

**APPENDIX D: STATE AND AGENCY COMMENTS  
AND PROGRAMMATIC AGREEMENT**

*(ADDED 15JAN21)*

The following comments were received during the State and Federal agency review and comment period which began on December 11, 2020 and ended on January 11, 2021.

Enclosure: U.S. Fish and Wildlife Service final Fish and Wildlife Coordination Act report.

Enclosure: U.S. Fish and Wildlife Service comments on Biological Assessment for Pondberry.

Enclosure: U.S. Forest Service comments.

Enclosure: Vicksburg District response to State and Federal agency comments.

The Programmatic Agreement between the Vicksburg District, Chickasaw Nation, Choctaw Nation of Oklahoma, Mississippi Band of Choctaw Indians, Quapaw Nation, Muscogee (Creek) Nation, Mississippi State Historic Preservation Officer, and Mississippi Levee Board regarding Proposed Plan, signed on January 14, 2021.

Enclosure: Programmatic Agreement.



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
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January 10, 2021

IN REPLY REFER TO:  
2021-CPA-001

Colonel Robert A. Hilliard, P.E.  
U.S. Army Corps of Engineers, Vicksburg District  
ATTN: CEMVK-PPMD  
4155 Clay Street, Room 248  
Vicksburg, Mississippi 39180

Dear Colonel Hilliard:

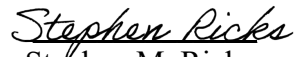
The U. S. Fish and Wildlife Service (Service) has prepared the following supplemental Fish and Wildlife Coordination Act (FWCA) Report for the Vicksburg District, U.S. Army Corps of Engineers, which addresses the proposed Yazoo Area Pump Project's impact to fish and wildlife resources. The Service submits the report in compliance with the FWCA (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and fulfills the requirements of Section 2(b) of the FWCA. The draft FWCA report, dated December 1, 2020, was submitted to the Mississippi Department of Wildlife, Fisheries, and Parks, which had no substantive comments or recommendations regarding our draft report.

The Service has reviewed the Final Supplemental No. 2 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement issued December 11, 2020 and have no additional comments beyond those raised in our previous draft FWCA report.

The Service continues to advocate for a plan that would balance natural floodplain values with sustained economic development for the Yazoo Study Area. We continue to have concerns that the ecological functions and values provided by backwater flooding within the Yazoo Study Area have not been accurately assessed, and consequently, are not being adequately mitigated for.

We appreciate the opportunity to provide our final FWCA Report on the Yazoo Area Pump Project. If you have any questions or require additional information, please contact David Felder (601-321-1131) of this office.

Sincerely,



Stephen M. Ricks  
Field Supervisor  
Mississippi Field Office

cc: Mississippi Department of Wildlife, Fisheries and Parks, Jackson, MS  
U.S. Fish and Wildlife Service, Atlanta, GA

# **FISH AND WILDLIFE COORDINATION ACT REPORT**

## **YAZOO AREA PUMP PROJECT YAZOO STUDY AREA, MISSISSIPPI**

**U.S. FISH AND WILDLIFE SERVICE  
ECOLOGICAL SERVICES  
JACKSON, MISSISSIPPI**

Submitted to

Vicksburg District  
U.S. Army Corp of Engineers  
Vicksburg, Mississippi

January 10, 2021

## Executive Summary

The Yazoo Study Area contains some of the richest natural resources in the nation including a productive floodplain fishery, one of only a few remaining examples of the bottomland hardwood forest ecosystem which once dominated the Lower Mississippi Alluvial Valley, and is one of only four remaining backwater ecosystems with a hydrological connection with the Mississippi River. The area supports hemispherically significant populations of resident and migratory land birds and waterfowl. The public land base includes bottomland hardwood forest and open lands encompassing National Wildlife Refuges, State Wildlife Management Areas, and Delta National Forest, as well as thousands of acres of privately owned forest land, including lands reforested through the Wetland and Conservation Reserve Programs.

On October 16, 2020, the U.S. Army Corps of Engineers released the draft supplemental No. 2 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement, with a stated goal of issuing a Record of Decision by January 15, 2021. While the Service appreciates the recent coordination undertaken by the Corps, the Service believes the Corps has been procedurally remiss in complying with the spirit of the FWCA, the 2003 Transfer Funding Agreement, and Engineering Regulation 1105-2-100 that directs coordination to be undertaken at the onset of planning. Service involvement was initiated once the preliminary draft Supplemental #2 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement and accompanying appendices were almost fully completed, thus precluding the Service and the Corps from undertaking necessary coordination during the planning process to ensure adequate time for Service review of Corps-relied upon models and assumptions, as well as compliance with the FWCA. The abbreviated timeframe has restricted the Service's ability to undertake a more thorough analysis and fully develop recommendations to reduce damages to fish and wildlife resources.

The primary purpose of this Service report is to document our position and recommendations to achieve "equal consideration" of fish and wildlife resources with the authorized project purpose of flood damage reduction, as mandated by the FWCA. "Equal Consideration" under the FWCA that requires wildlife conservation be given equal consideration to other features of water-resource development programs through planning, development, maintenance and coordination of wildlife conservation and rehabilitation. Wildlife and wildlife resources are defined by the FWCA to include: birds, fish, mammals and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent. Our position and recommendations have been developed on the basis of previous biological, hydrological, and spatial surveys and analysis of the study area, the Corps' Recommended Plan, and, including the no-action plan (Final Supplement No. 2 to the 1982 Yazoo Area Pump Project, December 2020).

The Yazoo Area Pump (i.e. Yazoo Backwater) Project has a long history dating back to its authorization under the Flood Control Act of 1941. The current proposal includes both structural and nonstructural features. The structural feature consists of a 14,000 cubic-feet-per-second (cfs) pumping station with a year-round pumping elevation of 87.0 feet (ft.), National Geodetic Vertical Datum (NGVD), which is the one-year floodplain elevation. The nonstructural features include voluntary perpetual easements and establishment of forests/conservation features on up to 2,700 acres of open agricultural land primarily below 87.0 ft. (2,100 acres below 87.0 ft., 600

acres at or above 87.0 ft.). In addition, a new mitigation feature to the project, referred to as environmental flows, includes the installation of up to 34 low-flow groundwater wells adjacent to the Mississippi River levee and upstream of the Yazoo Study Area to enhance water quantity and quality during stream low-flow periods. Finally, the Steele Bayou control structure would be closed during low-flow periods to maintain water elevations between 68.5 and 70.0 ft.

The Service continues to advocate for a plan that would balance natural floodplain values and sustained economic development for the Yazoo Study Area. The Corps' currently proposed plan, outlined in the FSEIS (December 2020) does not represent a balanced approach in the planning process.

The Service believes the currently formulated plan can meet the fish and wildlife resource planning goals and objectives provided our recommendations, especially if the six primary recommendations outlined below, are adopted.

1. Improve floodplain values by restoring the natural flood frequency to the one-year floodplain. Specifically, modify the timing of the Steele Bayou control structure closure from the current elevation of 75.0 ft. to the one-year floodplain elevation (pump-on elevation) of 87.0 ft.
2. Keep the Steele Bayou control structure open during low-flow conditions.
3. Concurrent with construction of the pumping station, build enough groundwater wells to provide and maintain a minimum of 100 cfs of flow at the Sunflower river gauge for the environmental flows component of the project.
4. Conduct a full assessment of fish and wildlife impacts associated with the loss or alteration of all functional wetlands, including shorter hydroperiod wetlands. Specifically, the acreage of wetlands flooded less than 14 consecutive days and wetlands outside (i.e. above) the two-year floodplain should be included in the FSEIS and impacts compensated concurrent with construction.
5. Support the ongoing trend underway in the Yazoo Study Area of reforestation of marginal agricultural lands below 90.0 ft. NGVD.
6. Offer perpetual conservation easements for all unprotected forested wetlands that will exhibit a shift in flood duration (i.e., decrease).

We believe these six recommendations will significantly conserve important fish and wildlife resources without affecting the mandate to alleviate flooding in the Yazoo Study Area. Our recommendations are presented in greater detail under the **Recommendations** section, below.

## **Project Description**

The currently proposed project has a number of changes from that proposed in the 2007 Yazoo Study Area Reformulation Report and FSEIS. One change includes the relocation of the proposed pumping station from the Steele Bayou sump area to the Big Sunflower sump area; however, pumping rates and elevations remain the same. Also, the Corps is now proposing to reforest up to 2,700 acres of cleared land from willing landowners at or near 87.0 ft. NGVD (as opposed to 55,600 acres in the 2007 report). Also, the current project no longer proposes to raise the level at which the Steele Bayou control structure would close during low-water periods. The

2007 plan proposed a gate closure between 70.0 and 73.0 ft. to improve wildlife and fisheries habitat during low-flow conditions; however, the current plan proposes to continue the current operations which closes the control structure between 68.5 and 70.0 ft. Finally, the current project proposes a new environmental feature, referred to as environmental flows. This feature includes the installation of up to 34 groundwater wells within strategic locations throughout the Mississippi Delta to enhance water quality and quantity during stream low-flow periods. This feature is designed to improve low-flow conditions for up to 9,321 acres of stream channels within the Mississippi Delta region. Current low-flow conditions, driven primarily by increased surface and groundwater withdrawal for agricultural irrigation are negatively impacting fish and wildlife resources, notably fish and mussel populations (Bryant, 2010).

The Yazoo Study Area is 926,000 acres. However, wetland assessments were only conducted on areas within the two-year floodplain exhibiting a minimum flood duration of 5% of the growing season (corresponding to a 14-day flood hydroperiod). Consequently, the Corps has limited their assessment of potential wetland impacts to only 97,677 acres of the total 926,000 acre Yazoo Study Area. The acreage of functional wetlands (i.e. naturally flooded bottomland hardwoods) within the Yazoo Study Area, but outside the two-year floodplain are not included or evaluated in the FSEIS.

According to the FSEIS, 74,211 acres of forested wetlands are within the two-year floodplain and  $\geq 5\%$  flood duration within the Yazoo Study Area. 32,215 of these acres will see a shift in flood duration, with 20,131 (14,901 + 5,230) acres shifting below the 5% flood duration (i.e. would fail to meet the Corps own wetland hydrology criteria). The Corps proposes to mitigate lost wetland functions by acquiring and subsequent reforestation of 2,405 acres of frequently flooded agricultural lands.

The FSEIS also limits its analysis of potential impacts to fish spawning and rearing habitats to only those acres within the two-year flood floodplain, thereby excluding from analysis significant portions of the Yazoo Study Area that currently provide important riverine floodplain habitat to fish and other aquatic species. For the small portion of the Yazoo Study Area that was considered, the Corps determined that 3,232 habitat units were required to fully offset impacts to fish spawning and rearing habitats. Accordingly, reforesting 2,405 acres of agricultural lands would generate 1,708 habitat units, and improving environmental flows via groundwater wells to 9,321 acres of streams would generate 1,678 habitat units. Included in these calculations was a newly created relative value index weighting factor that decreased required mitigation reforestation requirements by 40% due to perceived flood induced hypoxia in the Yazoo Study Area and its potential adverse effect on existing spawning and rearing habitats.

The FSEIS also highlights the difference between headwater and backwater flooding that is occurring in the Yazoo Study Area. According to the FSEIS, headwater flooding results from precipitation events within the Yazoo Study Area and will not be affected by the pump station. An analysis of headwater verses backwater flooding events for the Period of Record (POR) of 1978-2019 shows that from 58 to 75% of flood peaks at river gauges were the result of headwater peaks, therefore suggesting that some wetlands will continue to receive flood pulses due to headwater flooding events.



Finally, the FSEIS calculated how often the pump would have turned on during the POR had it been in operation. The Corps determined that the pump station would have been pumping for 812 days over the 41-year period (5.4% of time), with the majority of pumping during the months of March-June (663 days).

### **Existing Fish and Wildlife Resources**

Fish and wildlife resources within the Yazoo Study Area (including Federal lands legally dedicated to conservation) include Fish and Wildlife Service National Wildlife Refuges (NWR) (i.e. Holt Collier, Panther Swamp, Theodore Roosevelt and Yazoo National Wildlife Refuges), Department of Agriculture National Forests (Delta National Forest), migratory birds, interjurisdictional fishes, endangered and threatened species, and the backwater floodplain habitats on which they depend. See our 2006 FWCA report (<https://www.fws.gov/GISdownloads/R4/Louisiana%20ESO/Walther/Yazoo%20FWCA/>) for a detailed description of these resources. That report and its description of natural resources is incorporated into this report by reference, and all concerns and recommendations identified in that report remain valid.

Provided below is newer information about existing fish and wildlife resources in the project area that were not previously considered.

Several species of bats can be found within the Yazoo Study Area, including the Northern long-eared (*Myotis septentrionalis*), tri-color (*Perimyotis subflavus*), Brazilian free-tailed (*Tadarida brasiliensis*), Rafinesque's big-eared (*Corynorhinus rafinesquii*), Big Brown (*Eptesicus fuscus*), Hoary (*Aeorestes cinereus*), Northern yellow (*Dasypterus intermedius*), Eastern red (*Lasiurus borealis*), Seminole (*Lasiurus seminolus*), Southeastern myotis (*Myotis austroriparius*), Little brown (*Myotis lucifugus*), and Evening bat (*Nycticeius humeralis*) (Mississippi Bat conservation Strategy, 2020). The Mississippi Bat Conservation Strategy outlines a number of priority management actions for bats in Mississippi, including emphasis on 1) prioritizing management of riparian, wetland, and open area foraging sites and improving availability and quality of wetland and riparian foraging areas; and 2) prioritizing conservation of mature bald cypress/tupelo stands, which are disappearing from the landscape in Mississippi. The expansion of White-nosed Syndrome and habitat loss cause these species to be of conservation concern.

The newly proposed environmental flows feature expands the original project footprint to include 9,230 acres of streams in the Big Sunflower and Steele Bayou watersheds, including streams above the defined Yazoo Study Area. These streams support a diverse ichthyofauna characteristic of Mississippi Delta fish assemblages, including important game and commercial fish species such as white crappie, bluegill, largemouth bass, channel catfish, blue catfish, flathead catfish, smallmouth buffalo, common carp, freshwater drum, and several gar species. Field collections for the Fishery Appendix documented 56 species of fish in the Yazoo Study Area. These streams also support a diverse population of state and federally listed mussels. The federally endangered sheepsnose and threatened rabbitfoot mussels can be found in the Big Sunflower River between Indianola and Ruleville in Sunflower County, Mississippi, with portions designated as critical habitat for the sheepsnose. Failure to implement aquatic restoration could result in the continued decline of these species.

Since our 2006 FWCA report, the Louisiana black bear was delisted. There are currently three breeding sub-populations of black bears in Mississippi, including one within the Yazoo Study Area. The average home range for an adult male bear is roughly 20,000 acres while the average home range for an adult female is roughly 5,000 acres. Since 2005, the MDWFP has documented the births of over 30 cubs in the state. Additionally, general sightings of bears have increased dramatically all over the state, likely due to dispersing bears from populations in neighboring states (MDWFP website, 2020). MDWFP biologists currently estimate the Mississippi bear population to be about 150 bears, a major improvement over the estimated 40 individuals in 2002. Bottomland hardwood forests with a high tree species diversity and age class appear to be the preferred habitat type of Louisiana black bears throughout their current range (Gosselink and Lee, 1987, USFWS, 2009). Large cavity trees, typically bald cypress (*Taxodium distichum*) and tupelo gum (*Nyssa aquatica*), commonly found along water courses, swamps, and bottomland hardwood forests, are the most selected for tree dens (Neal, 1992 Weaver et al., 1994). Continued restoration of bottomland hardwoods would help ensure the continued conservation of this species.

Currently, Mississippi ranks third in the nation for total acres enrolled into the Natural Resource Conservation Service's (NRCS) Wetland Reserve Program (WRP), a voluntary program that offers landowners the opportunity to protect, restore, and enhance wetlands on their property. Approximately 150,000 acres across the state have been enrolled, with the majority located within the Lower Mississippi River Valley portion of the state. Pending 2019 applications for WRP in the Lower Mississippi River Valley would indicate the popularity and demand for this program. In Mississippi alone, there were 309 applications representing 60,172 acres. However, only 18 applicants received funding, representing 3,801 acres enrolled into the WRP program for 2019 (NRCS, personal communication, May 14, 2020).

The fact that over 40,000 acres of agricultural land within or near the one-year floodplain (87.0 ft.) of the Yazoo Study Area have been converted to forests since the Corps' 2007 report is clear evidence of the gradual and long-term movement away from agriculture to forest-based land uses within the poorly drained, frequently flooded portions of the Yazoo Study Area.

### *At-Risk Species*

The Service's Southeast Region has defined "at-risk species" as those that are:

- 1) proposed for listing under the Endangered Species Act (ESA) by the Service;
- 2) candidates for listing under the ESA, which means the species has a "warranted but precluded 12-month finding"; or
- 3) petitioned for listing under the ESA, which means a citizen or group has requested that the Service add them to the list of protected species.

As the Service develops proactive conservation strategies with partners for at-risk species, the states' Species of Greatest Conservation Need (defined as species with low or declining populations) will also be considered and included in our conservation recommendations under the FWCA.

The Service's goal is to work with private and public entities on proactive conservation to conserve these species, thereby precluding the need to federally list as many at-risk species as possible. While not all species identified as at-risk will become ESA listed species, their potentially reduced populations warrant their identification and attention in project and mitigation planning.

Discussed below are species currently designated as "at-risk" that may occur within the project area.

### Alligator Snapping Turtle

The alligator snapping turtle 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. The alligator snapping turtle is slow growing and long lived. Sexual maturity is reached at 11 to 13 year of age. Because of this and its low fecundity, loss of breeding females is thought to be the primary threat to the species.

### Golden-Winged Warbler

The golden-winged warbler breeds in higher elevations of the Appalachian Mountains and northeastern and north-central U.S. with a disjunct population occurring from southeastern Ontario and adjacent Quebec northwest to Minnesota and Manitoba. Wintering populations occur in Central and South America. The loss of wintering habitat in Central and South America and migratory habitat may also contribute to its decline. The golden-winged warbler is also known to hybridize with the blue-winged warbler.

This species may be found in forested habitats throughout the Yazoo Study Area during spring and fall migrations. This imperiled songbird depends on forested habitats to provide food and water resources before and after trans-Gulf and circum-Gulf migration. Population declines correlate with both loss of habitat owing to succession and reforestation and with expansion of the blue-winged warbler into the breeding range of the golden-winged warbler. Nonstructural features such as reforestation efforts and mitigation would provide the opportunity to actively address this species habitat needs in the Yazoo Study Area.

### Monarch Butterfly

On June 20, 2014, President Obama signed a Presidential Memorandum, "Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators," outlining an expedited agenda to address the devastating declines in honey bees and native pollinators, including the monarch butterfly. Recent research has shown dramatic declines in monarchs and their habitats leading conservation groups to petition the Service to list the species under ESA. Ensuring adequate and sustainable habitats, meeting all the life history needs of these species is of paramount importance. The Service and its partners are taking immediate actions to replace and restore monarch and pollinator habitat on both public and private lands across the U.S. landscape. Therefore, we recommend revegetation of disturbed grassland areas (e.g., levees) with

native plant species, including species of nectar-producing plants and milkweed endemic to the area.

### Mussels

Several state-listed and at-risk mussels can be found within the Yazoo Study Area, including the Western fanshell (*Cyprogenia aberti*), pyramid pigtoe (*Pleurobema rubrum*), and spike (*Eurynia dilatata*) (Mississippi Natural Heritage Program, 2018). These species can be found in the Big Sunflower River, including areas outside the Yazoo Study Area that may be affected by the environmental flows mitigation feature. Mussel populations in general continue to decline in the Mississippi Delta due to poor water quality, elevated water temperature, and low-flow conditions, which also adversely affects host fish that mussels rely on for reproductive success.

### **Yazoo Area Pump Project Fish and Wildlife Resource Planning Goals and Objectives**

The Service's planning goal for the Yazoo area pump project continues to be the implementation of a Federal resource development project that will support ecologically and economically sustainable development. The project should continue the ongoing realignment of land use with land capability; and, in terms of policy, purpose, and result, reflect "new direction" in the Mississippi Rivers and Tributaries (MR&T) approach to floodplain management, wetland conservation, and air and water quality improvements. This direction would be in keeping with the principles of Section 1149 of the Water Resources Development Act (WRDA) of 2018 directing nature-based alternatives (i.e., Engineering with Nature) to be considered.

To achieve this planning goal, the Service in 2006 formulated three planning objectives and several corresponding evaluation criteria upon which our evaluation and assessment of the Corps' Recommended Plan were based; those criteria and evaluation criteria remain valid and are presented below.

Objective 1: Continue the ongoing realignment of land use and land capability to address the imbalance between agricultural development and wetland conservation in the Yazoo Study Area

Evaluation Criterion 1A: Existing wetlands are protected

Evaluation Criterion 1B: Further intensification of agriculture in wetlands is avoided

Evaluation Criterion 1C: A transition from agriculture to forest within the two-year floodplain

Objective 2: Achieve "new directions" in floodplain management for the MR&T project

Evaluation Criterion 2A: A specific nonstructural flood damage reduction zone is dedicated

Evaluation Criterion 2B: Impacts of a project design flood on environmental and economic sustainability are reduced

Objective 3: Restore natural floodplain values and functions

Evaluation Criterion 3A: Backwater floodplain hydrology is restored

Evaluation Criterion 3B: Flood-compatible land uses are protected and restored

Evaluation Criterion 3C: The carbon storage and nutrient assimilation functions of the floodplain ecosystem are increased over that level expected to occur without the project

## **Service Recommendations**

In order to achieve these objectives and criteria, the Service recommends the following:

### **1. Restore existing one-year floodplain**

According to the FSEIS, any time the stage on the landside of the Steele Bayou Control Structure is higher than the riverside and above 70.0 ft, NGVD, the floodgates are open. With a rising river, the interior ponding areas are normally allowed to rise to an elevation of 75.0 ft. The floodgates are then closed when the river elevation is higher than the interior ponding levels. For the POR of 1978-2019, the Steele Bayou control structure floodgates were closed for 3,485 days (23% of time), with most closures occurring during the months of March-June (2,203 days).

Floodplains are an integral part of large-river ecosystems, where high flows that provide connectivity between the floodplain and the main-stem river (Welcomme 1979) drive ecosystem productivity (Junk et al., 1989). Floodplains with open or partial river connections provide breeding habitats for fish, increase sediment deposition and nutrient processing in floodplain lakes and wetlands, and reduce downstream flood potential via attenuation (Opperman et al., 2010); with the annual flood pulse being the most biologically productive feature of a river's ecosystem (Thorp, J.H and Lelong, M.D. 1994). This backwater flood pulse is the primary factor defining the ecological attributes of the Yazoo Study Area. It not only fuels the processes essential to fish and wildlife productivity within the Yazoo Study Area, it provides the biochemical link to the larger Lower Mississippi Valley ecosystem. Consequently, the current operations of the Steele Bayou control structure may be disrupting the natural seasonality of annual river flood pulses, restricting nutrient and dissolved oxygen exchanges, and impeding the reproductive efforts of plants and wildlife that are adapted to floodplains.

In addition, the current operations may be impacting fish communities by altering water quality and restricting fish passage. Floodgates are associated with hypoxia dead zones due to eutrophication in the stagnant upstream habitats (Gordon et al., 2015), which has been well documented in the Yazoo Study Area. The closed floodgates are also restricting fish passage, thereby adversely impacting important fisheries resources in the project area. During the course of a lifespan, fish may travel considerable distances between distinct habitats for feeding and growth (feeding migration), refuge from harsh environmental conditions (refuge migration) and/or for spawning purposes (reproductive migration). Such movements may occur regularly within an individual's lifetime, may involve a large proportion of the population of a species and may occur at different life stages (Lucas and Baras, 2001). Anthropogenic barriers that block or obstruct migration routes, may strongly affect populations and even the persistence of a species (Radinger and Wolter, 2014). Therefore, modifying the current operations of the Steele Bayou control structure to allow for greater connectivity could reduce negative impacts on fish while maintaining flood protection capacity.

Installation of the pumping station creates a new opportunity to not only maintain floodplain

connectivity that currently exists (up to 75.0 ft. when control structure is open), but to increase connectivity to 60,321 acres of primarily forested wetlands in the one-year floodplain by keeping the control structure open until Steele Bayou landside is at or near 87.0 ft. NGVD.

At the time of the Corps' 2007 report, 42,800 acres of cleared land (i.e. agriculture) were below 87.0 ft. NGVD. Since the 2007 report was released, significant reforestation of cleared agriculture land below 87.0 ft. has occurred, with a reported 2,700 acres of cleared lands at or near this elevation currently remaining. Since the Corps has proposed to reforest these cleared acres from willing landowners, and the new pumping station is offering no flood protection benefits to lands below 87.0 ft., we see no negative flood control consequences with allowing a natural flood pulse to exist up to the 87.0 ft. elevation. Our 2006 FWCA Report indicated that the Corps had analyzed the hydrologic effects of this change in operation, and concluded that such a change would have no significant adverse impacts upon flood control above 91.0 ft.

Therefore, the Service proposes changing the operation of the Steele Bayou Control Structure in order to reestablish the natural flood pulse between the Yazoo Study Area and the Mississippi/Yazoo Rivers up to 87.0 ft. NGVD (i.e. one-year floodplain). This would provide wildlife and fisheries benefits to an estimated 60,321 acres of mostly forested floodplain habitat.

## **2. Keep Steele Bayou control structure open during low-flow conditions**

Another feature of the current plan that is designed to provide wildlife and fisheries benefits is the closing of the Steele Bayou control structure during Steele Bayou and Big Sunflower River low-flow periods. Currently, the control structure closes between 68.5 and 70.0 ft. NGVD. The Corps' 2007 report proposed to modify closure to between 70.0 and 73.0 ft. so that 1,200 additional in-channel acres would be available during low-flow conditions. The Corps' 2007 Report went on to conclude that the extent of minimum ponding at elevation 73.0 ft. would extend 30 miles up Steele Bayou and 63 miles up the Big Sunflower. The current FSEIS does not explain why this feature is no longer being considered.

Although closing of the Steele Bayou control structure during low-flow conditions can have wildlife benefits, notably to waterfowl, closure can also create adverse impacts to important fishery resources in the Yazoo Study Area. As stated in the FSEIS, "Unobstructed backwaters also provide horizontal and lateral avenues of escape from hypoxic waters. Once Steele Bayou water control structure is closed, the only avenue of escape is to move upstream or laterally into shallower water or smaller tributaries" and "the spatial extent of hypoxia in the backwater area and the limited avenues of escape in regulated floodplains become a death trap for unwary fish" (Jones and Stuart, 2008). Just as control structure closure too soon can act as a barrier for upstream backwater fish passage, closure during low-flow conditions may also act as a barrier for downstream backwater fish fleeing low-flow and hypoxic conditions.

Another consideration regarding low-flow conditions is the new addition of the "environmental flows" mitigation feature. This feature is being designed to improve existing low-flow river conditions by restoring perennial flows in the Big Sunflower-Steele Bayou drainage upstream of the Yazoo Study Area. Up to 34 groundwater wells will pump up to 170 cfs of water collectively into Mississippi Delta streams to supplement annual low-flow conditions. Therefore, if these

additional environmental flows work as designed, then stream water levels should rarely fall to such low-flow conditions where the closure of the Steele Bayou control structure is required.

Leaving the control structure open during low-flow conditions may reduce winter foraging habitat for waterfowl and other wildlife using shallow water impoundment areas; however, we anticipate a net increase in fisheries resources due to improved water quality and fish passage, and increased shorebird use due to increased mudflat habitats during low-water periods.

Therefore, we no longer see the value of closing the Steele Bayou control structure during low-flow periods for fish and wildlife resource purposes since closure could result in trapping fish in backwater ponded areas with extended periods of stagnation and stratification. We anticipate the benefits of restoring the natural flood pulse to lands below 87.0 ft. will greatly outweigh the benefits of closing the structure during low-water conditions for wintering waterfowl.

### **3. Provide minimum environmental flows concurrent with pump startup**

The new environmental flows mitigation feature includes the construction and operation of up to 34 groundwater wells adjacent to the Mississippi river mainline levee. During periods of low flow, each well would provide up to 5 cfs (maximum of 170 cfs for all 34 wells) into streams upstream of the Yazoo Study Area. Environmental flows are expected to benefit a total of 9,321 acres of streams within the Mississippi Delta.

Prior to the 1980's, low-flow discharge of the Big Sunflower River at Sunflower, Mississippi was approximately 100 cfs. Since the 1990's into the 2000's, low-flow fall discharge has fallen to less than 10 cfs, and lower reaches of the Big Sunflower River usually cease flowing under these conditions. These low-flow conditions have resulted in multiple impairments to mussel and fish communities. "Low dissolved oxygen along with other major impairments to aquatic habitat in the Big Sunflower-Steele Bayou drainage has resulted in a fish community dominated by habitat and water quality tolerant species".

Therefore, the objectives of this new feature are to provide sufficient water flow to keep existing mussel beds inundated, improve fisheries, and increase the cumulative total flow of multiple stream systems within the Big Sunflower-Steele Bayou watershed. The environmental flows are also being designed to ensure fish passage flows over existing weirs (i.e. Old Lock and Dam on the Sunflower River) for spawning movements and recolonizations; as well as to help alleviate the low dissolved oxygen conditions currently occurring during the fall low-flow period. This feature also complies with section 7(a)(1) requirements of the ESA to conserve endangered mussels and designated critical habitat located above the Yazoo Study Area.

As indicated in the FSEIS and noted above, stream and groundwater levels throughout the Mississippi Delta have shown declines over several decades due to increases in irrigation to support agricultural production; creating conditions with detrimental effects to fish, mussels, and other riverine species. Extensive pumping from the Mississippi Delta Alluvial Aquifer with an apparent overdraft of about 100,000 ac-ft. per year has caused the groundwater table to fall below the elevation of the Sunflower River thalweg in its upper reaches. This has resulted in the loss of base flow that threatens natural resources in the channel confines (USDA MS Delta

Comprehensive, multipurpose Water Resource Plan, 1998). It is our understanding that the mitigation groundwater wells will be close to the Mississippi River where groundwater levels remain high. Therefore, this feature will not contribute to the groundwater deficit in the Sunflower River/Steele Bayou drainage, but rather will contribute to its recharge.

Assuming the environmental flows mitigation feature is successful, and additional demands for surface water withdrawal do not increase, then we anticipate this feature will have beneficial effects to aquatic resources within the Yazoo Study Area. However, we recommend that in order to ensure benefits, the Corps commit to monitoring and maintaining a minimum level of stream flow within the Big Sunflower River channel during late summer and fall low-flow stream conditions. From 1937 through 1975, the annual minimum flow at Sunflower, Mississippi, fell below 100 cfs only six times. Therefore, the Service recommends that a 100 cfs minimum flow should be maintained in the Big Sunflower River at Sunflower, Mississippi, and that the wells needed to maintain this flow should be installed and operational before or concurrent with pumping station completion. We also recommend that the Corps work with the State of Mississippi to ensure that irrigation water is not withdrawn from the Big Sunflower River when the river at Sunflower, Mississippi, falls below 100 cfs.

#### **4. Compensate for all wetland impacts, including impacts to shorter hydroperiod wetlands and wetlands outside the two-year floodplain**

As in previous FWCA reports, the Service continues to have concerns with the Corps' use of inaccurate assumptions to determine the extent of wetlands within the Yazoo Study Area potentially impacted by pump operations.

The Yazoo Study Area is 926,000 acres. However, wetland assessments were only conducted on areas within the two-year floodplain exhibiting a minimum flood duration of 5% of the growing season (corresponding to a 14-day or greater flood hydroperiod). Therefore, the Corps has limited their assessment of potential wetland impacts to only 97,677 acres of the total 926,000 acre Yazoo Study Area.

The Service disagrees with this assessment, and consequently, believes functional wetland impacts are being significantly underestimated. The National Environmental Policy Act requires the evaluation of all impacts to the environment, not just on wetlands in which flooding "substantially" contributes to wetland hydrology (i.e. >14 day flood duration). The failure to consider shorter hydroperiod wetlands that flood less than 14 days and/or wetlands in the Yazoo Study Area that are outside the two-year floodplain (i.e. 2-5 year floodplain) means an estimated 24,000 acres of functional wetlands are not being accurately considered (EPA 404(c) final determination, 2008).

The Service also believes the FSEIS fails to recognize the importance of riverine flooding to functioning wetland habitats, instead focusing on precipitation as the primary driver for wetland hydrology, with flooding providing "supplemental water sources in some areas during some years". The FSEIS relies on the findings of a recent publication (Berkowitz et al., 2019) to conclude that flooding influences wetland hydrology in the Yazoo Study Area to a lesser extent than previously thought, and therefore focuses the "current analysis on those wetlands in which



flooding substantially contributes to or sustains wetland hydrology”.

Hydrology from river or backwater flooding plays an important role in wetland functions and is not simply replaced by existing precipitation sources of hydrology. Flood water can affect the physiochemistry of wetlands in various way, including introducing and removing sediment, salt, nutrients or other materials from wetlands, thereby influencing its soils and water chemistry (Cherry, 2011). Also, the varying array of hydrology sources and amounts each contribute, from precipitation driven only wetlands to wetlands with >35 day of flood inundation, are in part what provide for the rich diversity of habitats and biodiversity present in the Yazoo Study Area.

Therefore, the Service recommends that the FSEIS more accurately address how shifts in flood duration will impact the functions and values of different wetland types. Palustrine, open water wetlands do not have the same wildlife values as precipitation driven, saturated soil wetlands, therefore, changes in wetland type may have a detrimental effect on some classes of animals that the Service has jurisdiction to protect. We recommend these effects on fish and wildlife resources be included in the FSEIS and compensated for accordingly.

The FSEIS does however assess wetland impacts within the two-year floodplain (97,677 acres), and concludes that there would only be a 2.2% decrease in wetland functions as a result of the pumping project. Using HGM models incorporating 19 wetland function variables, the Corps determined that many of the wetland function variables will remain unchanged after the pumps are in place, even though the same report shows that 43% of forested wetlands (32,215 acres) within the two-year floodplain will exhibit a shift in flood duration.

The Service disagrees that there will only be a 2.2% decrease in wetland functions as a result of the pumping project. Specifically, we have concerns on how the functional values of wetlands were determined, thereby underestimating the amount of wetland acreage required to offset these impacts. The Corps determined that 32,215 acres of forested wetlands will have some form of hydrological alteration due to the project, and that replanting 2,312 acres of cleared agricultural land would fully offset these losses. As noted in previous FWCA reports and planning aid letters, we continue to disagree with the how the wetland methodologies were applied to result in such low mitigation offsets. In addition, the Service believes that not mitigating impacts to all naturally flooded hardwood bottomlands does not comply with the FWCA and Section 2036a of the Water Resources Development Act (WRDA) of 2007, both of which identify the need to mitigate terrestrial impacts. Section 906(b) of the WRDA of 1986, specifically requires the mitigation of bottomland hardwoods; it does not distinguish between jurisdictional or non-jurisdictional bottomland hardwoods because it was written to ensure that the loss of bottomland hardwoods, including their functions and values, were mitigated.

## **5. Reforestation of the two-year floodplain**

We recommend that the Corps support the ongoing trend underway in the Yazoo Study Area of reforestation of marginal agricultural lands below 91.0 ft. NGVD. The NRCS currently has more applicants/acreage signed up for WRP enrollment than funding provided by Congress. Therefore, the Corps should expand the currently proposed nonstructural reforestation feature to include all agricultural land below 90.0 ft. exhibiting a  $\geq 5.0\%$  flood duration, which the FSEIS estimates at

less than 8,770 acres. This recommendation would also support President Trump's One Trillion Trees Initiative (EO 13955), which in part was created to develop, coordinate and promote Federal Government interactions with respect to tree growing, restoration, and conservation.

## **6. Offer perpetual easements on existing forested wetlands**

The Service is also concerned about existing forested wetlands within the Yazoo Study Area that may lose protections under the Clean Water Act (CWA) as a result of the pumping project. Specifically, we are concerned about unprotected forested wetlands that could be cleared for agriculture and other purposes should they become non-jurisdictional wetlands under the CWA. Such lands currently provide critically important fish and wildlife resource values as previously discussed.

The FSEIS reports that 43% of the forested wetlands (i.e. 32,215 acres) within the two-year floodplain will exhibit a shift in flood duration due to the pumping project, with 29% (21,592 acres) falling below the 5% hydrologic threshold which the Corps considers essential for establishing hydric soils and hydric vegetation. Since these acres will fall below the Corps' own threshold for what constitutes a wetland, we anticipate that many of these 21,592 acres of existing forested wetlands could lose CWA protections as a result of the pumping project. It's unclear how many of these acres are in federal or state ownership, or are permanently protected by existing federal programs (i.e. WRP). For the remaining acreage not protected by such programs, we recommend that the Corps offer perpetual easements from willing sellers for all forested wetlands that will exhibit a shift in flood duration as an indirect result of the pumps project. We would also encourage and strongly support sustainable forestry practices on such lands that maintain economic activity while creating, improving, and maintaining the array of vegetation types, successional stages, and structural attributes desired for forest-dependent fish and wildlife resources.

The Service also recommends that any lands acquired as nonstructural features or mitigation be prioritized for purchase using the Southeast Conservation Blueprint (<http://secassoutheast.org/blueprint>). This blueprint is a living, spatial plan that identifies the most important areas for conservation and restoration across the southeast region. In addition, the Service's Lower Mississippi Valley Joint Venture Office (LMVJV), with other federal and state agencies and the private sector through the Partners in Flight initiative (PIF) have developed management objectives to conserve forest breeding birds and their habitat in the Mississippi Alluvial Valley. Among the top priorities of this effort are building and maintaining forest blocks that provide habitat for self-sustaining populations of forest breeding birds (Twedt et al., 2006, LMVJV, 2020). Spatially explicit priorities for both projection (Elliott et al., 2019) and restoration (Twedt & Mini, 2020 *in press*: <https://www.lmvjv.org/conservation-tools-summary>) provide guidance regarding forest conservation actions. Therefore, the Service recommends that these prioritization tools be utilized in the consideration of the location of nonstructural features and mitigation areas and in prioritizing the avoidance of impacts. Finally, priority should also be given to purchase of lands from willing sellers within NWR acquisition boundaries or conducting joint management mitigation projects such as on the Twist mitigation area on Panther Swamp NWR.

Additional Service recommendations:

7. Appendix F-3 (Recreation). Although Hillside NWR and the eastern side of Panther Swamp NWR are outside the Yazoo Study Area, these refuges could be impacted by greater Yazoo River backwater flooding events due to pumping station operations. We recommend these potential impacts be assessed and mitigated accordingly. Impact analysis should include whether the project will alter the refuges' abilities to fulfill their establishing purposes and meet their management goals and objectives. Finally, impacts to public lands should be mitigated on the impacted public lands.
8. Appendix F-8 (Aquatics). Acreage analysis used for aquatic impacts (i.e. EnviroFish) should include all lands within the five-year flood frequency, not just the two-year flood frequency. Using acreage from within the two-year floodplain underestimates the amount of existing spawning and rearing habitat being used within the Yazoo Study Area.
9. If the environmental flows mitigation feature fails to restore perennial flow or improve survival rates of juveniles and adults during autumn, then the acreage needed to offset lost aquatic functions via reforestation should be reassessed and mitigated accordingly.
10. Update or fund new water resource plans for the Mississippi Delta to address ways to recharge the aquifer and increase water table levels in the study area. Updating or providing a water use plan that includes agricultural use may help reduce further dewatering or reverse this trend and address the source of the problem.
11. Appendix F-7 (Waterfowl). Because predicting duck use days (DUDs) values of specific sites requires modelling that is underpinned by perfect knowledge of the identity of these sites (which is not possible at this stage in the process), it is recommended that mitigation targets roughly mirror the distribution of waterfowl habitat loss depicted in Table 7 (-1,888ac [90%] forest, -217ac [10%] non-forest). This approach has the advantages of (1) more closely replacing what is lost, and (2) ensuring that DUDs lost due to the proposed project are supported through mitigation actions in the face of dynamic hydrological conditions.
12. Appendix H (Migratory Bird Treaty Act), Page 5. Although eBird does provide an indication of bird presence/absence in the project area, the LMVJV has occupancy models that would provide an alternative or supplemental method to assess probability of occupancy in the project area. These models are based on Breeding Bird Survey (BBS) data. There are two BBS routes that cross the project area (Eagle Lake and Delta National Forest routes). Occupancy models can be accessed at the link below:  
<https://www.sciencebase.gov/catalog/item/5e4183cae4b0edb47be639cc> (Twedt and Mini, 2020).
13. All mitigation for previous Corps project impacts in the Mississippi Delta should be completed before additional impacts occur. The Corps' most recent status report on construction projects requiring mitigation under Section 906 of WRDA of 1986 shows the Vicksburg District needing to acquire 8,071 acres of frequently flooded agricultural

lands for the Yazoo Backwater Maintenance and Upper Yazoo Projects in Mississippi (12th Annual Mitigation Report, Feb. 2020). Commitments made for current and future projects are undermined when the Corps fails to honor or complete past commitments in a timely manner.

14. Wetland mitigation lands should be purchased prior to the end of pump construction. Delays in mitigation implementation should result in the reassessment of impacts to account for the temporal delay. This reassessment should be coordinated with the Service and other natural resource agencies.
15. Under Sec 7(a)1 of the ESA, the Service recommends that mitigation areas should include adaptive management to provide habitat for listed bats, and adequate flows to maintain endangered mussel habitat. Management actions should be frequently updated in coordination with the Service and other natural resource agencies as habitat needs become better understood.
16. Coordinate further detailed planning of project features (e.g., Design Documentation Report, Engineering Documentation Report, Plans and Specifications, or other similar documents) with the Service, the respective state wildlife agencies and the Environmental Protection Agency. The Service should be provided an opportunity to review and submit recommendations on those reports. Coordination regarding wetland mitigation site selection should occur with the Service and other resource agencies as well.
17. As part of the adaptive monitoring program, wetlands in the project area should be monitored for a minimum of 10 years to validate the assumption that rainfall driven events are the critical source of hydrology.

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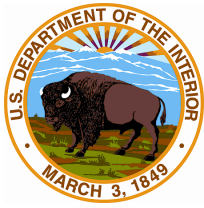
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# United States Department of the Interior

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January 10, 2021

IN REPLY REFER TO:  
2021-I-271

Colonel Robert A. Hilliard, P.E.  
U.S. Army Corps of Engineers, Vicksburg District  
ATTN: CEMVK-PPMD  
4155 Clay Street, Room 248  
Vicksburg, Mississippi 39180

Dear Colonel Hilliard:

This letter provides our response to your December 11, 2020, submission of a revised biological assessment (RBA) on the effects of the updated Yazoo Backwater Project on the federally listed plant, pondberry (*Lindera melissifolia*). The U.S. Army Corps of Engineers' (Corps) has addressed a number of the Service's concerns and suggested revisions in our December 8, 2020, response to your November 9, 2020, BA submission. In particular, the RBA has benefitted from the Corps' expanded description of the action area's baseline conditions, analysis of the pump station and borrow area, assessment of 182 known pondberry colonies within the Delta National Forest, and inclusion of additional and/or updated maps and tables along with addressing a number of other necessary clarifications. We appreciate these revisions and the RBA represents an improvement over the Corps' previous BA submission; however, we do not concur with the Corps' determination in the RBA that the proposed project may affect, but is not likely to adversely affect pondberry.

The Corps' determination is based substantially on new information from recent research by Berkowitz *et al.* (2019), which found that precipitation was adequate to allow most wetlands to persist in the absence of overbank flooding at most of the study sites. However, duration and inundation patterns (particularly associated with surface waters) differ strongly between wetlands driven by precipitation versus flooding. These differences in hydrology have potentially large impacts on habitat suitability for pondberry. We contend that the Corps has inappropriately extrapolated the findings from Berkowitz *et al.* (2019) specifically related to soil saturation (belowground) at local sites to conclude that hydrology will be maintained across the much broader and extensive backwater area encompassing pondberry distribution within the project area. Given that the location of these well study sites was independent of pondberry locations, adequate rationale and methods used to extrapolate and infer in a robust, spatially explicit manner the site-specific results of Berkowitz *et al.* (2019) have not been provided. We agree

with the Corps' proposed measures that include additional research to critically understand whether and how the existing water well study sites of Berkowitz *et al.* (2019) adequately represent hydrologic conditions at extant pondberry colonies elsewhere. Likewise, we agree that research is needed to identify local factors of landform, soils, drainage patterns, and other parameters that establish a local precipitation-driven hydrology to identify their existence elsewhere and test their predictive accuracy in a spatially explicit validated model of local hydrology. Otherwise, the Corps' conclusions of the existence of this local hydrology for all pondberry colonies in the project area is premature and inappropriate.

The structure, composition, and dynamics of bottomland hardwood forest communities with pondberry are affected by overbank flooding, local hydrology, and both factors combined. Results of recent pondberry surveys by the Corps identified a continued decline of the species in the Delta National Forest, with pondberry now absent at previously surveyed sites. We recognize that factors affecting pondberry growth, persistence, and decline can be multivariate and complex; however, the role of hydrology, including overbank flooding, cannot be disregarded. Furthermore, current patterns of overbank flooding at pondberry sites have generally been reduced from that historically estimated due to previous Corps projects. Based on the best available information, we find that the reduction of overbank flooding by the proposed project is likely to adversely affect pondberry. Accordingly, we recommend the Corps initiate formal consultation pursuant to section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). If you choose to initiate consultation, the Service will prioritize our resources towards this effort. However, it is imperative that the Service receives the requested information and clarifications in the attached review to initiate and expedite our formulation of the biological opinion.

We continue to appreciate and support the Corps' willingness to incorporate section 7(a)(1) conservation planning measures described in the RBA. Furthermore, we reiterate our previous assertion of the need for earlier Service involvement in the planning process. Such early involvement will give the Service the opportunity to provide constructive input on the project and its potential effects, allowing the Service and Corps increased opportunities to cooperatively identify means to avoid and minimize the project's effects on federal trust resources, while allowing for the Service's data, information, and analytical needs and concerns to be more quickly and efficiently resolved.

We look forward to continuing our discussion with your staff. For further information, please contact me at 601-720-5783 or [Stephen\\_Ricks@fws.gov](mailto:Stephen_Ricks@fws.gov).

Sincerely,

*Stephen Ricks*  
Stephen M. Ricks  
Field Supervisor  
Mississippi Field Office

Attachment (1)



# ATTACHMENT

## U.S. Fish and Wildlife Service Review of Revised Biological Assessment for Pondberry

While the December 11, 2020, RBA represents an improvement over the November 9, 2020, submission, the RBA does not support the Corps' determination that the proposed project may affect, but is not likely to adversely affect pondberry. We continue to have concerns about the project's effects on pondberry as well as the appropriateness and relevance of data and studies included in the RBA to support the Corps' determination, particularly the appropriateness of the Corps' reliance on and extrapolation of the study by Berkowitz *et al.* (2019) for its determination. Our primary concerns with the Corps' use of Berkowitz *et al.* (2019) for its determination, as well as our continued disagreement regarding the relative importance of local hydrology versus overbank flooding for maintaining pondberry, were noted in the preceding letter to this Attachment as well as our December 8, 2020, response letter. Additional concerns, comments, and information needs are described in more detail below.

Of particular concern is the ambiguity around the number of pondberry colonies/sites within the action area that are being analyzed by the Corps. In response to the Service's earlier request to incorporate the 182 pondberry colonies historical dataset into a revised biological assessment, the Corps included these locations on updated and new maps, retained its prior analyses of sites visited in 2020, and performed separate analyses of the 182 colonies dataset. For example, Tables 7 and 8 only evaluated colonies/sites visited (or attempted to be visited in 2020), including those discovered in 2020, whereas Tables 11, 12, and 13 apparently only analyze the 182 pondberry colonies historical dataset (i.e., Appendix 2). Likewise, Tables 11, 12, and 13 appear to inappropriately include pondberry colonies that occur outside of the action area (177 of the 182 colonies dataset occur in the action area). It is unclear how many unique pondberry colonies/sites are considered for analysis in the RBA, how the Corps determined what constitutes a colony/site for analysis, and how various data sources were combined, rectified (e.g., in cases of conflicting coordinates for a given colony), and used in analyses. Clear, consistent use of colony definitions (delineations) and locations are needed. A single, unified table and corresponding GIS shapefile for all pondberry colonies/sites (including rectified coordinates, as necessary), is necessary to ensure that the Service and Corps are evaluating the project's effects using the same colony data.

Various additional corrections and clarifications are also needed throughout the RBA, including:

- The Corps' notes that pondberry surveys were not conducted within the areas of the pump station and borrow site, while further "propos[ing] to add both sites to any future pondberry survey efforts to conduct a walking survey throughout all areas within both footprints." (p. 66). We appreciate the proposed inclusion of these sites in future survey efforts; however, the Corps has not provided any recommended actions should pondberry be discovered in either site during such surveys.
- All figures depicting pondberry's presence or absence during 2020 surveys appear to include sites with known location errors and/or uncertainties (e.g., GSRC plots 8, 45, and 46), all of

which are apparently depicted as “absent” (i.e., red circles). This is misleading regarding the status of pondberry at these sites, as they were not actually visited during 2020 and these maps need to be updated for accuracy.

- Figures 5 and 6. It is unclear how many and which pondberry colonies/sites fall within or outside of the 14-day duration floods depicted in the figures. How many and which colonies/sites occur within these areas?
- Figures 13 and 14 appear to use conflicting symbology for various pondberry colonies/sites, depicting individual sites as both not surveyed and present or absent.
- Figure 19. It is unclear if the flood frequencies depicted are current or post-pump construction. What is meant by “182 current and historic pondberry colony sites”? How were the number of colonies determined? (See also prior comments in this Attachment regarding uncertainty with the number of pondberry colonies/sites being analyzed in the RBA.)
- Table 4. Explanations have been provided for GSRC plots 8, 45, and 46 having unknown stem counts in 2020 (e.g., bullet 6 on p. 40); however, it is unclear why GSRC plots 22, 29, 33, 34, and 38 have unknown stem counts. Likewise, at least some of these plots are apparently depicted in various figures as having no pondberry in 2020, which is inaccurate if they are of unknown status, as may be indicated by having unknown stem counts.
- Appendix 1, Table A3. The table indicates that most sites located in Base Freq of 50 will shift to Pump Freq of 0. What does Pump Freq of 0 mean?
- Appendix 2. Please provide elevations, base flood frequencies, and pump flood frequencies for these sites.

Finally, while the RBA has addressed some of the comments and concerns noted in the Service’s December 8, 2020, response to the Corps’ November 9, 2020, BA submission, various concerns and needs noted in the Service’s previous response remain unaddressed or inadequately addressed. In particular, these include:

- Our previous requests for underlying spatial and related tabular data (e.g., flood frequency and inundation durations for both base and pumps conditions) used to create the maps and tables remain. This data is also needed for updated and new maps, tables, and analyses included in the RBA.
- As previously noted, current section 7 regulations (50 CFR § 402.2) define the environmental baseline definition as:

“The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process.”

While the Corps has updated the environmental baseline to include a limited amount of additional discussion of past impacts/effects of flood control projects (section 5.2 *Hydrology*), the Corps’ analysis remains incomplete (e.g., there is still no acknowledgement

or assessment of potential deleterious impacts caused or exacerbated by previous water and flood control projects in the action area).

- Information on which specific GSRC plots visited in 2020 where previously established PVC plot markers were found continues to be needed to more fully inform interpretation of 2020 colony/site data.
- As with the previous BA, the RBA includes various tables (Tables 7, 8, 9, 10, 12, Appendix 1 – A4, and Appendix 2) and a figure (Figure 19) that are never referenced, explained, or otherwise apparently assessed. Without such necessary context or explicit utility within the context of the RBA, it is generally unclear/uncertain if or how these tables were used in the Corps' assessment of pondberry's status and analysis of the project's effects on pondberry.

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**From:** [Sewell, Raymond - FS](#)  
**To:** [YazooBackwater MVK](#)  
**Cc:** [Petrick, Carl -FS](#); [Kelardy, Shannon B -FS](#); [Allison, Stephanie - FS](#); [Williamson, Shaun C -FS](#); [Rossilli, Mario T -FS](#); [Arney, Ken S -FS](#); [Madson, Stephanie - FS](#); [Krusac, Dennis -FS](#); [Johnson, Stephanie N -FS](#)  
**Subject:** [Non-DoD Source] (Final SEIS No. 2)  
**Date:** Monday, January 11, 2021 4:06:45 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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District Engineer  
USACE, Vicksburg District  
4155 Clay Street  
Vicksburg, Mississippi 39138-3435

Below are comments on the Final Supplement No. 2 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement (Final SEIS No. 2), from the United States Forest Service, National Forest of Mississippi.

If you have any questions or need any additional information, please let me know.

Thank you,

#### **Appendix H (4.6) – Page 15**

Despite the USFS following the best management practices outlined by the USFWS Recovery Plan for pondberry to avoid adverse ground-disturbing activities to these plants/colonies during forest management (Banker and Goetz 1989; Bowker 1989, in litt.), some pondberry colonies have either been extirpated or have experienced declines, potentially related to stem dieback, laurel wilt disease, changes in hydrology, interspecific plant competition, and natural canopy disturbances (Gulf South Research Corporation 2005, USFWS 2007, USFWS 2014).

Comment – As currently written, this sentence implies the USFS has established their own best management practices for pondberry, resulting in the loss of colonies. The suggested edits (in red text) clarify that the USFS follows guidelines and best management practices for pondberry that are established by the USFWS Recovery Plan for pondberry, which prohibit ground-disturbing activities within the protective buffer.

#### **Appendix H (4.11) – Page 19**

Within the DNF in Mississippi, the USFS, along with the USFWS, determined that a 100-foot undisturbed buffer around known pondberry colonies along with a 40-acre size limit on clear-cut openings would prevent any major changes in hydrology and maintain an adequate crown closure around a colony (Banker and Goetz, 1989).

Comment – The suggested edits (in red text) clarify that the decision making authority for T&E species protective measures and management guidelines lies with the USFWS, not with the USFS. Protective measures implemented at DNF come directly from the USFWS Recovery Plan for pondberry. The Forest Service does not determine protective measures for T&E species. In addition, the 40-acres size limit on clear-cut openings came from the National Forests in Mississippi Land Management Plan at the time, which is unrelated to pondberry protective measures.



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**Caring for the land and serving people**

**Vicksburg District response to comments received during the State and Agency review and comment period for the Final Supplement No. 2 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement.**

**Vicksburg District response to USFWS final Fish and Wildlife Coordination Act report:**

The Vicksburg District acknowledges receipt of the USFWS final Fish and Wildlife Coordination Act report (CAR) received on 10Jan21. Upon review of the final CAR it was determined that no additional recommendations were added upon those listed in the draft CAR. The Vicksburg District response to the draft CAR recommendations are included in Appendix M-2 of the Final Supplement No. 2 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement published on 11Dec20.

**Vicksburg District response to USFWS comments on Biological Assessment for Pondberry:**

The Vicksburg District acknowledges receipt of the USFWS comments on the Biological Assessment for Pondberry received on 10Jan21. Upon review of the comments, it was determined that the USFWS does not concur with the Corps determination that the Proposed Plan may affect, but is not likely to adversely affect Pondberry and proposed additional research is needed to adequately represent and validate potential effects to Pondberry resulting from implementation of the Proposed Plan. The Vicksburg District does not agree with the USFWS conclusions but will continue to work cooperatively with the USFWS to address concerns regarding the Proposed Plan and impacts to Pondberry.

**Vicksburg District response to USFS comments:**

The Vicksburg District acknowledges receipt to the USFS comments received on 11Jan21. Upon review of the comments, it was determined that the Vicksburg District concurs with the USFS comments. The USFS comments will be documented and included with the Final Supplement No. 2 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement.

**FINAL**

**PROGRAMMATIC AGREEMENT**

**AMONG THE  
U.S. ARMY CORPS OF ENGINEERS (USACE) VICKSBURG DISTRICT;  
THE CHICKASAW NATION;  
THE CHOCTAW NATION OF OKLAHOMA;  
THE MISSISSIPPI BAND OF CHOCTAW INDIANS;  
THE QUAPAW NATION;  
THE MUSCOGEE (CREEK) NATION;  
THE MISSISSIPPI STATE HISTORIC PRESERVATION OFFICER;  
AND THE MISSISSIPPI LEVEE BOARD;  
REGARDING  
THE YAZOO BACKWATER PROJECT**

**PREAMBLE**

**WHEREAS**, the mission of the U.S. Army Corps of Engineers (USACE), Memphis District (MVM), Vicksburg District (MVK), and New Orleans District (MVN), is to deliver vital public and military engineering services; partnering in peace and war to strengthen our Nation's security, energize the economy, and reduce risks from disasters; and

**WHEREAS**, the Yazoo Basin, Yazoo Backwater, Mississippi, Project, of which the Yazoo Backwater Project Area is a part, was authorized by the Flood Control Act (FCA) of August 18, 1941 (House Document [HD] 359/77/1), as amended by the Acts of December 22, 1944 and October 27, 1965 (HD 308/88/2) and the Water Resources Development Act (WRDA) of 1986 and 1996 and includes flood control features including levees, associated drainage channels, pump stations, and floodgates; and

**WHEREAS**, features completed to protect the Yazoo Backwater Project area from Mississippi River backwater floods include: 1) Muddy Bayou drainage structure (1978); 2) Steele Bayou Control Structure (1969); 3) Little Sunflower Control Structure (1975); 4) Yazoo Backwater Levee (1978); and 5) a 15-mile connecting channel between the Steele Bayou and Little Sunflower control structures (1978); the Yazoo Area Pump Project is the only feature of the Yazoo Backwater Project that remains unconstructed, and the Yazoo Backwater Area is the only major backwater area in the Mississippi River and Tributaries Project (MR&T) that does not have a pumping plant; and

**WHEREAS**, the Yazoo backwater levee, though it prevents floodwaters from entering the Yazoo Backwater Area, also prevents water from leaving the area, often trapping the water from the 4,093 square mile drainage area for extended periods of time. This effectively creates an artificial lake, uninhabitable by nearly all species. Aquatic species are acutely affected by low dissolved oxygen (DO) created by the stagnant, reducing conditions. Terrestrial species must flee or face mortality by the significant depth of the water. The human population of the Delta also suffers significantly. The 2019 flood event would have been several feet lower if the project had been completed, averting impacts to both natural resources and reducing the non-agricultural economic damages by 50%; and

**WHEREAS**, in nine out of the last ten years, the Yazoo Backwater Area has experienced significant flooding. In particular, the historic flood of 2019 caused two deaths, hundreds of millions of dollars in damages, and flooded over 600 homes; and

**WHEREAS**, devastating flooding will continue to plague the affected area, necessitating action to alleviate flood damage, severity, and extent; and

**WHEREAS**, the intent of the Yazoo Backwater Project is to reduce flood damages due to backwater flooding in the Yazoo Basin by constructing three (3) additional project features: 1) the structural component of this portion of the project consists of constructing a pump activated at elevation 87 feet (ft.) National Geodetic Vertical Datum (NGVD); 2) easements from willing sellers on cleared agricultural lands below elevation 87 ft. NGVD and subsequent reforestation; and 3) installation of low flow supplemental well fields adjacent to the Mississippi River levee upstream of the backwater area (augmented flow will improve aquatic habitat, particularly for endangered mussel species).

**WHEREAS**, the Yazoo Backwater Project Area is located in west-central Mississippi and is bordered by the left descending bank of the mainline Mississippi River levee on the west, the west bank levees of the Whittington Auxiliary Channel, the connecting channel on the east, and the Yazoo River on the south. The area which includes portion of Humphreys, Issaquena, Sharkey, Warren, Washington, and Yazoo counties, Mississippi and part of Madison Parish, Louisiana, contains approximately 630,000 acres, equaling the lands that fall within the 100-year flooded frequency. The current work items are listed in Appendix A; and

**WHEREAS**, USACE is the lead federal agency for purposes of the National Environmental Policy Act of 1969 (NEPA) and its implementing regulations, set out at 40 CFR Parts 1500-1508 (43 FR 55978), "Section 106" of the National Historic Preservation Act (NHPA) [54 U.S.C. § 300101 et seq.], as amended (54 U.S.C. § 306108), and its implementing regulations, set out at 36 CFR Part 800, and in accordance with 36 CFR § §800.2(a)(2) and 800.8; and

**WHEREAS**, the Yazoo Area Pump Project has been extensively reformulated over the past six decades to balance flood risk reduction with environmental concerns. Prior to NEPA, these included: 1) the Consolidated Report on the Yazoo Basin Backwater Protection Plan (November 10, 1947), which included provisions for development of fish and wildlife resources; and 2) the Comprehensive Review of the Mississippi River and its Tributaries (April 6, 1962), which recommended modification to the project that included reduction in the number of control structures and inclusion of a connecting channel between the Little Sunflower and Steele Bayou control structures, and the deferral of construction of pumping plants until some future time, with the number, location, and size of the pumps to be determined if and when future conditions and economic justification warranted installation; and

**WHEREAS**, in 1978 a reevaluation of the proposed pumping plant was initiated to determine the best plan for reducing flood damages. The results of the reevaluation were presented in the Yazoo Basin, Yazoo Backwater Area, the Yazoo Pump Project report and the Yazoo Area Pump Project Final Environmental Impact Statement (EIS) completed in 1982. Construction was initiated in 1986 but was halted by WRDA 1986, which required construction and operation and maintenance to be cost shared by a non-federal sponsor. Guidance from the Office of Management and Budget (OMB) in fiscal year 1991 Budget Pass-backs directed the USACE to reformulate Yazoo Basin Projects to provide: 1) greater levels of flood protection to urban areas; 2) reduce levels of agricultural intensification; and 3) reduced adverse impacts to the environment; and

**WHEREAS**, in 1993 USACE filed a Notice of Intent to file a Supplemental EIS (SEIS) and initiated reformulation of the project according to the above guidelines. WRDA 1996 changed the cost sharing requirements back to those in the original authorization. In 2000 USACE released the draft SEIS for comment. In 2007, after completing additional analyses and revisions in response to comments, USACE completed the Final Report, which included the Reformulation Study and Final SEIS (FSEIS This Agreement has been negotiated during USACE's current effort to supplement and as necessary augment the earlier NEPA documents with a Supplemental EIS; and

**WHEREAS**, USACE has informed local governments, and local non-federal sponsors during the development of this Agreement and will take appropriate steps to involve and notify those parties, as appropriate, during the implementation of the terms of this Agreement; and



**WHEREAS**, USACE has determined that the project elements (Appendix A) that, together, constitute this Undertaking may affect properties listed in or eligible for listing on the National Register of Historic Places (NRHP) pursuant to 36 CFR Part 60 (historic properties) and/or properties having religious and cultural significance to Tribes including sites that may contain human remains and/or associated cultural items; and

**WHEREAS**, as USACE cannot fully determine at this time how this Undertaking may affect historic properties, the location of historic properties, or their significance and character, USACE has elected to negotiate an Agreement in consultation with stakeholders, as provided for in 36 CFR § 800.14(b)(3), to govern the implementation of this Undertaking and fulfill its obligations under Section 106 of the NHPA including the resolution of adverse effects for this Undertaking; and

**WHEREAS**, as used in this Agreement, “Signatories” is defined in 36 CFR § 800.6(c)(1), “Invited Signatories” is defined in 36 CFR § 800.6(c)(2), and “Concurring Party” is defined in 36 CFR § 800.6(c)(3); and

**WHEREAS**, a Consulting Party will be recognized by USACE as a Signatory, Invited Signatory, or Concurring Party starting on the date the Consulting Party signs this Agreement as a Signatory, Invited Signatory, or Concurring Party and provides USACE with a record of this signature; and

**WHEREAS**, in accordance with 36 CFR § 800.6(c)(1), a Signatory has the authority to execute, amend, or terminate the Agreement; and

**WHEREAS**, in accordance with 36 CFR § 800.6(c)(2), Invited Signatories who sign this Agreement are signatories with the authority to amend and terminate the Agreement; and

**WHEREAS**, in accordance with 36 CFR § 800.6(c)(3), a Concurring Party is a Consulting Party invited to concur in the Agreement but who does not have the authority to amend or terminate the Agreement; and

**WHEREAS**, USACE initiated consultation, via letter on June 18, 2020 with the Caddo Nation of Oklahoma, the Jena Band of Choctaw Indians, the Mississippi Band of Choctaw Indians, the Quapaw Nation, The Chickasaw Nation, The Choctaw Nation of Oklahoma, The Muscogee (Creek) Nation, the Tunica-Biloxi Tribe of Louisiana, the Advisory Council on Historic Preservation (ACHP), the Louisiana and Mississippi State Historic Preservation Officers (SHPOs), and the Mississippi Levee Board; and

**WHEREAS**, in accordance with 36 CFR § 800.6(a)(1), the ACHP has been provided the required documentation and invited to participate in this Agreement via written and electronic correspondence on June 13, 2020 and October 13, 2020. On October 16, 2020, the ACHP provided electronic notice (confirmed by written correspondence November 3, 2020) that it has chosen to not participate in the consultation; and

**WHEREAS**, USACE recognizes that the State Historic Preservation Office is organized in accordance with Mississippi’s needs and has staff dedicated to historic preservation of the built-environment (divisions, commissions, or departments, etc.) and staff dedicated to archaeological sites (divisions, departments, surveys, etc.). Collectively, these staff fulfill the SHPO’s role for Mississippi in accordance with the NHPA and will be referred to as the MS SHPO. Any specific roles or authorities under state regulation will be defined, as appropriate; and

**WHEREAS**, USACE has consulted with the Mississippi State Historic Preservation Officer (MS SHPO), and Louisiana State Historic Preservation Officer (LA SHPO) on this Agreement pursuant to 36 CFR § 800.14(b) and 36 C.F.R. § 800.6. The Louisiana SHPO has declined to participate in this agreement by written notice, dated August 12, 2020. The Mississippi SHPO is a Signatory to this Agreement; and

**WHEREAS**, USACE recognizes that the Caddo Nation of Oklahoma, the Jena Band of Choctaw Indians, the Mississippi Band of Choctaw Indians, the Quapaw Nation, The Chickasaw Nation, The Choctaw Nation of Oklahoma, The Muscogee (Creek) Nation, the Tunica-Biloxi Tribe of Louisiana (collectively referenced as “

Federally-recognized Tribes”), may have sites of religious and cultural significance off Tribal Lands [as defined in 36 CFR § 800.16(x)] that may be affected by this Undertaking, and in meeting its Federal trust responsibility, USACE invited Tribes to participate in government-to-government consultation starting in June 2020. Pursuant to 36 CFR § 800.2 (c)(2)(ii)(E), and in consideration of the confidentiality of information, USACE has invited the Tribes to enter into this Agreement that specifies how USACE will carry out Section 106 responsibilities for this Undertaking; and

**WHEREAS**, USACE may invite additional Federally-recognized Tribes that have sites of religious and cultural significance to enter into the terms of this Agreement as invited signatories or concurring parties in accordance with 36 CFR § 800.14(f), and nothing in this Agreement prevents a Federally-recognized Tribe from entering into a separate Programmatic Agreement or other agreement with USACE for administration of USACE Programs; and

**WHEREAS**, in accordance with 36 CFR § 800.6(c)(2), and based on each Tribe’s response, the USACE has invited the Mississippi Band of Choctaw Indians, the Quapaw Nation, The Chickasaw Nation, and the Choctaw Nation of Oklahoma (collectively referenced as “ Consulting Tribes” ) to be Invited Signatories in this Agreement and each has elected to sign the Agreement as Invited Signatories; and

**WHEREAS**, in accordance with 36 CFR § 800.6 (c)(3), the Mississippi Levee Board and the Muscogee (Creek) Nation have been invited to participate in the development of this Agreement and have elected to sign as a Concurring Parties in this Agreement; and

**WHEREAS**, on in conjunction with the posting of the SEIS II draft report, USACE posted a NHPA/NEPA Public Notice of Availability (<https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Project-Management/Yazoo-Backwater-Report/FileId/299720/>) of the SEIS II draft report <https://www.mvk.usace.army.mil/missions/programs-and-project-management/project-management/yazoo-backwater-report/>) on October 16, 2020 for a 45-day comment period to end November 30, 2020; and

**WHEREAS**, on in conjunction with the posting of the SEIS II final draft report, USACE posted a NHPA/NEPA Public Notice of Availability (<https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Project-Management/Yazoo-Backwater-Report/>) of the FSEIS II No. 2 document on December 11, 2020, incorporating comments from the aforementioned 45-comment period and available through this link (<https://drive.google.com/file/d/1M2OvNRvylgWBAB-ZHhwQrNDsflkmPpTr/view>); and

**WHEREAS**, for the review of specific Undertakings under this Agreement, USACE may invite other agencies, organizations, and individuals to participate as consulting parties; and

**WHEREAS**, the USACE Vicksburg District uses its own staff and authority and will consult with the Mississippi SHPO and the appropriate Federally-recognized Tribe(s) regarding specific project elements within the respective districts; and

**WHEREAS**, USACE commits to continuing consultation with the Signatories, Invited Signatories and Concurring Parties to develop the Yazoo Backwater Agreement throughout the pre-construction engineering and design, and construction phases of the Undertaking’s implementation; and

**WHEREAS**, The Signatories, Invited Signatories, and Consulting Parties have determined that USACE’s Section 106 requirements can be effectively and efficiently implemented through a programmatic approach stipulating roles and responsibilities establishing protocols for consultation, facilitating identification and evaluation of historic properties, and streamlining the assessment and resolution of adverse effects; and

**NOW THEREFORE**, USACE (Vicksburg District), the Mississippi SHPO (Signatories), the Mississippi Band of Choctaw Indians, the Quapaw Nation, The Chickasaw Nation, and the Choctaw Nation of Oklahoma, (Invited Signatories), and the Mississippi Levee Board and the Muscogee (Creek) Nation (Concurring Parties) agree

that the Undertaking associated with the Yazoo Backwater Project shall be administered in accordance with the following stipulations in order to take into account the effects of the individual elements of the undertaking on historic properties and to satisfy USACE's responsibilities under Section 106 of the NHPA for all applicable undertakings.

## **STIPULATIONS**

### **I. APPLICABILITY**

- A.** This Agreement applies to the Undertaking in the Vicksburg District (MVK) of USACE for the currently identified authorized remaining work required to complete the Yazoo Backwater Project, currently listed in Appendix A and Stipulation I.E. (below), which includes the elements of the Undertaking addressed in the Yazoo Backwater SEIS II.
- B.** USACE will not apply or utilize this Agreement for any Undertaking other than the currently authorized Undertaking as defined and detailed in the Yazoo Backwater SEIS II, currently listed in Appendix A and Stipulation I.E. Any alteration, modification, or change in the scope or nature of the Undertaking will require additional consultation to address said alterations, modifications, or changes, which may culminate in the development of an amended Agreement (see Stipulation XIII) or designation as a new Undertaking pursuant to 36 CFR § 800.3.
- C.** USACE may utilize this Agreement to fulfill its Section 106 responsibilities and those of other Federal agencies that designate USACE as the lead Federal agency pursuant to 36 CFR § 800.2(a)(2) with appropriate notification to the other Signatories and ACHP regarding the Undertaking that falls within the scope of this Agreement. When USACE is not designated as the lead Federal agency, all Federal agencies, including USACE, remain individually responsible for their compliance with Section 106. This provision does not prevent USACE from recognizing another Federal agency as lead Federal agency for this specific Undertaking, as appropriate.
- D.** USACE has determined that the following types of activities have limited or no potential to affect historic properties and USACE has no further Section 106 responsibilities with regard to them, pursuant to 36 CFR § 800.3(a)(1):
  - 1. Administrative actions such as personnel actions, travel, procurement of services, and supplies (including vehicles and equipment) for the support of day-to-day operational activities, and the temporary storage of materials provided storage occurs within existing facilities or on previously disturbed soils.
  - 2. Providing funding for planning, studies, and design and engineering costs that involve no commitment of resources other than staffing and associated funding.
  - 3. Funding the administrative action of acquiring properties, including the real estate transactions and transfers.
  - 4. Boundary Surveying, monitoring, data gathering, and reporting in support of planning or design activities (e.g., conducting geotechnical boring investigations or other geophysical and engineering activities provided no clearing or grubbing is necessary).
  - 5. Demarcation of project areas and resources (e.g., cultural sites, wetlands, threatened and endangered species habitat).

- E. Project Description:** The Yazoo Study Area contains approximately 926,000 acres of which approximately 500,000 acres are lands within the 100-year flood frequency and includes all or portions of Humphreys, Issaquena, Sharkey, Warren, Washington, and Yazoo counties, Mississippi and part of Madison Parish, Louisiana (see Appendix A: Figures A-1 and A-2) and includes the following elements:
1. The pump station located in Warren County, Mississippi, approximately eight miles northeast of the Steele Bayou water control structure near Deer Creek, between the Yazoo Backwater levee and the Yazoo River, and approximately three miles northeast of the intersection of Highway 465 and Highway 61 (see Appendix A; Figure A-3).
  2. A borrow area would be located north of Highway 465 and the Yazoo Backwater levee, approximately eight miles southwest of the pump station, and approximately 0.5 mile northwest of the Steele Bayou water control structure (see Appendix A: Figure A-4).
  3. Thirty-four supplemental low flow groundwater wells would be located north of the Yazoo Study Area, in Washington, Bolivar, and Coahoma counties, Mississippi, and within the project drainage area to mitigate for unavoidable impacts to aquatic resources (attributed to deprivation of an adequate oxygen supply) (see Appendix A: Figure 1.5).

## **II. POINTS OF CONTACT**

- A.** USACE Vicksburg District will provide at a minimum a primary and secondary contact, which may include technical staff as well as liaisons. The primary contact is the contact to which all initial and formal correspondence is sent. If the individual designated as the primary point of contact is not available, communications shall be directed to the secondary contact.
- B.** USACE has requested and will continue to request Consulting Parties, including Signatories, Invited Signatories and Concurring Parties, designate a primary and secondary point of contact. Each Consulting Party to this Agreement is requested to provide phone numbers, email addresses, and mailing addresses for the primary and secondary contacts.
- C.** USACE acknowledges that contacts and areas of interest may change over time. Addressing this is primarily a USACE responsibility with assistance from the Consulting Parties. The initial compilation is provided in Appendix B. Following the initial compilation, USACE and the Consulting parties shall follow the process outlined in the appropriate set of roles and responsibilities below to provide and distribute updated information. Alteration of Appendix B will not require executing an amendment to the Agreement.
- D.** In accordance with the process laid out in the roles and responsibilities below, USACE will follow-up on returned email and hard-copy mail or disconnected phone lines to ensure that a POC is re-established and the relevant Consulting Party receives the necessary information.

## **III. ROLES AND RESPONSIBILITIES OF THE CONSULTING PARTIES**

- A. USACE:** To the extent of its legal authority, and in coordination with other Signatories, Invited Signatories, and Concurring Parties, USACE shall ensure that the following measures are implemented
1. Shall not construct any element of the Undertaking until Section 106 review is completed pursuant to this Agreement.
  2. Shall notify and consult with the MS SHPO, appropriate Federally-recognized Tribes, and other

Consulting Parties. Consultations may include face-to-face meetings, as well as communications by U.S. mail, e-mail, facsimile, and/or telephone. Times and places of meetings, as well as an agenda for meetings, will be developed with mutual acceptance and done in a timely manner.

3. Shall comply with public involvements requirements of Section 106 in accordance with 36 CFR § 800.2(d).
  - a. USACE shall notify the public of the elements of the proposed Undertaking in a manner that reflects the nature, complexity, significance of historic properties likely affected by the Undertaking, the likely public interest given USACE's specific involvement, and any confidentiality concerns of Federally-recognized Tribe(s), private individuals and organizations.
  - b. USACE may consult with the MS SHPO and relevant THPO, Consulting Tribes, or Federally-recognized Tribe(s), and other consulting parties, to determine if there are individuals or organizations with a demonstrated interest in historic properties that should be included as a consulting party for the Undertaking in accordance with 36 CFR § 800.2(c)(5). If such parties are identified or identify themselves to USACE, USACE shall provide them with information regarding the Undertaking and its effects on historic properties, consistent with the confidentiality provisions of 36 CFR § 800.11(c).
  - c. In accordance with the public outreach strategy developed for an Undertaking in consultation with the MS SHPO, appropriate Federally-recognized Tribe(s), USACE shall identify the appropriate stages for seeking public input during the Section 106 consultation process. USACE shall consider all views provided by the public regarding an Undertaking.
  - d. USACE shall also provide public notices and the opportunity for public comment or participation in an Undertaking through the public participation process of the National Environmental Policy Act (NEPA) and its implementing regulations set out at 40 CFR Parts 1500-1508, and/or Executive Orders 11988 and 11990 relating to floodplains and wetlands, and if applicable, Executive Order 12898, Environmental Justice
4. Shall maintain the POC List, Appendix B and distribute annually as part of the consultation, to the parties listed as the Primary POC. USACE will incorporate any changes to the POC listing as derived from the steps below into the annual distribution, as well as individual updates received in the interim.
  - a. USACE district staff engaged in consultation who receive a returned email, returned letter, or notification of a disconnected phone line, will follow up with the relevant Consulting Party to re-establish the appropriate point of contact. This will be communicated to necessary parties upon clarification and in the annual POC update.
  - b. At a minimum the MVK Cultural staff will make a round of phone calls to confirm the current POC listed for each of the Federally-recognized Tribes contained in the POC listing.
  - c. District Archaeologists will ensure that the contact information for the SHPOs within their district have not changed.
5. Shall consult with any Federally-recognized Tribe on a government-to-government basis in recognition of its sovereign status, whether a signatory to this Agreement or not, but particularly

regarding sites that may have traditional, religious, and/or cultural importance to Federally-recognized Tribes. In meeting its Federal trust responsibility, USACE alone shall conduct all government-to-government consultation with Federally-recognized Tribes.

6. Shall be responsible for determining the APE, identifying historic properties located within the APE, providing NRHP eligibility determinations, and findings of effect, in consultation with SHPO, appropriate Federally-recognized Tribes, and other Consulting Parties.
7. Shall ensure all Cultural Resources review is conducted by qualified professional staff as outlined in Stipulation VI.
8. Shall ensure that all documentation generated as part of the NHPA process resulting from these Undertakings shall be consistent with applicable *Standards (State and Federal)* (Stipulation VI.A) and confidentiality provisions outlined in Stipulation IV.
9. Shall ensure, to the greatest extent practicable, that the MS SHPO and the appropriate Federally-recognized Tribe(s) are consulted at the same time. And will, prior to submitting any determinations of eligibility and/or finding of effect as part of the consultation, review National Register eligibility recommendations provided by a cultural resources contractor and make its own determination.
10. USACE contractors shall not consult directly with any SHPO/THPO, Consulting Tribes, or Federally-recognized Tribes. Consultation with SHPO/THPO, Consulting Tribes, or Federal recognized Tribes remains a federal responsibility. This is/will be documented in any SOW for Cultural Resource Management activities or other construction work.
11. Shall, when authorizing elements of this Undertaking requiring environmental/cultural conditions pursuant to this Agreement, include all stipulations and conditions negotiated as part of the Section 106 Process. USACE will ensure that this information is communicated to the NFS and USACE contractor, and will be available for technical questions related to its implementation. This information is conveyed through the Buildability, Constructability, Operability, Environmental and Sustainability Reviews (BCOES Process), per Engineering Regulation 415-1-11, leading to solicitation.
12. Shall ensure that all documentation (e.g., identification, evaluation, and mitigation reports) resulting from this Undertaking is reviewed pursuant to this Agreement is consistent with the MS SHPO and appropriate Consulting Tribes' Tribal guidelines, per Stipulation VI., and the confidentiality provisions of 54 U.S.C. § 307103 and 36 CFR § 800.11(c), per Stipulation IV.
13. Shall ensure that, on Federal land, that the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. §3001-3013, 18 U.S.C. § 1170) and the Archaeological Resources Protection Act of 1979 (ARPA)(16 U.S.C. §470aa – 470mm) are followed.
14. Shall ensure that the provisions of the State of Mississippi's burial law, including specific authorities outlined in Stipulation IX- Treatment of Human Remains and Items of Religious and Cultural Importance are provided to the NFS. USACE will provide any necessary technical guidance on the implementation of these laws, in support of the Designated Authority on NFS, State, or private land, subject to this agreement.
15. Shall consult the ACHP to resolve disputes that may occur during the implementation of this Agreement, pursuant to the Dispute Resolution process in Stipulation XII, resolve adverse effects, and participate in the annual reviews convened by USACE to review the effectiveness

of this Agreement.

**B. SHPO:**

1. The MS SHPO shall coordinate with USACE, to identify Consulting Parties, including any communities, organizations, or individuals that may have an interest in the Undertaking and its effects on historic properties.
2. The MS SHPO shall consult with USACE regarding USACE's determination of the Areas of Potential Effects (APE), National Register eligibility, and findings of effect responding within timeframes set out in Stipulation V.
3. On a per Work Item basis, the MS SHPO shall provide, as part of the consultation, available information about historic properties (such as access to site files, GIS data, survey information, geographic areas of concern) for the purposes of addressing effects to historic properties. Only Qualified Staff, per Stipulation VI. shall be afforded access to protected historic property information. USACE and any MS SHPO may execute a written agreement to clarify and memorialize data sharing if it extends beyond any basic fee structure or access schedule.
4. The MS SHPO staff of jurisdiction (Historic Preservation Division staff members or equivalent) shall be reasonably available as a resource and for consultation through site visits, written requests, telephone conversations or electronic media. In those instances where consultation has occurred, USACE shall provide a written summary via e-mail or regular mail to SHPO, including any decisions that were reached.

**C. Federally Recognized Tribes:**

1. USACE acknowledges that Federally-recognized Tribes possess special expertise in assessing the National Register eligibility of properties with religious and cultural significance to that particular Tribe. Tribal leaders, and as appropriate, their representatives, shall decide the individual for the Tribe who meets appropriate qualifications/standards for the Tribe's review of the Undertaking affecting properties with religious and cultural significance to that particular Tribe. Designations such as this will follow the intent and processes laid out in USACE's 2012 Tribal Consultation Policy.
2. Federally-recognized Tribes (THPOs and other designees) may coordinate with USACE, to identify Consulting Parties, including any communities, organizations, or individuals that may have an interest in the Undertaking and its effects on historic properties.
3. Federally-recognized Tribes (THPOs and other designees) may consult with USACE regarding USACE's determination of the Areas of Potential Effects (APE), National Register eligibility, and findings of effect responding within timeframes set out in Stipulation V.
4. On a per Work Item basis, Federally-recognized Tribes (THPOs and other designees) may provide, as part of the consultation, available information about historic properties (such as access to site files, GIS data, survey information, geographic areas of concern) for the purposes of addressing effects to historic properties. Only Qualified Staff, per Stipulation VI. shall be afforded access to protected historic property information. USACE and any Federally-recognized Tribe may execute a written agreement to clarify and memorialize data sharing, if it extends beyond any basic fee structure or access schedule.
5. Federally-recognized Tribes (THPOs and other designees) may be reasonably available as a resource and for consultation through site visits, written requests, telephone conversations or

electronic media. In those instances where consultation has occurred, USACE shall provide a written summary via e-mail or regular mail to THPO, including any decisions that were reached.

6. Federally-recognized Tribes (THPOs and other designees) may, based on availability, participate in annual reviews convened by USACE to discuss the effectiveness of this Agreement in accordance with Stipulation III.

#### **IV. CONFIDENTIALITY OF HISTORIC PROPERTY INFORMATION**

- A. USACE will safeguard information about historic properties to the extent allowed by Section 304 of NHPA (54 U.S.C. § 307103), Section 9 of the Archaeological Resources Protection Act (ARPA), and other applicable Federal laws, as well as implementing restrictions conveyed to USACE by the MS SHPO and Federally-recognized Tribes, consistent with state and tribal guidelines. These safeguards will be included in any developed cultural resources Scopes of Work, as well.
- B. Only USACE staff meeting the Professional Standards (Stipulation VI.) , shall be afforded access to protected historic property information provided by any SHPO and/or Federally-recognized Tribes;
- C. Regarding sensitive information shared by Federally-recognized Tribes, USACE, in accordance with provisions of federal law, will not share non-public information, without first confirming (in writing with the provider of the information) the appropriateness of sharing.
- D. USACE shall provide to all Consulting Parties the documentation specified in 36 CFR § 800.11 subject to the confidentiality provisions of 36 CFR § 800.11(c) and such other documentation as may be developed during consultation to resolve adverse effects to the extent permitted by federal law.
- E. The MS SHPO/THPO, Consulting Tribal staff, and Federally-recognized Tribal staff and/or designee(s), shall safe guard historic property information (locational and other non-public) in accordance with the provisions of Section 304 of the NHPA and applicable State and Tribal legal authorities.
- F. USACE anticipates the presentation of historic property data as part of any Standard Treatment Measure (STM) or Memorandum of Agreement Treatment Measure (MOA TM) but shall ensure that these products, presentations, or other publications are adequately coordinated and consulted upon before release/presentation to ensure that any otherwise protected information is being represented appropriately.

#### **V. CONSULTATION STANDARDS, TIMEFRAMES, AND CORRESPONDENCE**

##### **A. Consultation Standards:**

1. Consultation among all Consulting Parties to this Agreement will continue throughout the implementation of this Agreement. Per 36 CFR § 800.16(f), consultation means “the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the section 106 process.”
2. USACE, when consulting with any Federally-recognized Indian Tribe, whether a signatory to this Agreement or not, will do so on a government-to-government basis in recognition of their sovereign status.



3. USACE will consult with the MS SHPO, Federally-recognized Tribes, and other consulting parties, based on expressed areas of interest in the case of Federally-recognized Tribes or jurisdiction in case of the MS SHPO. Consultations may include face-to-face meetings, as well as communications by regular mail, electronic mail, and/or telephone. Times and places of meetings, as well as an agenda for meetings, will be developed with mutual acceptance and done in a timely manner.

**B. Timeframes:**

1. All time designations in this Agreement shall be in calendar days unless otherwise expressly stipulated in writing in this Agreement:
  - a. For Emergency Undertakings as reviewed under Stipulation VII., USACE shall follow the timeframes as indicated in 36 CFR 800.12 (b) (2.).
  - b. Following the Streamlined Project Review Stipulation VII. provisions of this Agreement, the response time for requests for concurrence shall be a maximum of thirty (30) days, unless otherwise agreed to by the parties to the specific consultation on a case-by-case basis.
2. The review period will be extended until the next business day, if a review period included in this Agreement concludes on a Saturday, Sunday, State, or Federal, or Tribal holiday. If requested, USACE may consider an extension of a review period consistent with the time designations in this Agreement for parties affected by an unanticipated state office closure (any state) (e.g., hurricane, tornado or similar).
3. Any electronic communication forwarding plans or other documents for review under the terms of this Agreement that is sent after 4:00 pm Central Time will be deemed to have been received by the reviewing party on the next business day.
4. E-mail comments by the Signatories on any documents submitted for review under this Agreement are timely if they are received at any time on or before the last day of a review period. Responses sent by mail will be accepted as timely if they are postmarked by the last day allowed for the review.
5. If any Signatory does not object to USACE's finding or determination related to an Undertaking within an agreed upon timeframe, USACE may proceed to the next step in the consultation process as described in Stipulation VII, Project Review.
6. Timeframes are contingent upon USACE ensuring that its findings and determinations are made by Qualified Staff and supported by documentation as required by 36 CFR § 800.11(d) and 36 CFR § 800.11(e), and consistent with USACE guidance.

**C. Correspondence:**

1. The Consulting Parties may send and accept official notices, comments, requests for further information and documentation, and other communications required by this Agreement in accordance with the protocol in Appendix B.
2. If the size of an e-mail message is unusually large or an e-mail is returned to a sender because its size prevents delivery, the sender will contact the intended recipient(s) and determine alternative methods to deliver the information (including available file sharing platforms).

3. Time-sensitive information that is not sent by e-mail should be sent by overnight mail, courier, or hand-delivered. The timeframe for requests for review not sent by e-mail will be measured by the date the delivery is signed for by the MS SHPO, Federally-recognized Tribe, or other organization representing the Consulting Parties.

## VI. STANDARDS

- A. In addition to the definitions utilized in 36 CFR § 800, this Agreement uses the definitions presented in the subsequent paragraphs to establish standards for performing all cultural resource project reviews and investigations required under the terms of this Agreement including, but not limited to, site identification, NRHP eligibility evaluations, and as appropriate, STM or MOA TM for the resolution of adverse effects to historic properties:
1. “Qualified Staff” – shall mean staff who meet, at a minimum, the SOI Professional Qualifications Standards set forth at 48 FR 44738 (September 29, 1983), for History, Archaeology, Architectural History, Architecture, or Historic Architecture ([https://www.nps.gov/history/local-law/arch\\_stnds\\_9.htm](https://www.nps.gov/history/local-law/arch_stnds_9.htm)) and the appropriate qualifications presented in Professional Qualifications (36 CFR Part 61, Appendix A).
  2. “Standards” -- shall mean the Secretary of the Interior’s (SOI) Standards and Guidelines for Archaeology and Historic Preservation [Federal Register 48(190) 1983:44716-44737] ([https://www.nps.gov/history/local-law/arch\\_stnds\\_0.htm](https://www.nps.gov/history/local-law/arch_stnds_0.htm));
  3. “Meeting Professional Standards” -- shall mean that all cultural resource investigations shall be performed by, or under the direct (in-field) supervision of appropriate professional(s) or by contractors, who are “Qualified Staff”;
  4. “Field and Reporting Standards” – shall mean the current historic standing structure and archaeological guidance from the MS SHPO’s Office;
  5. “Policies and Guidelines” -- shall mean guidance from any of the following:
    - a) The National Park Service publication *The Archaeological Survey: Methods and Uses* (National Park Service 1978);
    - b) ACHP’s Treatment of Archeological Properties: A Handbook (1980) (<https://www.achp.gov/sites/default/files/documents/2018-11/Treatment%20of%20Archeological%20Properties-A%20Handbook-OCR.pdf>);
    - c) Identification of Historic Properties: A Decision-making Guide for Managers (1988, joint ACHP-NPS publication);
    - d) Consulting About Archeology Under Section 106 (1990);
    - e) ACHP’s [Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites](https://www.achp.gov/sites/default/files/documents/2018-06/ACHPPolicyStatementRegardingTreatmentofBurialSitesHumanRemainsandFuneraryObjects0207.pdf) (1999);
    - f) ACHP’s Policy Statement Regarding the Treatment of Burial Sites, Human Remains and Funerary Objects (2007) <https://staging.achp.gov/sites/default/files/policies/2018-06/ACHPPolicyStatementRegardingTreatmentofBurialSitesHumanRemainsandFuneraryObjects0207.pdf>; and
    - g) Section 106 Archaeology Guidance: A reference guide to assist federal agencies in making effective decisions about archaeological sites (2009)

- B. In developing Scopes of Work (SOW) for identification and evaluation studies, STM or MOA TM(s), or any other cultural resources activities required under the terms of this Agreement, USACE will comply with the requirements of the Standards, Field and Reporting Standards, and the Policies and Guidelines, in existence at the time this work is performed.
- C. Additionally, in developing SOW for identification and evaluation studies, STM or MOA TM(s), or any other cultural resources activities required under the terms of this Agreement, and where geographically appropriate, USACE will take into account the following guidance:
  - 1. Guidance from the *National Historic Preservation Act Section 106 Protocol and Standards*, *Archaeological Survey Standards*, and *Archaeological Resources Protection Act Violation Procedures*; and
  - 2. Any additional area-specific guidance beyond that provided for under VI (e.g., additional Federally-recognized Tribal guidance, or local preservation ordinances).
- D. In developing the SOW for development of the contextual cultural study of the Yazoo Backwater area under the terms of this Agreement, USACE will consult guidelines associated with feasibility studies developed in association with designation of National Heritage Areas (NHA), in existence at the time this work is performed (see Appendix D for more detailed information).
- E. Additionally, in developing the SOW for the development of the heritage area contextual/cultural study of the Yazoo Backwater area under the terms of this Agreement, USACE will take into account the following guidance:
  - 1. Guidance from the National Park Service publication *NATIONAL HERITAGE AREA FEASIBILITY STUDY GUIDELINES* (National Park Service 2019 - [https://www.nps.gov/subjects/heritageareas/upload/NHA-Feasibility-Study-Guidelines\\_FINAL-Revisions-2019\\_508-compliant.pdf](https://www.nps.gov/subjects/heritageareas/upload/NHA-Feasibility-Study-Guidelines_FINAL-Revisions-2019_508-compliant.pdf)); and
  - 2. The National Park Service publication *Heritage Study, Environmental Assessment, Lower Mississippi Delta Region: Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee* (2 vols.) (1998 - [https://www.nps.gov/parkhistory/online\\_books/mrdr/mrdr\\_heritage\\_study.pdf](https://www.nps.gov/parkhistory/online_books/mrdr/mrdr_heritage_study.pdf) & [https://www.nps.gov/parkhistory/online\\_books/mrdr/mrdr\\_heritage\\_study2.pdf](https://www.nps.gov/parkhistory/online_books/mrdr/mrdr_heritage_study2.pdf)); and
  - 3. The National Park Service publication *National Heritage Area (NHA) Feasibility Studies Short Guide to Assessing National Importance, Contributing Resources, Opportunities, and a Boundary for Heritage Areas* ([https://www.nps.gov/subjects/heritageareas/upload/NHA-Study-Guidance\\_Assessing\\_a\\_Nationally\\_Important\\_Landscape\\_andOpportunities.pdf](https://www.nps.gov/subjects/heritageareas/upload/NHA-Study-Guidance_Assessing_a_Nationally_Important_Landscape_andOpportunities.pdf)); Guidance from the *National Historic Preservation Act Section 106 Protocol and Standards*, *Archaeological Survey Standards*, and *Archaeological Resources Protection Act Violation Procedures*; and
  - 4. The National Park Service publication *REGIONWIDE ARCHEOLOGICAL SURVEY PLAN, SOUTHEAST FIELD AREA, NATIONAL PARK SERVICE* (National Park Service 1996 - [https://www.nps.gov/parkhistory/online\\_books/sero/rasp.pdf](https://www.nps.gov/parkhistory/online_books/sero/rasp.pdf)). Any additional area-specific guidance beyond that provided for under VI A (e.g., additional Federally-recognized Tribal guidance, or local preservation ordinances).

## VII. PROJECT REVIEW

- A. Review for Emergency Undertakings:** For review of actions that are emergencies, USACE shall follow the provisions of 36 CFR 800.12 (b).
- B. Heritage Study Development and Implementation:** USACE acknowledges that the Undertaking will cause both direct and indirect effects to historic properties and proposes the following actions to provide context for evaluating NRHP eligibility and assessing effects.
1. USACE shall commit to the scoping, execution, and completion of the heritage area contextual/cultural study prior to finalizing any cultural resources studies in accordance with Stipulation VI. Timing will be defined in the final scope for the study.
  2. USACE shall use the draft Heritage Area Study to consult with stakeholders to determine the areas where further cultural studies may be warranted prior to initiating construction activities in those additional locations.
  3. USACE shall provide GIS-based data from the Heritage Study for incorporation into MS SHPO and Tribal databases/GIS platforms. Data will be defined in the final scope of the study, but it is anticipated to include data specific to the spatial patterning of cultural resources and environmental factors influencing resource location.
  4. USACE cultural resources staff shall utilize the Heritage Study data and Cultural Study data from the areas of proposed construction, to design a cultural resources component to the Monitoring and Adaptive Management (MAM) Plan provided for as part of the EIS (<https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Project-Management/Yazoo-Backwater-Report/FileId/303750/>). Specifics of the cultural resources component of the MAM Plan will be scoped before the MAM is implemented.
- C. Streamlined Project Review:** For all elements of the Undertaking, USACE shall ensure that the following project review steps are implemented. In the interest of streamlining, USACE may combine some or all of these steps during consultation in accordance with 36 CFR § 800.3(g).
1. Consulting Parties: USACE shall consider all written requests of individuals and organizations to participate as consulting parties, and consult with the MS SHPO and the appropriate Federally-recognized Tribe(s) to identify any other parties that meet the criteria to be consulting parties and invite them to participate in the Section 106 process. USACE may invite others to participate as consulting parties as the Section 106 consultation proceeds.
  2. Area of Potential Effects (APE): For all projects undergoing streamlined project review, Qualified Staff shall determine the APE in consultation with the MS SHPO and appropriate Federally-Recognized Tribe(s).

The APE will be defined as all areas to be effected by construction activities and areas of associated ground disturbance including but not limited to haul roads, borrow areas, staging and stockpiling areas. The APE will include all areas for which a Right-of-Entry is sought by USACE. Additional effects that will be considered shall include visual, auditory, and off-site anticipated erosion resulting from the constructed feature. USACE may consider information provided by other parties, such as local governments and the public, when establishing the APE.

APE Definition Factors:

- a. For standing structures not adjacent to or located within the boundaries of a National Register listed or eligible district, Qualified Staff may define the APE as the individual structure or structures when the proposed Undertaking is limited to its repair or rehabilitation (e.g. floodwalls, or other appurtenant structures to the levees, etc.).
  - b. For archaeological sites the USACE should consider the nature of likely properties in unsurveyed areas, the fact that mound sites may have been incorporated into the levee profile or may have been excavated and used as fill material in the levee.
3. Identification and Evaluation: Qualified Staff shall determine, in consultation with the MS SHPO and Tribe(s), if the APE contains historic properties, including properties of religious and cultural significance to Federally-recognized Tribes. This may include the review of newly developed or previously produced documentation in coordination with the MS SHPO, appropriate Federally-recognized Tribe(s), and any additional Consulting Parties.
  - a. Level of Effort: USACE shall make a reasonable and good faith effort to identify historic properties in accordance with 36 CFR § 800.4(b)(1). USACE shall consult with the MS SHPO and appropriate Federally-recognized Tribe(s) to determine the level of effort, methodology necessary to identify and evaluate a variety of historic property types, and any reporting requirements. For properties of religious and cultural significance to affected Federally-recognized Tribe(s), USACE shall consult with the affected Tribe(s) to determine if the APE contains such properties and determine the necessary level of effort to identify and evaluate or avoid any such historic properties. All Identification and Evaluation studies will comply with the Standards (Stipulation VI).
  - b. Timing:
    - i. With respect to each element of the Undertaking, USACE shall achieve compliance with all relevant terms of this Agreement prior to initiating physical construction of that Work Item.
    - ii. The results of all field investigations will be subject to a review and comment period of no less than thirty (30) days by the appropriate Consulting Parties, following the receipt by the MS SHPO and the appropriate Federally-recognized Tribe(s) of the completed reporting document (architectural survey, Phase I or II archaeological reports, and any other supporting documentation).
    - iii. Coordination of consultation will be through the designated Points of Contact (Stipulation II).
4. Determinations of Eligibility: USACE shall make determinations of National Register eligibility based on identification and evaluation efforts, and consult with the MS SHPO, appropriate Federally-recognized Tribe(s), and other Consulting Parties regarding these determinations. Should the MS SHPO, or appropriate Federally-recognized Tribe(s) disagree with the determination of eligibility, USACE shall:
  - a. Consult further with the objecting party to resolve the objection;
  - b. Treat the property as eligible for the National Register; or

- c. Obtain a determination of eligibility from the Keeper of the National Register in accordance with 36 CFR § 63.2(d)-(e) and 36 CFR § 800.4 (c) 2.
5. Findings of No Historic Properties Affected:
- a. Basis for Finding. USACE shall make a finding of “no historic properties affected” under the following circumstances:
    - i. If no historic properties are present in the APE; or
    - ii. The Undertaking shall avoid alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register (including cumulative effects); or
  - b. USACE shall notify the MS SHPO, appropriate Federally-recognized Tribes(s), and any other consulting parties of this finding and provide supporting documentation in accordance with 36 CFR § 800.11(d). Unless consulting parties object to the finding, or request additional information, within 30-days, the Section 106 review of the Undertaking will have concluded.
  - c. If the MS SHPO and/or appropriate Federally-recognized Tribes(s), objects to a finding of “no historic properties affected,” USACE shall consult with the objecting party to resolve the disagreement.
    - i. If the objection is resolved, USACE either may proceed with the Undertaking in accordance with the resolution or reconsider effects on the historic property by applying the criteria of adverse effect pursuant to Stipulation VII., Application of the Criteria of Adverse Effect, below.
    - ii. If USACE is unable to resolve the disagreement, it will forward the finding and supporting documentation to ACHP and request that ACHP review USACE’s finding in accordance with the process described in 36 CFR § 800.4(d)(1)(iv)(A) through 36 CFR § 800.4(d)(1)(iv)(C).). USACE shall, pursuant to 800.4(d)(1)(iv)(C), prepare a summary of its decision that contains the rationale for the decision and evidence of consideration of the ACHP’s opinion, and provide this to the MS SHPO, appropriate Federally-recognized Tribes(s), and all other consulting parties. If USACE’s final determination is to reaffirm its “no historic properties affected” finding, the Section 106 review of the Undertaking will have concluded. If USACE will revise its finding, then it shall proceed in accordance with Stipulation VII., below.
6. Assessing Adverse Effects: If, through consultation, USACE finds an Undertaking may affect historic properties in the APE, including those of religious or cultural significance to affected Federally-recognized Tribe(s), USACE shall apply the criteria of adverse effect to historic properties within the APE(s), including cumulative effects, taking into account the views of the consulting parties and the public concerning effects in accordance with 36 CFR § 800.5(a).
- a. *Findings of No Adverse Effect:* If, through consultation, USACE determines that an Undertaking does not meet the adverse effect criteria, pursuant to 36 C.F.R. § 800.5(a)(1), USACE shall propose a finding of “no adverse effect” and consult with the MS SHPO, appropriate Federally-recognized Tribes(s) and Consulting Parties in accordance with 36 CFR § 800.5(b) and following steps i-iii below, or will move to subparagraph b.

- i. USACE shall notify all consulting parties of its finding; describe any project specific conditions and/or modifications required to avoid or minimize effects to historic properties; and provide supporting documentation pursuant to 36 CFR §800.11(e).
  - ii. Unless a consulting party objects within thirty (30)-days, USACE will proceed with its “no adverse effect” determination and conclude the Section 106 review.
  - iii. If a consulting party objects to a finding of “no adverse effect,” USACE will consult with the objecting party to resolve the disagreement.
  - a. If the objection is resolved, USACE shall proceed with the Undertaking in accordance with the resolution; or
  - b. If the objection cannot be resolved, USACE shall request that ACHP review the findings in accordance with 36 CFR § 800.5(c)(3)(i)-(ii) and submit the required supporting documentation. USACE shall, pursuant 800.5(c)(3)(ii)(B), prepare a summary of its decision that contains the rationale for the decision and evidence of consideration of the ACHP’s opinion, and provide this to the MS SHPO, appropriate Federally-recognized Tribes and all other consulting parties. If USACE’s final determination is to reaffirm its “no adverse effect” finding, the Section 106 review of the Undertaking will have concluded. If USACE will revise its finding then it shall proceed to Stipulation VI., below.
  - c. *Avoidance and Minimization of Adverse Effects:* If USACE, during its initial review, finds any element of the Undertaking may adversely affect historic properties, USACE may make a further internal review to consider ways to avoid or minimize effects to historic properties. The review will consider revising the elements of the scope of work affecting historic properties to substantially conform to the SOI Preservation Standards or otherwise avoid or minimize adverse effects.
    - i. If USACE modifies the scope of work following its initial internal review to avoid or minimize effects below the “criteria of adverse effect” (36 CFR 800.5 (a)(1), (i.e., to the point USACE can make a finding of No Adverse Effect), USACE shall consult with the MS SHPO, appropriate Federally-recognized Tribe(s), and all other consulting parties providing the *original and modified* Scopes of Work as part of its finding of “no adverse effect” following the process in Stipulation VII.
    - ii. If USACE is unable to modify elements of the Undertaking to avoid or minimize effects below the “criteria of adverse effect”, USACE shall initiate consultation to resolve the adverse effect(s) in accordance with Stipulation VII., Resolution of Adverse Effects.
7. Resolution of Adverse Effects: If USACE determines that the Undertaking or any of its elements may adversely affect a historic property, it shall resolve the effects of the Undertaking in consultation with the MS SHPO, the appropriate Federally-recognized Tribe(s), ACHP, if participating, and other consulting parties, by one of the methods, described in VII.C.7.(a-c). USACE may use the Abbreviated Resolution Process (ABR) to resolve adverse effect and propose it to parties, and if the parties agree, will use the ABR. If the parties do not agree, then USACE will move to develop a MOA, in accordance with 36 CFR § 800.6(c). When, through consultation, USACE determines the Undertaking will adversely affect an NHL, USACE shall notify and invite the Secretary of the Interior and ACHP, as well as notifying Regional National Park Service staff to participate in consultation in accordance with 36 CFR § 800.10.
- a. *Abbreviated Resolution Process:* USACE may propose in writing to the consulting parties to resolve the adverse effects of the Undertaking through the application of one or more

Treatment Measures outlined in Appendix E (Historic Property Treatment Plan). USACE shall ensure that the provisions of the Historic Property Treatment Plan, as outlined in the consultation and agreed to by consulting parties, are documented in writing and implemented. The use of these Treatment Measures in a Historic Property Treatment Plan shall not require the execution of an individual Memorandum of Agreement or Secondary Programmatic Agreement.

- i. In consultation with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, USACE shall propose in writing the implementation of a specific Historic Property Treatment Measure, or combination of Treatment Measures, with the intent of expediting the resolution of adverse effects, and provide documentation as required by 36 CFR § 800.11(e) and subject to the confidentiality provisions of 36 CFR § 800.11(c)). The correspondence will include a Historic Properties Treatment Plan that outlines roles and responsibilities for accomplishment of the selected treatment measures, specify the deliverables, and define the timeline.
  - ii. The ACHP at its discretion may participate in the development of Historic Property Treatment Plans, under the Abbreviated Resolution Process, when requested by USACE, the MS SHPO, appropriate Federally-recognized Tribe(s), or other consulting parties, or when the ACHP determines that its participation is warranted.
  - iii. Unless a consulting party or the ACHP objects to USACE's proposed Historic Property Treatment Plan within the timeframe outlined in Stipulation V. Timeframes, USACE shall proceed with the implementation of the Historic Property Treatment Plan and will conclude the Section 106 review.
  - iv. If any of the consulting parties or ACHP objects within the timeframe outlined in Stipulation V. Timeframes, to the resolution of adverse effects through the application of the Abbreviated Consultation Process, USACE shall resolve the adverse effect(s) using procedures outlined below in Stipulation VII., MOA or Programmatic Agreement. USACE shall invite any individual or organization that will assume a specific role or responsibility outlined in a Memorandum of Agreement or Secondary Programmatic Agreement to participate as an invited signatory to the undertaking-specific agreement.
  - v. Because funding and implementation details of a Historic Property Treatment Plan for specific Undertakings may vary by State and Non-Federal Sponsor, USACE shall provide written notice to the Consulting Parties within sixty (60) days of the completion of the Historic Property Treatment Measure(s). This written notice will serve as confirmation that the Historic Property Treatment Measure(s) for a specific Undertaking have been implemented. USACE also shall include information pertaining to the progress and completion of Historic Property Treatment Plans in the annual report pursuant to Stipulation III USACE Roles and Responsibilities.
- b. *Memorandum of Agreement (MOA)*: USACE shall provide ACHP with an adverse effect notice in accordance with 36 CFR § 800.6(a)(1) if it has not already provided such under the Abbreviated Consultation Process of this Agreement, if a consulting party or ACHP objects in accordance with Stipulation II.C.6(a)(iii), or if USACE in consultation with SHPO/THPO, Tribe(s), and other consulting parties has determined that an MOA would be more appropriate than the Abbreviated Consultation Process to resolve the adverse effect(s). In consultation with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, including ACHP (if participating), USACE shall develop an MOA, in accordance with 36 CFR § 800.6(c) to agree upon Treatment Measures to avoid, minimize, and/or mitigate adverse effects on historic properties. The MOA may also



include Treatment Measures that serve an equal or greater public benefit in promoting the preservation of historic properties in lieu of the Treatment Measures outlined in Appendix E.

8. Objections: Should USACE or any signatory or consulting party object within the timeframes established by this Agreement to any plans, specifications, or actions taken pursuant to resolving an adverse effect, and the objection cannot be resolved, USACE shall address the objection in accordance with Stipulation XI, Dispute Resolution.
9. Reports:
  - a. USACE shall ensure that all reports and other documents resulting from the actions pursuant to this Agreement will be provided in a format acceptable to the MS SHPO and appropriate Federally-recognized Tribes. USACE will ensure that all such reports (e.g., identification surveys, evaluation reports, treatment plans, and data recovery reports) meet or exceed the Department of the Interior's *Format Standards for Final Reports of Data Recovery* (42 FR 5377-79) and the *Field and Report Standards* identified in Stipulation II.A.1(d).
  - b. USACE shall provide all documentation for these efforts to the MS SHPO, appropriate Federally-recognized Tribes, or other Consulting Parties, as appropriate, consistent with the confidentiality provisions of Stipulation IV. of this Agreement.
  - c. Once supporting documentation is received, SHPO and Tribes will have thirty (30)-days to review supporting documentation (e.g., site forms and reports). If the MS SHPO or appropriate Federally-recognized Tribes intend to review and comment on documentation, and are unable to do so within the thirty (30)-day review period, a request for additional review time must be made in writing to USACE and specify the anticipated completion date. USACE will consider the request and work with the requesting party to come to a mutually agreeable timeframe. USACE will notify other Consulting Parties of any mutually approved extension by e-mail.

## **VIII. CURATION**

Recovered archaeological collections from a USACE-required archaeological survey, evaluation, and/or mitigation remain the property of the land owner (either private, State, Federal, etc.). USACE, in coordination with the MS SHPO and appropriate Federally-recognized Tribe(s) may, as determined through consultation, encourage private land owners to transfer any recovered artifacts and related documentation to an appropriate archive or public or Federally-recognized Tribal entity. USACE, in coordination with SHPO and Federally-recognized Tribe(s), shall work with all Tribal, State, and local agents to support steps that ensure the long-term curation of these artifacts and documents through the transfer of the materials to a suitable repository as agreed to by USACE, the MS SHPO, and appropriate Federally-recognized Tribes(s) and following applicable State or Tribal guidelines. USACE shall ensure that collections from federal or tribal land, including field and laboratory records sufficient to document the collection, are curated at a repository meeting federal standards (36 C.F.R. 79) as agreed to by USACE, SHPO, and affected Federally-recognized Tribe(s), and follow that repository's guidelines.

## **IX. TREATMENT OF HUMAN REMAINS AND ITEMS OF RELIGIOUS AND CULTURAL IMPORTANCE**

**A. Documenting Human Remains:** The recordation of human remains in a burial context or as individual elements is a task that requires sensitivity and good judgment, as defined through consultation. Consultation is a necessary part of documenting any human remains (in a discovery situation or during the treatment of historic properties) following the provisions of this stipulation. In planning how to document human remains (photography, drawing for the purposes of illustration, videography, or other), the determination will be made in consultation and concurrence with the MS SHPO, Federally-recognized Tribe(s), and, as appropriate, other descendant communities. Even if it is determined to photo document the human remains, the photographs should not be published or made publicly available in any way. The USACE will maintain records for the purpose of management of the human remains, with the intent of satisfying the protection provisions of the federal and state laws governing human remains, the records will be hardcopy and digital. When the records are digital, they will not be connected to externally available electronic resources like GIS servers or other and marked as restricted (per NHPA, FOIA, and, as appropriate, ARPA). As part of the consultation for each Work Item where Human Remains are present, the USACE will ensure that the consultation happens as appropriate to each jurisdiction to determine the course of action for each situation.

**B. General Human Remains Discovery Process:**

1. In the event that previously unreported or unanticipated human remains, burials, funerary objects, Native American sacred objects, or Native American objects of cultural patrimony are encountered during field investigations, laboratory work, or during construction or maintenance activities originating from Federal, state, or private lands (Federal and Non-Federal Lands) USACE shall notify the relevant historic preservation interests (SHPO's of Jurisdiction, and interested Federally-recognized Tribal representatives) within 24-hrs of the discovery. Concurrently, USACE will implement the provisions 2 thru 6 below:
2. Any USACE employee or contractor(s) who knows or has reason to know that they have inadvertently discovered human remains, burials, funerary objects, Native American sacred objects, or Native American objects of cultural patrimony must provide immediate telephone notification of the inadvertent discovery to the responsible Federal construction official, with written confirmation, to the appropriate USACE District's Point of Contact in this agreement. The written notification should contain the results, if any, of the field evaluation. The appropriate USACE District's Cultural Resources Staff and Tribal Liaison will begin to develop a plan of action to inform the appropriate District Commander of the consultation tasks necessary to address the discovery. No Photographs should be taken at this time of the human remains.
3. All fieldwork, construction or maintenance activities, must stop immediately within a one hundred (100) meter (328 ft.) radius buffer zone around the point of discovery; unless there is reason to believe that the area of the discovery may extend beyond the one hundred (100) meter (328 ft.) radius buffer zone in which case the buffer zone will be expanded appropriately, within the APE. USACE will implement measures to protect the discovery from theft and vandalism. Any human remains or other items in the immediate vicinity of the discovery must not be removed or otherwise disturbed. USACE will take immediate steps, if necessary, to further secure and protect inadvertently discovered human remains, burials, funerary objects, Native American sacred objects, or Native American objects of cultural patrimony, as appropriate, including stabilization, or covering the find location.
4. USACE will notify local law enforcement, coroner, or Medical Examiner, as appropriate, and the MS SHPO, per the POC in Appendix B, by telephone to assess the nature and age of the human skeletal remains within twenty-four (24) hours of the discovery of unmarked human remains and accompany local law enforcement personnel during all field investigations. USACE will also notify interested Federally-recognized Tribes of the discovery within the same period. If the appropriate local law enforcement official determines that the remains are not involved in a

criminal investigation, USACE will follow jurisdictional guidelines as provided for based on land ownership (per Stipulation IX).

- a. In cases where human remains, burials, funerary objects, Native American sacred objects, or Native American objects of cultural patrimony are discovered during the implementation of a USACE-funded undertaking on Federal Land, USACE will notify by telephone and e-mail, the MS SHPO, Tribes, and other affected parties (e.g., living descendants) that may that might attach religious and cultural significance to the discovery at the earliest possible time, but no later than forty-eight (48) hours and inform them of the steps already taken to address the discovery.
  - b. In cases where the human remains are discovered on Non-Federal Lands and are determined to be Native American, the individual state's Designated Authority will notify and coordinate with Tribes as required by the appropriate state law, but not later than forty-eight (48)-hours from the time of their notification. As requested and to the extent of its legal authority, USACE will assist the Designated Authority, to consult with Tribes and affected parties, as appropriate.
  - c. In cases where the human remains are discovered on Non-Federal Lands and determined to be other than Native American, the individual state's Designated Authority will notify and coordinate in accordance with the appropriate state law. As requested and to the extent of its legal authority, USACE will assist the Designated Authority to consult with the affected parties, as appropriate.
5. USACE will consult with MS SHPO, THPOs, and appropriate Federally-recognized Tribes, and other affected parties to develop a mutually agreeable action plan with timeframes to take into account the effects of the Undertaking on the discovery; resolve adverse effects if necessary; and ensure compliance with applicable federal laws and their implementing regulations, if the discovery of Native American human remains, funerary objects, Native American sacred objects, or Native American objects of cultural patrimony occurs on Federal Land (see Stipulation IX for the detailed process).
  6. Following the outcome of any consultation (Federal Lands or Non-Federal Lands) to address the discovery of human remains, USACE will coordinate with any contractor(s) regarding any required scope of project modification necessary to implement recommendations from the consultation and facilitate proceeding with the Undertaking.

**C. Specific Authorities and Processes for Addressing Human Remains:** If human remains, funerary objects, Native American sacred objects, or Native American objects of cultural patrimony are encountered during project field investigations or laboratory work or during construction activities, the USACE will comply with the provisions based on the nature of the land ownership at the time remains or objects are encountered, in accordance with Engineering Regulation 1102-2-100 (Policy & Guidance), Appendix C-4.

1. Federal Lands: If discovered/recovered from *Federal lands*, USACE shall concurrently implement processes defined in this Agreement, satisfying NHPA, as well as
  - ensuring consultation with appropriate Federally-recognized Tribes for any human remains, funerary objects, Native American sacred objects, or Native American objects of cultural patrimony (objects) as required by the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), as amended (25 U.S.C. §§ 3001-3014) and its implementing regulations (43 C.F.R. Part 10); and

- ensuring the appropriate provisions of the Archaeological Resources Protection Act, 16 USC §§ 470aa et seq., are followed.
- a. For discoveries of human remains, burials, funerary objects, Native American sacred objects, or Native American objects of cultural patrimony, USACE will continue to consult with the MS SHPO, claimant Federally-recognized Tribes, and other affected parties, as appropriate, whether they are Signatories to this Agreement or not, regarding additional measures to avoid and protect or mitigate the adverse effect of the Undertaking. These measures may include:
    - i. Visits to the site by the MS SHPO, claimant Federally-recognized Tribes, and other affected parties, as appropriate;
    - ii. Formally evaluate the archaeological site for NRHP-eligibility;
    - iii. Explore potential avoidance alternatives;
    - iv. Develop and implement a mitigation plan in consultation and concurrence with the MS SHPO, claimant Federally-recognized Tribes, and other affected parties, as appropriate, including procedures for disinterment and re-interment.
  - b. Initial Determination of nature of discovered Human Remains when from Federal Lands (Native American or Other)
    - i. USACE, in consultation with the MS SHPO and claimant Federally-recognized Tribes, whether they are Signatories to this Agreement or not, and other affected parties, may consult with a qualified physical anthropologist, forensic scientist, or other experts as may be needed to examine and assess the discovery. Unless the remains were inadvertently removed, the evaluation will be conducted at the site of discovery. Other than for crime scene investigation, no excavation, examination, photographs, or analysis of Native American human remains or remains suspected of being Native American will be conducted or allowed by USACE archaeologists or any other professional without first consulting with the claimant Federally-recognized Tribes, whether they are Signatories to this Agreement or not. The consulting expert will be allowed to draw and measure the exposed remains and associated funerary objects. Drawings cannot be published in any form or shown as part of scholarly presentations without the written permission of the appropriate Tribes or next living descendant.
    - ii. USACE, in consultation with the MS SHPO, claimant Federally-Recognized Tribes, and other affected parties, as appropriate, whether they are Signatories to this Agreement or not, will have seven (7)-days to determine if the skeletal remains are human, the degree to which they were disturbed, and if possible, using reasonable measures to assess their potential age, cultural affiliation, and identity, without any further disturbance. Upon making a determination or at the end of the seven (7)-days, whichever comes first, USACE will notify the appropriate affected parties of its findings. This notification will include pertinent information as to kinds of human remains, funerary objects, Native American sacred objects, or Native American items of cultural patrimony discovered, their condition, and the circumstances of their inadvertent discovery.
    - iii. If the remains are determined NOT to be Native American in origin, USACE will follow the principals outlined in the 2007 ACHP "Policy Statement Regarding Treatment Of Burial Sites, Human Remains and Funerary Objects" to respectfully treat the remains and determine proper disposition, disinterment, re-interment, and memorialization, as well as any Real Estate guidance at the time of the discovery.

- c. Initiating NAGPRA Consultation following Inadvertent Discoveries/Recovery of Human Remains from Federal Lands
  - i. For the purposes of notification and consultation of an inadvertent discovery, USACE considers the Consulting Tribes, and Federally-recognized Tribes who have identified the County/Parish as an area of interest are likely to be cultural affiliated with inadvertently discovered NAGPRA items found on a specific Work Item.
  - ii. Upon certification of an inadvertent discovery of NAGPRA items by the responsible Federal official, the USACE shall notify the consulting Federally-recognized Tribes. This notification will be made via email and telephone call to the appropriate consulting Tribes' Primary POC within twenty-four (24) hours, and include concurrent hard copy written notification, via regular mail. Notifications shall include a copy of the field documentation and a list of all other parties being notified.
  - iii. No later than three (3) days after the email and telephone notification, the consulting Federally-recognized Tribes and/or claimant Federally-recognized Tribe shall agree to a date and time for a teleconference to begin the consultation process.
- d. Consultation for Inadvertent Discoveries//Recovery of Human Remains from Federal Lands that are Native American
  - i. Consultation will begin with the teleconference with all consulting Federally-recognized Tribes and/or claimant Federally-recognized Tribe. At this time both parties may determine that the cause of the inadvertent discovery is not on-going, that the location where the discovery occurred is secure (or can be secured), and that the NAGPRA items do not need to be removed.
  - ii. If all consulting parties participating in the consultation reach the same conclusion under A above, then the USACE will issue a written notice to all parties concluding that the location of the inadvertent discovery is secure and that the NAGPRA items will be left in place. If any consulting parties disagree with this assessment, then consultation will progress with all consulting parties including the signatories to this Agreement.
  - iii. If consensus is not attained, the USACE will notify, in writing, all consulting Federally-recognized Tribes of its intent to complete consultation with a written plan of action in accordance with 43 CFR § 10.5(e). The USACE will produce a NAGPRA plan of action which details the steps it will follow to complete the NAGPRA consultation process (43 CFR § 10.5(e)). This plan will contain a) a list of all materials considered to be NAGPRA items, b) the planned treatment, care, and handling of the materials, c) any planned recording of the find location as an archaeological site, d) any analysis planned for the remains, e) and a description of any anticipated summary reports. USACE and the consulting Federally-recognized Tribes will create a template plan of action to be on file.
  - iv. Within thirty (30) days of receipt of notice to consult and the action plan, the consulting Federally-recognized Tribes agree to provide a summary response containing the names and contact info for any potential lineal descendants, recommendations on any topics that should be included in consultation, request for any additional consultation meetings, recommendations for any treatment actions for the location of the discovery, and a list of any items that should be considered as NAGPRA items. Submission of this report does not preclude on-going discussion on any of these topics as consultation progresses.

- v. Based on the responses received, USACE may choose to update and resubmit the plan of action to all consulting parties, but at a minimum will notify all consulting parties in writing of its intent to implement the plan of action previously presented to the consulting parties.
  - vi. At the conclusion of implementation of the plan of action, USACE will provide all of the consulting parties, in writing, copies of the draft Notice of Intended Disposition, and will provide the consulting parties thirty (30) days to comment.
- e. Process to Determine Disposition of Native American Human Remains from Federal Lands
- i. Once the thirty (30) days has commenced after providing the consulting parties with the draft copy of the Notice of Intended Disposition, and considering all comments, USACE will publish the Notice of Intended Disposition in a newspaper of general circulation in the local area, and also in a newspaper of general circulation in the local area for the Tribes. Both notices will be published a second time, at least one week later.
  - ii. Copies of the Notice of Intended Disposition, as well as a description of when and where it was published, will be provided to the National Parks Service, National NAGPRA program.
  - iii. USACE anticipates that during the notice period described above, discussions will begin with the appropriate claimant Federally-recognized Tribe/s regarding disposition. Disposition will generally take the form of a physical transfer of custody and reburial on USACE lands, or the claimant Federally-recognized Tribe/s may choose to rebury privately once the Tribe assumes control over the NAGPRA items.
2. Non-Federal Lands: If human remains are recovered *from State or other private land*, USACE will require that Mississippi laws are followed, as outlined by state statute. As requested and to the extent of its legal authority, USACE will support the state lead (Designated Authority) in following the State's processes related to discovery, disposition, disinterment, re-interment, and memorialization.
- a. Mississippi: Mississippi statutes related to the discovery of human remains are collected below.
    - i. Burial Excavation Permits (Native American only). Miss. Code §§ 25-59-1, 39-7-19 (1972, as amended);
    - ii. Abandoned Cemeteries, House Bill 780. <https://www.mdah.ms.gov/historic-preservation/archaeology/permits>
    - iii. For unanticipated discoveries on private, county, or state land in Mississippi, which are Native American, The Chief Archaeologist is the lead authority and will consult with USACE, Tribe(s), landowner, and descendants as appropriate to determine the necessary course of action.
  - b. Regardless of state, if the human remains recovered are determined to be Native American, USACE, in conjunction with the NFS, will identify and secure a mutually

agreeable reburial location in which to reinter the human remains removed from the project area. Other arrangements may be defined at the time it is determined that Native American human remains have been recovered, but will include at a minimum:

- i. In person consultation regarding the human remains and any objects;
  - ii. The identification of a reburial location as close to the disinterment location as feasible;
  - iii. A commitment on the part of USACE to facilitate the reburial by an affiliated Tribe and to protect the human remains and associated grave goods, at no cost to the Federally-recognized Tribes, or the MS SHPO.
  - iv. Acknowledgment of the establishment of the cemetery in the administrative record and in the real estate records as determined best at time of reburial.
- c. If the remains are determined NOT to be Native American in origin, USACE will follow the principals outlined in the 2007 ACHP "Policy Statement Regarding Treatment Of Burial Sites, Human Remains and Funerary Objects" to respectfully treat the remains and determine proper disposition, disinterment, re-interment, and memorialization, as well as any USACE real estate guidance at the time of the discovery.

## **X. Provisions for Post-Review Discoveries (Non-Human Remains)**

- A.** USACE is responsible for complying with 36 C.F.R. § 800.13(a) in the event of inadvertent discoveries of Historic Properties during implementation of the Project. Discoveries of previously unidentified Historic Properties or unanticipated adverse effects to known Historic Properties are not anticipated, however if there is an inadvertent discovery or unanticipated effect, USACE will ensure that the following stipulations are met. These provisions will be included in all construction, operations, and maintenance plans and project managers will brief field personnel.
- B.** If previously unreported properties that may be eligible for nomination to the NR or that may be of significance to Federally-recognized Tribes, and/or, if unanticipated effects on historic properties are found during the construction phase, USACE will implement the provisions outlined below that are intended to ensure that the Undertaking is in compliance with all applicable federal and state laws and regulations, including Section 106 of the NHPA:
- C.** If there is no reasonable expectation that the property contains human remains, funerary objects, Native American sacred objects, or Native American objects of cultural patrimony, all work within a fifty (50) meter (164 ft.) radius buffer zone must stop immediately. If Human Remains are located or suspected, provision of Stipulation IX will be followed. USACE will notify SHPO and Federally-recognized Tribes, as appropriate, as well as any other affected party, of the discovery, and implement interim measures to protect the discovery from theft and vandalism. Construction may continue outside the fifty (50) meter (164 ft.) radius buffer zone. Within seventy-two (72) hours of receipt of notification of the discovery, USACE, as appropriate, will:
- 1. Inspect the work site to determine the extent of the discovery and ensure that work activities have halted within the fifty (50) meter (164 ft) radius buffer zone;
  - 2. Clearly mark the area of the discovery;
  - 3. Implement additional measures, as appropriate, to protect the discovery from theft and vandalism; and

4. Provide an initial assessment of the site's condition and eligibility to the MS SHPO and appropriate Federally-recognized Tribes; and
  5. Notify other Consulting Parties, if applicable, of the discovery.
- D.** If USACE, in consultation with the MS SHPO, Consulting Tribes, and other Consulting Parties, as appropriate, determines the site is either isolated, does not retain integrity sufficient for listing on the NRHP, or will not be further disturbed by construction activities, construction may resume within the fifty (50) meter (164 ft) radius buffer zone.
- E.** If USACE determines that the cultural resource site or artifact either is, or may be, eligible for inclusion on the NRHP, USACE will consult with the MS SHPO, Consulting Tribes, and other Consulting Parties, as appropriate, regarding appropriate measures for site treatment pursuant to 36 C.F.R. § 800.6(a). The MS SHPO and Tribes will have seven (7)-days to provide their objections or concurrence on the proposed actions. These measures may include:
1. Formal archaeological evaluation of the site;
  2. Visits to the site by SHPO and/or Consulting Tribes;
  3. Exploration of potential alternatives to avoid the site;
  4. Preparation and implementation of a mitigation plan by USACE in consultation and concurrence with the SHPO, Consulting Tribes, and other Consulting Parties, as appropriate.
- F.** The notified Consulting Parties will have seven (7)-days following notification to provide comment regarding USACE's determination of the NRHP eligibility of the discovery.
- G.** A report of findings describing the background history leading to and immediately following the reporting and resolution of an inadvertent discovery will be prepared by USACE within thirty (30)-days of the resolution of each inadvertent discovery.
- H.** USACE will communicate the procedures to be observed with its contractors and personnel.
- I.** USACE will provide Notice to Proceed to the contractor to work in the area. Notices to Proceed may be issued by USACE for individual construction segments, defined by USACE in its construction specifications, after the identification and evaluation of historic properties has been completed.

## **XI. DISPUTE RESOLUTION**

- A.** Should any Signatory or Concurring Party to this Agreement object at any time to any actions proposed or the manner in which the terms of this Agreement are implemented, the USACE shall consult with such party to resolve the objection. If USACE determines that such objection cannot be resolved, the USACE will forward all documentation relevant to the dispute, including the USACE's proposed resolution, to the ACHP. The ACHP shall provide USACE with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, Signatories, and Invited Signatories, and provide them with a copy of this written response. The USACE will then proceed according to its final decision.



- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) - day time period, the USACE may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, USACE shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories and Invited Signatories to the Agreement, and provide them and the ACHP with a copy of such written response.
- C. The USACE's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged.

## **XII. SEVERABILITY, WITHDRAWAL, AND TERMINATION**

- A. The SHPO or any Invited Signatory may withdraw from this PA after providing USACE written notice ninety (90) calendar days prior to its withdrawal. USACE shall consult with the withdrawing party to identify any mutually acceptable measures that would avoid the party's withdrawal. If mutually acceptable measures are identified that would require amendment to the PA, USACE will go through the amendment procedures outlined in Stipulation XIII.
- B. In the case of SHPO withdrawal, the PA would no longer apply within that SHPO's state and USACE would comply with 36 CFR Part 800 for all undertakings previously subject to this PA in that state. In the case of an Invited Signatory withdrawing from the PA, USACE would consult with that Tribe pursuant to 36 CFR Part 800 for all undertakings previously subject to this PA that would have the potential to affect historic properties of religious and cultural significance to the Tribe. This PA would remain in effect in all other jurisdictions and for all other parties.
- C. Signatories and Invited Signatories, who execute this Agreement, may terminate this Agreement by providing thirty (30) days written notice to the other Signatories, provided that the Signatories consult during this period to seek amendments or other actions that would prevent termination. If this Agreement is terminated, USACE shall comply with Section 106 through other applicable means pursuant to 36 CFR Part 800. Upon such determination, USACE shall provide all other Signatories and ACHP with written notice of the termination of this Agreement.
- D. A Consulting Tribe may notify the other Signatories that it is fully withdrawing from participation in the Agreement. Following such a withdrawal, USACE shall review Undertakings that may affect historic properties of religious and cultural significance to the Consulting Tribe in accordance with 36 CFR §§ 800.3 through 800.7, 36 CFR § 800.8(c), or an applicable alternative under 36 CFR § 800.14. Withdrawal from this Agreement by a Consulting Tribe does not otherwise terminate the Agreement. At any time that this Agreement remains in effect, a Consulting Tribe that has withdrawn from the Agreement may notify USACE and SHPO in writing that it has elected to participate again in the agreement.
- E. In the event any provision of this Agreement is deemed by a Federal court to be contrary to, or in violation of, any applicable existing law or regulation of the United States of America, only the conflicting provision(s) shall be deemed null and void, and the remaining provisions of the Agreement shall remain in effect.

## **XIII. AMENDMENTS**

- A. The Undertaking  
May not be subject to amending if the scope and nature of the Undertaking is altered, modified, or changed to such a degree that it no longer reflects the scope and nature of the Undertaking

as defined and detailed in the Yazoo Backwater SEIS II, currently listed in Appendix A and Stipulation I.E.

**B. Body of the Programmatic Agreement:**

May be amended when such an amendment is agreed to in writing by all Signatories and Invited Signatories. The amendment will be effective on the date a copy signed by all of the Signatories and Invited Signatories is filed with the ACHP.

**C. Appendices:**

May be amended at the request of USACE or another Signatory or Invited Signatory in the following manner:

1. USACE, on its own behalf or on behalf of another Signatory or Invited Signatory, shall notify the Signatories of the intent to modify the current Appendix or Appendices and shall provide a draft of the updated Appendix or Appendices to all Signatory parties.
2. If no Signatory or Invited Signatory objects in writing within thirty (30) days of receipt of USACE's proposed modification, USACE shall date and sign the amended Appendix and provide a copy of the amended Appendix to the other Signatories. Such an amendment shall go into effect on the date USACE transmits the amendment to the other Signatories.

3. Current List of Appendices:

- a. Appendix A: Proposed Work Items
- b. Appendix B: Point of Contacts (POC)
- c. Appendix C: (Reserved)
- d. Appendix D: Heritage Study Structure
- e. Appendix E: Treatment Measures

**D. Any Amendments to the Body of the Agreement or the Appendices, shall be posted to the websites currently tracking the implementation of the Undertaking.**

## **XIV. DURATION**

- A.** The Agreement shall expire ten (10) years from the date of the last signature. One (1) year prior to the expiration of the Agreement, the USACE shall review the Agreement in order to determine whether it should be reissued or allowed to expire. If the Agreement requires reissue, the USACE shall consult with the Consulting Parties, as well as amend the Agreement in order to ensure compliance with the most current version of the Federal regulations implementing the NHPA.
- B.** The Signatories and Invited Signatories may collectively agree to extend this Agreement to cover additional calendar years, or portions thereof, through an amendment provided that the original Agreement has not expired.

## **XV. ANTI-DEFICIENCY ACT**

USACE's obligations under this Agreement are subject to the availability of appropriated funds, and the stipulations of this Agreement are subject to the provisions of the Anti-Deficiency Act. USACE shall make reasonable and good faith efforts to secure the necessary funds to implement this Agreement in its entirety. If compliance with the Anti-Deficiency Act alters or impairs USACE's ability

to implement the stipulations of this Agreement, USACE shall consult in accordance with the amendment procedures found at Stipulation XIII and termination procedures found at Stipulation XII.

## **XVI. EXECUTION AND IMPLEMENTATION**

- A.** Nothing in this Agreement is intended to prevent the USACE from consulting more frequently with the Consulting Parties concerning any questions that may arise or on the progress of any actions falling under or executed by this Agreement.
- B.** This Agreement shall be executed in counterparts, with a separate page for each Signatory, and shall become effective on the date the agreement is signed by or filed with the ACHP.
- C.** USACE shall ensure that each Signatory and Invited Signatory is provided with an electronic (pdf) and physical copies of the Agreement including signatures. USACE shall provide electronic copies of additional executed signature pages to the Consulting Parties as they are received. USACE shall provide a complete copy of the Agreement with original signatures to any Signatory on request.
- D.** Execution of this Agreement by the USACE (Vicksburg District), the Mississippi SHPO (Signatories), the Mississippi Band of Choctaw Indians, the Quapaw Nation, The Chickasaw Nation, and The Choctaw Nation of Oklahoma (Invited Signatories), and the Mississippi Levee Board and the Muscogee (Creek) Nation (Concurring Parties) and implementation of its terms evidence that USACE has taken into account the effects of this undertaking on historic properties and afforded ACHP a reasonable opportunity to comment on USACE's Proposed Actions at MRL Features.

**SIGNATORY PAGE**

**PROGRAMMATIC AGREEMENT**

**AMONG THE  
U.S. ARMY CORPS OF ENGINEERS (USACE) VICKSBURG DISTRICT;  
THE CHICKASAW NATION;  
THE CHOCTAW NATION OF OKLAHOMA;  
THE MISSISSIPPI BAND OF CHOCTAW INDIANS;  
THE QUAPAW NATION;  
THE MUSCOGEE (CREEK) NATION;  
THE MISSISSIPPI STATE HISTORIC PRESERVATION OFFICER;  
AND THE MISSISSIPPI LEVEE BOARD;  
REGARDING  
THE YAZOO BACKWATER PROJECT**

**U.S. Army Corps of Engineers, Vicksburg District (CEMVK)**



Robert A. Hilliard  
Colonel, Corps of Engineers  
District Commander

Date: \_\_\_\_\_

**SIGNATORY PAGE**

**PROGRAMMATIC AGREEMENT**

**AMONG THE  
U.S. ARMY CORPS OF ENGINEERS (USACE) VICKSBURG DISTRICT;  
THE CHICKASAW NATION;  
THE CHOCTAW NATION OF OKLAHOMA;  
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THE QUAPAW NATION;  
THE MUSCOGEE (CREEK) NATION;  
THE MISSISSIPPI STATE HISTORIC PRESERVATION OFFICER;  
AND THE MISSISSIPPI LEVEE BOARD;  
REGARDING  
THE YAZOO BACKWATER PROJECT**

**The Mississippi State Historic Preservation Officer**



Katie Blount  
Mississippi State Historic Preservation Officer

Date: 1-14-2021

**INVITED SIGNATORY PAGE**

**AMONG THE  
U.S. ARMY CORPS OF ENGINEERS (USACE) VICKSBURG DISTRICT;  
THE CHICKASAW NATION;  
THE CHOCTAW NATION OF OKLAHOMA;  
THE MISSISSIPPI BAND OF CHOCTAW INDIANS;  
THE QUAPAW NATION;  
THE MUSCOGEE (CREEK) NATION;  
THE MISSISSIPPI STATE HISTORIC PRESERVATION OFFICER;  
AND THE MISSISSIPPI LEVEE BOARD;  
REGARDING  
THE YAZOO BACKWATER PROJECT**

**Chickasaw Nation**

Nothing in this Agreement shall be construed to waive the sovereign rights of the Chickasaw Nation, its officers, employees, or agents.

\_\_\_\_\_  
Bill Anoatubby, Governor  
Chickasaw Nation

Date: \_\_\_\_\_

**INVITED SIGNATORY PAGE**

**PROGRAMMATIC AGREEMENT**

**AMONG THE  
U.S. ARMY CORPS OF ENGINEERS (USACE) VICKSBURG DISTRICT;  
THE CHICKASAW NATION;  
THE CHOCTAW NATION OF OKLAHOMA;  
THE MISSISSIPPI BAND OF CHOCTAW INDIANS;  
THE QUAPAW NATION;  
THE MUSCOGEE (CREEK) NATION;  
THE MISSISSIPPI STATE HISTORIC PRESERVATION OFFICER;  
AND THE MISSISSIPPI LEVEE BOARD;  
REGARDING  
THE YAZOO BACKWATER PROJECT**

**The Choctaw Nation of Oklahoma**

Nothing in this Agreement shall be construed to waive the sovereign rights and immunities of the Choctaw Nation of Oklahoma, its officers, employees, or agents.

Date: \_\_\_\_\_

\_\_\_\_\_  
Gary Batton, Chief  
Choctaw Nation of Oklahoma

**INVITED SIGNATORY PAGE**

**PROGRAMMATIC AGREEMENT**

**AMONG THE  
U.S. ARMY CORPS OF ENGINEERS (USACE) VICKSBURG DISTRICT;  
THE CHICKASAW NATION;  
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THE MISSISSIPPI BAND OF CHOCTAW INDIANS;  
THE QUAPAW NATION;  
THE MUSCOGEE (CREEK) NATION;  
THE MISSISSIPPI STATE HISTORIC PRESERVATION OFFICER;  
AND THE MISSISSIPPI LEVEE BOARD;  
REGARDING  
THE YAZOO BACKWATER PROJECT**

**THE QUAPAW NATION**

Date: \_\_\_\_\_

\_\_\_\_\_  
Joseph T. Byrd,  
Quapaw Nation Chairman



**INVITED SIGNATORY PAGE**

**PROGRAMMATIC AGREEMENT**

**AMONG THE  
U.S. ARMY CORPS OF ENGINEERS (USACE) VICKSBURG DISTRICT;  
THE CHICKASAW NATION;  
THE CHOCTAW NATION OF OKLAHOMA;  
THE MISSISSIPPI BAND OF CHOCTAW INDIANS;  
THE QUAPAW NATION;  
THE MUSCOGEE (CREEK) NATION;  
THE MISSISSIPPI STATE HISTORIC PRESERVATION OFFICER;  
AND THE MISSISSIPPI LEVEE BOARD;  
REGARDING  
THE YAZOO BACKWATER PROJECT**

**Mississippi Band of Choctaw Indians**

\_\_\_\_\_  
Ben Cyrus, Chief

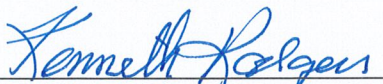
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**CONCURRING PARTY SIGNATORY PAGE**

PROGRAMMATIC AGREEMENT

AMONG THE  
U.S. ARMY CORPS OF ENGINEERS (USACE) VICKSBURG DISTRICT;  
THE CHICKASAW NATION;  
THE CHOCTAW NATION OF OKLAHOMA;  
THE MISSISSIPPI BAND OF CHOCTAW INDIANS;  
THE QUAPAW NATION;  
THE MISSISSIPPI STATE HISTORIC PRESERVATION OFFICER;  
AND THE MISSISSIPPI LEVEE BOARD;  
REGARDING  
THE YAZOO BACKWATER PROJECT

Mississippi Levee Board



Kenneth Rodgers, President, Board of Commissioners

Date: 1-14-2021

**CONCURRING PARTY SIGNATORY PAGE**

**PROGRAMMATIC AGREEMENT  
AMONG THE  
U.S. ARMY CORPS OF ENGINEERS (USACE) VICKSBURG DISTRICT;  
THE CHICKASAW NATION;  
THE CHOCTAW NATION OF OKLAHOMA;  
THE MISSISSIPPI BAND OF CHOCTAW INDIANS;  
THE QUAPAW NATION;  
THE MUSCOGEE (CREEK) NATION;  
THE MISSISSIPPI STATE HISTORIC PRESERVATION OFFICER;  
AND THE MISSISSIPPI LEVEE BOARD;  
REGARDING  
THE YAZOO BACKWATER PROJECT**

**Muscogee (Creek) Nation**

\_\_\_\_\_  
David Hill, Principal Chief

Date: \_\_\_\_\_

## **Appendix A: Proposed Work Items Yazoo Backwater Agreement As of 11 December 2020**

The project descriptions below include the latest information regarding Work Items that will be reviewed in accordance with this Agreement. These items are subject to change as additional information and analyses are conducted. In addition, Work Items may be added from other project authorities, but only for alteration or enhancement of the Yazoo Backwater features. USACE maintains a project website for the SEIS effort for Yazoo Backwater (<https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Project-Management/Yazoo-Backwater-Report>) with current information and previous environmental documentation and will post the completed Agreement there.

The Proposed Plan includes structural, nonstructural, and mitigation features as discussed below.

### **1. *Structural Features:***

- A 14,000 cubic feet per second (cfs) pump station, consisting of twelve pumps, located near Deer Creek, with a year-round pump elevation of 87.0 feet, National Geodetic Vertical Datum (NGVD) 1929, when the riverside water elevation is greater than the landside water elevation at the Steele Bayou water control structure.
- Current operation of the Steele Bayou water control structure within the Yazoo Study Area during low flow periods would remain the same, maintaining the water levels in the Yazoo Study Area between 68.5 and 70.0 feet, NGVD.
- The pump station would be operated according to a pump station operation manual. The pumps would be natural gas driven. The pumps could not be instantaneously turned on all at the same time nor would all the pumps be utilized every time stages were predicted to exceed elevation 87.0 feet, NGVD. Other factors that would have to be accounted for would be the forecast of inflows due to Mississippi River conditions, interior conditions (stages and ground conditions) and forecasted flood and weather conditions. The availability of natural gas as the power sources would reduce the carbon footprint of operating the pump station and the initial capital cost of the project.

### **2. *Nonstructural Features:***

- Acquisition and reforestation/conservation features on up to 2,700 acres of agricultural lands through perpetual easements from willing sellers only. Securing this conservation feature on lands below elevation 87.0 feet, NGVD, would remove these lands from future economic damages resulting from flooding and therefore flood reduction benefits would be gained as a result of this nonstructural feature. Conservation features are practices implemented and maintained solely for wildlife management purposes.
- Conservation features include, but are not necessarily limited to (1) water management impoundments for waterfowl, wading birds, or other wildlife purposes; (2) food plots; (3) permanent openings maintained in early successional stages; (4) access trails, roads, and firebreaks; or (5) facilities and buildings necessary for property management (constructed above the 100-year floodplain elevation).

### **3. *Mitigation Features:***

- Acquisition of 2,405 acres of frequently flooded agricultural lands, at or below the 2- year floodplain, in fee title, and subsequent reforestation of these lands would be pursued to offset any unavoidable losses to wetlands, terrestrial, waterfowl, and a portion of the aquatic resources.
- Installation of 34 supplemental low flow groundwater wells within 30,000 feet of the Mississippi River channel and upstream of the Yazoo Study Area which would deliver a maximum of 5.0 cfs during traditionally low flow periods. The supplemental low flow groundwater wells would mitigate for remaining unavoidable losses to aquatic resources attributed to deprivation of an adequate oxygen supply.



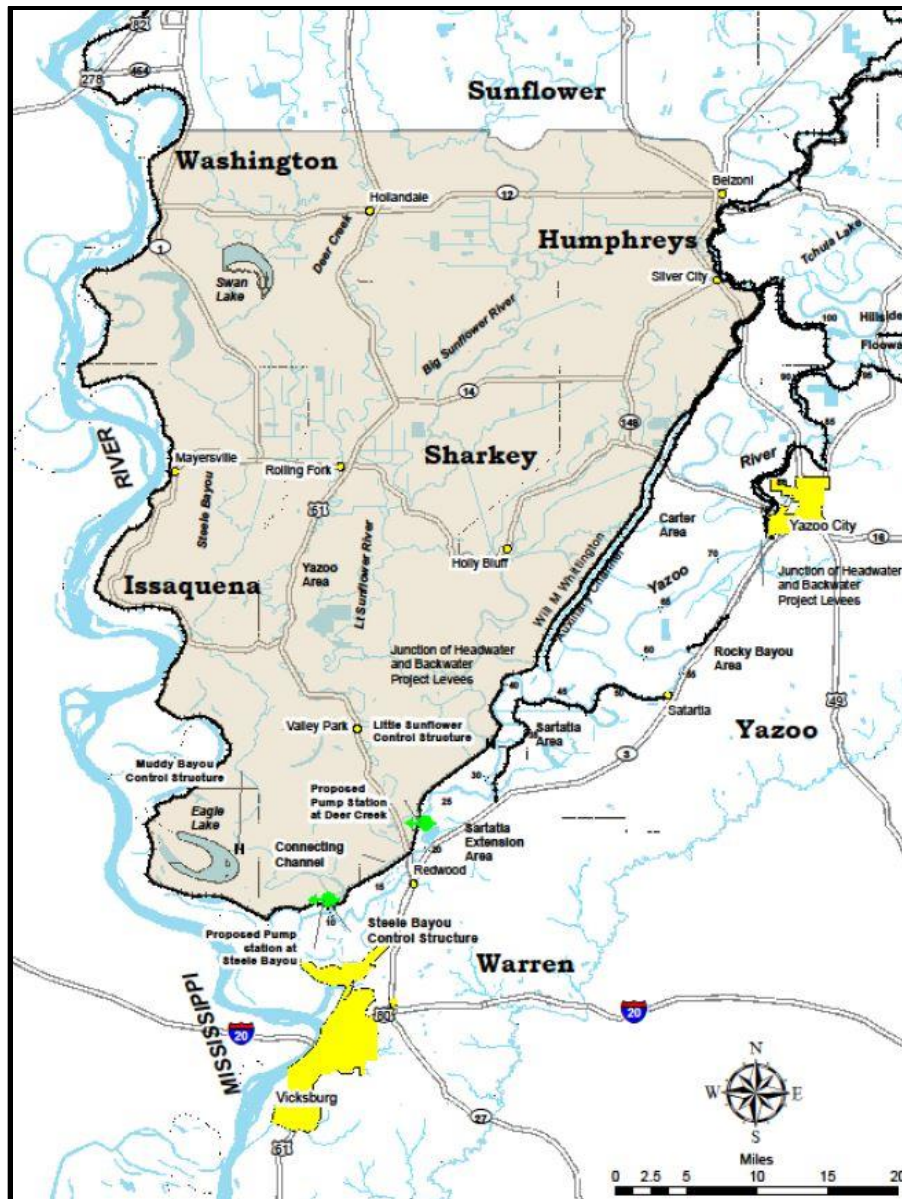


Figure A-1. Yazoo Backwater Area and Five Subareas.

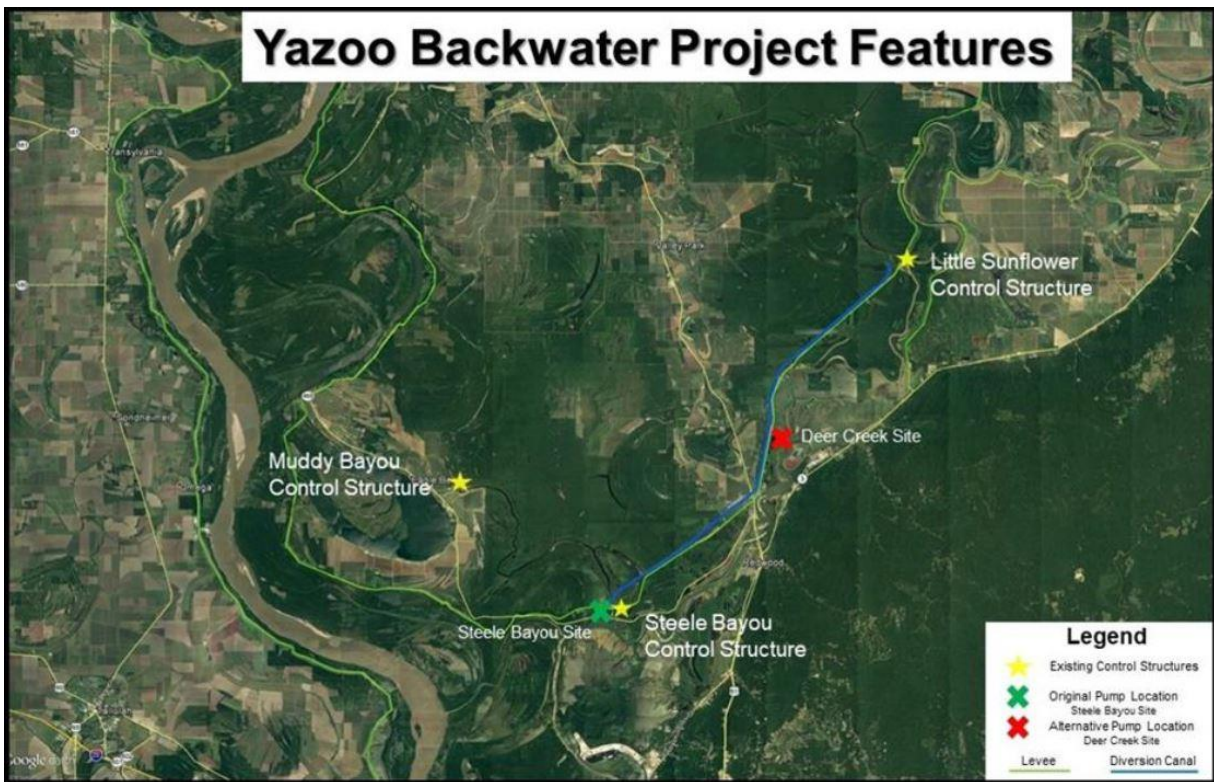


Figure A-2. Completed features of the Yazoo Basin, Yazoo Backwater Project Area.

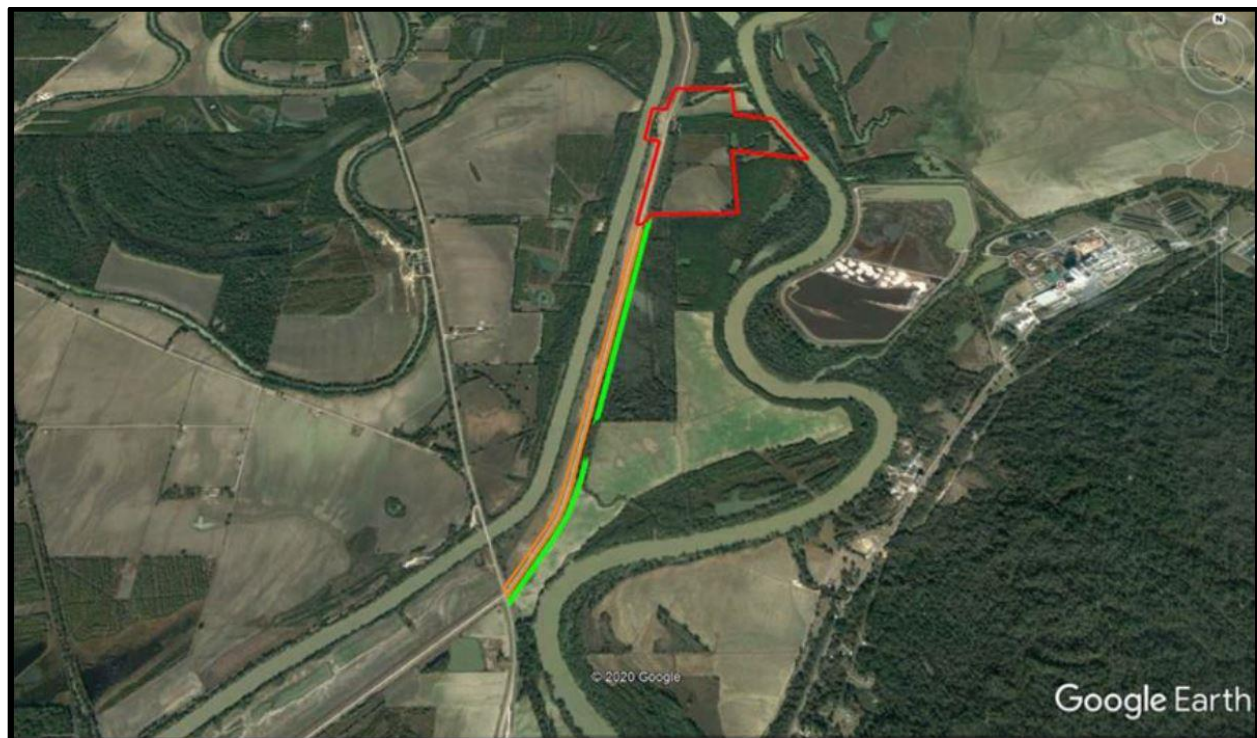


Figure A-3. Pump station (Red), Access Road (Orange), and Utilities (Green) Right-of-Ways.





Figure A-4. Borrow Area and Access Road Right-of-Ways.

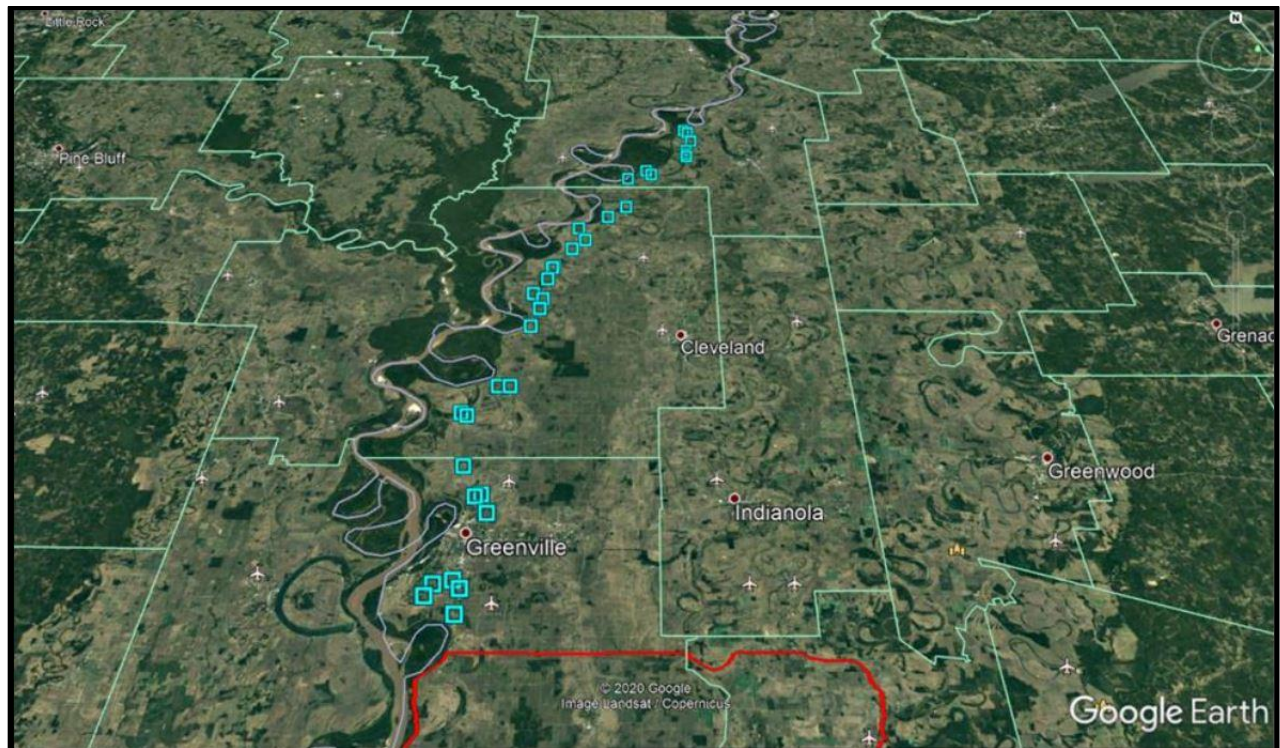


Figure A-5. Locations of the 34 Supplemental Low Flow Groundwater Wells in Relation to the Yazoo Study Area.

**Coordinate Information for Proposed Well Locations:** (all coordinates using WGS 84 Datum)

YBP-HB-RB-1 (Coahoma County)

Latitude: 34.273325

Longitude: -90.703394

UTM (Zone 15): Easting = 711425 Northing = 3794849

YBP-HB-RB-2 (Coahoma County)

Latitude: 34.266272

Longitude: -90.695509

UTM (Zone 15): Easting = 712169 Northing = 3794083

YBP-HB—RB-3 (Coahoma County)

Latitude: 34.239646

Longitude: -90.689430

UTM (Zone 15): Easting = 712796 Northing = 3791142

YBP-HB-HB-4 (Coahoma Count)

Latitude: 34.209698

Longitude: -90.698882

UTM (Zone 15): Easting = 712000 Northing = 3787801

YBP-HB-HB-5 (Coahoma County)

Latitude: 34.199029

Longitude: -90.701078

UTM (Zone 15): Easting = 711825 Northing = 3786613

YBP-HB-HB-6 (Coahoma County)

Latitude: 34.191527

Longitude: -90.699784

UTM (Zone 15): Easting = 711963 Northing = 3785784

YBP-HP-HP-7 (Coahoma County)

Latitude: 34.148420

Longitude: -90.782139

UTM (Zone 15): Easting = 704476 Northing = 3780834

YBP-HP-HP-8 (Coahoma County)

Latitude: 34.1317671

Longitude: -90.771853

UTM (Zone 15): Easting = 705451 Northing = 3779663

YBP-HP-MS-10 (Bolivar & Coahoma Counties)

Latitude: 34.125550

Longitude: -90.818169

UTM (Zone 15): Easting = 701208 Northing = 3778226

YBP-HP-SB-12 (Bolivar County)

Latitude: 34.046181

Longitude: -90.820778



UTM (Zone 15):                Easting = 701155    Northing = 3769418

YBP-HP-EB-13 (Bolívar County)

Latitude:                    34.019554

Longitude:                  -90.854977

UTM (Zone 15):               Easting = 698060    Northing = 3766398

YBP-BP-BP-14 (Bolívar County)

Latitude:                    33.989223

Longitude:                  -90.908447

UTM (Zone 15):               Easting = 693191    Northing = 3762932

YBP-BP-BP-15 (Bolívar County)

Latitude:                    33.959868

Longitude:                  -90.8595028

UTM (Zone 15):               Easting = 694497    Northing = 3759702

YBP-BP-BP-16 (Bolívar County)

Latitude:                    33.937774

Longitude:                  -90.918054

UTM (Zone 15):               Easting = 692419    Northing = 3757208

YBP-BP-LB-18 (Bolívar County)

Latitude:                    33.892194

Longitude:                  -90.951117

UTM (Zone 15):               Easting = 689463    Northing = 3752092

YBP-BP-LB-19 (Bolívar County)

Latitude:                    33.865807

Longitude:                  -90.957512

UTM (Zone 15):               Easting = 688930    Northing = 3749154

YBP-BP-LB-20 (Bolívar County)

Latitude:                    33.894604

Longitude:                  -90.947902

UTM (Zone 15):               Easting = 689756    Northing = 3752365

YBP-BP-LB-22 (Bolívar County)

Latitude:                    33.832277

Longitude:                  -90.979902

UTM (Zone 15):               Easting = 686932    Northing = 3745394

YBP-BP-LB-23 (Bolívar County)

Latitude:                    33.820262

Longitude:                  -90.962468

UTM (Zone 15):               Easting = 688572    Northing = 3744093

YBP-BP-LB-24 (Bolívar County)

Latitude:                    33.799166

Longitude:                  -90.966098

UTM (Zone 15):                      Easting = 688282    Northing = 3741747

YBP-BP-SB-26 (Bolivar County)

Latitude:                      33.7611244

Longitude:                      -90.978348

UTM (Zone 15):                      Easting = 687230    Northing = 3737519

YBP-DC-SB-27 (Bolivar County)

Latitude:                      33.641581

Longitude:                      -90.019729

UTM (Zone 15):                      Easting = 683652    Northing = 3724175

YBP-DC-BB-28 (Bolivar County)

Latitude:                      33.641458

Longitude:                      -90.000552

UTM (Zone 15):                      Easting = 685431    Northing = 3724195

YBP-DC-DC-29 (Bolivar County)

Latitude:                      33.592799

Longitude:                      -90.071932

UTM (Zone 15):                      Easting = 678911    Northing = 3718673

YBP-DC-DC-30 (Bolivar County)

Latitude:                      33.587776

Longitude:                      -90.062583

UTM (Zone 15):                      Easting = 679789    Northing = 3718132

YBP-DC-WB-32 (Washington County)

Latitude:                      33.501512

Longitude:                      -90.055510

UTM (Zone 15):                      Easting = 680625    Northing = 3708578

YBP-MC-MC-33b (Washington County)

Latitude:                      33.453028

Longitude:                      -90.032072

UTM (Zone 15):                      Easting = 682904    Northing = 3703243

YBP-BB-HB-34 (Washington County)

Latitude:                      33.456199

Longitude:                      -90.023326

UTM (Zone 15):                      Easting = 683710    Northing = 3703610

YBP-BB-HB-35 (Washington County)

Latitude:                      33.427554

Longitude:                      -90.011716

UTM (Zone 15):                      Easting = 684850    Northing = 3700454

YBP-MC-No8-39 (Washington County)

Latitude: 33.326338

Longitude: -90.072216

UTM (Zone 15): Easting = 679433 Northing = 3689124

YBP-MC-No6-40 (Washington County)

Latitude: 33.331386

Longitude: -90.046192

UTM (Zone 15): Easting = 681845 Northing = 3689729

YBP-MC-No8-41 (Washington County)

Latitude: 33.310524

Longitude: -90.081628

UTM (Zone 15): Easting = 678589 Northing = 3687354

YBP-MC-No6-43 (Washington County)

Latitude: 33.286261

Longitude: -90.037283

UTM (Zone 15): Easting = 682768 Northing = 3684741

YBP-MC-No6-44 (Washington County)

Latitude: 33.320182

Longitude: -90.035270

UTM (Zone 15): Easting = 682885 Northing = 3688506

YBP-Borrow Area (Issaquena County)

Latitude: 32.461796

Longitude: -90.897512

UTM (Zone 15): Easting = 697612 Northing = 3593562

Pumping Station (Warren County)

Latitude: 32.539337

Longitude: -90.798895

UTM (Zone 15): Easting = 706701 Northing = 3602355

YBW FEATURES		
<b>Pumping Plant Area</b>	<b>acres</b>	
Access ROW Limits	25.07	
Utility ROW Limits	10.54	
Pump Station Limits	95.96	

Pump Station ROW Limits (does not include the pump station limits, therefore total pump station ROW is 211.76ac (95.96ac + 115.80ac = 211.76ac))	115.80 (total = 211.76)	
<b>TOTAL</b>	<b>247.37 acres</b>	
<b>Borrow Area</b>	<b>acres</b>	
Access ROW Limits	9.74	
Borrow Area ROW Limits	35.92	
<b>TOTAL</b>	<b>45.66 acres</b>	
<b>Well Areas</b>	<b>acres</b>	<b>Access Road acres</b>
YBP-HB-RB-1 (Ritchies Bayou)	1.25	0.01
YBP-HB-RB-2 (Ritchies Bayou)	1.25	0.47
YBP-HB-RB-3 (Ritchies Bayou)	0.75	0.52
YBP-HB-HB-4 (Harris Bayou)	1.04	0.40
YBP-HB-HB-5 (Harris Bayou)	0.75	0.38
YBP-HB-HB-6 (Harris Bayou)	0.51	
YBP-HP-HP-7 (Hushpuckena River)	0.75	0.05
YBP-HP-HP-8 (Hushpuckena River)	1.00	0.21
YBP-HP-MS-10 (McNeil Slough)	1.05	
YBP-HP-SB-12 (Upper Stokes Bayou)	1.25	0.13
YBP-HP-EB-13 (Edwards Bayou)	0.75	
YBP-BP-BP-14 (Bogue Phalia)	0.50	0.03
YBP-BP-BP-15 (Bogue Phalia)	1.25	0.95
YBP-BP-BP-16 (Bogue Phalia)	1.00	0.03
YBP-BP-LB-18 (Lane Bayou)	1.25	0.14
YBP-BP-LB-19 (Lane Bayou, Charlie Capp WMA)	0.75	0.42
YBP-BP-LB-20 (Lane Bayou)	1.25	0.32
YBP-BP-LB-22 (Laban Bayou)	1.01	0.15
YBP-BP-LB-23 (Laban Bayou)	0.75	0.09
YBP-BP-LB-24 (Laban Bayou)	1.25	0.12
YBP-BP-SB-26 (Lower Stokes Bayou)	0.50	2.02
YBP-DC-SB-27 (Straight Bayou)	1.02	0.23
YBP-DC-BB-28 (Browns Bayou)	0.75	0.25
YBP-DC-DC-29 (Deer Creek)	0.75	1.69
YBP-DC-DC-30 (Deer Creek)	0.75	0.04
YBP-DC-WB-32 (Williams Bayou)	0.75	0.06
YBP-MC-MC-33b (Main Canal)	1.01	0.05
YBP-BB-HB-34 (Horseshoe Bayou)	0.75	1.72
YBP-BB-HB-35 (Horseshoe Bayou)	1.01	0.29
YBP-MC-No8-39 (Ditch No8)	0.75	0.03
YBP-MC-No6-40 (Ditch No6)	0.75	0.61
YBP-MC-No8-41 (Ditch No8)	0.75	0.45
YBP-MC-No9-43 (Ditch No9)	0.75	0.22
YBP-MC-No6-44 (Ditch No6)	1.25	0.11
<b>TOTAL</b>	<b>30.90 acres</b>	<b>12.19 acres</b>

## Appendix B: Point of Contacts (POC)

### CONTACT INFORMATION FOR SIGNATORIES AND FEDERALLY RECOGNIZED TRIBES

Signatories shall provide USACE with updated contact information as it becomes available, and revisions to this Table will be made without an amendment to this Agreement. This Table will be updated annually by USACE and included in the Annual Report.

Some will be all email (excepting reports) others will be all paper. Just a matter of capturing so that district archaeologist/TL has the right tool to communicate in the future.

<b>Federally-Recognized Tribes</b>	
<b>Caddo Nation</b>  <u>Primary:</u> Derrick Hill, THPO Caddo Nation 117 Memorial Lane Binger, OK 73009 (405) 656-2344 <a href="mailto:dhill@mycaddonation.com">dhill@mycaddonation.com</a>  Method of contact for project notification and documentation: email to Primary contact email.  Method of contact for other communication: email, phone call	<b>Caddo Nation</b>  <u>Secondary:</u> Tamara Francis Fourkiller, Chairman Caddo Nation PO Box 487 Binger, OK 73009 <a href="mailto:tffourkiller.cn@gmail.com">tffourkiller.cn@gmail.com</a>
<b>Chickasaw Nation</b>  <u>Primary:</u> Karen Brunso, THPO Division of Historic Preservation PO Box 1548 Ada, Oklahoma 74821 (580) 272-1106 <a href="mailto:Karen.Brunso@chickasaw.net">Karen.Brunso@chickasaw.net</a>  <a href="mailto:HPO@chicksaw.net">HPO@chicksaw.net</a>  Method of contact for project notification and documentation: email to <a href="mailto:HPO@chicksaw.net">HPO@chicksaw.net</a> .  Method of contact for other communication: email, phone call	<b>Chickasaw Nation</b>  <u>Secondary:</u> Bill Anoatubby, Governor PO Box 1548 Ada, Ok 74821 (580) 436-2603
<b>Choctaw Nation of Oklahoma</b>	<b>Choctaw Nation of Oklahoma</b>

<p><u>Primary:</u>  Ian Thomson  Historic Preservation Department  Choctaw Nation of Oklahoma  P.O. Box 1210  Durant, OK 74702  (580) 924-8280  <a href="mailto:ithompson@choctawnation.com">ithompson@choctawnation.com</a></p> <p>Lindsey D. Bilyeu, MS  Senior Compliance Review Officer  <a href="mailto:lbilyeu@choctawnation.com">lbilyeu@choctawnation.com</a></p> <p>Method of contact for project notification and documentation: email Senior Compliance Review Officer with a copy to THPO.</p> <p>Method of contact for other communication: email, phone call</p>	<p><u>Secondary:</u>  Gary Batton, Chief  Choctaw Nation of Oklahoma  Attn: Choctaw Nation Historic Preservation Department  P.O. Box 1210  Durant, OK 74702-1210  (800) 522-6170  <a href="mailto:gbatton@choctawnation.com">gbatton@choctawnation.com</a></p>
<p><b>Jena Band of Choctaw Indians</b></p> <p><u>Primary:</u>  Alina J. Shively, THPO  Jena Band of Choctaw Indians  PO Box 14  Jena, LA 71342  (318) 992-1205  <a href="mailto:ashively@jenachoctaw.org">ashively@jenachoctaw.org</a></p> <p>Method of contact for project notification and documentation: email to Primary contact.</p> <p>Method of contact for other communication: email, phone call</p>	<p><b>Jena Band of Choctaw Indians</b></p> <p><u>Secondary:</u>  B. Cheryl Smith, Chief  Jena Band of Choctaw Indians  1052 Chanaha Hina Street  Trout, LA 71371  (318) 992-2717  <a href="mailto:chief@jenachoctaw.org">chief@jenachoctaw.org</a></p>
<p><b>Mississippi Band of Choctaw Indians</b></p>	<p><b>Mississippi Band of Choctaw Indians</b></p>

<p><u>Primary:</u> Ken Carleton, Tribal Archeologist Mississippi Band of Choctaw Indians 101 Industrial Road Choctaw, MS 39350 (601) 656-5251 <a href="mailto:ken.carleton@choctaw.org">ken.carleton@choctaw.org</a></p> <p>Method of contact for project notification and documentation: email to Primary contact.</p> <p>Method of contact for other communication: email, phone call</p>	<p><u>Secondary:</u> Ben Cyrus, Chief Mississippi Band of Choctaw Indians 101 Industrial Road Choctaw, MS 39350 (601) 656-5251 <a href="mailto:info@choctaw.org">info@choctaw.org</a></p>
<p><b>Muscogee (Creek) Nation</b></p> <p><u>Primary:</u> Ms. Corain Lowe-Zepeda, THPO Muscogee (Creek) Nation Historic &amp; Cultural Preservation Department P.O. Box 580 Okmulgee, OK 74447 (918) 732-7733 <a href="mailto:clowe@mcn-nsn.gov">clowe@mcn-nsn.gov</a> <a href="mailto:Section106@mcn-nsn.gov">Section106@mcn-nsn.gov</a></p> <p>Method of contact for project notification and documentation: email to <a href="mailto:Section106@mcn-nsn.gov">Section106@mcn-nsn.gov</a> and a copy to the Primary contact.</p> <p>Method of contact for other communication: email, phone call</p>	<p><b>Muscogee (Creek) Nation</b></p> <p><u>Secondary:</u> Principal Chief, David Hill Muscogee (Creek) Nation Historic &amp; Cultural Preservation Office P.O. Box 580 Okmulgee, OK 74447</p> <p>LeeAnne Wendt, Tribal Archaeologist Muscogee (Creek) Nation Historic &amp; Cultural Preservation Department P.O. Box 580 Okmulgee, OK 74447 Telephone: (918) 732-7852 <a href="mailto:LWendt@mcn-nsn.gov">LWendt@mcn-nsn.gov</a></p>
<p><b>Quapaw Nation</b></p> <p><u>Primary:</u></p>	<p><b>Quapaw Nation</b></p> <p><u>Secondary:</u></p>

<p>Everett Bandy, Historic Preservation Officer  Quapaw Nation Historic Preservation Program  PO Box 765  Quapaw, O.K. 74363-0765  Telephone: (918) 238-3100  <a href="mailto:ebandy@quapawnation.com">ebandy@quapawnation.com</a></p> <p>Routine: Section email.  Section106@quapawnation.com / specific  responses directed to THPO.</p> <p>Method of contact for project notification and  documentation: hard copy letter directly to  THPO (post-pandemic) and email to Primary  contact. In the meantime, continue email.</p> <p>Method of contact for other communication:  email, phone call</p>	<p>Joseph T. Byrd,  Quapaw Nation Chairman  PO Box 765  Quapaw, O.K. 74363-0765  <a href="mailto:joseph.byrd@quapawnation.com">joseph.byrd@quapawnation.com</a></p> <p>Follow guidance in letter. CC to Chairman</p>
<p><b>Tunica-Biloxi Tribe of Louisiana</b></p> <p><u>Primary:</u>  Mr. Earl J. Barbry, Jr., THPO  Tunica-Biloxi Tribal Historic Preservation  Office  151 Melancon Drive  Marksville, LA 71351  Telephone: (800) 272-9767, ext. 6451  <a href="mailto:earlji@tunica.org">earlji@tunica.org</a></p> <p>Method of contact for project notification and  documentation: email to Primary Contact.</p> <p>Method of contact for other communication:  email, phone call</p>	<p><b>Tunica-Biloxi Tribe of Louisiana</b></p> <p><u>Secondary:</u>  Chairman Marshall Pierite  Tunica-Biloxi Tribe of Louisiana  151 Melancon Drive  Marksville, LA 71351  Telephone: (318) 253-9767  <a href="mailto:marshallpierite@tunica.org">marshallpierite@tunica.org</a></p>
<p><b>SHPOS &amp; Other Non-Federal Organizations</b></p>	
<p><b>Advisory Council on Historic Preservation</b></p>	<p><b>Advisory Council on Historic Preservation</b></p>



<p><u>Primary:</u> Christopher Daniel, Program Analyst Advisory Council on Historic Preservation 401 F Street NW, Suite 308 Washington DC 20001-2637 (202) 517-0223 e106@achp.gov; <a href="mailto:cdaniel@achp.gov">cdaniel@achp.gov</a></p> <p>Method of contact for project notification and documentation: email to <a href="mailto:e106@achp.gov">e106@achp.gov</a> and copy to Primary contact email.</p> <p>Method of contact for other communication: email, phone call</p>	<p><u>Secondary:</u> Tom McCulloch Assistant Director Office of Federal Agency Programs Advisory Council on Historic Preservation 401 F. Street NW, Suite 308 Washington, DC 20001-2637 (202) 517-0222 <a href="mailto:tmcculloch@achp.gov">tmcculloch@achp.gov</a></p> <p>Method of contact for project notification and documentation: email to <a href="mailto:e106@achp.gov">e106@achp.gov</a> and copy to Primary contact email.</p> <p>Method of contact for other communication: email, phone call</p>
<p><b>Mississippi Department of Archives and History</b></p> <p><u>Primary:</u> Hal Bell, Review and Compliance Officer State Historic Preservation Office Mississippi Department of Archives and History Historic Preservation Division P.O. Box 571 Jackson, Mississippi 39205-0571 Telephone: Office (601) 576-6957 <a href="mailto:hbelle@mdah.ms.gov">hbelle@mdah.ms.gov</a></p> <p>Method of contact for project notification and documentation: email at <a href="mailto:section106@mdah.ms.gov">section106@mdah.ms.gov</a> with a copy to the Primary and Secondary contact.</p> <p>Archaeological Site Forms: Submit to via email</p> <p>Reports: Hard copy and PDF on CD</p> <p>Method of contact for other communication: email, phone call</p>	<p><b>Mississippi Department of Archives and History</b></p> <p><u>Secondary:</u> Cindy Carter-Davis, Chief Archaeologist State Historic Preservation Office Mississippi Department of Archives and History Historic Preservation Division P.O. Box 571 Jackson, MS 39205-0571 Telephone(office): 601-576-6945 E-mail: <a href="mailto:ccarterdavis@mdah.ms.gov">ccarterdavis@mdah.ms.gov</a></p>
<p><b>Mississippi Levee Board</b></p> <p><u>Primary:</u> Peter Nimrod, Chief Engineer Mississippi Levee Board</p>	<p><b>Mississippi Levee Board</b></p> <p><u>Secondary:</u> Robert (Bobby) Thompson, Assistant Engineer Mississippi Levee Board</p>

<p>P.O. Box 637 Greenville, MS 38701 (662) 334-4813 <a href="mailto:peter@msleveeboard.com">peter@msleveeboard.com</a></p> <p>Method of contact for project notification and documentation: email to <a href="mailto:peter@msleveeboard.com">peter@msleveeboard.com</a>.</p> <p>Method of contact for other communication: email, phone call</p>	<p>P.O. Box 637 Greenville, MS 38701 (662) 334-4813 <a href="mailto:bobby@msleveeboard.com">bobby@msleveeboard.com</a></p>
<p align="center"><b>U.S. Army Corps of Engineers (USACE) Districts</b></p>	
<p><b>New Orleans District (CEMVN)</b></p> <p><u>Primary</u> Jason A. Emery, Cultural Resources RTS and District Tribal Liaison CEMVN-PDS-N 4700 Leake Ave. New Orleans, LA 70118 (504) 862-2364 <a href="mailto:Jason.a.emery@usace.army.mil">Jason.a.emery@usace.army.mil</a></p> <p>Method of contact for project notification and documentation: email or receipt of hard copy</p> <p>Method of contact for other communication: email, phone call</p>	<p><b>New Orleans District (CEMVN)</b></p> <p><u>Secondary:</u> Edward P. Lambert Chief, Environmental Compliance Branch Regional Planning and Environmental Division South, USACE 167 N. Main St., Room B-202, Memphis, TN 38103-1894 Telephone: Office (901)544-0707 Mobile (901) 634-2461 E-mail: <a href="mailto:Edward.P.Lambert@usace.army.mil">Edward.P.Lambert@usace.army.mil</a></p>
<p><b>USACE Vicksburg District (CEMVK)</b></p> <p><u>Primary Tribal:</u> Kristen Camp, District Tribal Liaison CEMVK-PP-D 4155 East Clay Street Vicksburg, MS 39183 (601) 631-7934 <a href="mailto:Kristen.F.Camp@usace.army.mil">Kristen.F.Camp@usace.army.mil</a></p> <p><u>Primary Cultural:</u> John R. Underwood, Archeologist CEMVK-PDS-N 4155 East Clay Street Vicksburg, MS 39183 (601) 631-5017 <a href="mailto:john.r.underwood@usace.army.mil">john.r.underwood@usace.army.mil</a></p>	<p><b>USACE Vicksburg District (CEMVK)</b></p> <p><u>Secondary:</u> Edward P. Lambert Chief, Environmental Compliance Branch Regional Planning and Environmental Division South, USACE 167 N. Main St., Room B-202, Memphis, TN 38103-1894 Telephone: Office (901)544-0707 Mobile (901) 634-2461 E-mail: <a href="mailto:Edward.P.Lambert@usace.army.mil">Edward.P.Lambert@usace.army.mil</a></p>

## Appendix C: (Reserved)

## **Appendix D: Heritage Study**

As provided in Stipulation VII E. of this Agreement, a heritage study will be developed by USACE after discussions with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, and will be documented in writing. USACE will provide the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, with the opportunity to concur on the proposed scope/plan. This scope shall identify the natural, cultural, historic and scenic resources of the Yazoo Backwater as they combine to form a cohesive, nationally distinctive landscape that has arisen from patterns of human activity shaped by geography.

The scope shall identify, at a minimum and as appropriate: the responsible party/entity that will implement and complete the proposed work; the scope of work and the standards that will apply to the preparation and distribution of a deliverable; the deliverable(s) (e.g. the quantity, approximate size, materials, content, final ownership/copyrights); any professional qualifications that will be required to prepare deliverable(s) described in the scope; the repositories and/or parties that will receive copies of a deliverable and the disposition of any deliverable that is not curated; points when USACE, agent or contractor, SHPO/THPO, and/or Federally-recognized Tribes, and other consulting parties, as appropriate, will be given the opportunity to review and comment on the deliverable; and timeframes for each review and deliverable.

USACE will provide written notice to the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, within sixty (60) days of the completion of the scope. Any dispute regarding the implementation of this study will be resolved following the process set out in Stipulation XI, Dispute Resolution.

This Appendix may be amended in accordance with the process set out in Stipulation XIII of this Agreement for amending appendices.

## Appendix E: Treatment Measures

As provided in Stipulation VII B. 7, if an Undertaking may adversely affect a historic property, USACE may propose to resolve the adverse effect through the application of one or more of the Treatment Measures set out below. The selected measures will be developed by USACE after discussions with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, and will be documented in writing (in a Treatment Plan). USACE will provide the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, with the opportunity to concur on the proposed Treatment Measures as set out in Stipulation VII.B.

The Treatment Plan shall identify, at a minimum and as appropriate: the responsible party/entity that will implement and complete each treatment measure; the scope of work and the standards that will apply to the preparation and distribution of a deliverable; the deliverable(s) (e.g. the quantity, approximate size, materials, content, final ownership/copyrights); measures to ensure that any treatment measure documenting the condition of or requiring the data recovery on the historic property is implemented before the property is adversely affected; any professional qualifications that will be required to prepare deliverable(s) described in the Treatment Measure(s); the repositories and/or parties that will receive copies of a deliverable and the disposition of any deliverable that is not curated; points when USACE, NFS, agent or contractor, SHPO/THPO, and/or Federally-recognized Tribes, and other consulting parties, as appropriate, will be given the opportunity to review and comment on the deliverable; and timeframes for each review and deliverable.

USACE will provide written notice to the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, within sixty (60) days of the completion of the Treatment Measures as required by Stipulation VII. B. USACE shall include information pertaining to the progress of and completion of all Treatment Measures in the annual report pursuant to Stipulation III. USACE Roles and Responsibilities.

Any dispute regarding the implementation of a Treatment Plan will be resolved following the process set out in Stipulation XI, Dispute Resolution.

This Appendix may be amended in accordance with the process set out in Stipulation XIII of this Agreement for amending appendices.

**\*\*Reminder\*\*** should there be human remains associated with/anticipated during implementation of a Treatment Plan, review Stipulation IX Treatment of Human Remains to ensure accepted protocols are followed.

If USACE, in consultation with the MS SHPO, Federally-recognized Tribes, and other consulting parties, determines that a treatment measure, including Alternative Mitigation\*, *not included* in the list below is in the public interest and is the most appropriate means to resolve an adverse effect, USACE will initiate consultation to develop an MOA or a Programmatic Agreement as set out in Stipulation VII.B.

\*Alternate Mitigation means something alternative to either the location or the action that is agreed to be a meaningful offsetting of the adverse effects. Easy examples are for survey of lands unaffected by the project in exchange for no mitigation/data recovery for the specified archaeological site. Agencies have a difficult time justifying the funding for these actions, unless it can clearly be demonstrated to be in the public interest.

## List of Treatment Measures:

1. **PHOTOGRAPHIC RECORDATION:** USACE, in consultation with the MS SHPO, and/or, Federally-recognized Tribe(s), and other consulting parties, will select the photographic medium or mediums from the options described below and identify a list of photographs that will serve to document the historic property that will be adversely affected by an Undertaking. The photographic specifications set out below were previously determined by USACE, in consultation with the appropriate SHPO, to meet archival standards and are provided for guidance. Photographic images may include existing drawings and plans. If the parties determine that it is in the public interest to document a property through the preparation of measured drawings, USACE will initiate consultation to develop an MOA.
- A. **Recordation for Standing Structures (Flexible Standards):** The responsible entity will **ensure that a trained professional** photograph the exterior and/or interior, if it is accessible, in the selected photographic format(s) with an emphasis on documenting those portions of the exterior and/or interior that will be altered. The trained professional will take photographs of the views identified by USACE, in consultation with the NFS, agent or contractor, MS SHPO, and/or Federally-recognized Tribe(s), and other consulting parties, as appropriate, and will print specifically identified images
  1. Digital Photography: The digital photography and color photographs must comply with the “Best” category of requirements from the National Register Photo Policy Fact Sheet:  
[http://www.nps.gov/nr/publications/bulletins/photopolicy/Photo\\_Policy\\_update\\_2013\\_05\\_15.pdf](http://www.nps.gov/nr/publications/bulletins/photopolicy/Photo_Policy_update_2013_05_15.pdf), with the following additional requirements:
    - Image files must be saved as both TIFF and JPEG files.
    - Color images must be produced in RGB (Red/Green/Blue) color mode as 24-bit or 48-bit color files.
    - In addition to the requirements specified by the latest National Register Photo Policy, photographs will be digitally labeled to state the address (name of facility, street number, street name, city, and state); date of photograph; description of view, including direction of camera; and name of photographer/agency.
  2. 35mm Black/White and Color Photography: Photographs must be taken with a 35MM SLR Camera or a 35 MM point-and-shoot camera using 35 MM black/white or color film. Photographs taken with disposable cameras are not acceptable.
    - The 35 mm film black/white or color film photography package will include one (1) full set of 35mm film black/white or color photographs printed on acid free paper specifically designed for color prints, the corresponding 35mm film negatives in acid free sleeves.
    - Photographs will be labeled in pencil on the back to state the address, name of facility, street number, street name, city, and state; date of photograph; description of view, including direction of camera; and name of photographer/agency.
  3. Large Format Photography: Photographs must be taken with a large-format view camera with ample movement for perspective correction. The minimal complement of lenses includes a sharp rectilinear wide angle, a normal, and a mildly telephoto lens.
    - Acceptable film formats are 4x5, 5x7, and 8x10. Acceptable polyester-based films include those of medium and slow speed (100 and 400 ASA) produced by Kodak, Ilford, and others.

- The large format film photography package will include one (1) full set of 4 x 5 or 5 x 7-inch photographs printed on acid free paper, the corresponding 4 x 5 or 5 x 7-inch negatives in acid free sleeves.
  - Photographs will be labeled in pencil on the back to state the address name of facility, street number, street name, city, and state; date of photograph; description of view, including direction of camera; and name of photographer/agency.
4. Video: A video documentary regarding the historic property may include on-camera interviews, archival footage and/or images, current footage of the historic property, and current footage of other similar historic properties. The content and length of the video will be described in the treatment measure.
  5. Narrative History: A narrative history may be prepared to provide a context for the photographs following the Historic American Building Survey (HABS) Historical Reports: Short or Outline format.
  6. Recordation Package: The recordation package will include a photo log, printed copies of selected photographs, digital copies of photographs, and may include a narrative history. The recordation package may include reproductions of historic photographs, existing building plans, contemporary sketch plans, and/or maps. All materials will be packaged in archival sleeves and boxes. Archival disks will be used for all digital materials.
  7. Review: The responsible entity may informally consult with USACE and SHPO, and/or Tribe(s) to select photographs and other images that will be included in the recordation materials. The process to review and finalize the photographs and other images will be described in the treatment measure.
  8. Distribution: The responsible entity will prepare a minimum of three archival quality copies of the recordation materials and will forward two copies to MS SHPO and one copy to the U.S. Army Corps of Engineers, Office of History, Humphreys Engineer Center. In consultation with the NFS, MS SHPO, and/or Federally-recognized Tribe(s), and other consulting parties, as appropriate, may identify additional archives and/or parties that will receive copies of the recordation materials. The responsible entity will provide USACE with documentation confirming that the recordation materials have been archived as described in the treatment measure.

**B. Recordation for Standing Structures (Established Standards):** The treatment plan will document the proposed Level and Standard that will be most appropriate to capturing the significance of the historic property prior to alteration and define the responsible entity. Choices will be made between the **Historic American Building Standards (HABS)**, the **Historic American Engineering Standards (HAER)**; or the **Historic American Landscape Standards (HALS) at Level III, Level II or Level I**. During the development of the Treatment Plan USACE will coordinate with the NPS, MS SHPO and appropriate Federally-recognized Tribe(s), as necessary to make the selection. For any project requiring recordation to any of these standards, USACE will ensure that a trained professional photograph the exterior and/or interior, if it is accessible, in the selected standard with an emphasis on documenting those portions of the historic property that will be altered or demolished. The trained professional will take photographs of the views identified by USACE, in consultation with the NFS, MS SHPO, and/or the appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, and will print specifically identified images and produce the required historical narrative:

## **2. Public Interpretation**

USACE, and/or the NFS shall consult with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, to design an educational or public interpretive plan. The educational or public interpretive plan may include historical markers, signs, displays, educational pamphlets, websites, workshops, videos, and other similar mechanisms to educate the public on historic properties within the local community, state, or region. In certain instances the MS SHPO may request that the proposed historical marker conform to the requirements of the state in question, and request that the NFS apply to state programs to provide for a uniform interpretive program.

## **3. Historical Context Statements**

USACE, and/or the NFS shall consult with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate to identify the topic; audience; framework of a historic context statement; and format for the final deliverable. The context statement may focus on an individual property, a historic district, a set of related properties, or relevant themes as identified in the specific statewide preservation plan or the National Park Service's National Historic Landmark Thematic Framework.

## **4. Oral History Documentation**

USACE, and/or the NFS shall consult with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, to identify the list of potential interview candidates; the parameters of the oral history project; qualifications of the individual or individuals conducting the oral interviews; the process for any ongoing coordination with the appropriate SHPO and relevant Tribe(s); and format for the final deliverable.

## **5. Historic Property Inventory**

USACE, and/or the NFS shall consult with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, to establish the appropriate level of effort to accomplish an inventory/re-inventory. Efforts may be directed toward the resurvey of previously designated historic properties, per 36 CFR 800.16(I), which have undergone change or lack sufficient documentation, or the survey of new historic properties and/or districts that lack formal designation. The proposed treatment measure will describe the boundaries of the survey area and the data collection method in keeping with the MS SHPO's guidance for surveys and define the survey objective.

## **6. National Register and National Historic Landmark Nominations**

USACE, and/or the NFS shall consult with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, to identify the individual properties that would benefit from a completed National Register of Historic Places (NRHP) or National Historic Landmark (NHL) nomination form. Once the parties have agreed to a property, the responsible entity will continue to coordinate with USACE, the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, through the drafting of the NRHP nomination form or will contact the NHL Program to begin the nomination process. The MS SHPO and/or Federally-recognized Tribe(s) will provide adequate guidance to the responsible entity during the preparation of the nomination form. The responsible entity will work with the MS SHPO to ensure the completed



NRHP form is presented to the particular state's National Register Review Committee in a timely manner for consideration by the State Historic Preservation Officer and the Keeper of the Register.

## **7. Geo-References of Historical Maps and Aerial Photographs**

USACE, and/or the NFS shall consult with the MS SHPO, appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, to identify the historical maps and/or aerial photographs for scanning and geo-referencing. Once a list of maps and/or aerial photographs have been agreed upon, the responsible entity will continue to coordinate with USACE, the appropriate SHPO, Tribe(s), and other consulting parties, SHPO, and/or Tribe(s), and other consulting parties, as appropriate, through the scanning and geo-referencing process and will submit drafts of paper maps and electronic files to USACE, the appropriate SHPO, Tribe(s), and other consulting parties, SHPO, and/or Tribe(s), and other consulting parties, as appropriate, for review. The final deliverable produced by the responsible entity will include a 1) paper copy of each scanned image, 2) a geo-referenced copy of each scanned image, 3) original high-resolution digital image of map/aerial photograph in TIFF file format, 4) copies of the user agreements for every geo-referenced image with transferability of use to all parties, 5) a process report outlining the research, and 6) the metadata relating to both the original creation of the paper maps and the digitization process.

## **8. Archaeological Research Design and Data Recovery Plan**

USACE shall develop and implement a data recovery plan with a research design in consultation with the MS SHPO, appropriate Federally-recognized tribe(s), and other consulting parties, as appropriate, to recover data from archaeological properties listed in, or eligible for listing in the NRHP, which will be adversely affected by ground-disturbing activities that are part of the Undertaking. The research design and data recovery plan will be consistent with the Secretary of the Interior's Guidelines for Archaeological Documentation ([http://www.nps.gov/history/local-law/arch\\_stnds\\_7.htm](http://www.nps.gov/history/local-law/arch_stnds_7.htm)) ACHP's recommendations on the recovery of significant information from archaeological sites. <http://www.achp.gov/archguide.html>. All work shall conform to the most current guidelines per the MS SHPO and as augmented by Federally-recognized Tribal or other local guidelines, as provide in Stipulation VI. Standards, and, if applicable, Stipulation IX. Treatment of Human Remains and Items of Religious and Cultural Importance.

## **9. Marketing Plan for Demolition or Abandonment**

USACE, and/or the NFS shall consult with the MS SHPO, appropriate Federally-recognized tribe(s), and other consulting parties, as appropriate, to develop and implement a feasible marketing plan to advertise the availability of historic structures identified for demolition or abandonment for sale and/or relocation. A good faith and reasonable marketing plan will include publicizing and advertising the property in newspapers, magazines, and/or websites of record for a specific period of time. The plan may require the purchaser to relocate the property outside of the Special Flood Hazard Area (100-year floodplain), and the plan will give preference to a purchaser who proposes to use a professional house mover that follows the recommendations in Moving Historic Buildings by John Obed Curtis (1975, reprinted 1991 by W. Patram for the International Association of Structural Movers) or other similar updated reference material. If a good faith and reasonable marketing effort does not result in the identification of a party or parties willing to purchase and, if necessary, relocate the property, the property may be demolished or abandoned. This marketing plan will be used in conjunction with Treatment Measure I, Recordation Package. USACE will ensure that the property is recorded prior to relocation or demolition.

## 10. Salvage

The NFS or contractor shall work with USACE, the MS SHPO, and/or appropriate Federally-recognized Tribe(s), and other consulting parties, as appropriate, to identify selective architectural elements that may be salvaged from a building/structure slated for demolition. The elements will be removed at the agent or contractor's expense. The salvaged elements may be re-used in another structure or in displays for educational purposes. As an alternative, the agent or contractor, in consultation with USACE, NFS, SHPO, and/or Tribe(s), and other consulting parties will attempt to identify a private or public not-for-profit local or regional historic preservation organization interested in receiving a donation of the architectural features. The organization may sell the architectural features to the general public for the specific purpose of raising funds to support future historic preservation activities in the region. . Any income derived by the agent or contractor from the sale of architectural features may be considered project income by the program to be deducted from proceeds of the grant. Salvage activities shall not occur at or below grade in order to avoid affecting unevaluated archaeological resources.

## 11. Assessment and Reduction of Vibratory Affects

USACE, and/or the NFS shall consult with the MS SHPO, appropriate Federally-recognized tribe(s), and other consulting parties, as appropriate, to develop and implement a feasible vibratory reduction strategy. The plan will follow the best practices outlined in NCHRP 25-25, *Current Practices to Address Construction Vibration and Potential Effects to Historic Buildings Adjacent to Transportation Projects* (2012) or similar. Generalized steps are the following: 1) Consultation between historic building owner, Project Delivery Team and reviewing agencies such as SHPO and local planning departments to identify potential risks, negotiate changes and agreement on protective measures. 2) Documentation of the condition of the building prior to commencement of adjacent work, including a detailed photo survey of existing damage as specified in the particular treatment plan. 3) Establishment of vibration limits not to be exceeded based on condition of building, founding soil conditions, and type of construction vibration. 4) Implementation of protective measures at both the construction site and the historic building, which could include specific means and methods to be used and those that will not be used and as specified in the BCOES. 5) Implement regular monitoring during construction to identify damage, evaluate the efficacy of protective measures already in place and to identify and implement additional corrective steps. The results of any implemented plan will be shared with the consulting parties to the particular adverse effect and summarized in the annual plan.