



**US Army Corps
of Engineers** ®
Memphis District

ISSUE DATE: May 24, 2012

PUBLIC NOTICE

EXPIRATION DATE: June 4, 2012

PUBLIC NOTICE
U.S. ARMY CORPS OF ENGINEERS

**Availability of Draft Environmental Assessment (EA) and
Draft Finding of No Significant Impact (FONSI)**

REPLY TO:
ATTN: Mike Thron
Environmental Compliance Branch
U.S. ARMY CORPS OF ENGINEERS
167 North Main Street, Room B-202
Memphis, Tennessee 38103-1894
Tele: (901) 544-0708
Fax: (901) 544-3955
E-mail: John.m.thron@usace.army.mil

TITLE: Merriwether-Cherokee and Presidents Island Top Bank Repairs

AUTHORITY: This project is authorized by the Flood Control Act of 15 May 1928, Public Law No. 391-70, as amended and supplemented by subsequent Acts of Congress. The 1928 Flood Control Act authorized the MR&T Project, which included channel improvement and stabilization works for stabilizing the channel to provide an efficient navigation alignment, increase the flood-carrying capacity, and protect the levee system.

LOCATION: The Merriwether-Cherokee project area is located along the left descending bank of the Mississippi River near approximate River Mile 869 above Head of Passes (AHP) in Lake County, Tennessee. The Presidents Island project area is located along the left descending bank of the Mississippi River near approximate River Mile 733 AHP in Shelby County, Tennessee, approximately two miles downstream of the Interstate 55 Bridge. Presidents Island is part of the International Port of Memphis, one of the largest inland ports on the shallow draft portion of the Mississippi River, situated near downtown Memphis. Record flooding occurred in the Lower Mississippi River in early May 2011 resulting in these two large top bank failures within the

Memphis District. The river stage during peak flow near the Merriwether-Cherokee failure location was 48.22 feet on the Tiptonville Gage on May 6, 2011. The bank failure at Merriwether-Cherokee threatened to cut off a nine-mile meander of the river. At Presidents Island, the river stage during peak flow was 48.0 feet on the Memphis Gage on May 9, 2011. Approximately 75% of the entire flow was across Presidents Island during peak flow, threatening to cut off approximately six to seven miles of river meander. Maps of the two bank failures are shown in Figures 1 and 2.

MERRIWETHER-CHEROKEE FAILURE/OVERBANK SCOUR



Figure 1. Map of the bank failure and path of overbank flow from Mississippi River floodwaters in 2011 at Merriwether-Cherokee, Lake County, Tennessee.

PRESIDENTS ISLAND BANK FAILURE/OVERBANK SCOUR

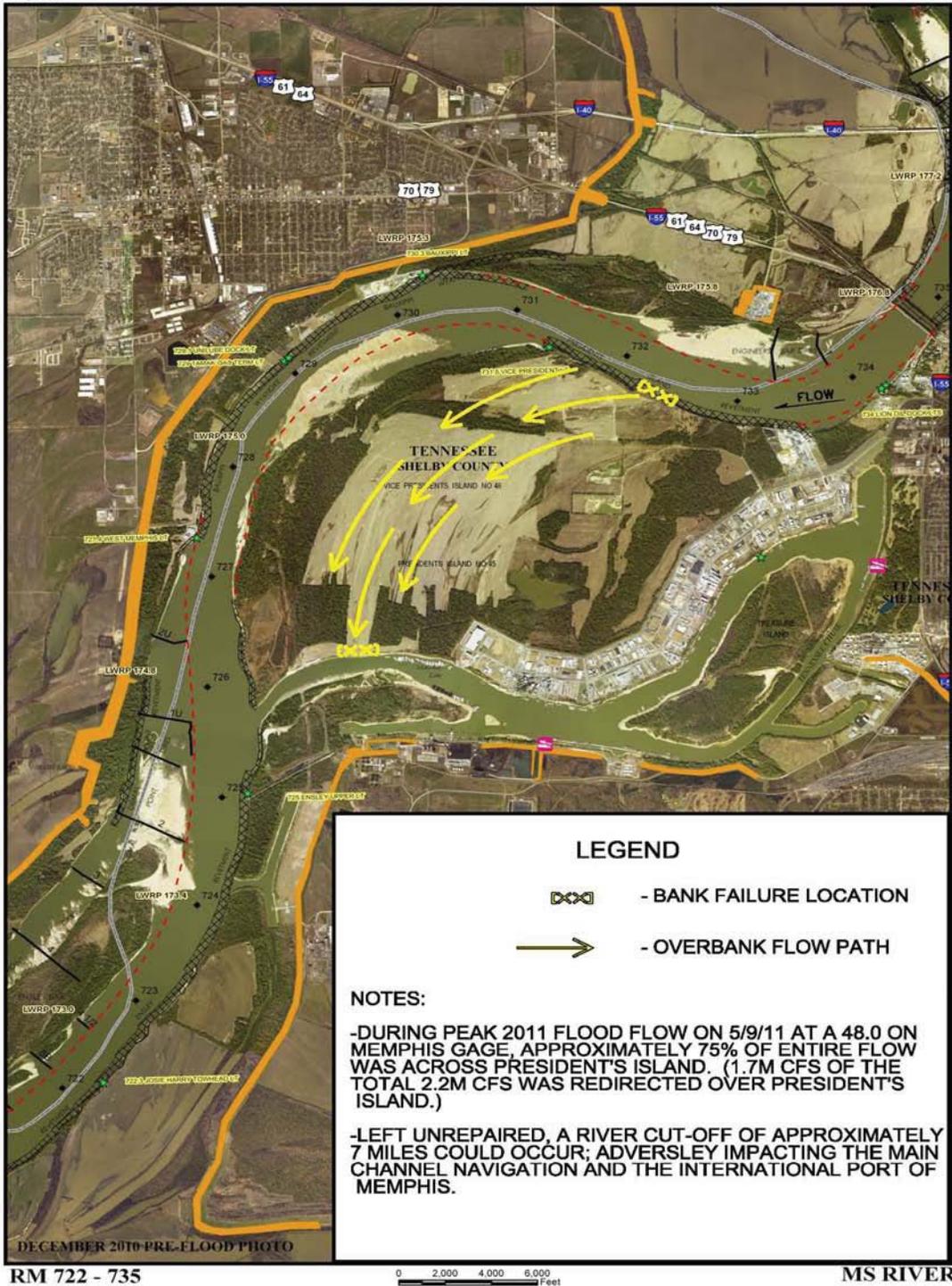


Figure 2. Map of the bank failure and path of overbank flow from Mississippi River floodwaters in 2011 at Presidents Island, Shelby County, Tennessee.

TO WHOM IT MAY CONCERN: Pursuant to the National Environmental Policy Act of 1969, as amended, the U.S. Army Corps of Engineers (USACE), Memphis District, is issuing this notice of the intention to repair the top bank failures at Merriwether-Cherokee and Presidents Island on the Lower Mississippi River.

PURPOSE: The purpose of the proposed repairs to top bank and overbank scour is to prevent river cut-offs at the two locations and maintain the current navigation channel. A river cut-off at Presidents Island would also destroy the existing entrance to McKellar Lake Harbor which is one of the largest inland ports in the United States.

ALTERNATIVES: Several alternatives were investigated for repairs at Merriwether-Cherokee and Presidents Island. For the purposes of NEPA, the no-action alternative serves as the baseline against which impacts and benefits of the action alternatives are evaluated. A description of each alternative is included below. Diagrams of alternatives are shown in Appendix A.

2.1 No Action. The no action alternative is defined as leaving the top bank and the adjacent overbank scour holes in their existing conditions with no improvements. This alternative would not reduce the risk of river cutoffs occurring at flood flows for an extended duration.

If the Mississippi River were to flood again and continue cutting a channel where the failure at Merriwether-Cherokee occurred, nine miles of existing river channel that has approximately \$54,000,000 of river training structures already in place could be lost. Furthermore, the head cutting that would result from the cutoff would progress upstream causing more damage to this reach while degrading and possibly invalidating many of the existing structures in place to aid in navigation and flood control. If the Mississippi River were to flood again and continue cutting a channel toward the harbor where the failure at Presidents Island occurred, approximately six miles of existing river channel that has approximately \$47,000,000 of river training structures already in place could be lost. It would also adversely impact and possibly shut down the International Port of Memphis.

2.2 Restore top bank, completely fill scour hole with dredge material, and then place ACM along the riverbank. At Merriwether Cherokee, this alternative would provide the highest level of protection until the Sheep Ridge Road / levee is restored; however, the resultant magnitude of dredge fill that would be required rendered this alternative unacceptable. The estimated amount of over 6 million cubic yards of dredge fill is not only cost prohibitive, but the quantity of source material needed for this fill would be difficult to identify. Even if this magnitude of source material was identified, placement of dredge fill would take multiple seasons to accomplish. Dredge fill would also be vulnerable to scour during a flood until the levee is restored. Therefore this alternative would not provide adequate or timely protection from a potential river cutoff. The estimated cost for this alternative at Merriwether-Cherokee is \$34,000,000.

At Presidents Island, this alternative would provide the highest level of protection to the navigation channel and the International Port of Memphis; however, the quantity of dredge fill material that would be required rendered this alternative unacceptable. As would be the case at

Merriwether-Cherokee, the estimated amount of over 3 million cubic yards of dredge fill would be cost prohibitive, would be difficult to find this large quantity of source materia, and would take too much time to accomplish. Therefore this alternative would not provide adequate or timely protection from a potential river cutoff. The cost for these proposed repairs at Presidents Island would be approximately \$30,500,000.

The total cost for Alternative 2.2 would be \$64,500,000.

2.3 Construct stone baffle/containment dike on recommended alignments and fill with dredge material. The proposed action at Merriwether-Cherokee consists of construction of a stone containment baffle approximately 1,600 feet in length placed across the overbank scour hole and parallel to the recently restored top bank. Bank paving consisting of riprap side slopes would connect the baffle to top bank for reinforcement and to prevent flanking. The existing scour hole between the stone baffle and top bank would then be filled with approximately 1.2 million cubic yards of dredge fill for stability. Assuming a production rate of approximately 26,400 cubic yards of dredged sand per day, approximately 46 days of dredging would be required for the dredge fill. Dredge sand would be piped in from the river near the failure location and effluent would return to the Mississippi River through an existing notch in the recently restored top bank closure structure. Finally, underwater bank armoring consisting of 8,100 squares of ACM would be installed riverside of top bank, and riprap stone paving (maximum thickness of 4 feet) would be installed on top of the dredge fill extending approximately 100 feet landward of top bank. The cost for these proposed repairs at Merriwether-Cherokee would be \$15,200,000.

The same approach would be used for the proposed repairs at Presidents Island. Approximately 135,000 tons of stone would be used to construct the containment baffle extending approximately 2,400 feet in length. Approximately 2 million cubic yards of dredge fill would be needed to fill the scour hole between the containment baffle and top bank. Assuming a production rate of approximately 26,400 cubic yards of dredged sand per day, approximately 76 days of dredging would be required for the dredge fill. Dredge sand would be piped in from the river near the failure location and effluent would return to the Mississippi River through an existing notch in the recently restored top bank closure structure. Finally, underwater bank armoring consisting of 9,600 squares of ACM would be installed riverside of top bank, and riprap stone paving (maximum thickness of 4 feet) would be installed on top of the dredge fill, extending approximately 100 feet landward of top bank. The estimated cost for these proposed repairs at Presidents Island is \$28,568,000.

All rock work would be conducted from the water. Draglines would be used to pull rock from floating barges for the placement of rock. The barges would access the overbank scour hole at each location through an approximately 300-foot wide notch in the newly restored top bank. Dredge pipes would temporarily be placed across the land during the dredge fill operation.

The total cost for Alternative 2.3 would be \$43,768,000.

2.4 Construct stone baffle/containment dike on further landward alignments and fill with dredge material. This alternative is very similar to Alternative 2.3, however the location of the baffle was adjusted landward. Moving the baffle further landward caused dredge fill cubic yardage to

increase dramatically. Additionally, riprap stone paving would need to be increased to a distance of 900 feet landward of top bank for stability. The changes associated with this alternative alignment resulted in higher estimated costs than the proposed alternative; thus, this alternative was not selected as the preferred alternative. The estimated cost for these proposed repairs at Merriwether-Cherokee is \$18,500,000 plus \$30,031,550 at Presidents Island.

The total cost for Alternative 2.4 would be \$48,531,550.

2.5 Construct stone baffle/containment dike on further riverward alignments and fill with dredge material. This alternative is very similar to Alternative 2.3; however, the location of the baffle was adjusted riverward. This alternative would require less dredge fill; however, the decreased distance between baffle and stone fill on the downstream end reduces the integrity of the overall repair, possibly increasing risk of failure when compared to the other alternatives. Due to this decreased integrity, riprap stone paving would need to be increased to a distance of 300 feet landward of top bank for stability. This alternative yielded higher estimated costs than the proposed alternative. The estimated cost for these proposed repairs at Merriwether-Cherokee is \$16,800,000 and \$34,371,500 at Presidents Island.

The total cost for Alternative 2.5 would be \$51,171,500.

The no action alternative was determined to be unacceptable because of the risks and extent of projected flood damages. Alternative 2.2 would provide the highest level of protection; however, it would also require the largest amount of dredge fill and has the highest costs. This large amount of dredge fill would not only be cost prohibitive, but also take multiple seasons to accomplish. Therefore Alternative 2.2 would not provide adequate or timely protection from a potential river cutoff. Alternatives 2.3, 2.4, and 2.5 were similar in scope; however, Alternative 2.3 provided the best protection at the lowest cost. Alternative 2.3 offered the best compromise of environmental impacts and project costs, and thus was selected as the proposed action.

DESCRIPTION OF WORK: The proposed action at Merriwether-Cherokee consists of construction of a stone containment baffle approximately 1,600 feet in length placed across the overbank scour hole and parallel to the recently restored top bank. Bank paving consisting of riprap side slopes would connect the baffle to top bank for reinforcement and to prevent flanking. The existing scour hole between the stone baffle and top bank would then be filled with approximately 1.2 million cubic yards of dredge fill for stability. Assuming a production rate of approximately 26,400 cubic yards of dredged sand per day, approximately 46 days of dredging would likely be required for the dredge fill. Dredge sand would be piped in from the river near the failure location, and effluent would return to the Mississippi River through an existing notch in the recently restored top bank closure structure. Finally, underwater bank armoring consisting of 8,100 squares of articulated concrete mattress (ACM) would be installed riverside of top bank; and riprap stone paving (maximum thickness of 4 feet) would be installed on top of the dredge fill, extending approximately 100 feet landward of top bank.

The same approach would be used for the proposed repairs at Presidents Island. Approximately 135,000 tons of stone would be used to construct the containment baffle extending approximately 2,400 feet in length, and approximately 2 million cubic yards of dredge fill would

be needed to fill the scour hole between the containment baffle and top bank. Assuming a production rate of approximately 26,400 cubic yards of dredged sand per day, approximately 76 days of dredging would likely be required for the dredge fill. Dredge sand would be piped in from the river near the failure location and effluent would return to the Mississippi River through an existing notch in the recently restored top bank closure structure. Finally, underwater bank armoring consisting of 9,600 squares of ACM would be installed riverside of top bank; and of riprap stone paving (maximum thickness of 4 feet) would be installed on top of the dredge fill, extending approximately 100 feet landward of top bank.

All rock work would be conducted from the water. Draglines would be used to pull rock from floating barges for the placement of rock. The barges would access the overbank scour hole at each location through an approximately 300-foot wide notch in the newly restored top bank. Dredge pipes would temporarily be placed across the land during the dredge fill operation.

WATER QUALITY CERTIFICATION: An Aquatic Resource Alteration Permit (ARAP), or Section 401 water quality certification, was received from the State of Tennessee for the proposed repairs at Merriwether-Cherokee on 4 April 2012 and for Presidents Island on 19 March 2012.

SECTION 404 (b)(1) EVALUATION AND SECTION 10 OF THE RIVERS AND HARBORS ACT: Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, the proposed placement of rock within the scour holes and the proposed dredge fill are covered under Nationwide Permit 3 for Maintenance Activities. No adverse impacts to navigation are expected.

ENDANGERED SPECIES: Three federally listed species may occur within the Lower Mississippi River in the vicinity of the proposed project areas: the interior least tern (*Sterna antillarum athalassos*), pallid sturgeon (*Scaphirhynchus albus*), and fat pocketbook pearly mussel (*Potamilus capax*). The proposed actions have been coordinated with the U.S. Fish and Wildlife Service and are part of an emergency consultation for flood repairs due to the 2011 flood, as provided for in Section 7 of the Endangered Species Act, as amended. Based on initial review of the proposed flood repairs, the U.S. Fish and Wildlife Service does not believe that the flood repairs would result in jeopardy to federally listed species. Nevertheless, upon completion of emergency flood repairs, the USACE will prepare a biological assessment to determine effects on federally listed species.

CULTURAL RESOURCES: Near the Merriwether-Cherokee project area around River Mile 869, the steamer *Alaska* is reported to have sunk on a sandbar above Island No. 13 over 100 years ago. Additionally, the Merriwether Bend area near river mile 870.5 was the home of the Merriwether family that owned plantations in the area. However, the river has migrated a couple of miles south at these locations since those times, and no known cultural resources are within the present project right of way.

Presidents Island has a rich history. In 1862 the Confederate ram boat *General Jeff. Thompson* was sunk at the head of the island. Some years later several other boats, the *Platte Valley* and the *Mary Boyd*, crashed into the wreckage of the *General Jeff. Thompson* and sank. During the later part of the Civil War the Island became a refugee camp for more than 1,500 African Americans. After the Civil War, General Nathan B. Forrest retired to the Island and managed a large plantation. Many years after the Civil War a “pest house” hospital, where people with highly contagious diseases were isolated from the general public, was constructed on the Island. There was also a prison located on the Island at the same time. During the 1920’s, the area became internationally known for cock fighting and other forms of gambling. No known cultural resources are within the proposed project rights-of-way. However, a newly discovered historic cultural resource (with human remains) was observed after the flood of 2011; it is located near the edge of overbank scour, approximately 1,000 feet southeast of the proposed project. Based on the history of the island and the number of human remains uncovered by the 2011 floodwaters, the archeological site can be considered to be significant and potentially eligible for inclusion on the National Register of Historic Places. Completion of the proposed action will provide erosion protection to this portion of Presidents Island and will provide protection against flood damages to the known archeological site southeast of the project. Protecting the site from damage is extremely important due to the history of Presidents Island, the number of human remains discovered, and the number of potential human remains in the site.

PUBLIC INTEREST REVIEW: The purpose of this public notice is to advise all interested parties of the proposed activities and to solicit comments and information necessary to evaluate the probable impact on the public interest. The public review period is restricted to **10 days** due to the need to perform these critical repairs in a timely manner. Comments must be received by June 4, 2012. Comments received after this date will not be considered.

The decision to proceed with this project will be based on an evaluation of the probable impact, including cumulative impacts, of the activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The potential benefits that reasonably may be expected to accrue from the activity must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the activity will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; federal, state and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of the proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to modify or condition the project. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are

used in preparation of the final environmental assessment and/or draft environmental impact statement pursuant to the National Environmental Policy Act and are also used to determine the overall public interest of the proposed activity. **The draft EA and draft FONSI will be circulated to agencies and any other parties that respond to this notice requesting copies. Copies of these documents have been placed on the District's website at:**

<http://www.mvm.usace.army.mil/regulatory/public-notices/pn.htm>

PUBLIC HEARING: Any person may request in writing, within the comment period specified in this notice, that a public hearing be held to consider this proposed project. Requests for a public hearing shall clearly state the reason for holding a public hearing. The District Engineer will determine if the issues raised are substantial and whether a hearing is needed in order to reach a decision on the project.

COMMENTS OR REQUEST FOR ADDITIONAL INFORMATION: If you wish to obtain additional information or to submit comments on this proposal, contact Mike Thron at the U.S. Army Corps of Engineers, Environmental Compliance Branch, 167 North Main Street, Room B-202, Memphis, Tennessee 38103-1894, telephone 901/544-0670. **Comments should be forwarded to this office by June 4, 2012.**

Sincerely,



Edward P. Lambert
Chief, Environmental Compliance Branch,
Regional Planning and Environmental Division South