DRAFT
ENVIRONMENTAL ASSESSMENT

BAYOU METO BASIN, ARKANSAS
POST GENERAL REEVALUATION DESIGN CHANGES

April 2015

PROJECT DESCRIPTION

The Bayou Meto Basin, Arkansas, General Reevaluation, project area is located in eastern Arkansas and includes portions of Lonoke, Prairie, Jefferson, Arkansas, and Pulaski Counties (Figure 1). The project includes waterfowl management, agricultural water supply, flood control, water conservation measures, fish and wildlife, and groundwater management strategies that will be implemented within the project area. A general reevaluation report (GRR) and final environmental impact statement (EIS) were prepared by the U.S. Army Corps of Engineers (USACE), Memphis and Vicksburg Districts, and circulated for public review in December 2006. The record of decision (ROD) was signed in November 2007. These documents can be viewed on the Bayou Meto Basin, Arkansas, web site at http://www.mvm.usace.army.mil/bayoumeto/index.asp

An environmental assessment (EA) was prepared in 2010 that addressed four proposed modifications to the final EIS: (1) assessment of backwater fishery impacts and mitigation requirements that were not previously addressed; (2) relocation of a project borrow site; (3) relocation of Pumping Station #1 and access road, and (4) maintaince of backwater channel connectivity. The Finding of No Significant Impacts (FONSI) for these modifications was signed in July 2010.

During the final design phase of the main canal (Canal 1000) which will move water from Pumping Station # 1 to the project area, additional modifications to the original plans were found to be required. These modifications include a re-alignment of a section of Canal 1000 (Figure 2); collection of stormwater from a low area within the pathway of the canal and piping it to Scott Bayou (Figure 3), and acquisition of additional rights-of-way (ROW) for the construction of bridge crossings at Colonel Maynard Road, Highway 161, and Highway 165 (Figure 3).

This EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), and the Council on Environmental Quality's regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation 200-2-2. The following sections include a discussion of the purpose and need for the proposed action, the authority for the proposed action, alternatives to the proposed action, important resources affected by the proposed action, and associated impacts of the proposed action.

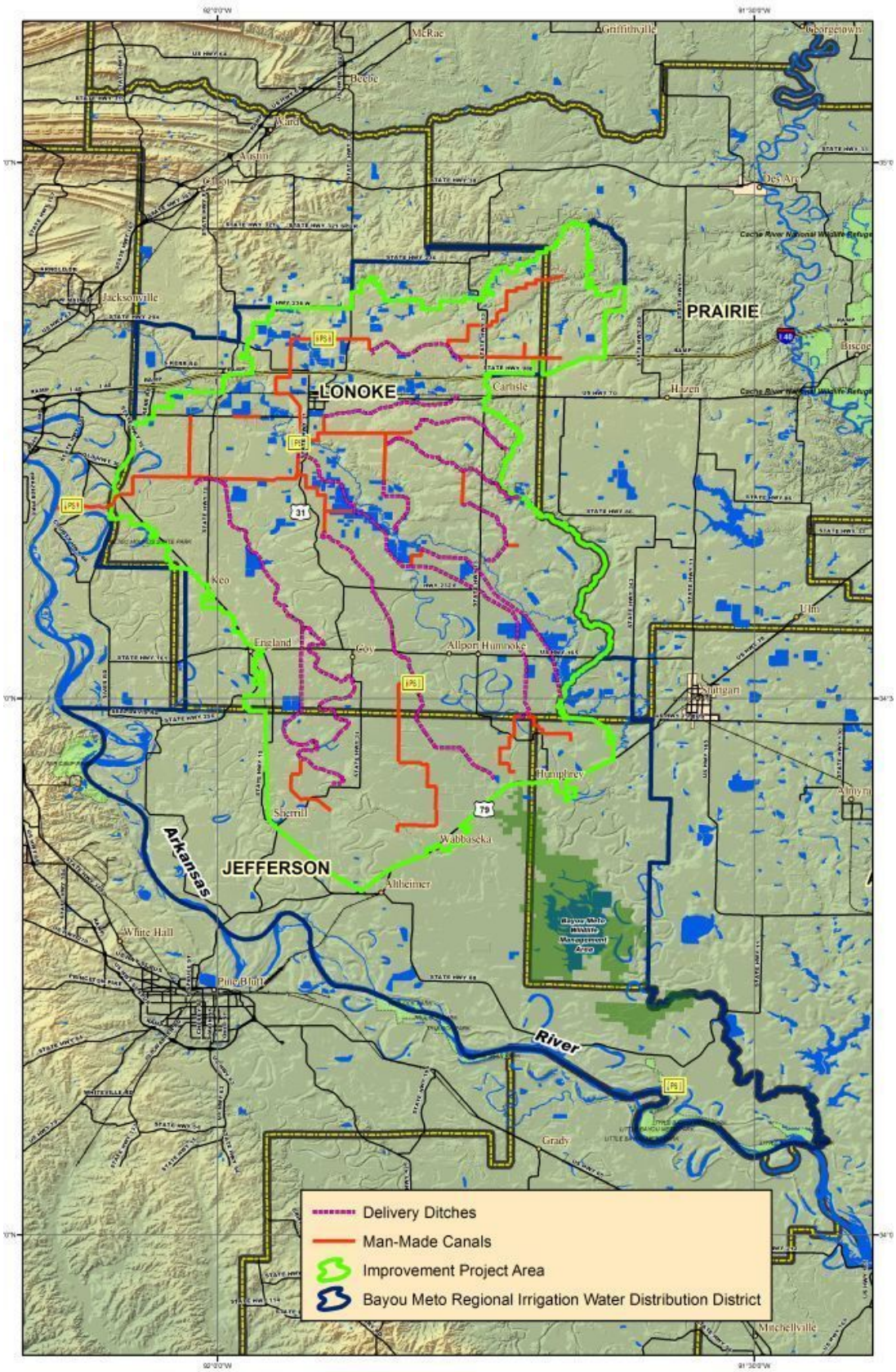

Figure 1. Location of the Bayou Meto Basin, Arkansas Project in east-central Arkansas.

NEED FOR THE PROPOSED ACTION

Purpose

The project as described in the final EIS and 404(b)(1) evaluation included construction of the canal and associated impacts to wetlands and streams within its ROW. However, during detailed planning for the construction of the canal it was determined that substantial cost savings (approximately $2.9 million) would be realized if a portion of the canal was realigned. Canal realignment would remove the need for demolition of an existing bridge and construction of a new bridge over Scott Bayou.

Additional ROW was also determined necessary for construction of the three bridges that would provide access over Canal 1000 at Colonel Maynard Road, Highway 161, and Highway 165. Bridge construction at Colonel Maynard Road and Highway 161 would each require 4.4 acres of additional ROW; 2 acres per bridge approach (4 acres total) would be permanently converted to highway ROW. The construction of the bridge at Highway 165 would require approximately 10 acres of ROW with 1.4 of the 10 acres permanently converted to highway ROW for the bridge approach.

Hydraulic analyses also determined that a low area within the canal ROW would need to be continuously drained via a sump with a pipe running from the sump area and draining into Scott Bayou.

It is important to note that this EA covers all project alterations from the date of the 2011 EA to this date. Detailed designs for project construction items are at various stages of development. No changes to the project, in addition to those disclosed in this EA, are anticipated. However, the project will continually be reviewed in order to ensure compliance with NEPA.

DESCRIPTIONS OF THE PROPOSED MODIFICATIONS

a) Realignment of Canal 1000. A reach of Canal 1000 would be adjusted to the north in order to avoid building an additional bridge over Scott Bayou (Figure 2). The impacts to bottomland hardwood forest would decrease by approximately 2.6 acres with the proposed new alignment. Approximately 5,500 feet of canal would be realigned to the north of the original location. The proposed realignment would cross agricultural land and then trend southeasterly to the crossing location at Scott Bayou, which is within the originally planned ROW described in the final EIS. The canal would then be realigned again to avoid two sharp angles in the canal west of Arkansas Highway 161. The canal then rejoins the original alignment approximately 1 mile southeast of Scott, Arkansas.

b) Acquisition of additional ROW for bridge construction. During the design of the bridges that would cross Canal 1000 at Colonel Maynard Road, Highway 161 and Highway 165, it was determined that additional land acquisition would be needed for permanent bridge construction and temporary roads to handle traffic during construction. Bridge construction at Colonel Maynard Road and Highway 161 would each require 4.4 acres of additional ROW; 2 acres per bridge approach (4 acres total) would be permanently converted to highway ROW. The construction of the bridge at Highway 165 would require approximately 10 acres of ROW with 1.4 acres of it permanently converted to highway ROW for the bridge approach.

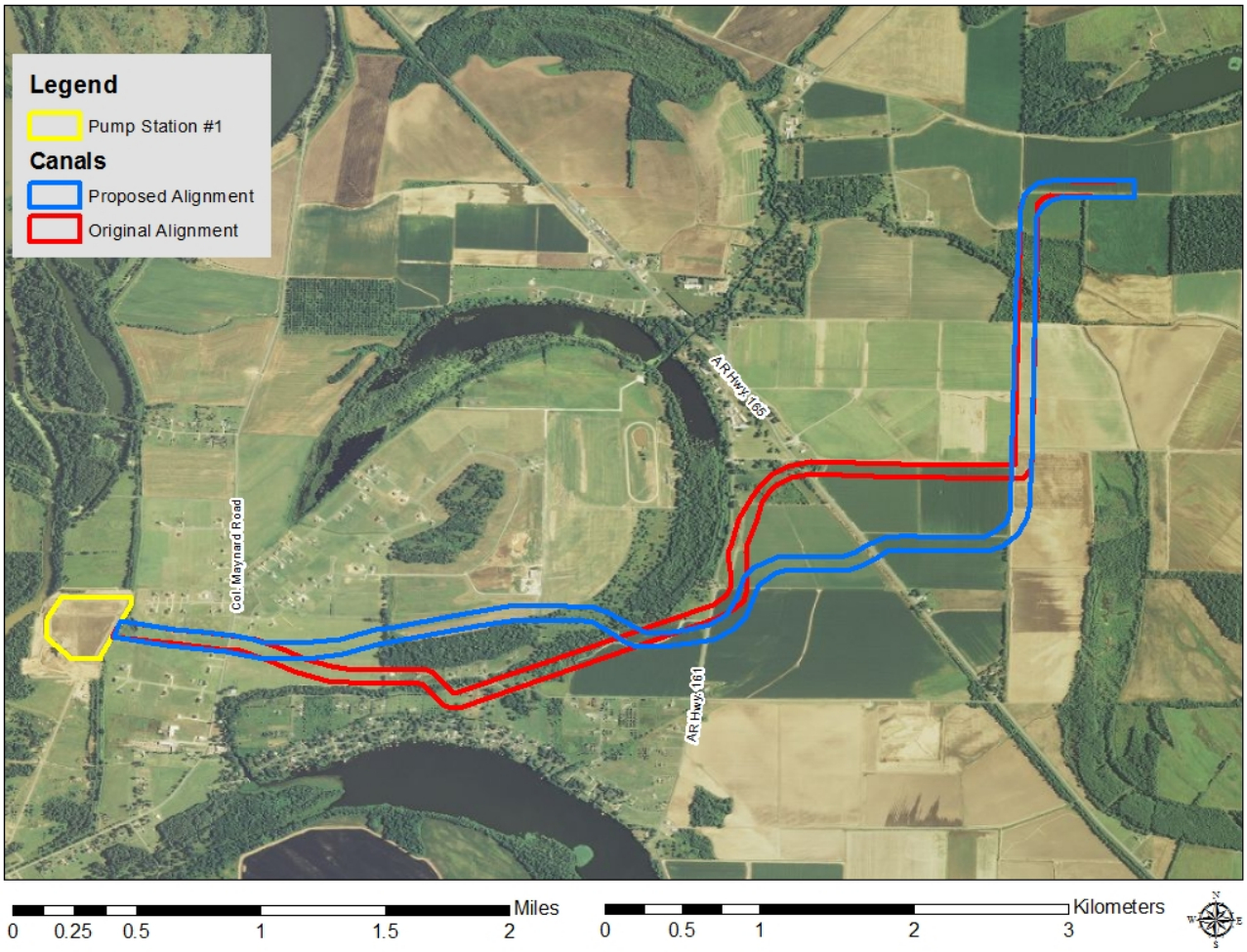

Figure 2. Location of the re-alignment of Canal 1000 near Scott, Arkansas. The proposed modification would save approximately $2,900,000 by avoiding a bridge demolition and construction of an additional bridge over Scott Bayou.

Because the bridges would be constructed before the canal is dug, there would be no need for a temporary bridge. Traffic will be diverted around the construction site using temporary roads.

c) Collection and piping of interior drainage to Scott Bayou. A hydrologic model of the existing conditions in the area of Canal 1000 ROW indicated that stormwater from several drainages flows through the area where the canal would be located before entering into Scott Bayou. It was determined that the best option to provide the required drainage was to direct the flow east under Colonel Maynard Road and then south and under Upper Steel Bend Road and into Scott Bayou (Figure 3). The majority of this drainage design would stay within the existing Canal 1000 ROW and would utilize ditches and pipes to move the water from the outlet of the siphon to the bayou.

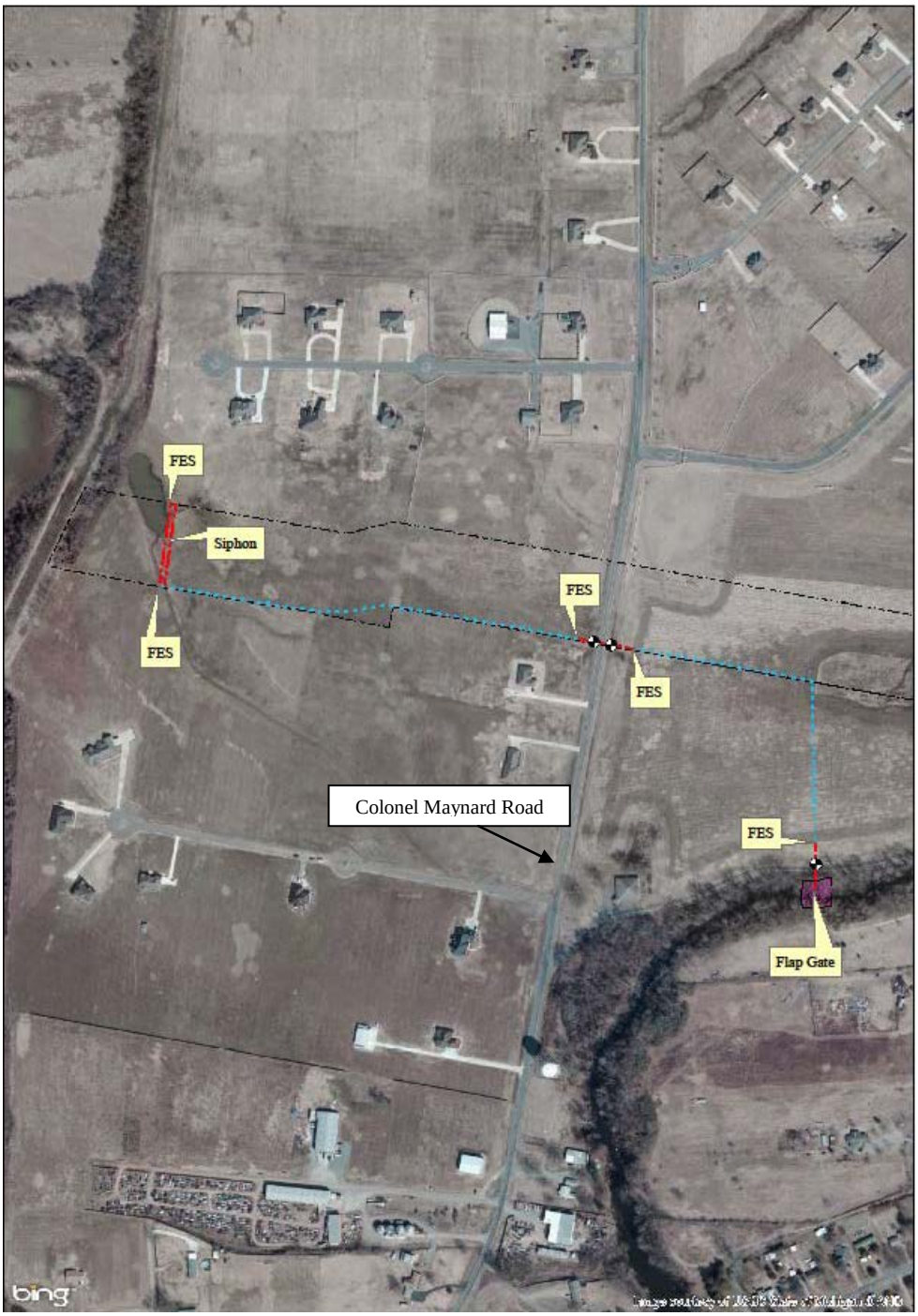

Figure 3. The blue line represents the proposed drainage route for the stormwater diversion from a low area near Canal 1000 to Scott Bayou near Scott, Arkansas. FES refers to "Flaired End Sections" at the entrance and exit of culverts.

The Bayou Meto Water Management District, local project sponsor, contracted with a private archeologist who conducted surveys on the proposed realignment ROW. No evidence of significant cultural resources was discovered during the effort. The results of this survey were reviewed by the Memphis District archeologist and the Arkansas State Historic Preservation Officer (SHPO). Memphis District archeologists will survey the proposed alignment of the drainage fix extending from

Canal 1000 to Scott Bayou prior to initiation of any construction activities. The results of that survey will also be coordinated with the SHPO.

PROJECT MODIFICATIONS

MODIFICATION 1 – Realignment of a section of Canal 1000.

1. **No Action** - With the no action alternative, the canal would remain in the alignment as presented and analyzed in the final EIS. No cost savings would be realized and bridge demolition and construction would be necessary over Scott Bayou.

2. **Realignment of a section of Canal 1000** – The canal would be realigned along two reaches which would save approximately $2,900,000; approximately $2,000,000 from elimination of the need to demolish an existing bridge and construct a new bridge over Scott Bayou, and approximately $900,000 in savings from real estate costs. The realignment would also reduce bottomland hardwood impacts by 2.6 acres.

MODIFICATION 2 - Acquire additional Right-Of-Way for construction of three bridges.

1. No Action - With the no action alternative, bridge construction would significantly disrupt traffic flows in the area and require detours of traffic onto other surface roads which may not be designed to handle the traffic.

2. Acquire additional Right-Of-Way for construction of three bridges. The acquisition of the additional acres adjacent to the bridge construction sites at Colonel Maynard Road, Highway 161, and Highway 165 would allow for temporary road construction to minimize disruption of traffic flow in the area.

MODIFICATION 3 - Collection and piping of interior drainage to Scott Bayou.

1. No Action - With the no action alternative, construction of Canal 1000 would impede the movement of stormwater from basins to the west of Colonel Maynard Road, which would result in potential flooding of homes and property.

2. Collection and piping of interior drainage to Scott Bayou. The proposed drainage solution would collect water from storm events and send it to Scott Bayou via a series of ditches and pipes. The stormwater would continue to enter the bayou as before; therefore, there would be minimal disruption to the bayou or to the lake into which it drains.

AUTHORITY FOR THE PROPOSED ACTION

The Grand Prairie-Bayou Meto Project was reauthorized by the Water Resources Development Act of 1996 with a broadened scope of work, to include ground water protection and conservation, agricultural water supply, and waterfowl management. Congressional language contained in the Energy and Water Appropriations Act, 1998, directed the Corps to initiate a re-evaluation of the Bayou Meto Basin. The record of decision was signed by Major General Riley, Director of Civil Works, in November 2007, authorizing the project as designed.

FLOODPLAIN MANAGEMENT

Executive Order 11988, Floodplain Management (signed May 24, 1977), requires Federal agencies to recognize the significant values of floodplains and to consider the public benefits that would be realized from restoring and preserving floodplains. The Executive Order has the objective of avoidance, to the extent possible, of long and short-term adverse impacts associated with the occupancy and modification of the base floodplain and the avoidance of direct and indirect support of development in the base floodplain wherever there is a practical alternative. Under this Order the Corps of Engineers is required to provide leadership and take action to:

a. Avoid development in the base floodplain unless it is the only practical alternative;
b. Reduce the hazard and risk associated with floods;
c. Minimize the impact of floods on human safety, health, and welfare; and
d. Restore and preserve the natural and beneficial values of the base floodplain.

All alternatives were designed to minimize, to the extent practical, adverse impacts to floodplains. The selected plan is responsive to the planning objectives and is consistent with the requirements of Executive Order 11988.

ENVIRONMENTAL JUSTICE IN MINORITY AND LOW-INCOME POPULATIONS

The final EIS evaluated potential project impacts to minority and low-income populations according to Executive Order 12898. It was concluded that the project would have no adverse environmental or health effects on minority or low-income populations and that the project would reduce the risk of future unemployment of minorities and low-income residents by maintaining irrigated agricultural practices.

INVASIVE SPECIES

The final EIS evaluated the potential for invasive species entering the Bayou Meto Basin and determined during an assessment by scientists from USACE Engineer Research and Development Center (ERDC) that, although it was likely that larval zebra mussels (*Dreissena polymorpha*) would enter the irrigation system from the Arkansas River, factors such as temperature and limited attachment sites would prevent successful colonization. Exotic fish species such as Asian carp that could potentially enter the area as a result of importing water are already present in the project area as a result of accidental releases from local fish farms.

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

Engineering Regulation 1165-2-132, Water Resources Policies and Authorities for Hazardous, Toxic, and Radioactive Waste for Civil Works Projects, requires the performance of a hazardous, toxic, and radioactive waste (HTRW) assessment(s) to determine the potential for encountering any HTRW at or near Corps civil works projects.

A Phase 1 Assessment was conducted over the entire Bayou Meto Basin, Arkansas, project area during the planning phase to determine the potential for HTRW occurring within the project-affected area during the project planning effort. Site inspections, aerial videotape and photography review, document research, and coordination with appropriate agencies were performed in conducting this assessment. No site of concern was identified in the footprint of the inlet channel or flow regulating reservoir. In addition, a record search was conducted for this environmental assessment through the Environmental Protection Agency's (EPA) EnviroMapper Web Page (http://maps.epa.gov). The EPA search engine was checked for any superfund sites, toxic releases, or hazardous waste sites within the vicinity of the proposed project area. No such sites were noted on the EPA web page within a five-mile radius of the proposed project area. A Phase 1 Field Assessment was conducted for the proposed borrow site and access locations, and no evidence of HTRW materials was uncovered. Based upon the Phase 1 Assessments and a check of the EPA Web Page, it is reasonable to assume that no HTRW contamination would be encountered within the project area. No additional HTRW investigations are recommended. No other analysis is required unless new information is revealed or HTRW is discovered during construction.

CLEAN WATER ACT COMPLIANCE

A section 404(b)(1) evaluation was completed during the GRR and was presented in Appendix D, Section IV of the report. Discussions with the Arkansas Department of Environmental Quality (ADEQ) determined that the proposed project features discussed in this EA do not require additional water quality certification due to the very limited impacts and the fact that the drainage fix only redirects the drainage flow from the existing route into culverts. The drainage would still enter Scott Bayou. The proposed drainage fix and associated impacts discussed in this environmental assessment are covered by Nationwide Permit 18; therefore, no additional analysis or mitigation is required. The ADEQ has confirmed via a phone conversation that the Section 401 certification for the Bayou Meto Basin, Arkansas, project is still valid.

ENVIRONMENTAL SETTING

Location

The Bayou Meto Basin, Arkansas, project boundaries have not changed since the completion of the final EIS, and are shown in Figure 1. The project area encompasses approximately 765,745 acres within the 1,500-square mile Bayou Meto Basin and includes portions of Lonoke, Jefferson, Prairie,

Arkansas, and Pulaski counties. Irrigation is used on 369,874 acres of agricultural land, and 22,942 acres are commercial fishponds. There are approximately 135,586 acres of wetlands within the project area, which comprise approximately 18% of the total area. There are numerous streams and ditches within the project area; Bayou Meto, Bayou Two Prairie, and Wabbaseka Bayou are among the largest of the streams. The Bayou Meto inlet channel and flow regulating reservoir are located on the east side of the Arkansas River just upstream of the David D. Terry Lock and Dam in Pulaski County, Arkansas (Figure 2).

Climate

Pulaski County lies in the humid subtropical climate zone and has long hot summers and cool winters, with an average high of 91 ^{o}F in the summer (June through August) and an average low of 33 ^{o}F in winter (December through February). The total annual precipitation is about 51 inches, varying from a monthly average of 5.7 inches in November, to 2.9 inches in August. Average monthly snowfall is 1.1 inches during the winter months (December through February), but can vary greatly from year to year. Winter ice storms also occur within the area, which can result in severe damage to trees, shrubbery, and power lines.

Soils

The alluvial soils in the inlet channel, flow regulating reservoir, and access road area consist primarily of Bruno fine silty loam and Keo silt loams. Both soil types were formed by deposition of materials carried by the Arkansas River. The Bruno soils are excessively well drained and have a low natural fertility, while the Keo soils have moderate to high natural fertility and are well drained. Keo soils support mixed hardwood forests and are well suited to crop production, while the Bruno soils have a low water capacity and are commonly used for pasture (U.S. Soil Conservation Service, 1975).

SIGNIFICANT RESOURCES AND IMPACTS

Aquatic resources

Impacts to aquatic resources were addressed in the final EIS and its appendices, including fish and freshwater mussels, with the exception of assessing the impacts of the placement of the inlet channel and flow regulating reservoir on backwater fish habitats, which were addressed in the previous EA. The construction of the outlet structure on the drainage culvert in Scott Bayou would temporarily disrupt any fish within the immediate vicinity and potential damage any sessile macroinvertebrates (e.g. mollusks) inhabiting the immediate construction area, but no significant, long-term impacts to the aquatic community in the bayou are expected. No significant changes in water quality or volume would be expected due to the work items proposed in this EA.

Vegetation

The vegetative community in the Bayou Meto Basin, Arkansas, project area was discussed extensively in the final EIS. The land within the proposed realignment of Canal 1000 consists primarily of land in crop production (84%) and pasture (8%), with the remaining consisting of bottomland hardwoods (BLH) (1.6%), roads, and other uses. The proposed realignment of Canal 1000 would result in a 2.6-acre decrease in BLH impacts.

The land uses in the areas needed for temporary roads for bypassing bridge construction consist of agricultural land and maintained road ROW immediately adjacent to the roadways.

Wetlands

There are approximately 89,000 total acres of wetlands within the project boundaries, consisting of 79,000 acres of BLH forest and approximately 10,000 acres of farmed wetlands.

A decrease of 2.6-acres in BLH impacts would occur with the proposed realignment of Canal 1000, while no impacts would result from the bridge ROWs. The area where the stormwater collects was already considered in the final EIS, and the impacts to that location were included in the mitigation required for the overall project. Less than 0.1 acres of woody vegetation would be removed along Scott Bayou in order to construct the outlet culvert for the stormwater drainage design. More than half of the cleared area would be allowed to regenerate naturally with native vegetation. This disturbance would be covered by Nationwide Permit 18.

Wildlife Resources

Impacts of the proposed construction of the main canals, including Canal 1000, were quantified in the final EIS. Habitat Evaluation Procedures (HEP) were used to determine the direct construction impacts to wildlife (see Volume 10, Appendix D, Section XIII of the General Reevaluation Report, http://www.mvm.usace.army.mil/bayoumeto/Reports.asp).

The proposed realignment of the section of Canal 1000 would reduce BLH impacts by 2.6-acres, and the additional ROW for bridge construction would not result in the loss of any additional wildlife habitat due to their locations within agricultural fields or within existing road ROWs. The disturbance of less than 0.1 acres of wooded riparian area on Scott Bayou would eliminate minimal terrestrial wildlife habitat and impact some aquatic habitat. However, more than 50% of the terrestrial area would be allowed to naturally re-vegetate and most of the aquatic habitat disturbance would be short-term. Since the proposed project modifications would result in an overall decrease in terrestrial habitat impact and only a minor, short-term impact to aquatic habitat, no compensatory mitigation is required.

Threatened and Endangered Species

One endangered species, the interior least tern, is known to occur within the Bayou Meto Basin, Arkansas, project area. The interior least tern received protection under the Endangered Species Act on June 27, 1985. The interior least tern is a migratory, colonial shorebird. Discussions and analysis for the final EIS determined that the Bayou Meto Project would not negatively impact either the interior least tern or its habitat.

The northern long-eared bat has very recently been listed as a threatened species, and coordination is ongoing regarding the wooded area that would be impacted by the construction of the outlet culvert for the stormwater drainage design. The tree clearing to accommodate the culvert has been limited to less than 0.1 acres, and would not significantly change the character of the forested area. No other federally listed threatened or endangered species were identified during the studies conducted during the overall project general reevaluation (Volume 10, Appendix D, Section XII).

Bald and Golden Eagle Protection Act

Two active bald eagle nests were reported during the initial project area study in the southern portion of the project area; however, no project related construction is proposed within 0.5 miles of these sites, and the proposed modifications discussed in the environmental assessment would be over 40 miles from those nests.

Cultural Resources

The cultural resources survey previously conducted for the projects final EIS and GRR covered the project footprint as envisioned at that time. An archeological survey was undertaken of the proposed Canal 1000 realignment and no significant cultural or archeological sites were discovered. USACE archeologists surveyed the proposed ROW for the drainage fix and found no significant cultural or archeological sites within the area. The results of these surveys will be coordinated for cultural resources inventory, evaluation, and protection (as applicable) under provisions of the National Historic Preservation Act and the 2009 signed Programmatic Agreement.

Because the proposed bridge construction ROW additions are exceptionally close to the ROW previously surveyed (negative for cultural resources), there would not be a need for further cultural studies at those locations. Pursuant to 36 CFR 800.3(a)(1), the District Archaeologist has determined that these proposed bridge ROW modifications have no potential to cause effects on historic properties eligible for the National Register of Historic Places. Thus, no further section 106 consultation is required.

Should prehistoric or historic artifacts be encountered or if human or unrecognizable bones are encountered during the project construction work would be stopped immediately in that specific area and the MVM District archeologist would be contacted. Any discoveries made during the proposed construction would be resolved under 36 CFR 800.13.

Air Quality

Potential air quality concerns related to the Bayou Meto Basin, Arkansas, project were coordinated with the Arkansas Department of Environmental Quality (ADEQ) during the planning phase of the project. The proposed project area is in attainment for all air quality standards. Since the equipment to be used is a mobile source, the project is exempt from air quality permitting requirements. Although air emissions would not require a permit, best management practices shall be used throughout the construction to minimize air pollution.

Water Quality

Water quality was addressed in detail in the final EIS and GRR for the Bayou Meto Basin, Arkansas, project and was coordinated with ADEQ. None of the modifications proposed in this EA would negatively impact water quality in either the Arkansas River or the Bayou Meto Basin. ADEQ was consulted during the development of this EA to ensure that the Water Quality Certification for the project would still be valid, and to confirm that the proposed project modifications discussed in this EA would not require any permit modifications.

CUMULATIVE EFFECTS

Cumulative impact is defined as the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR § 1508.7).

The cumulative effects of the Bayou Meto Basin, Arkansas project were discussed in the final EIS. None of the proposed modifications would significantly increase the cumulative effects of the project.

MITIGATION

A tract of prior converted farmland totaling approximately 141 acres has been planted with bottomland hardwood tree species to mitigate for the project impacts to date. This tract is adjacent to an Arkansas Game and Fish Commission Wildlife Management Area (Holland Bottoms) near Jacksonville, Arkansas. Additional project mitigation will occur concurrently with project construction impacts. No additional mitigation would be required due to the project modifications discussed in this EA.

COMPLIANCE WITH REGULATIONS

Project compliance with applicable federal and state regulations is shown in Table 1 in the Appendix. Review of the draft EA by appropriate agencies and individuals and a finding of no significant impact (FONSI) would bring the project into full compliance with the listed laws and regulations.

Table 1. Relationship of Plan to Environmental Laws and Regulations

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

Federal Policies and Acts	Compliance Status
Archaeological Resources Protection Act of 1979	2
Bald Eagle Act	1
Clean Air Act Amendments of 1977	1
Clean Water Act of 1977, as amended	1
Endangered Species Act of 1973, as amended	1
Fish and Wildlife Coordination Act of 1958	1
Flood Control Act of 1946, as amended	1
Food Security Act of 1985	1
Land and Water Conservation Fund Act	1
National Environmental Policy Act of 1969	2*
National Historic Preservation Act of 1966, as amended	1
River and Harbor and Flood Control Act of 1970	1
Water Resources Development Act of 1986	1
Water Resources Planning Act of 1965	1

Executive Orders

Floodplain Management (E.O. 11988)	1
Protection, Enhancement of the Cultural Environment (E.O. 11593)	1
Protection of Wetlands (E.O. 11990)	1
Other Federal Policies	
Water Resources Council, Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies	1

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

2/ Partial compliance with the policy and related regulations has been accomplished.

*Full compliance would be met following the Finding of No Significant Impact.

COORDINATION

Project modifications have been coordinated with the project interagency environmental team. The team is comprised of representatives from USACE, U.S. Fish and Wildlife Service, Arkansas Game and Fish Commission, Arkansas Natural Heritage Commission, ADEQ, Arkansas Natural Resources Commission, U.S. Environmental Protection Agency, and the Bayou Meto Water Management District. In addition, this draft environmental assessment is being coordinated with these agencies and other interested parties.

CONCLUSION

During the detailed design of the Bayou Meto Basin, Arkansas project, a requirement for modifications to the project as detailed in the final EIS and GRR was identified. The proposed change in the alignment of a section of Canal 1000, a fix to a localized drainage issue, and the requirement for additional ROW adjacent to three proposed bridge crossings of Canal 1000 would save significant funds, ensure proper drainage, and prevent the disruption of traffic during bridge construction.

None of the proposed modifications discussed in this EA significantly changes the impacts of the authorized Bayou Meto Basin, Arkansas, project. No other significant project modifications, in addition to the changes disclosed in this EA, are anticipated. However, the Memphis and Vicksburg districts and interagency team will continually review the project to ensure NEPA compliance. The proposed design modifications do not constitute a major federal action that would significantly affect the human environment. Therefore, a supplemental EIS is not required.

PREPARER

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LITERATURE CITED

U.S. Soil Department of Agriculture, Soil Conservation Service in Cooperation with Arkansas Agricultural Experiment Station. 1975. *Soil Survey of Pulaski County, Arkansas*.