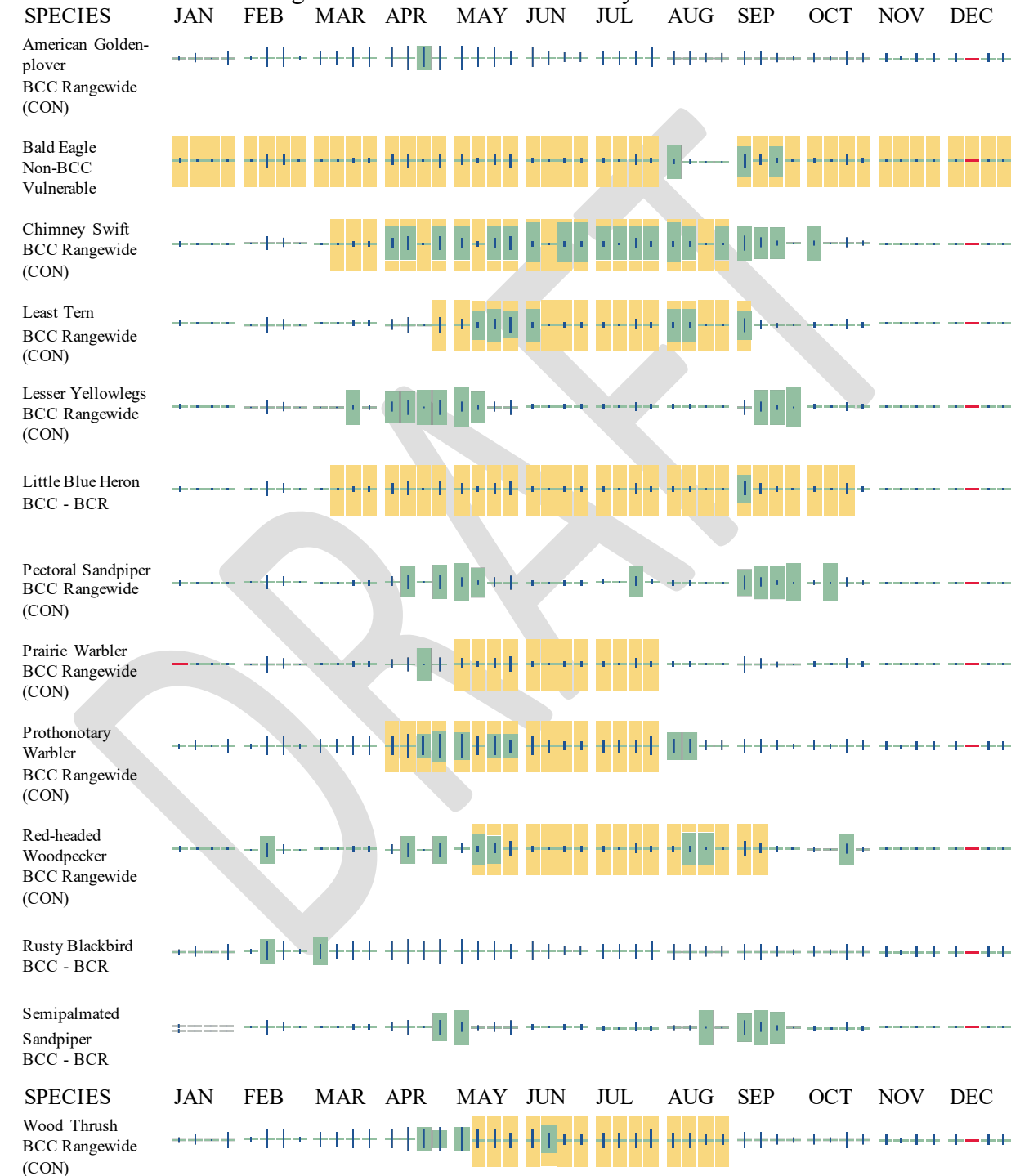
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines: the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (-)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information, please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPAC USER CONTACT INFORMATION

Agency: U.S. Army Corps of Engineers
Name: Robert Prebeck
Address: 167 North Main Street
City: Memphis
State: TN
Zip: 38103
Email: Robert.w.prebeck@usace.army.mil
Phone: 901-544-3135

Appendix B

**Aquatic Resource Alteration Permit (ARAP)
NRS 23.078
Tennessee Department of Environment and Conservation (TDEC)**

DRAFT



AQUATIC RESOURCE ALTERATION PERMIT NRS23.078

Pursuant to §401 of *The Federal Clean Water Act* (33 U.S.C. 1341), any applicant for a Federal license or permit to conduct any activity which may result in any discharge into the waters of the U.S., shall provide the federal licensing or permitting agency a certification from the State in which the discharge originates or will originate. Accordingly, the Division of Water Resources requires reasonable assurance that the activity will not violate provisions of *The Tennessee Water Quality Control Act of 1977* (T.C.A. §69-3-101 et seq.) or provisions of §§301, 302, 303, 306 or 307 of *The Clean Water Act*.

Subject to conformance with accepted plans, specifications and other information submitted in support of the application, pursuant to 33 U.S.C. 1341 the State of Tennessee hereby certifies the activity described below. This shall serve as authorization under T.C.A. §69-3-101 et seq.

PERMITTEE: City of Memphis
125 N Main Street, Suite 608
Memphis, TN 38103

AUTHORIZED WORK: Authorized activities are impacts to the Mississippi River in Shelby County, TN for the construction of a new public access boat ramp and seven deadman anchors along the bank for cruise line ship docking. The concrete boat ramp will be approximately 40 feet wide by 340 feet long with approximately 35 feet extending below high-water mark into the river. The left descending bank is currently armored with riprap. Areas disturbed by the construction of the ramp and deadman anchor installation will be regraded and armored to restore to current conditions. All seven deadman anchors will be installed along the left descending riverbank with existing rip rap bank protection in place, and above the high-water mark (213 ft. in elevation). No mitigation for the activity is necessary as the impacts are considered to be *de minimis*.

LOCATION: Greenbelt Landing
1320 North Mud Island
Road Memphis, TN
38103 Mississippi River
Latitude: 35.180781, Longitude: -90.056991

EFFECTIVE DATE: September 28, 2023

EXPIRATION DATE: September 27, 2028

A handwritten signature in black ink that reads "M. Lee Barker".

for Jennifer Dodd

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PART IV

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PART I

Authorized Work:

The applicant is authorized to construct a new public access boat ramp and install seven deadman anchors along the bank of the Mississippi River. The concrete boat ramp will be approximately 40 feet wide by 340 feet long with approximately 35 feet extending below high-water mark into the river. The left descending bank is currently armored with riprap. Areas disturbed by the construction of the ramp and deadman anchor installation will be regraded and armored to restore to current conditions. All seven deadman anchors will be installed along the left descending riverbank with existing rip rap bank protection in place, and above the high-water mark (213 ft. in elevation).

Special Conditions

1. The permittee shall submit a post-construction inspection report that reflect the “as-constructed” condition of all features authorized or required by this permit:
 - a. The post-construction inspection report shall include sufficient information, including photographic documentation, to demonstrate conformance with the approved plans, specifications, and special conditions of this permit.
 - b. The post construction inspection report shall be submitted **within 30 days of project completion**.
 - c. The report may be submitted via email to water.permits@tn.gov or to the following address:

1. Division of Water Resources Natural Resources Unit

William R. Snodgrass - Tennessee Tower 312 Rosa L. Parks Avenue, 11th Floor Nashville, Tennessee 37243-1102

2. Unless stated otherwise, all work shall be accomplished in conformance with the accepted plans, specifications, data, and other information submitted in support of application NRS 23.078.
3. The authorized stream alterations shall not cause measurable degradation to resource values and classified uses of waters of the state, including disruption of sustaining surface or groundwater hydrology and/or impairment of recreation or navigation.
4. The ramp shall be constructed in the dry to the maximum extent practicable. All surface water flowing towards this work shall be diverted from the immediate in-stream work area using cofferdams and/or berms constructed of sandbags, clean rock (containing no fines or soils), steel sheeting, or other non-erodible, non-toxic material. All such diversion materials shall be removed upon completion of the work.
5. Best Management Practices (BMPs) shall be stringently implemented throughout the construction period to prevent sediments, oils, or other project-related pollutants from

being discharged into waters of the state. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the state, including groundwater, should a spill occur.

6. Equipment staging and maintenance areas shall be developed a sufficient distance from any water to ensure that oil, gas, other petroleum products, and other hazardous materials do not enter the waters.
7. Instream work by heavy equipment shall be kept to a minimum. Equipment shall be free of noticeable leaks of fluids and oils; e.g., hydraulic, transmission, crankcase, and engine coolant, fluids, and oils.
8. Streambeds shall not be used as transportation routes for construction equipment. Temporary stream crossings shall be limited to one point in the construction area and erosion and sediment control measures shall be utilized where stream banks are disturbed.

General Conditions

1. The amount of fill, stream channel and bank modifications, or other impacts associated with the activity shall be limited to the minimum necessary to accomplish the project purpose. The permittee shall utilize the least impactful practicable method of construction.
2. It is the responsibility of the permittee to convey all terms and conditions of this permit to all contractors. A copy of this permit, approved plans, and any other documentation pertinent to the activities authorized by this permit shall be maintained on site at all times during periods of construction activity.
3. Clearing, grubbing, and other disturbance to riparian vegetation shall be kept at the minimum necessary for slope construction and equipment operations. Unnecessary native riparian vegetation removal, including tree removal, is prohibited. Native riparian vegetation must be reestablished in all areas of disturbance outside of any permanent authorized structures after work is completed. Coverage under this permit does not serve to waive any local riparian buffer protection requirement, and permittees are responsible for obtaining any necessary local approval.
4. This activity may not result in the permanent disruption to the movement of fish or other aquatic life upon project completion.
5. Temporary or permanent soil stabilization shall be accomplished within 15 days after final grading or other earth work. Permanent stabilization with perennial vegetation or other permanently stable, non-eroding surface shall replace any temporary measures as soon as practicable. Vegetative species must be on approved native species planting list, (*Landscaping with Natives* - https://www.tnipc.org/wp-content/uploads/2017/10/landscaping_2016_forweb.pdf)
6. Work shall not commence until the permittee has received all necessary authorizations pursuant to applicable provisions of section 10 of The Rivers and Harbors Act of 1899, the federal §404 permit from the U. S. Army Corps of Engineers, a §26a permit from the Tennessee Valley Authority, §402 of the Clean Water Act (including, but not limited to,

an NPDES permit for construction stormwater), or any other federal, state, or local laws. The permittee is responsible for obtaining these permits.

7. To minimize aquatic wildlife entanglement and plastic debris pollution, the use of monofilament-type erosion control netting or blanket is prohibited in the stream channel, stream banks, or any disturbed riparian areas within 30 feet of top of bank. Temporary erosion and sediment control products that either do not contain netting, or that contain netting manufactured from 100 percent biodegradable non-plastic materials such as jute, sisal, or coir fiber shall be specified. Netting used in these products should have a loose-weave wildlife-safe design with movable joints between the horizontal and vertical twines, allowing the twines to move independently. Degradable, photodegradable, UV degradable, oxo-degradable, or oxo-biodegradable plastic netting (including polypropylene, nylon, polyethylene, and polyester) are not acceptable alternatives.
8. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in Rule 0400-4-3-.03 of the Rules of the Tennessee Department of Environment and Conservation. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impair the usefulness of waters of the state for any of the uses designated by Rule 0400-4-4. These uses include fish and aquatic life (including trout streams and naturally reproducing trout streams), livestock watering and wildlife, recreation, irrigation, industrial water supply, domestic water supply, and navigation.
9. Backfill activities must be accomplished in the least impactful manner possible that stabilizes the streambed and banks to prevent erosion. The completed activities may not disrupt or impound stream flow.
10. Adverse impact to formally listed state or federal threatened or endangered species or their critical habitat is prohibited.
11. This permit does not authorize adverse impacts to cultural, historical or archeological features or sites.

PART II

Mitigation Requirements

No compensatory mitigation is required of this project.

PART III

Duty to Reapply

Permittee is not authorized to discharge or conduct an activity that alters the properties of waters of the state after the expiration date of this permit. In order to receive authorization to discharge or to conduct an activity that alters the properties of waters of the state beyond the expiration date, the permittee shall submit such information and forms as are required to the

director of the Division of Water Resources. Such applications must be properly signed and certified.

If any portion of the permitted activities, including the authorized impacts to water resources, compensatory mitigation requirements, or post-project monitoring is not completed before the expiration date of this permit **the permittee must apply for permit extension or re-issuance**. The permittee shall submit such information and forms as are required to the director of the Division of Water Resources at least ninety (90) days prior to its expiration date. Such applications must be properly signed and certified.

Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

Water Rights

The waters of Tennessee are the property of the state and are held in public trust for the use of the people of the state. This permit does not grant or convey any prescriptive rights, appropriation, or allocation of water, nor does it authorize any injury to the riparian rights of others.

Other Permits

This permit does not preclude requirements of other federal, state or local laws. This permit also serves as a state of Tennessee aquatic resource alteration permit (ARAP) pursuant to the *Tennessee Water Quality Control Act of 1977* (T.C.A. §69-3-101 et seq.).

Other Information

If the permittee becomes aware that he/she failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the director, then he/she shall promptly submit such facts or information.

Changes Affecting the Permit Transfer/Change of Ownership

1. This permit may be transferred to another party, provided there are no activity or project modifications, no pending enforcement actions, or any other changes which might affect the permit conditions contained in the permit, by the permittee if:
 - a. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date;
 - b. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and contractual liability between them; and
 - c. The Director does not notify the current permittee and the new permittee, within 30 days, of his or her intent to modify, revoke, reissue, or terminate the permit, or require that a new application be filed rather than agreeing to the transfer of the permit.

2. The permittee must provide the following information to the division in their formal notice of intent to transfer ownership:
 - a. the permit number of the subject permit;
 - b. the effective date of the proposed transfer;
 - c. the name and address of the transferor;
 - d. the name and address of the transferee;
 - e. the names of the responsible parties for both the transferor and transferee;
 - f. a statement that the transferee assumes responsibility for the subject permit;
 - g. a statement that the transferor relinquishes responsibility for the subject permit;
 - h. the signatures of the responsible parties for both the transferor and transferee, and;
 - i. a statement regarding any proposed modifications to the permitted activities or project, its operations, or any other changes which might affect the permit conditions contained in the permit.

Address

The permittee shall promptly provide to the director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

Noncompliance

Effect of Noncompliance

All discharges shall be consistent with the terms and conditions of this permit. Any permit noncompliance constitutes a violation of applicable state and federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

Reporting of Noncompliance

24-Hour Reporting

1. In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the Division of Water Resources in the appropriate Environmental Field Office within 24-hours from the time the permittee becomes aware of the circumstances. (The Environmental Field Office should be contacted for names and phone numbers of environmental response personnel).

2. A written submission must be provided within five (5) days of the time the permittee becomes aware of the circumstances unless this requirement is waived by the director on a case-by-case basis. The permittee shall provide the director with the following information:
 - a. A description of the discharge and cause of noncompliance;
 - b. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
 - c. The steps being taken to reduce, eliminate, and prevent recurrence of the non-complying discharge.

Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph a. above, the permittee shall report the noncompliance by contacting the permit coordinator, and provide all information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including but not limited to, accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Liabilities

Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the state of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of pollutants to any surface or subsurface waters.

Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its discharge activities in a manner such that public or private nuisances or health hazards will not be created.

Liability under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action

or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or the *Federal Water Pollution Control Act*, as amended.

Reopener:

This permit may be modified, suspended, or revoked for cause, including:

1. Violation of any of the terms or conditions of this permit or of T.C.A § 69-3-101 et. seq.;
2. Obtaining the permit by misrepresentation or failing to disclose fully all relevant facts;
3. A change in any condition that requires either a temporary or permanent change in the conditions of this permit.

Appeal:

An appeal of this action may be made as provided in T.C.A. §69-3-105(i) and Rule 0400-04-05-.12 by submitting a petition for appeal:

1. The petition must be filed within THIRTY (30) DAYS after public notice of the issuance of the permit.
2. The petition must specify the provisions subject to appeal and the basis for the appeal.
3. The petition should be addressed to the technical secretary of the Tennessee Board of Water Quality, Oil and Gas at the following address: Ms. Jennifer Dodd, Director, Division of Water Resources, William R. Snodgrass - Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243-1534, or you may submit such petition electronically to TDEC.Appeals@tn.gov. Any hearing would be in accordance with T.C.A. §§69-3-110 and 4-5- 301 et seq.

Permit Rationale
City of Memphis
Mississippi River
Memphis, Shelby County, Tennessee
September 2023

Permit Writer: Nicholas Zemlachenko

Summary

City of
Memphis c/o
Manny Belen
125 North Main Street, Suite 644
Memphis, Tennessee 38103
901-636-6700

Location: 1320 North Mud Island Road, Memphis, Shelby County; Mississippi River

Waterbody Segment ID: TN08010100001_1000

Latitude 35.180781 Longitude -90.056991

Authorized Activity: Impacts to the Mississippi River in Shelby County, TN for the construction of a new public access boat ramp and the installation of seven deadman anchors along the bank for cruise line ship docking. The concrete boat ramp will be approximately 40 feet wide by 340 feet long with approximately 35 feet extending below high-water mark into the river. The left descending bank is currently armored with riprap. Areas disturbed by the construction of the ramp and deadman anchor installation will be regraded and armored to restore to current conditions. All seven deadman anchors will be installed along the left descending riverbank with existing riprap bank protection in place, and above the high-water mark (213 ft. in elevation). No mitigation for the activity is necessary as the impacts are considered to be *de minimis*.

Permit Status

Permit Type:	ARAP
Classification:	Minor
Issuance Date:	September 28, 2023

Expiration Date:	September 27, 2028
Effective Date:	September 28, 2023

Status of Affected Waters

Waterbody Segment ID: TN08010100001_1000, **Name:** Mississippi River
(Tennessee side) from Mississippi stateline to confluence of Loosahatchie River.
Ecoregion 73a Shelby County

Designated Use	Use Support	Causes	Sources
livestock watering & wildlife	fully supporting		

irrigation	fully supporting		
recreation	not supporting	Polychlorinated biphenyls (PCB's)	Sources outside state jurisdiction or borders
recreation	not supporting	Polychlorinated biphenyls (PCB's)	Contaminated sediments
recreation	not supporting	Chlordane	Sources outside state jurisdiction or borders
recreation	not supporting	Chlordane	Contaminated sediments
recreation	not supporting	Dioxin (Including 2,3,7,8-TCDD)	Sources outside state jurisdiction or borders
recreation	not supporting	Dioxin (Including 2,3,7,8-TCDD)	Contaminated sediments
recreation	not supporting	Mercury	Atmospheric deposition-Toxics
fish and aquatic life	not supporting	Physical substrate habitat alterations	Dredging (e.g., for Navigation Channels)

Assessment Date: May 20, 2018

The affected waters have available parameters for habitat.

This stretch of the Mississippi River is an Exceptional Tennessee Water (ETW) for the following reasons:

- Federal endangered Pallid Sturgeon (*Scaphirhynchus albus*), state threatened Blue Sucker (*Cycleptus elongatus*).

Authorized Alterations

Authorized alterations are impacts to the Mississippi River in Shelby County, TN for the construction of a new public access boat ramp and the installation of seven deadman anchors along the left descending bank for cruise line docking. The concrete boat ramp will be approximately 40 feet wide by 340 feet long with approximately 35 feet extending below high-water mark into the river. The left descending bank is currently armored with riprap. Areas disturbed by the construction of the ramp and deadman anchor installation will be regraded and armored to restore to current conditions. All seven deadman anchors will be installed along the left descending riverbank with existing rip rap bank protection in place, and above the high-water mark (213 ft. in elevation). No mitigation for the activity is necessary as the impacts are considered to be *de minimis*.

Alternatives Analysis and Selection of Least Impactful Practicable Alternative

The applicant has submitted an analysis of potentially practicable alternatives to the authorized activity. The overall stated purpose of the activity is to improve overall safety and access of the dock, as well as to allow additional cruise docking, recreational use of the greenspace and sidewalks. The completion of the project will also allow for commercial and recreational use to increase with the continued development of the site as an official landing and greenspace. The applicant has provided the following discussion analyzing alternatives:

The No Action Alternative would keep the docking capacity low and prevent multiple vessels from utilizing the available space when Beale Street Landing is out of commission, potentially resulting in a loss of revenue due to no port availability. Current tree tie-off conditions for the ships are inadequate, unsafe, and undesirable.

The current infrastructure is not ADA compliant and transportation (bus) access to the site is limited for passengers and luggage.

The project alternatives considered consisted of the same parking lot design with structural differences and additional features. The initial design included additional deadman anchors and a sidewalk to access low water; three storage buildings and dumpster enclosures with a different aesthetic design; and a third seating area along the west side of the parking lot (see Attachment4).

The primary alternative impacting the Mississippi River consisted of additional deadman anchors to the south with three located below the 213-foot elevation. A sidewalk was proposed at the south end of the existing ramp that would extend into the Mississippi River to provide additional egress and ingress access to ships during low-water elevation conditions and safer access to the proposed lower elevation deadman anchors.

The amount of grading necessary to create this accessible sidewalk would have been significant. After assessment of the steep slope, ADA requirements, available space, and finances, the sidewalk and deadman anchors would not add the expected value and were

removed from the design.

The removal of additional deadman anchors and the sidewalk from the project scope reduced the number of features that required permitting and was a significant cost reduction. Also, the additional structures along the channel from downstream to upstream would have greater impact on the stream itself, not only in terms of more construction within the actual stream but also in terms of habitat obstruction. The results in terms of erosion protection for the channel bank would be, for all practical purposes, the same, and the cost for several grade control structures is estimated to be more costly than the proposed measures. Reducing the number of features needing installation below the 213-foot elevation will also decrease the potential sediment loading into a navigable water.

Due to the type of work proposed, avoidance of impacts to the overall stream will be minimal, as most of the project is along the bank. All work will be conducted “in-the-dry”. Work in areas outside of the water will be conducted utilizing appropriate sediment and erosion controls, and any work required that would normally be within the water will utilize flow diversion techniques to maintain dry work conditions. Silt fencing will be installed and remain in place during construction. Erosion control details demonstrating these techniques and are available upon request.

Mechanized equipment will be required to work along the bank, and all possible effort will be made to keep this equipment out of the water. Wherever possible, equipment will be transported along the outer edge of the channel, above the bank. Work will be completed in the dry, and equipment will be located within any containment / diversion structures to minimize potential exposure to any water in the channel. Equipment will not be staged overnight in the channel and all equipment will be removed from the channel prior to any pending storm / high flow events.

The Division has made a determination that the width of the ramp is of a reasonable amount needed to accomplish the purpose of the project (e.g., to enable the launching of a wide range of commercial and recreational vessels) and in combination with the installation of seven deadman anchors above the high-water mark along the left descending bank of the Mississippi River, represents the least impactful practicable alternative.

Existing Conditions/Loss of Resource Values

The project area is along the left descending bank of the Mississippi River along Mud Island just south of the Wolf River junction. At the project location, the river is approximately 2,600 feet wide and flows north to south with a silty sand bed material. The project reach is comprised primarily of a parking lot with an existing boat ramp (Upper Mud Island Boat Ramp) along the south side of the parking lot, a small, abandoned, boat ramp into the Wolf River on the north end, and an existing riprap stabilized bank with a few mature trees present.

The existing Mud Island Boat Ramp and parking lot extends down into the river to approximately 186-foot elevation. This area has no significant bank erosion present and experiences high waters and flooding during the rainy season. There are a few mature trees along the high side of the bank that likely provide additional stabilization.

The existing conditions of the site only allow it to be utilized by one boat when the Beale Street Landing is occupied or out of operational levels. Currently, the only means of mooring for cruise ships is through utilizing mature trees situated on the bank at this location, and access to shore is accomplished via extended ramps up the steep driveway.

Authorized Characteristics

The project proposes to:

- Install an approximate 40-foot wide by 340-foot-long boat ramp on the northwest area of the project site on the Mississippi River.
- Install seven deadman anchors along the left descending bank, containing existing rip rap bank protection. None are to be installed below the high-water mark (213 ft. in elevation).

The new boat ramp will not impact the channel structure or flow as the ramp will be along the northwest corner of the project area angled downstream. The bank beneath the existing riprap at the authorized boat ramp construction site will be re-established, as needed, with selective grading and placement of earthwork. Banks along the new ramp will be stabilized with riprap armoring, mirroring existing conditions. The slopes will be constructed at a 15% grade. The approximate acreage of disturbance for the boat ramp is 0.30 acres. The authorized design for the boat ramp will require 2,106 cubic yards of excavation, 568 cubic yards of fill, 1,491 cubic yards of riprap placement, and 249 cubic yards of concrete placement. The impacts below the 213-foot elevation will consist of 1,561 cubic yards of excavation, 565 cubic yards of fill, and 1,217 cubic yards of riprap placement.

The existing bank is armored with riprap, which will also be used as bank stabilization for the new construction. The new deadman anchors will be installed along the left descending bank for cruise liner docking; they measure as 12.0-feet by 7.5-feet by 4.0-feet thick concrete pads with 50-ton steel pipe pile supports driven into the bank. Banks will only incur minor disturbances and areas that need reestablishment will be selectively filled, graded, and stabilized with riprap. The new ramp slopes will be constructed at a 15% grade with welded wire at midpoint of the slab.

A temporary construction access road will be developed on the existing north entrance to the parking lot with a concrete washout adjoining the entrance to the south.

The Division has made the determination that the authorized impacts would not constitute an appreciable permanent loss of water resource values and are *de minimis*.

Antidegradation

In accordance with the Tennessee Antidegradation Statement (Rule 0400-40-03-.06), the Division has made the determination that the authorized activities will not result in an appreciable permanent loss of resource values, and therefore will result in no more than *de minimis* degradation of an Exceptional Tennessee Water (ETW) without mitigation.

For more information, please reference Tennessee's Antidegradation Statement which is found in Chapter 0400-40-03 of the Rules of the Tennessee Department of Environment and Conservation

DRAFT

Part IV- Appendix

Aerial Map- Project Site



XXX

Topographic Map- Project Site



XXXI

Appendix C

Draft Section 404(b)(1) evaluation of the Clean Water Act

DRAFT

DRAFT SECTION 404(b)(1) EVALUATION

Greenbelt Park Enhancement

Memphis, Shelby County, Tennessee

I. PROJECT DESCRIPTION

A. Location

The proposed project area is within the boundaries of Greenbelt Park, Memphis, Shelby County, Tennessee. Greenbelt Park is situated along the east bank of the Mississippi River, between approximate river miles 738.7 to 737.1 above head of passes (AHP). The project area will be located on the north end of the park, just south of the confluence of the Wolf and Mississippi rivers.

B. General Description

The project area is situated within an existing park owned by the City of Memphis and lies upon the east bank of the Mississippi River. Species include black willow, *Viridis* sp., redvine, cottonwood, and Johnsongrass. Articulated concrete mattress (ACM) was placed along the bank to prevent erosion, along with riprap placed on top of the ACM. Vegetation is growing through the ACM and riprap, which has been placed along the shoreline to stabilize the bank and reduce erosion. Expected wildlife in the area include common mesopredators such as raccoon, opossum, skunk, and coyote. Other possible species include white-tailed deer, cottontail rabbit, a variety of reptiles and amphibians, as well as migratory songbirds, raptors, waterfowl, and shorebirds.

C. Authority and Purpose

The Flood Control Act (FCA) of 1928, as amended, authorized the Lower Mississippi River and Tributaries (MR&T) Project, including the Mississippi River Channel Improvement component, which includes construction and maintenance of the Loosahatchie-Memphis Revetment on which the Project is being constructed. In addition, Section 4 of the FCA of 1944, Public Law 534, 78th Congress, 2nd Session, as amended, (16 U.S.C. 460d) authorizes the construction, maintenance, and operation of public parks and recreational facilities on the Project and permits the maintenance and operation of such facilities by local interests. The purpose and need for the project is to improve the existing Greenbelt Landing by providing additional recreational opportunities for the public along the existing riverfront. This project will permit additional boat launching access to the Mississippi River as well as more

space for the mooring and parking of cruise boats, fishing vessels, and other smaller watercraft along top bank of the river.

D. General Description of Dredged and /or Fill Material

1. General Characteristics of Fill Material

Fill material used for construction is expected to come from a commercial source(s) consisting primarily of inert materials and is not expected to be a carrier of potential contaminants. Class C riprap and concrete will also be used in the ramp construction.

2. Quantity of Material

The proposed design for the boat ramp will require 2,106 cubic yards of existing earth to be cut, 568 cubic yards of fill, 1,491 cubic yards of Class C riprap, and 249 cubic yards of concrete. The impacts below ordinary high water (OHW) mark of 213 feet will consist of 1,561 cubic yards of cut, 565 cubic yards of fill, and 1,217 cubic yards of Class C riprap.

3. Source of Material

The material associated with bank grading would consist of recent alluvium deposits (mostly sands) and is essentially the same material composing the substrate below the water line. The 250-lb riprap used for the proposed activities would be obtained from quarries producing stone which meets USACE specifications.

E. Description of Proposed Discharge Sites

1. Location

The proposed project area is within the boundaries of Greenbelt Park, Memphis, Shelby County, Tennessee. Greenbelt Park is situated along the east bank of the Mississippi River, between approximate river miles 738.7 to 737.1 above head of passes (AHP). The project area will be located on the north end of the park, just south of the confluence of the Wolf and Mississippi rivers. The disposal site consists of the area below elevation 213' of the Mississippi River where boat ramp construction would occur. The area consists of earthen riverbank with existing rock revetment.

2. Size

The proposed boat ramp is approximately 40-feet wide by 340-feet in length and is situated along the Mississippi River's left-descending bank.

The fill area proposed below the ordinary high-water mark is approximately 1.2 acres.

3. Type of Habitat

The project area is situated within an existing park owned by the City of Memphis and lies upon the east bank of the Mississippi River. A site visit was conducted on 12 August 2024 and thick undergrowth was observed along the riverbank. Species observed include black willow, *Viridis* sp., redbud, cottonwood, and Johnsongrass.

4. Timing and Duration of Discharge

Construction is set to begin as soon as possible. During construction, work typically occurs daylight to dark until completion.

F. Description of Disposal Method

Mechanized equipment will be required to work along the bank, and all possible effort will be made to keep this equipment out of the water. Wherever possible, equipment will be transported along the outer edge of the channel, above the bank. Work will be completed in the dry, and equipment will be located within any containment / diversion structures to minimize potential exposure to any water in the channel. Equipment will not be staged overnight in the channel and all equipment will be removed from the channel prior to any pending storm / high flow events.

II. FACTUAL DETERMINATION

A. Physical Substrate Determinations

1. Substrate Elevation and Slope

The proposed ramp is designed with a slope of 1:7 and work will be conducted both below and above the ordinary high water (OHW) mark of 213 feet.

2. Sediment Type

Any material graded during bank preparation consists of alluvium deposits (mostly sands) which is the same material that has recently fallen into the river due to bank caving and similar to what is located on the channel bottom. This material does not change the substrate type or composition in the immediate area of discharge or downstream. Stone placed along the bank is Class C riprap (approximately 1-250 pounds in size). Natural concentrations of stones this size are not typically found on the lower Mississippi River.

3. Dredged and Fill Material Movement

The boat ramp is designed as a permanent structure and no fill material should experience movement after construction.

4. Physical Effects on Benthos

Due to poor existing conditions, few or no mussels are likely to inhabit the project footprint or be affected by construction. Low densities of mayflies, chironomids, amphipods, and oligochaetes likely inhabit the sandy channel bottom along the area where the boat ramp is to be constructed. During construction, many of these macroinvertebrates in the immediate vicinity of the project are expected to drift downstream. Benthic fish would temporarily shift upstream or downstream during construction.

5. Other Effects

Not applicable.

6. Action Taken to Minimize Impacts

Mechanized equipment will be required to work along the bank, and all possible effort will be made to keep this equipment out of the water. Wherever possible, equipment will be transported along the outer edge of the channel, above the bank. Work will be completed in the dry, and equipment will be located within any containment / diversion structures to minimize potential exposure to any water in the channel. Equipment will not be staged overnight in the channel and all equipment will be removed from the channel prior to any pending storm / high flow events.

B. Water Circulation, Fluctuation, and Salinity Determination

a) Water

a) Salinity

No effect

b) Water Chemistry

No expected change

c) Clarity

Some sediments would be stirred up during bank preparation and when rock protection is deposited into the chute. However, due to the size of the receiving waters, no significant change in clarity is expected.

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

b) Current Patterns and Circulation

a) Current Patterns and Circulation
No major changes in current patterns and circulation are expected.

b) Velocity
No expected change.

c) Stratification
Stratification would not occur because of the proposed activities, and no changes to stratification are expected throughout other portions of the year.

d) Hydrologic Regime
No effects to the hydrologic regime are expected.

c) Normal Water Level Fluctuations
The proposed project will not affect normal water level fluctuations.

d) Salinity Gradients

No expected change.

e) Action Taken to Minimize Impacts

Mechanized equipment will be required to work along the bank, and all possible effort will be made to keep this equipment out of the water. Wherever possible, equipment will be transported along the outer edge of the channel, above the bank. Work will be completed in the dry, and equipment will be located within any containment / diversion structures to minimize potential exposure to any water in the channel. Equipment will not be staged overnight in the channel and all equipment will be removed from the channel prior to any pending storm / high flow events.

C. Suspended Particulate/Turbidity Determination

1. Expected Changes in suspended Particulates and Turbidity Levels in Vicinity of Disposal Sites

The incorporation of best management practices is expected to result in negligible effects. Potential impacts to water quality are addressed in the State's 401 water quality certification.

2. Effects on Chemical and Physical Properties of the Water Column

a) Light Penetration

The temporary increase in turbidity during construction would be minor and of short duration. The proposed project would have no lasting effect on light penetration.

b) Dissolved Oxygen

No change is expected.

c) Toxic Metals and Organics

No change is expected.

d) Pathogens

No change is expected.

e) Aesthetics

There are numerous concrete boat ramps similar in their design and their use of materials along the banks of the Mississippi River. The proposed boat ramp will have a negligible effect on aesthetics.

f) Others as Appropriate

None are noted.

3. Effects on Biota

a) Primary Production

The proposed work should have no distinguishable effects on primary productivity.

b) Suspension/Filter Feeders

Due to poor existing conditions, no mussels are likely to inhabit the proposed area.

c) Sight Feeders

Resident fish are adapted to turbidity increases that occur with high water events. Project-related turbidity increases would be minor compared to these natural events. Since fish and other sight feeders are highly mobile, project impacts to sight-feeding organisms would be insignificant and short term.

4. Actions Taken to Minimize Impacts

Mechanized equipment will be required to work along the bank, and all possible effort will be made to keep this equipment out of the water. Wherever possible, equipment will be transported along the outer edge of the channel, above the bank. Work will be completed in the dry, and equipment will be located within any containment / diversion structures to minimize potential exposure to any water in the channel. Equipment will not be staged overnight in the channel and all equipment will be removed from the channel prior to any pending storm / high flow events.

D. Contaminant Determinations

Stones used for the bank protection are considered inert material. The bank is comprised of mostly sands; thus, any material introduced via grading would have low potential for pollutants. There is a low likelihood that any contaminants would be introduced or translocated due to construction.

E. Aquatic Ecosystems and Organism Determination

1. Effects on Plankton

Effects, if any, on plankton communities are expected to be insignificant and of short duration.

2. Effects of Benthos

Due to poor existing conditions, few or no mussels are likely to inhabit the project footprint or be affected by construction. Low densities of mayflies, chironomids, amphipods, and oligochaetes likely inhabit the sandy channel bottom along the area where the boat ramp is to be constructed. During construction, many of these macroinvertebrates in the immediate vicinity of the project are expected to drift downstream. Benthic fish would temporarily shift upstream or downstream during construction.

3. Effects on Nekton

Nekton would be temporarily displaced during construction but expected to return shortly after project completion. Resident fish in the Mississippi River are adapted to turbidity increases that occur with high water events. Minor increases in sediment load would be expected with grading activities; however, these effects would be transitory, and minor compared to natural events in the Mississippi River. Since fish and other sight feeders are highly mobile, impacts to sight-feeding organisms within the project area would be insignificant and short term.

4. Effects on Aquatic Food Web

Temporary reductions in benthic macroinvertebrate communities and drift from such a small area should not significantly impact the aquatic food web. These organisms would quickly colonize the area after construction.

5. Effects on Special Aquatic Sites

a) Sanctuaries and Aquatic Sites

No sanctuaries or aquatic sites within project area.

b) Wetlands

No wetlands exist within project area.

c) Mud Flats

No mud flats exist within project area.

d) Vegetated Shallows

No vegetated shallows exist within project area.

e) Riffle and Pool Complexes

No riffle or pool complexes exist within project area.

6. Threatened and Endangered Species

Coordination with the U.S. Fish and Wildlife Service has indicated that the proposed activities would not likely adversely affect threatened or endangered species or critical habitat. Per the Endangered Species Act, informal consultation with the U.S. Fish and Wildlife Service, Cookeville, TN Office was conducted, and no threatened or endangered species exist within the project area.

7. Other Wildlife

Some wildlife in the immediate area of construction may be temporarily displaced due to construction. Any disturbance would be minimal and short-lived.

8. Actions Taken to Minimize Impacts

Mechanized equipment will be required to work along the bank, and all possible effort will be made to keep this equipment out of the water. Wherever possible, equipment will be transported along the outer edge of the channel, above the bank. Work will be completed in the dry, and equipment will be located within any containment / diversion structures to minimize potential exposure to any water in the channel. Equipment will not be staged overnight in the channel and all equipment will be removed from the channel prior to any pending storm / high flow events.

F. Proposed Disposal Site Determinations

1. Mixing Zone Determination

Fill material would be placed in depths varying from 213 to 168 feet. Flow direction is generally downstream. Stratification would not occur because of the proposed bank stabilization measures. Minor increases in sediment load would be expected with the proposed activities; however, any increases in turbidity would be transitory and minor compared to the natural sediment load of the river, especially during high river stages.

2. Compliance with Applicable Water Quality Standards

An Aquatic Resources Alteration Permit (Permit # NRS23078) has been issued by the Tennessee Department of Environment and Conservation to comply with the Clean Water Act, Section 401 requirements.

3. Potential Effects on Human Use Characteristics

1. Municipal and Private Water Supply

Not applicable.

2. Recreational and Commercial Fishing

Fishing should not be affected by the proposed work.

3. Water Related Recreation

Not applicable.

4. Aesthetics

There are numerous concrete boat ramps similar in their design and their use of materials along the banks of the Mississippi River. The proposed boat ramp will have a negligible effect on aesthetics.

5. Parks, National Historical Monuments, National Seashore, Wilderness Areas, Research Sites and Similar Preserves

No sites exist within the footprint of the proposed project.

G. Determination of Cumulative Effects on the Aquatic Ecosystem

No significant adverse cumulative effects are anticipated beyond those discussed above in Section II.

H. Determination of Secondary Effects on the Aquatic Ecosystem

No significant adverse secondary effects are anticipated beyond those discussed above in Section II.

III. FINDING OF COMPLIANCE OR NON-COMPLIANCE WITH THE RESTRICTIONS ON DISCHARGE

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 alternative action is to terminate the project, which result in existing conditions remaining within the project area. If the no-action alternative is selected, then additional improvements will not be completed. No additional anchors will be installed, the existing boat ramp will not be constructed and improvements to the existing boat ramp and parking areas will not be completed.

B. Compliance with Applicable State Water Quality Standards

An Aquatic Resources Alteration Permit (Permit # NRS23078) has been issued by the Tennessee Department of Environment and Conservation to comply with the Clean Water Act, Section 401 requirements.

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

The U.S. Environmental Protection Agency (EPA) currently designates carbon monoxide at a “maintenance” level within Shelby County, TN. Other factors are described as “within attainment.” This indicates that air quality, except for carbon monoxide, within the project area meets National Ambient Air Quality Standards (NAAQS) set by the EPA.

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

No significant impacts are expected.

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.

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

To minimize impacts, mechanized equipment will be required to work along the bank, and all possible effort will be made to keep this equipment out of the water. Wherever possible, equipment will be transported along the outer edge of the channel, above the bank. Work will be completed in the dry, and equipment will be located within any containment / diversion structures to minimize potential exposure to any water in the channel. Equipment will not be staged overnight in the channel and all equipment will be removed from the channel prior to any pending storm / high flow events.

H. Based on 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.

Date: 13 September 2024

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Appendix D

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