

# **DRAFT ENVIRONMENTAL ASSESSMENT**

## **BENDWAY WEIR CONSTRUCTION MISSISSIPPI RIVER AT WESTOVER RIVER MILE 652R AHP PHILLIPS COUNTY, ARKANSAS**

### **INTRODUCTION**

The Corps of Engineers, Memphis District, has prepared this environmental assessment (EA) to evaluate potential impacts associated with installing five bendway weirs along the right bank of the Mississippi River between miles 651R and 652R in Phillips County, Arkansas (Figure 1). This particular river reach was not originally covered under the 1976 *Mississippi River and Tributaries, Mississippi River Levees and Channel Improvement Environmental Impact Statement*. As a result, this EA is prepared to address the impacts of installing five small bendway weirs in this river reach.

The project site is just downstream of the New Helena Harbor, Arkansas, and across the river from Friars Point, Mississippi. The harbor is also known as the Phillips County Harbor. This reach of the Mississippi River requires constant maintenance dredging to maintain a safe navigation channel because of a large sand bar that has developed across the river just downstream of Mississippi Limestone, a major gravel industry on this part of the river. The growth of the sand bar has narrowed the navigation channel and produces currents that now direct swift currents along the right bank. The strong currents and high water velocities pull towboats toward the bank. This makes it extremely difficult and hazardous for the towboats to safely navigate this river bend from either direction. At low river stages, both Helena Harbor and Mississippi Limestone facilities are inaccessible due to exposed sand bars.

The swift currents have also cut a deeper bed at the base of bank along this river bend; deepening it over 20 feet in one place. The river bottom is beginning to scour below the base of the existing revetment. This raises concern for the stability of the existing revetment along this section of bank. Continued channel bed cutting would cause the revetted bank to fail with significant riverbank erosion. If this happens, the configuration of the mouth of Helena Harbor could possibly change and prevent access to the harbor. More importantly, the main Mississippi River Levee is only several hundred feet back from the river along this reach. The loss of revetment protection and subsequent fast bank erosion would become a major concern. This could lead to a massive failure of the levee, particularly when it is needed most; at high river stages.

Bendway weirs are low rock dikes extending outward from the river bank and part way across the river bed. They are installed in deep water so as not to adversely impact safe river towboat navigation, particularly at low river stages. These under water bendway weirs would direct the river currents away from the right bank. The deep river currents would then remove

the outer edge of the encroaching sand bar and move the deep navigation channel away from the river bank. Towboats would then have a wider channel and a smother river bend to navigate through. Dredging in this reach would also be reduced. More importantly, the potential for a massive levee failure would be prevented. If left unchecked, the encroaching sand bar would further narrow the river with swifter currents in the bend. Mississippi Limestone docks would be silted in and Helena Harbor would be inaccessible for part of the year. A towboat accident could occur. Maintenance dredging would also increase in this area at significant expense to the Government. The underwater weirs would stabilize the existing revetment further increasing protection for the nearby Mississippi River Levee.

There would be no hindrance to navigation during or after construction. Limestone rock would be deposited to construct the five bendway weirs. No wetlands or endangered species would be impacted with construction. No cultural resources would be impacted.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as interpreted by Council on Environmental Quality Regulations (40 CFR Parts 1500-1508) and the U.S. Army Corps of Engineers Regulation ER-200-2-2, and employs a systematic, interdisciplinary approach. The following sections include a discussion of the need, authority, and impacts of alternative plans on natural and cultural resources associated with the proposed action.

## **PROJECT DESCRIPTION**

The work would involve placing approximately 43,000 tons of Graded Stone A in five under water dikes. The stone would be large limestone rock obtained from quarries near Cape Girardeau, Missouri, or Paducah, Kentucky. Rock for each weir would be deposited starting from near the toe of the slope of the outside river bend and extending outward for several hundred feet across the river bottom. Weir lengths are as follows: Weir No.1 would be 500 feet; Weir No. 2 would be 670 feet; Weir No. 3 would be 750 feet; Weir No. 4 would be 600 feet; and Weir No.5 would be 750 feet (Figure 2). The average weir height would be 15 feet with a maximum thickness around 28 feet in the deepest parts. The bases of the weirs would be about 50 feet wide (Figure 3).

The tops of all weirs would be to a -25 LWRP. Note that LWRP stands for Low Water Reference Plane. The reference plane is the elevation at any particular place in the river where over a long period of record, the lowest river stages were at or above a certain river elevation for 97% of the time. This elevation is considered the zero (0) LWRP. The tops of all five bendway weirs would be at a -25 LWRP, well below a river level that could make them a hazard to safe river towboat navigation. In other words, there would always be 25 feet or more of water over the weirs.

No riverbank excavation would be required to tie any of the underwater bendway weirs into the river bank. Rock would be deposited on top of the existing articulated concrete mattress and extend outward from there across the river bottom. However, to ensure the integrity of each weir, additional rock paving would extend from 100 feet upstream to 200 feet downstream of the

weir centerline. This is to ensure that the weirs will not fail in very strong river currents during high river stages.

## **NEED FOR ACTION**

### **Purpose**

The primary purpose of this project is to create a safer navigation channel for towboats in the Mississippi River bend around Mile 652R by reducing the strong drafting current that presently exists. This would prevent a towboat accident. A secondary purpose is to redirect the river currents to maintain access to Helena Harbor on the right bank, and the Mississippi Limestone docks on left bank. This would help maintain the economy of the area. The third purpose is to help reduce the dredging problem that exists at this location. The fourth purpose is to prevent erosion of the existing revetment along this river reach. Failure to protect the revetment could lead to the nearby Mississippi River Levee failing at high river flood stages resulting in massive property damage and possible loss of life.

### **Public Concerns**

Continued towboat navigation through this hazardous Mississippi River bend could lead to an accident. Barges could break lose and block safe navigation of the river. Some barges could even sink. If hazardous or toxic materials are involved, serious concerns for public safety could arise. Adverse environmental impacts could also incur. Both Helena Harbor and the Mississippi Limestone docking facilities are important businesses in this region. The economies of both are already adversely impacted at extreme low river stages when sand bars block access to the facilities. Without this project to redirect the river currents, both facilities would experience longer periods during the summer months where they would be unable to access the river. Protection of the nearby main line Mississippi River Levee is paramount. It is only several hundred feet away from the river. Should it fail at high river stages because the bendway weirs were not in place to stabilize the existing revetment at this river bend, many thousands of acres would be inundated with the associated economic losses to agriculture and property. People might even be injured or perish.

## **PROJECT AUTHORITY**

This project is authorized by the Flood Control Act of 15 May 1950, Public Law No. 391-70, as amended and supplemented by subsequent Acts of Congress. As part of this Act, the Federal government is responsible for major maintenance of the constructed flood control features.

## ALTERNATIVES

Five alternatives were considered during plan formulation.

*Alternative 1: No Action:* The no-action alternative is defined as termination of this bendway weir project. The unsafe navigation conditions through this river bend would continue to worsen. Erosion of the river bed at the bank toe would increase, leading to bank failure. This would create a pocket along the outside bank producing very unsafe eddies that would compound the already unsafe navigation conditions. This could cause a towboat accident. Failure of the revetted river bank so close to the main Mississippi River Levee could possibly lead to the levee failing at high river flood stages. This would be catastrophic disaster. Silting in of the Helena Harbor mouth and the Mississippi Limestone dock would produce economic hardships to those businesses and to the overall area. Losses of revenue would occur.

*Alternative 2: Increase Dredging In This River Reach:* Increasing dredging along this river reach to maintain safe navigation would be costly. The river is moving toward the right descending river bank. The growing sand bar on the left bank is constricting the navigation channel against the revetted right descending bank. The amount of sand that would be required to be removed from this huge, 1.5 mile long bar could not be done in sufficient time to stabilize the channel prior to the next high river stage. The sand bar would be expected to redevelop soon after dredging ceases thus negating the huge dredging effort and expense. The industrial facilities on both sides of the river would receive no relief. Also, the river bank would still undergo erosion that could threaten the integrity of the nearby Mississippi River levee.

*Alternative 3: Install High Dikes Along the Outside Bank:* High Dikes would rise above the water surface and extend far out into the navigation channel in this tight bend. They would efficiently direct the river currents away from the right bank but would force the towboats to slowly navigate past them. This would be nearly impossible to do in swift river currents along the outside bend. At low and intermediate river stages, the dikes would create a very narrow navigation channel through this bend. This would be very hazardous to navigation. A towboat accident could occur. The Mississippi Limestone dock on the left bank would probably be accessible for longer periods because dikes would direct low river stage currents toward the left river bank, helping it to be free of sand bar development. However, a high dike immediately downstream of the Helena Harbor mouth would eddy the currents and encourage a sand bar to develop there. This would adversely impact boats transiting the harbor mouth. Also, high dikes so near the harbor mouth would make for major navigation hazards at the mouth. On the other hand, this alternative would provide increased protection along the revetted bank and stronger protection of the Mississippi River levee. High dikes on the right descending river bank would only solve a portion of the problems in this river reach.

*Alternative 4: Install Hard Points:* Hard points are very short dikes spaced at close intervals along an eroding river bank. They would stabilize the river bank in a similar fashion as the high dikes would. They would be much shorter in length than regular dikes and be less of a navigation hazard than long dikes would be. However, there would still be unsafe towboat passage through this reach because of maneuvering required to avoid the structures. A wider river channel is required at this river reach for safe towboat navigation. Hard points would be

too short to direct low river stage currents toward the left bank to remove the edge of the sand bar that is encroaching into the navigation channel. The navigation channel would still remain narrow with swift and unsafe currents. Both industrial facilities would see no relief from their problems, and sand bar formation at both places would still be a problem. However, as with dikes, increased river bank protection would also increase the levee protection.

*Alternative 5: Install Five Under Water Bendway Weirs:* Bendway weirs would redirect the swift currents off the river bank. This would make for safer towboat transit of this river bend. The weirs would be 25 feet and more underneath the towboats so there would be no navigation hazards around this bend or at the mouth of Helena Harbor. The weirs would eventually remove a small part of the edge of the sand bar that is encroaching from across the river. This would widen the channel and reduce the erosive currents along the toe of the revetted river bank. Both navigation channel and river currents would be modified sufficiently such that dredging problems would be reduced in this river reach. The revetment along the river bank would be strengthened and stabilized with additional rock, thus protecting the nearby Mississippi River levee. Some of the low river sand bar that is exposed at Mississippi Limestone would be reduced permitting the docks to be used for a longer period of the year. In addition, installing under water weirs would be less costly than building long, high dikes, and continued annual dredging.

Consequently, Alternative 5, installing five under water bendway weirs along the right Mississippi River bank at Mile 652R, is the only feasible alternative.

## **FLOODPLAIN MANAGEMENT**

These five under water bendway weirs would be installed directly in the Mississippi River. No work would be done in the floodplain. No excavation would take place, thus there would be no impacts to river floodplain. If left unprotected, there is a possibility of bank erosion and failure of the revetted river bank. This could lead to failure of the nearby Mississippi River levee. Should this occur, there would be devastating changes to the floodplain behind the levee if a failure occurs at Mississippi River flood stages. The river could even seek a new course like it did during the 1973 flood. Installing the underwater bendway weirs would take place completely within the Mississippi River channel. This is the least costly and least environmentally damaging approach. No adverse floodplain impacts are expected as the result of constructing the five underwater bendway weirs.

## **HAZARDOUS, TOXIC AND RADIOACTIVE WASTE (HTRW)**

A record search was conducted by Corps personnel through the EPA EnviroMapper Web Page (<http://maps.epa.gov>). The EPA search engine did not indicate any superfund sites, toxic releases, or hazardous waste sites within, or directly adjacent to the project site. Absence of a historical file on a particular property is not meant to constitute a guarantee that activities have not occurred or the site has never been impacted. Since no river bank excavation would take place during construction, the likelihood of uncovering any HTRW is extremely remote. Inspections of this river bank revealed no evidence of potential or present HTRW problems.

If left unprotected, the main levee could fail at a high Mississippi River flood stage. The resulting flood waters over thousands of acres in an agricultural area would damage agrichemical storage facilities on the many farms that would become inundated. Gasoline, oil, and other chemicals could be transported in the flood waters when numerous buildings and occasional gasoline stations throughout the floodplain are also inundated. Installing bendway weirs that would protect the levee would prevent this potential human health hazard from taking place.

## **ENVIRONMENTAL SETTING**

### **Location**

The Westover Bendway Weirs project is located in southeast Arkansas on the right descending bank of the Mississippi River between miles 651R and 652R in Phillips County. The project site is approximately 13 miles south-southwest of Helena, Arkansas, and 13 miles northwest of Clarksdale, Mississippi. Specific location puts it just downstream of the New Helena Harbor, Arkansas and across the river from Friars Point, Mississippi.

### **Climate**

This section is summarized from the U.S. Department of Agriculture Soil Survey of Phillips County, Arkansas that was issued in November, 1974. Phillips County has generally warm summers and mild winters. The county can occasionally have long, hot, humid summers because of the moisture brought in from the Gulf of Mexico. Evaporation from the streams, marshes and rice fields contributes to the high humidity. The county can also have occasional cold weather and snow when arctic cold fronts pass through, but these are of short duration. Overall, winters are relatively free of severe snow and cold temperatures. The most violent and abrupt weather occurs in the spring with the passage of strong weather fronts. These are usually accompanied by turbulent weather and heavy rainfall. In the fall, the days are warm and the nights cool with much less humidity. Passing weather fronts are also less severe during the fall. Summer temperatures regularly exceed 90 degrees Fahrenheit or higher, particularly in July and August, and occasionally reaches 100 degrees or higher. Minimum summer temperatures average around 78 degrees Fahrenheit. Winter temperatures range from average highs of 53 degrees to average lows of 32 degrees Fahrenheit. Precipitation averages 50 inches and is fairly adequate throughout the year. Prolonged droughts can occur but are rare. March and April are the wettest months, each normally having around 11 inches of rain. August through October are the driest months with about 3 inches of rain each month.

### **Soils**

This section is summarized from the U.S. Department of Agriculture Soil Survey of Phillips County, Arkansas that was issued in November, 1974. The project site is located within the Mississippi River. The surrounding valley is made of alluvial soils that were deposited thousands of years ago, after the Pleistocene glaciations, when the Mississippi River and the Ohio River flowed over this site. Both rivers carried gravel, sand, and finer sediments in the

melt water, depositing them to form the Mississippi River delta. As a result, the area is relatively flat with only gradual changes in elevation due to several different ancient river terrace levels. The present Mississippi River channel lies within these soils. There are two major soil associations along the top bank adjacent to the project site. The Commerce-Robinsonville-Crevasse association soils are found along the top bank of the Mississippi River and extend a short distance past the main river levee. These are the finer-grained soils associated closely with fairly recent river channel movements and over bank flooding. These soils are somewhat poorly drained, well-drained, and excessively drained, level and gently undulating, loamy and sandy soils. The Newellton-Sharky-Tunica association soils lies further beyond the Mississippi River levee. These soils are somewhat poorly drained and poorly drained, level and gently undulating, clayey soils. They lie within the abandoned river channels. All soils are suited to cultivated crops, with corn, cotton, grain sorghum, soybeans and winter wheat being the primary crops.

Unconsolidated, shifting sand covers the river bottom and deepest part of the revetted river bank at the project site. No cropland soils will be impacted as all work would deposit rock on top of shifting sand on the river bottom. The project site is, and will continue to be constantly under water during and after project completion.

## **SIGNIFICANT RESOURCES AND IMPACTS**

### **Vegetation**

Row-crop farming takes place along the top of the bank of the Mississippi River to where the revetment begins. A narrow strip of small trees and brush is found along the border of the field edges and the rock revetment. The vegetation is volunteer growth from species native and common to the area. Nearly all trees and shrubs are small. However, several large cottonwood trees are found here. The predominant trees found along the top bank at the project site are black willow, red maple, silver maple, and cottonwood. Other typical plant species that occur are cat briar, black berry, privet, morning glory, trumpet vine, and various grasses. Since all construction would be done from floating barges, there would be no disturbance to the river bank and vegetation growing there, or in the cropland beyond top bank. No emergent or submerged aquatic vegetation grow on the articulated concrete mattress of the revetted bank or in the constantly shifting sand on the river bed. In addition, the muddy water is too dark for sufficient sunlight to penetrate to permit aquatic plant growth. Thus there would be no impacts to aquatic vegetation.

### **Agricultural Lands**

Row crops are planted in the field on the top bank at this site. No croplands would be disturbed since all work would be done from floating barges. No river bank excavation would be required to key the weirs into the riverbank since all rock would be placed on existing articulated concrete mattress that is about 25 feet below the surface. Thus, there would be no adverse impacts to cropland. Landward of the main levee, nearly all the delta land is in farm production. The bendway weirs would reinforce the riverbank and Mississippi River levee. Thus, cropland adjacent to and beyond the levee would continue to be protected from erosion and flooding.

## **Wildlife Resources**

Wildlife resources that could be expected to inhabit the cropland and wooded sections adjacent to the project area include raccoon, opossum, rabbit, mice, rats, voles, shrew, songbirds, turtles, snakes, amphibians, fox, coyote, deer, and other small animals typically found along the Mississippi River banks. Since all work would be done from barges floating in the river, there would be no significant adverse impacts to wildlife.

## **Aquatic Resources**

Swift currents running along an outside bend of the Mississippi River provide habitat conditions used by those species, such as flathead catfish, sturgeon and sicklefin chub, that are adapted to swift currents along a hard, semi-smooth substrate and constantly changing sandy river bed. The currents would be changed in five small places when large limestone rock is deposited and eddy currents develop at the toe of the bank slope and along the river bottom. Construction time would be relatively slow which should enable any benthic fish along the revetted bank to move elsewhere. Few or no aquatic species are expected to be found in the constantly shifting sand that constantly moves along the river bed. Rock structures extending part way across the river bottom would change the river current velocities and thus increase habitat diversity at these specific sites. This is expected to increase invertebrate and fish use at the weir sites. Thus, minimal adverse impacts would be expected with construction, but some aquatic benefits would result with the increased habitat diversity. This project was thoroughly reviewed and discussed by the U.S. Fish and Wildlife Service (USFWS) and both the Arkansas and Mississippi wildlife resource agencies at the February 21, 2007 and the February 26, 2008 Interagency Environmental Meetings. All agencies agreed there would be minimal or no adverse impacts to the aquatic resources. Slight habitat improvement would result.

## **Endangered Species**

There is no sand bar along the right descending river bank where the underwater weirs would be installed. Thus there is no interior least tern nesting colony at the site. Since all work would be done from floating barges, there would be minimal impact to any terns that may decide to feed along the revetted bank. Least terns recently nested on the large sand bar across the river. However, there would be no adverse construction impacts to least terns because the sand bar is about one mile from the construction site, no personnel or equipment would be on this sand bar, and all work would be done from floating barges.

High water Mississippi River currents shift and move sand bars around each year. This is a natural occurrence that the least tern is adapted to. The small portion of bar that will eventually wash away once the weirs are installed would not adversely impact the least tern nesting colony on the sand bar. The removed portion of the bar would be minuscule in comparison to the entire sand bar, and the terns would just nest on another part of the sand bar. With around 10,000 least terns in the lower Mississippi River, slightly changing the configuration of one sand bar would be insignificant. The overall Mississippi River least tern population would not be affected.

The pallid sturgeon prefers gravel sandbar substrate along drop-offs at sand bar edges. None of this habitat occurs at the underwater weir sites. Thus no adverse construction impacts are expected for the pallid sturgeon. This habitat is found at the sand bar located across the river

from the weir sites. Even though some of that bar would be washed away, the overall bar-edge configuration favorable to pallid sturgeon would only be shifted slightly more toward the left descending river bank. There should be no significant change in pallid sturgeon habitat and no adverse impact to the species.

The swift river currents and constantly moving sandy substrate are not conducive for pocketbook pearly mussel (*Potamilus capax*) habitat. Thus, it is highly unlikely that any mussels would be found at the weir sites. No adverse impacts are expected.

This project was reviewed and thoroughly discussed with the USFWS and both the Arkansas and Mississippi wildlife resource agencies at the February 21, 2007 and the February 26, 2008 Interagency Environmental Meetings. All agencies agreed there would be no adverse impacts to any endangered species. The USFWS granted endangered species clearance at the 2007 meeting. Their follow-up clearance letter is included in the Appendix to this document. At the 2008 meeting, the USFWS reaffirmed their previous findings of no adverse impact to any endangered species or critical habitat.

No other endangered species were observed or are known to occur within the project area. This project is being coordinated again with the UFWS through this draft environmental assessment. Any additional comments they may have regarding general impacts to wildlife and endangered or threatened wildlife or plants, or their critical habitats, will be considered in our final environmental assessment.

### **Cultural Resources**

This project would not adversely impact cultural resources due to the nature of the work and the fact that no excavation would be done. No further cultural work would be required for this project unless the scope of work or project rights-of-way change. This project has been coordinated with the Arkansas State Historic Preservation Officer (SHPO). A copy of this correspondence is included in the Appendix to this report. Should deeply buried artifacts or other site indicators be uncovered during construction, the Memphis District Archeologist, SHPO, and Federally Recognized Tribes will be immediately notified to ensure compliance with all Federal and state laws and regulations. A copy of the draft EA and Public Notice will be sent to the SHPO and federally recognized tribes.

### **Wetlands**

There are no wetlands within the Mississippi River channel. Thus, there would be no wetland impacts.

### **Air Quality**

No air quality monitoring data has been collected for this area by the Arkansas Department of Environmental Quality (ADEQ), Air Division. Phillips County is an attainment county for air quality. The various types of conventional construction equipment to be used are classified as mobile sources. ADEQ does not require permits for mobile sources operating for durations such as the short duration of this bendway weir construction. This equipment would

not cause a significant adverse impact to the overall air quality in the county. No special air quality permit is needed, nor are any special conditions required. Best management practices shall be used throughout the construction to minimize air pollution.

### **Water Quality**

No earth would be excavated to construct the five bendway weirs. Thus, no silt would be stirred up or washed into the river. Approximately 43,000 tons of rock riprap and would be placed beginning on the existing revetment at the toe of the riverbank and then deposited outward from the bank across several hundred feet of sandy river bed. Dike construction is a relatively slow process. The slight amount of sand or silt that would be stirred off the river bed by rocks being dropped on it would be similar to what is disturbed with routine dike construction. The volume of water flowing over the weir construction site is so great that the relatively small amount of disturbed sand and silt would be quickly diluted. It would also be minuscule compared to the sediment load in the river at high river stages. Overall, water quality impacts would be minimal during construction, and would quickly return to preconstruction levels immediately after construction. This project meets the criteria of Nationwide Permit 13 for bank stabilization. No Section 404(b)(1) evaluation is required. Since this project is for navigation safety in the Mississippi River, and is similar to a normal dike construction project, no special permit is required from the Arkansas Department of Environmental Quality.

### **Section 10 Navigation**

Installing the bendway weirs would involve several barges and small towboats working along the right river bank; much less than what is required for new revetment construction. The equipment required for bendway weir construction would be working close to the bank and would not pose a significant navigation hazard. The contractor will have a contact pilot on the job at all times to manage towboat traffic and improve communication with industry. The Coast Guard will be coordinated with during all phases of construction to ensure continued river navigation safety. They will alert all towboat traffic to be aware of this construction activity. No adverse impacts are expected. After project completion, a wider and safer navigation channel is expected in this hazardous river reach. Navigation safety would be greatly improved following project completion.

## **CUMULATIVE IMPACTS**

Long-term, direct impacts would be that navigation safety would increase because a narrow channel in a hazardous river reach would be widened. A small portion of the sand bar on the opposite side of the river would also be removed to accomplish this. This would move the sailing line off the river bank and more into the center of the river channel. Towboats would be able to transit this reach at a safer speed without the risk of swift currents pushing them into the revetted river bank, or becoming grounded on the sand bar on the left bank. This would slightly reduce the cost of moving products on the river. Indirect impacts would be that the outside river bank would have increased armoring to prevent the existing revetment from failing, which if unchecked, could jeopardize the integrity of the nearby main Mississippi River levee. The endangered least tern would not be significantly affected by the very minor reduction in size of

the sand bar. The sand bar would still contain ample least tern nesting area following project construction. The endangered pallid sturgeon is not expected to be adversely impacted because the amount of sand bar edge would remain the same. This habitat would only be shifted a little closer to the left river bank. No adverse impacts to the either species are expected. There would be no changes in the river sediment load or water quality over ambient conditions. Thus there would be no impacts regarding excess siltation or Gulf hypoxia. In fact, this project would protect the right bank, likely preventing large bank failures that would introduce significant amounts of sediment into the Mississippi River.

### **COMPLIANCE WITH REGULATIONS**

Project compliance with applicable Federal and state regulations is shown in Table 1. Since this project meets the conditions of Nationwide Permit 13, Section 401 water quality certification is not required. This project was thoroughly reviewed at two interagency meetings with the U.S. Fish and Wildlife Service. They concurred there would be no adverse endangered species impacts. Their letter to the Corps stating such fulfills Section 7 consultation requirements. Since this project is to be built entirely under water in the Mississippi River, no impacts would occur to farmland or cultural resources.

**TABLE 1: RELATIONSHIP OF PLAN TO ENVIRONMENTAL LAWS AND REGULATIONS**

The relationships of the recommended plan to the requirements of environmental laws, executive orders, and other policies are presented below:

<u>Federal Policies and Acts</u>	<u>Compliance Status</u>
Archeological Resources Protection Act of 1979	1
Bald Eagle Act	1
Clean Air Act Amendments of 1977	1
Clean Water Act of 1977, as amended	1
Endangered Species Act of 1973, as amended	1
Farmland Protection Policy Act of 1984	1
Fish and Wildlife Coordination Act of 1958	1
Flood Control Act of 1946, as amended	1
Food Security Act of 1985	1
Land and Water Conservation Fund Act	1
National Environmental Policy Act of 1969	2
National Historic Preservation Act of 1966, as amended	1
River and Harbor and Flood Control Act of 1970	1
Water Resources Development Act of 1986	1
Water Resources Planning Act of 1965	1
 <u>Executive Orders</u>	
Floodplain Management (E.O. 11988)	1
Protection, Enhancement of the Cultural Environment (E.O. 11593)	1
Protection of Wetlands (E.O. 11990)	1
 <u>Other Federal Policies</u>	
Prime and Unique Farmlands	1
Water Resources Council, Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies	1

1/ Full compliance with the policy and related regulations has been accomplished.

2/ Partial compliance with the policy and related regulations has been accomplished. Full compliance will be accomplished upon signing of the Finding of No Significant Impact (FONSI).

## COORDINATION

This project is being coordinated with the U.S. Fish & Wildlife Service, the U.S. Environmental Protection Agency, the Arkansas Game and Fish Commission, State Historic Preservation Officer, Arkansas Department of Environmental Quality (ADEQ), and numerous towing industries that use the Mississippi River. A notice of availability (NOA) of a draft EA and a draft finding of no significant impact (FONSI) has been issued to the public. The NOA contains a web link to the draft EA and draft FONSI. Hard copies of these documents will also be mailed to individuals upon request.

## RELATED ENVIRONMENTAL DOCUMENTATION/REFERENCES

U.S. Army Corps of Engineers, Environmental Desk Reference (IWR) Report 96-PS-3), Institute for Water Resources Policy and Special Studies Division, July 1996.

USDA, Food Security Act.

Council on Environmental Quality Regulations

## CONCLUSION

This office has assessed the environmental impacts of the proposed action and has determined that the proposed work will have no significant impacts upon vegetation, fish, wildlife, cultural resources, or the human environment.

## PREPARER

For additional information, please contact John Rumancik at (901) 544- 3975.

## APPENDIX

**Figure 1: Project Map**

**Figure 2: Aerial Photograph**

**Figure 3: Weir Cross Section**

**Letter to U.S. Fish & Wildlife Service requesting concurrence with no adverse endangered species impacts.**

**Correspondence received from the U.S. Fish & Wildlife Service granting endangered species clearance.**

**Correspondence received from the Arkansas State Historic Preservation Officer granting cultural resources clearance.**

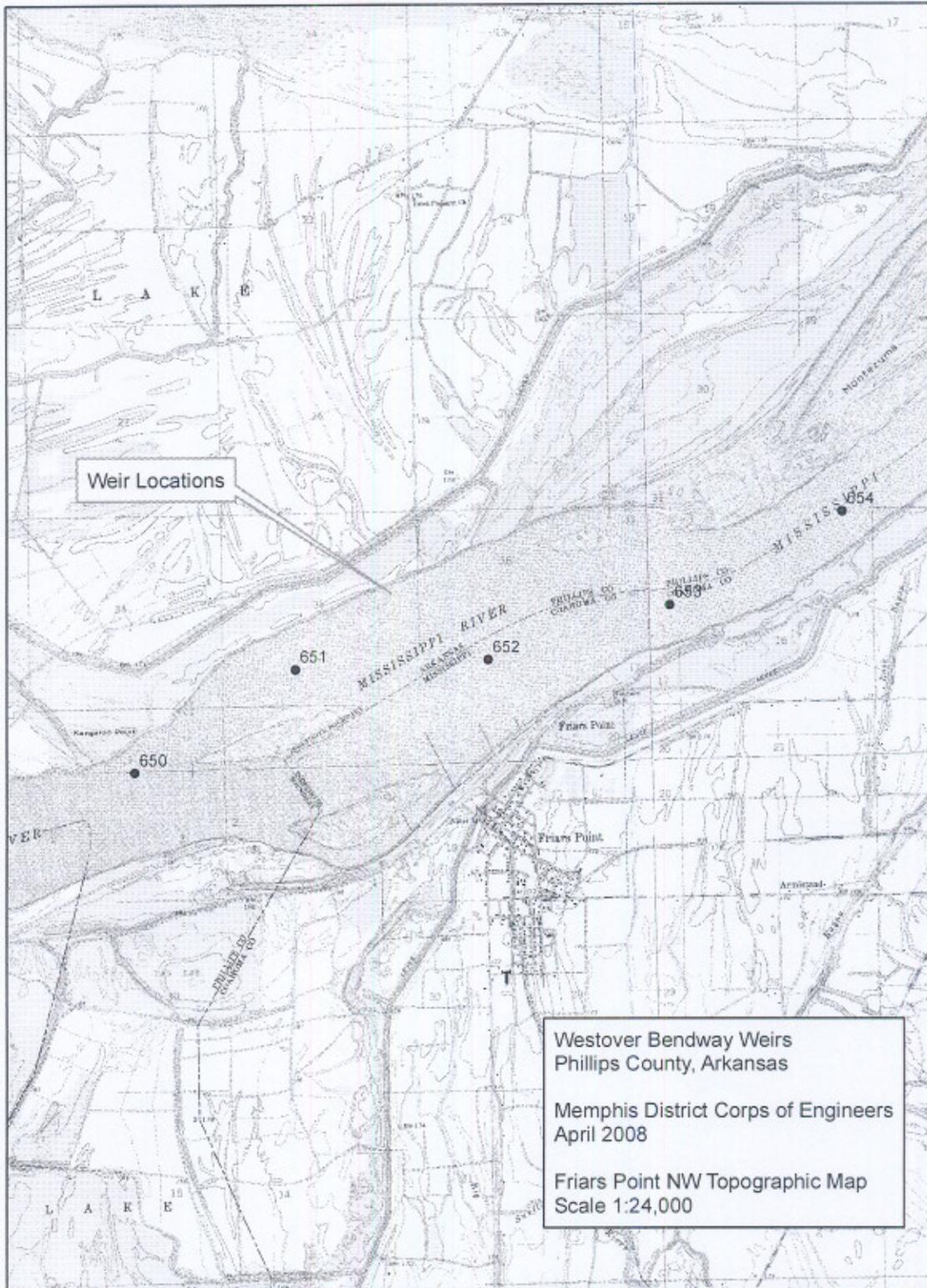


Figure 1



# 2008 WESTOVER BENDWAY WEIR CONSTRUCTION

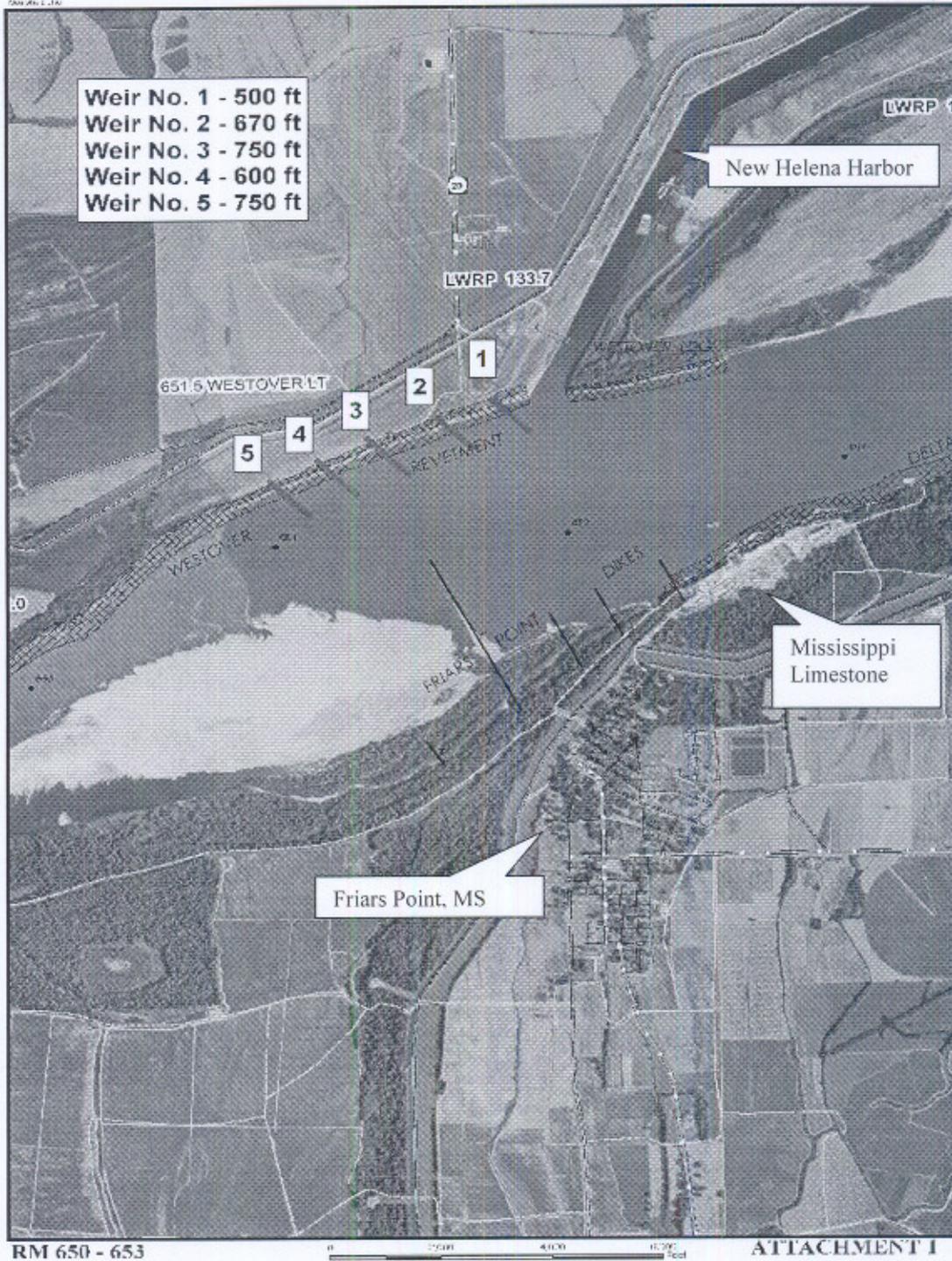
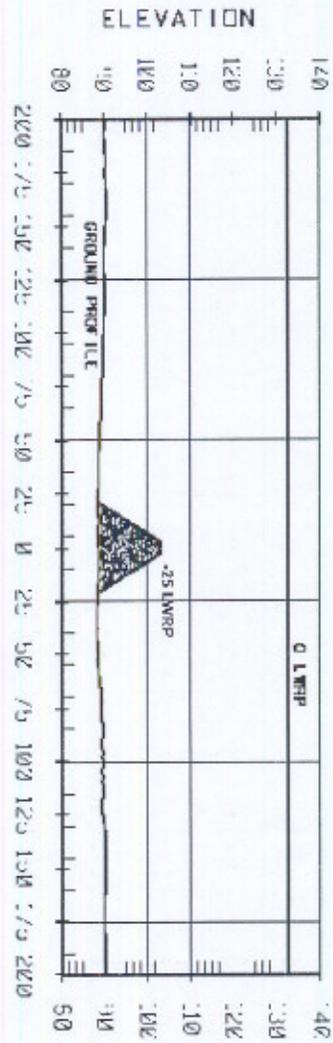


Figure 2

97% OF THE TIME THE WATER SURFACE IS ABOVE THE 0 LWRP LINE

TYPICAL SECTION



ATTACHMENT 2

Figure 3

March 19, 2007

Planning, Programs, & Project  
Management Division  
Environmental Branch

Ms. Jane Ledwin  
U.S. Fish & Wildlife Service  
Ecological Services Office  
101 Park DeVillie Place Suite A  
Columbia, MO 65203

Dear Ms. Ledwin:

This is to update final coordination with you pertaining to the February 21, 2007, interagency dike meeting and endangered species impacts. To expedite matters, this letter is sent to you as lead Ecological Services office for this year's meeting. A copy of this letter has also been sent to the other USFWS offices and to each state wildlife resource agency having jurisdiction within the Memphis District. As agreed upon by the team, this letter is addressed to your office for final coordination, but it will also serve as the coordination letter to all the other resource agencies.

The U.S. Army Corps of Engineers, Memphis District, will be constructing several projects in the Mississippi River this upcoming 2007 construction season. These involve two dike areas, and four new revetments. Two of last year's projects that could not be finished due to adverse river stages are also planned to be completed. These entail removing an old pile dike at Below Cherokee (Mile 867R) that is extending into the navigation channel, and placing revetment across the mouth of DeSoto Lake at Mile 624L.

This year is the first year that Memphis District reviewed the next following year's projects in detail and asked for endangered species clearance. This was done because we will now be able to do some of the 2008 projects in the fall if river stages permit and the contractor is in the area. Thus, these projects entail two dikes, one bendway weir, one hard point and two revetments. We hope to continue this additional review from now on.

Since the plans for these projects were sent to all team members in advance and then reviewed by the team at the dike meeting, only a brief description of each is included here for review and your convenience.

**2007**

Dikes #1, #2, #3  
(781R)

**Lower Bullerton, AR**

Construct 3 new dikes to a +8, +10, and +12 LWRP with notches in Dikes #2 and #3 at a 0 LWRP. The dikes are planned to remove an underwater shoal that has developed in the navigation channel.

**2007**

**Randolph, TN**

Dike #1T (770L)	Extend the lower end of the long trail dike for 1,500 ft. One tie back dike would be placed from the bluff across the chute to maintain dike and bluff stability. The tie back would be to a -10LWRP.
<b>2007</b> Revetment (922L)	<b>Hickman Bar Revetment, KY</b> Extend the existing revetment upstream for about 1,000 ft. with ACM.
<b>2007</b> Revetment (823L)	<b>Obion Tamm Revetment, TN</b> Extend the existing revetment upstream for about 1,500 ft. with ACM.
<b>2007</b> Revetment (727L)	<b>Ensley, TN</b> Extend the existing revetment upstream for about 1,800 ft. with ACM being placed below the existing riprap along the top bank.
<b>2007</b> Revetment (711L)	<b>Norfolk Star, MS</b> Extend the existing revetment upstream for about 1,600 ft. with ACM.
<b>2008</b> Dikes #4b, #7, #8 (708R)	<b>Cat Island, AR</b> Extend Dike #4b for 1,650 ft. Construct 1,150 ft. of new Dike #7 at a +15 LWRP. This is too short for a notch. Construct 1,900 ft. of new Dike #8 on existing high ground at a +25 LWRP. No notch is planned due to very short stone sections. Note; as part of this contract we would attempt to notch the dike behind cat island to open up the chute.
<b>2008</b> Dikes #2, #3 (705R)	<b>Seyppel, AR</b> Extend Dike #2 for 1,800 ft and raise it to a +20 LWRP. Extend Dike #3 for 2,600 ft. and raise it to a +20 LWRP. Dike #3 may be lowered in elevation depending upon new data and funding availability. Note; we will look at notching both dikes in the chute thalwegs after we solve the dredging problem.
<b>2008</b> Bendway Weirs (651R)	<b>Westover Bendway Weirs, AR</b> A series of underwater bendway weirs will be installed along the right bank just downstream of the New Helena Harbor to remove the end of the bar that is extending into the navigation channel from the opposite bank. The weirs would be to a -20LWRP. These weirs are part of an overall project that will eventually include one dike and three chevrons on the left bank between Miles 652L and 653L.
<b>2008</b> New Revetment (935R)	<b>Wolf Island Bar, KY</b> Extend the existing revetment upstream for about 2,400 feet with ACM.
<b>2008</b> Hard Points (932L)	<b>Wolf Island Bar, KY</b> Install about 20 hard points along the right bank of Wolf Island Bar Chute to stabilize the bank and also help maintain the integrity of the open chute

between the inland and the least tern nesting sand bar.

**2008**

New Revetment  
(874L)

**Merriwether-Cherokee, TN**

Extend the existing revetment upstream for about 2,500 feet with ACM. The bank is forming a gut at this site and the revetment is needed to maintain the bank line around the bend.

Group discussions by all the agencies took place while reviewing all the proposed plans at the interagency meeting. Minutes from the meeting have been sent to all meeting attendees as well as team members unable to attend the meeting. The team agreed upon a few minor changes to the original plans. These are reflected in the above summary.

All the resource agency team members agreed there would be no adverse impacts to the overall populations of the pallid sturgeon or the interior least tern. As a result, you and the USFWS biologists from the three other Ecological Services Offices in attendance granted verbal endangered species clearance for all the projects. Leroy Koch from the Kentucky Ecological Services Office telephoned prior to the meeting to give his approval.

Based on the discussions and agreement at the February 21, 2007 interagency dike meeting, the Memphis District Corps of Engineers concludes that constructing four new dike projects, one new hard point project, two new bendway weir projects, and six new short revetments in the lower Mississippi River would not jeopardize the existing populations of the endangered interior least tern, the endangered pallid sturgeon, or their habitats. We request your concurrence on this matter. If you have any questions, please contact John Rumancik at (901) 544-3975.

Sincerely,

David L. Reece  
Chief, Environmental Branch

cc:

Lindsey Lewis – Conway, AR  
Leroy Koch – Frankfort, KY  
Jim Widlak – Cookeville, TN  
Paul Hartfield – Jackson, MS  
Janet Sternburg (MDC) – Jefferson City, MO  
Marla Barbour (KDFWR) – Frankfort, KY  
George Scholten (TWRA) – Cookeville, TN  
Craig Uyeda (AGFC) – Little Rock, AR  
Dennis Reicke (MDFWP) – Jackson, MS



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Columbia Ecological Services Field Office  
101 Park DeVille Drive, Suite A  
Columbia, Missouri 65203-0057  
Phone: (573) 234-2132 Fax: (573) 234-2181  
April 23, 2007

Mr. David Reece, Chief  
Environmental and Economic Analysis Branch  
U.S. Army Corps of Engineers  
B-202 Clifford Davis Federal Building  
167 North Street  
Memphis, Tennessee 38103-1894

Dear Mr. Reece:

Please refer to the February 21, 2007, Interagency Meeting at the U.S. Army Corps of Engineers (Corps), Memphis District, to discuss the District's proposed Mississippi River operations and maintenance (O&M) work for 2007 and 2008. The following comments are based on that Interagency meeting; descriptions of the proposed work included in John Rumancik's January 29, 2007, and February 8, 2007, emails; and the discussion summaries in Mr. Rumancik's March 8, 2007, email. The U.S. Fish and Wildlife Service (Service) submits the following comments pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and the Endangered Species Act of 1973 (16 U.S.C. 1531-1543). The Service's Columbia, Missouri, office has coordinated these comments with our offices in Arkansas, Kentucky, Tennessee, and Mississippi.

### General Comments

The information presented at the Interagency Meeting was clear, concise, and very helpful in understanding the actions proposed by the Corps. We appreciate the updates from the 2006 projects and believe it is important to review completed work to assess if the objectives were achieved or modifications are needed. The Corps provided useful visuals during the meeting that help document change across years at selected river reaches. Both the visuals and the 2006 Channel Improvement Masterplan, which included both navigation and environmental features, provided excellent references for our discussions. Corps staff was responsive to our questions and it was clear the Corps is approaching this as a collaborative process. The Service believes that is the most effective way to fulfill our shared responsibilities along the Mississippi River. The meeting notes provided by Mr. Rumancik accurately reflects the major points of discussion. We offer the following comments to assist the Corps as you proceed with this work.

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USFWS Endangered Species Clearance  
All projects*

### Specific Comments

#### 2007 Work

At the meeting it was noted that Jack Kilgore, ERDC, has commented on the rarity of gravel point bars without upstream dikes in the Lower Mississippi River. Such is the case at Lower Bullerton. Gravel bars can be important to many species, including the pallid sturgeon. We recommend that the Corps follow the fate of the gravel point bar at this site to see if and how the proposed work may affect it. In addition, previous dike work at Lookout Point was designed to, among other things, address sedimentation in the vicinity of the Hatchie River. During those discussions it was suggested that the dike work may also help restore gravel areas at that site. It would be helpful to assess the effect of that work on the gravel areas to determine if the dikes have helped expose clean gravel substrate.

#### 2008 Work

There was considerable discussion at the Interagency Meeting regarding the proposed work at the Cat Island and Seypell sites. The Service expressed concerns regarding the height of the proposed dikes and the potential for currently unvegetated sandbars to become permanently vegetated if the dikes are high enough to support trees, as has happened elsewhere. We recommend that the Corps continue to plan projects that implement the goal of maintaining as much unvegetated habitats as possible to protect existing least tern colonies and support the long-term recovery of the least tern.

The proposed chevrons at Westover are intriguing. The Omaha District of the Corps has extensive experience with riverine chevron construction and may be a good source of information as you plan your work. We recommend you contact John Remus, 402/221-4620, for lessons learned on the Missouri River.

### Endangered Species

We appreciate the Corps considerations of federally listed species in the design of on-going operations and maintenance work. The Corps continued innovation in project conception helps ensure potential adverse effects to federally listed species are avoided. Post-construction monitoring provides critical information on the performance of this work, including both the navigation and environmental aspects.

The Service encourages the Corps to conduct periodic, system-wide assessments of habitat in the Lower Mississippi. Because both the endangered least tern and pallid sturgeon transcend District Boundaries, we recommend the Memphis District work with other Districts along the river, as well as the Division Office to implement a regular assessment program. At the Interagency Meeting, Jane Ledwin mentioned that the Service is scheduled to conduct a 5-year review of the Interior least tern next year. It has been almost a decade since the Corps last evaluated habitat suitable for the tern in the lower river. Ms. Ledwin recommended that the Corps conduct a follow-up evaluation of

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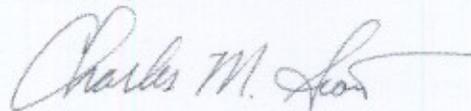
that habitat, not only to measure the cumulative effects of the Corps river work, but to also document the habitat base available to the tern on the lower river. Such information is an important component in the 5-year review, and is useful in determining if the threats to the species as originally listed have been addressed. The Service would be willing to work with the Corps to develop such as assessment.

Based on the information presented at the interagency meeting, we concur with the Corps determination that the proposed work is not likely to adversely affect federally listed species. Should the location or scope of the proposed work change, please coordinate with the Service state office.

We are encouraged by the Corps initiative to develop and recommend environmental features in their on-going river work. Such initiative demonstrates an appreciation of our shared environmental responsibilities and the Corps commitment to address them through its respective programs.

Thank you for your continued coordination on Mississippi River work. Please contact Jane Ledwin of this office at (573) 234-2132, extension 109, if you have any questions or we can be of further assistance.

Sincerely,



Charles M. Scott  
Field Supervisor

cc: MDC, Jefferson City, MO (Policy Coordination, Sternberg)  
USFWS, Conway, AR (Lewis)  
USFWS, Cookeville, TN (Widlack)  
USFWS, Frankfurt, KY (Koch)  
USFWS, Jackson, MS (Hartfield)  
USACE, MVD, Vicksburg, MS (Gutshall)

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*All projects*



DEPARTMENT OF THE ARMY  
MEMPHIS DISTRICT CORPS OF ENGINEERS  
167 NORTH MAIN STREET B-202  
MEMPHIS TN 38103-1894

65961  
CBE

February 29, 2008

Planning, Programs, & Project  
Management Division  
Environmental Analysis Branch

Mr. Frances McSwain  
Deputy State Historic Preservation Officer  
Arkansas Historic Preservation Program  
1500 Tower Building  
323 Center Street  
Little Rock, Arkansas 72201

AHPP  
MAR 03 2008

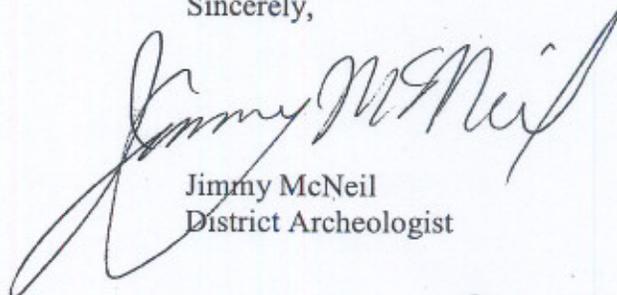
Dear Mr. McSwain:

Memphis District, U. S. Army Corps of Engineer's, is proposing to construct five bendway weirs at Westover, Phillips County, Arkansas. The purpose of the project is to create a safer navigation channel for tows below the private harbor on the right descending bank by directing the high velocities along the bank toward the center of the channel. The construction will not require any bank grading or excavation of materials. The weirs will be constructed by starting at the bank and placing stone in the river and extending into the river approximately 500 to 750 feet. The weirs will always remain 25 feet or more below the water. A search of in-house records does not indicate that there are any submerged cultural resources in this area. However, as this area has been dredged and maintained over the years it is felt that no cultural resources will be endangered with this work and no further cultural work is recommended.

I have included a section of the Friars Point NW, AR-MS 1:24,000 (7.5 minute) topographic map with the project area marked on it.

Should you need further information, I can be contacted at 901-544-0710, 901-544-3955 (fax), or by mail at [Jimmy.D.McNeil@us.army.mil](mailto:Jimmy.D.McNeil@us.army.mil).

Sincerely,



Jimmy McNeil  
District Archeologist

Enclosure

Date 3/17/08  
No known historic properties will be affected by this undertaking. This effect determination could change should new information come to light.  
  
Frances McSwain, Deputy State  
Historic Preservation Officer