



OFFICE OF WATER

WASHINGTON, D.C. 20460

January 8, 2025

The Honorable Jaime A. Pinkham
Acting Assistant Secretary of the Army (Civil Works)
U.S. Department of the Army
108 Army Pentagon
Washington, D.C. 20310-0108

Dear Mr. Pinkham:

On November 29, 2024, the U.S. Army Corps of Engineers, Vicksburg District issued a Final Environmental Impact Statement for the Yazoo Backwater Area Water Management Project (2024 FEIS). The Recommended Plan described in the 2024 FEIS includes a proposed pumping project (2024 Plan for the Yazoo Pumps Project). Following the Corps' issuance of the 2007 Final Supplemental Environmental Impact Statement for the Yazoo Pumps Project (2007 FSEIS), the pumps project was the subject of a *Clean Water Act* Section 404(c) Final Determination issued by the U.S. Environmental Protection Agency in 2008 (2008 FD). In a letter dated November 19, 2024, you asked the EPA whether the 2008 FD applies to the 2024 Plan for the Yazoo Pumps Project.

Based on a comprehensive evaluation of the 2008 FD and the record for the 2008 FD, 2007 FSEIS and 2024 FEIS, the agency has concluded that the CWA Section 404 discharges from the 2024 Plan for the Yazoo Pumps Project are not prohibited by the 2008 FD. For the reasons discussed in Attachment A, the 2008 FD does not apply to the 2024 Plan for the Yazoo Pumps Project. This analysis is based on the 2024 Plan for the Yazoo Pumps Project as presented in the 2024 FEIS and assumes implementation of the Memorandums of Agreement referenced in Attachment A. This letter is limited to the 2024 Plan as proposed and does not address the applicability of the EPA's 2008 FD to any potential future plans, including modifications to the 2024 Plan, that the Corps may propose.

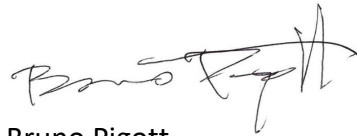
Also, as part of our review, the EPA separately evaluated and considered the proposed compensatory mitigation designed to offset the project's unavoidable impacts to wetlands and other aquatic resources, as well as fish and wildlife species, and finds that this mitigation is expected to reduce adverse effects to an acceptable level. Of particular importance is the commitment to purchase all necessary in-lieu fee program/mitigation bank credits and/or secure all Corps-constructed compensation sites prior to commencing any work in waters of the United States associated with the 2024 Plan. Any changes to the compensatory mitigation plan, including failure to purchase necessary in-lieu fee program/mitigation bank credits and/or secure Corps-constructed compensation sites prior to commencing work in waters of the United States, would raise serious questions regarding whether

impacts will be reduced to an acceptable level and thus the EPA would consider the Plan for review pursuant to CWA Section 404(c).

The EPA appreciates the collaborative process pursued by the Corps in the development of the 2024 Plan, which we anticipate will provide significant flood risk reduction in the lower Mississippi Delta while avoiding, minimizing and effectively compensating for impacts to the region's important ecological resources.

If you have further questions regarding this letter, please contact me or your staff may contact Brian Frazer at (202) 566-1652 or frazer.brian@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruno Pigott", with a stylized flourish at the end.

Bruno Pigott
Principal Deputy Assistant Administrator

ENCLOSURE

cc: Colonel Jeremiah A. Gipson, U.S. Army Corps of Engineers, Vicksburg District
Mike Oetker, Southeast Region, U.S. Fish and Wildlife Service
Jeananne M. Gettle, U.S. Environmental Protection Agency, Region 4

Attachment A

Detailed Analysis

This document includes four sections. Section I provides relevant background on *Clean Water Act* Section 404(c), flooding in the Yazoo Backwater Area, the 2007 Plan for the Yazoo Pumps Project, the EPA's 2008 CWA Section 404(c) Final Determination concerning the Yazoo Pumps Project (2008 FD),¹ the 2020 Plan for the Yazoo Pumps Project, and the 2024 Plan for the Yazoo Pumps Project proposed in the U.S. Army Corps of Engineers' 2024 Final Environmental Impact Statement for the Yazoo Backwater Area Water Management Project (2024 FEIS).² Section II provides the EPA's determination regarding the applicability of its 2008 FD to the 2024 Plan for the Yazoo Pumps Project. Section III discusses the proposed compensatory mitigation designed to offset the 2024 Plan's unavoidable impacts to wetlands and other aquatic resources, as well as fish and wildlife species. Section IV summarizes relevant conclusions.

I. Background

A. CWA Section 404

CWA Section 404 creates a program that regulates the discharge of dredged or fill material into waters of the United States through the specification of disposal sites. The statute prescribes roles for the EPA and the Corps to implement the CWA Section 404 program.

- Disposal sites may be specified in various ways, including through the Corps regulatory program or Civil Works program. See 33 U.S.C. § 1344; 40 C.F.R. § 230.2(a).
- Subject to CWA Section 404(c), CWA Section 404(b) directs the Secretary of the Army to apply environmental criteria developed by the EPA in specifying disposal sites for the discharge of dredged or fill material. These substantive regulatory criteria are known as the CWA Section 404(b)(1) Guidelines. The "Guidelines are applicable to the specification of disposal sites for discharges of dredged or fill material into waters of the United States." 40 C.F.R. § 230.2(a). The requirements of the Guidelines apply to both the Corps' Section 404 regulatory program decisions as well as to Corps Civil Works projects.

Section 404(c) states:

"The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. Before making such determination, the Administrator shall consult with the Secretary. The Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection."

¹ The 2008 FD is available at: https://www.epa.gov/sites/production/files/2015-05/documents/yazoo-final-determination_signed_8-31-08.pdf.

² The 2024 FEIS is available at: <https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Yazoo-Backwater/>.

Pursuant to Section 404(c), an action under this provision includes four key components: a prohibition, restriction, denial, and/or withdrawal (the 2008 FD includes a prohibition); the “defined area” subject to the prohibition; the materials subject to the prohibition (referred to below as the “prohibited discharges”); and the basis for the EPA determining that the discharge “will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.” The EPA’s regulations implementing CWA Section 404(c) include a multi-step process to exercise this authority, including the issuance of a Proposed Determination, Recommended Determination, and Final Determination. 40 C.F.R. Part 231.

B. Flooding in the Yazoo Backwater Area

The Yazoo Backwater Area is situated between the Mississippi and Yazoo Rivers in west-central Mississippi immediately north of Vicksburg, Mississippi and has historically been subject to flooding during high flow events in the Mississippi River. Flood risk reduction for the entire Yazoo Backwater Area was authorized by the *Flood Control Act* of 1941. Since authorization and subsequent modification, the Corps has completed construction of extensive flood risk reduction features in the Yazoo Backwater Study Area, or YSA (Figures 1 and 2). This infrastructure has significantly reduced the frequency and duration of flooding in the YSA from the Mississippi and Yazoo Rivers and includes levees, associated drainage channels and water control structures. Despite implementation of these flood risk reduction features, flooding in the YSA continues to occur during high flow events in the Mississippi River. When the Mississippi River is experiencing a high flow event and the Steele Bayou Water Control Structure, or Steele Bayou WCS, is closed, rainfall that occurs within the YSA basin accumulates resulting in flooding within the YSA. This flooding is known as backwater flooding.

C. 2007 Yazoo Pumps Project

As described in a 2007 Final Supplemental Environmental Impact Statement (2007 FSEIS)³ developed pursuant to the *National Environmental Policy Act*, the 2007 Yazoo Pumps Project was a Corps Civil Works project designed to address these backwater flooding concerns.

The 2007 FSEIS Recommended Plan for the Yazoo Pumps Project, referred to as “Plan 5,” included a 14,000 cubic feet per second, or cfs, pumping station with a year-round pumping elevation of 87 feet National Geodetic Vertical Datum, or NGVD. The 2007 FSEIS Plan 5 was designed to pump flood water out of the YSA and into the lower Yazoo River when the Steele Bayou WCS is closed. As discussed above, when the Mississippi River is experiencing a high flow event and the Steele Bayou WCS is closed, rainfall that occurs within the YSA basin accumulates resulting in flooding within the YSA.

1. EPA’s Section 404(c) review process

The 2007 FSEIS Plan 5 would have directly impacted approximately 43.6 acres of wetlands and other waters of the United States through the discharge of dredged or fill material associated with construction of the pumping station at the Steele Bayou site located adjacent to the Steele Bayou WCS (2007 FSEIS, Appendix 2, CWA Section 404(b)(1) Evaluation, pp. 2-3) (Figure 1). The secondary/indirect effects from operation of the 2007 Plan 5 pumping station would have adversely impacted

³ The 2007 FSEIS is the first supplement to the 1982 Final Environmental Impact Statement for the Yazoo Pumps Project (1982 FEIS) and is available at: <https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Project-Management/Yazoo-Backwater-Project/Yazoo-Backwater-Report/>.

approximately 67,000 acres of wetlands in the Yazoo Backwater Area (2007 FSEIS Main Report, Table 17, pp. 1-20).

Because of concerns that the 2007 project's large-scale wetland impacts could result in extensive adverse impacts to the area's fish and wildlife resources, the EPA initiated the Section 404(c) review process in February of 2008. After consulting with the Corps and the Mississippi Board of Levee Commissioners (the local project sponsor) on potential opportunities to reduce project impacts, EPA Region 4 published its Proposed Determination in March 2008 for public comment and held a public hearing. After reviewing public input, EPA Region 4 submitted its Recommended Determination to EPA Headquarters in July of 2008.

2. 2008 FD findings

Unacceptable adverse effects

The 2007 FSEIS considered additional pumping station alternatives to Plan 5. These alternatives (i.e., Plans 3, 4, 6 and 7) would have adversely impacted between approximately 28,400 and 118,400 acres of wetlands. After the EPA initiated its Section 404(c) review in February of 2008, the Corps proposed two alternatives to Plan 5 to attempt to reduce project impacts to an acceptable level. One of these alternatives was Plan 6 from the 2007 FSEIS and the second was described by the Corps as a modification of Plan 6 (i.e., Modified Plan 6) which would have resulted in adverse impacts to between approximately 28,400 and 48,000 acres of wetlands (2008 FD, p. 13). Table 1 compares key features of the 2007 Plans prohibited by the 2008 FD including pumping capacities, pumping elevations, direct and secondary/indirect impacts to wetlands, non-structural features, compensatory mitigation and water control structure management.

The 2008 FD concludes that construction and operation of Plans 3 through 7 and Modified Plan 6 would dramatically alter the timing, and reduce the spatial extent, depth, frequency and duration of time project area wetlands flood (2008 FD, p. 72). The 2008 FD also concludes that the large-scale hydrologic alterations caused by Plans 3 through 7 and Modified Plan 6 would significantly degrade the critical ecological functions provided by at least 28,400 acres of wetlands in the Yazoo Backwater Area, including those functions that support wildlife and fisheries resources (2008 FD, p. 72). Thus, the 2008 FD finds that the discharge of dredged or fill material associated with Plans 3 through 7 and Modified Plan 6 would result in unacceptable adverse effects on fishery areas and wildlife because each of these alternatives would adversely impact at least 28,400 acres of wetlands in the Yazoo Backwater Area (2008 FD, pp. 72-73).

Compensatory mitigation and reforestation

The 2008 FD also evaluates the proposed compensatory mitigation and reforestation (i.e., a "nonstructural" component of the project) plans described in the 2007 FSEIS (Table 1), finding extensive deficiencies with the proposals. Together, the plans included 10,662 acres of compensation for the proposed project, 4,367 acres of compensation for impacts associated with already implemented aspects of related projects, and 40,571 acres of additional reforestation for a total of 55,600 acres of revegetated agricultural land without hydrologic restoration. Acquisition would have started two months after the Record of Decision was signed and continued for 14 years.

Deficiencies in the proposed compensatory mitigation and reforestation plans include an insufficient amount of compensation to offset impacts, inadequate restoration measures to offset functional impacts, lack of sufficient suitable (i.e., restorable) acreage available in the targeted area, failure to identify specific compensation and reforestation sites, and complete reliance on compensation and reforestation sites not yet acquired via purchase of conservation easements from willing landowners.

The EPA's unacceptable adverse effects determination was not ameliorated by the proposed, but deficient, compensatory mitigation and reforestation plans, because neither reduced the impacts of the listed Plans to acceptable levels (2008 FD, p. 73). Specifically, the 2008 FD "finds that the environmental benefits suggested by the FSEIS to accrue from the project's [reforestation] have not been substantiated." (2008 FD, p. 73). And the 2008 FD "finds that the Corps has not demonstrated that potential impacts of the Yazoo Backwater Area Project can be adequately mitigated to reduce the impacts to an acceptable level." (2008 FD, p. 73).

Water control structure management

The 2007 FSEIS includes a proposal to change the management of the Steele Bayou WCS to hold additional water within the YSA during certain times of the year when water levels are low in the Area's streams and other waters. The 2007 FSEIS describes this effort as a *water management feature* (see Table 1 for proposed elevations for holding water behind the Steele Bayou WCS). The 2008 FD considers this particular water management feature to be irrelevant for purposes of EPA's review of the Yazoo Pumps Project stating that "[o]peration of the Steele Bayou control gates to maintain water elevations and generation of the environmental benefits associated with this operation is not dependent upon construction of any pumping station." (2008 FD, p. 6).

Commitment to Further Collaboration

Recognizing the need for continued collaboration on a solution to address backwater flooding in the YSA, the 2008 FD states that the "EPA continues to support the goal of providing improved flood protection for the residents of the Mississippi Delta; however, it believes that this vital objective can be accomplished consistent with ensuring effective protection for the area's valuable natural resources. EPA is committed to participating in discussions with other federal and state agencies, and the public, concerning the best way to provide flood protection while protecting wetlands and other natural resources." (2008 FD, p. iv).

D. 2020 Yazoo Pumps Project

The combination of more frequent and significant flooding in the Yazoo Backwater Area; increased economic and safety concerns for the area's residents; and the availability of new and improved environmental and hydraulic data prompted the initiation of an updated evaluation of the 2007 Recommended Plan and in 2020, the Corps issued a second supplement to the 1982 FEIS.

This 2020 Final Supplemental Environmental Impact Statement (2020 FSEIS) relied heavily on the 2007 FSEIS.⁴ Like the 2007 Recommended Plan, the 2020 Recommended Plan also consisted of a pump station with a maximum combined pumping capacity of 14,000 cfs and a year-round pumping elevation of 87.0 feet NGVD at the Steele Bayou gage. However, the location of the pumping station was moved to a site at Deer Creek, and changes were made to the proposed reforestation/conservation and compensatory mitigation measures. Prior to issuance of the 2020 FSEIS, the EPA provided the Corps with a letter dated November 30, 2020, that stated that the 2008 FD did not apply to the 2020 Recommended Plan for the Yazoo Pumps Project.

The 2020 FSEIS was filed with the EPA on December 11, 2020, and circulated for a final 30-day state and federal agency review and comment period. After a final review by other federal, state, and local agencies and the public, a ROD was signed on January 15, 2021. However, on January 12, 2021, four conservation groups challenged EPA's November 30, 2020, letter. *American Rivers, et al. v. EPA*, No.1:21-cv-00097 (D.D.C.). As part of this litigation, The EPA reviewed the November 2020 letter consistent with an Executive Order signed by President Biden on January 20, 2021. "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis," 86 FR 7037. This involved a comprehensive review of the record of the 2008 FD, 2007 FSEIS, and 2020 FSEIS. Based on this review, the agency determined that it needed to reconsider the applicability determination in the November 30, 2020, letter and filed a motion for remand without vacatur of the determination in that letter. On October 4, 2021, the court granted the EPA's motion.

As discussed in its November 17, 2021 letter from EPA Assistant Administrator for the Office of Water, Radhika Fox, to Acting Assistant Secretary of the Army (Civil Works), Jaime Pinkham, based on a comprehensive evaluation of the 2008 FD and the associated record, the 2007 FSEIS, and the 2020 FSEIS, the EPA concluded that the 2020 Recommended Plan was 2007 FSEIS Plan 5 and involved discharges into the geographic area covered by the 2008 FD. Therefore, the EPA concluded that the 2020 Recommended Plan was prohibited by the 2008 FD.⁵ As a result, the Corps withdrew the Record of Decision on December 11, 2021, and sought opportunities for continued agency discussions on alternative plans to address flooding concerns in the area.

E. 2023 Joint Memorandum of Collaboration

In January 2023, the U.S. Department of the Army (Civil Works) and the EPA signed a Joint Memorandum of Collaboration to continue to address flooding in the Yazoo Backwater Area. The memorandum stated that Army and the EPA "are committed to a collaborative and expeditious path forward to establish flood risk reduction solution(s) in the [Yazoo Backwater Area] that are compliant with the *Clean Water Act* (CWA) and all other applicable laws and regulations." The Joint Memorandum also stated that "[c]lose collaboration between the Agencies throughout the process will serve the federal government in meeting flood risk management objectives, fulfilling NEPA and CWA Section 404 requirements, addressing the needs of the affected communities, and reducing potential conflicts and delays with the implementation of the project." Although the U.S. Fish and Wildlife Service was not a

⁴ The 2020 FSEIS is available at: <https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Project-Management/Yazoo-Backwater-Project/Yazoo-Backwater-Report/>.

⁵ EPA's November 17, 2021 letter is available at: <https://www.epa.gov/system/files/documents/2021-11/epa-reconsideration-of-november-30-2020-yazoo-letter.pdf>.

signatory to the Joint Memorandum, they were subsequently included in the collaborative effort in recognition of their important role in the Yazoo Backwater Area.

The Joint Memorandum identified activities to help enable the Corps to deliver a proposed approach to flood risk reduction for the Yazoo Backwater Area by June 2023. Pursuant to the 2023 Joint Memorandum, the EPA worked collaboratively with the Corps and the USFWS as it developed its approach. The Corps, the EPA and the USFWS participated in joint public engagement sessions regarding the Corps' proposed approach on February 15, 2023, and May 4 and May 5, 2023. The Corps outlined its proposed approach in its July 2023 *Federal Register* Notice announcing its intent to prepare a new EIS for the Yazoo Backwater Area Water Management Project (88 FR 43101, July 6, 2023).

As part of the NEPA process, the EPA provided scoping comments to the Corps on August 7, 2023, and attended cooperating agency meetings beginning September 14, 2023. Following issuance by the Corps of the draft EIS on June 28, 2024, the EPA attended public meetings on the draft EIS on July 22 and July 23, 2024, and provided comments to the Corps on the draft EIS on August 27, 2024.

F. 2024 Yazoo Pumps Project

On November 29, 2024, the Corps issued the final EIS for its plan to address remaining backwater flooding concerns in the YSA (i.e., the 2024 FEIS), and this plan includes a new proposal for the Yazoo Pumps Project. According to the 2024 FEIS, the overall project purposes of the 2024 Plan are to provide significant flood risk reduction for communities in the YSA and the local economy while avoiding and minimizing impacts to important environmental resources. Components of the 2024 Plan are identified in Table 1 and include the following.

1. Pumping Station

To reduce flood stages across all frequency flood events in the YSA, the 2024 Plan includes a 25,000 cfs pump station at the Steele Bayou site located adjacent to the Steele Bayou WCS. To avoid and minimize adverse impacts on the environment and still meet the overall project purposes, the pump operation plan manages water levels at 90.0 feet National Geodetic Vertical Datum of 1929 (NGVD29)⁶ at the Steele Bayou gauge during crop season (25 March – 15 October) and up to 93.0 feet NGVD29 at the Steele Bayou gauge during non-crop season (16 October – 24 March).

2. Water Control Structure Management

In its current state, the YSA is an altered system due to the Mississippi Mainline levee and Yazoo Backwater levee and outlet structures limiting inflow of water from the Yazoo-Mississippi Rivers. During potential flood-prone periods with rising Mississippi and Yazoo Rivers, the 1985 Water Control Manual for the operation of Steele Bayou WCS allows free movement of water into and out of the lower Yazoo Basin up to an elevation of 75.0 feet NGVD29 before closing the gate. However, in the absence of a pumping station, the practice has been to close the gate at lower elevations. Implementation of the 2024 Plan and its pumping station will allow full utilization of the 1985 Water Control Manual including allowing free movement of water into and out of the lower Yazoo Basin up to an elevation of 75.0 feet NGVD29 before closing the gate which will promote fish passage. During low-water periods, consistent

⁶ The is consistent with the datum used in the 2007 FSEIS.

with the water control structure operation plan, the Steele Bayou WCS is operated to maintain water elevations between 68.5 and 70.0 feet NGVD29, and this will be continued.

3. Compensatory Mitigation

According to the 2024 FEIS (Appendix F-3 – Wetlands), direct impacts associated with the construction of the pumping station would result in impacts to 432 acres of wetlands which equates to the loss of 1,884 Average Annual Functional Capacity Units, or AAFUCs, using the Hydrogeomorphic assessment method (Smith and Klimas 2002,⁷ Smith and Lin 2007⁸). The 2024 FEIS finds that the secondary/indirect impacts associated with operation of the pumping station, as proposed, are not likely to convert wetlands in the YSA to non-wetlands; however, the reductions in flood frequency and duration resulting from implementation of 2024 Plan are expected to impact wetland function. Implementation of the 2024 Plan is estimated to result in the loss of 25,470 AAFUCs spread across approximately 92,867 acres of wetlands in the YSA (Table 1). Estimated functional impacts of the 2024 Plan for wetlands, aquatic resources/fisheries, waterfowl and wildlife as well as required mitigation are summarized in Table 2.

To fully offset these wetland impacts as well as estimated impacts to aquatic resources/fisheries, waterfowl, and wildlife, the 2024 FEIS indicates that the Corps will purchase credits totaling 27,354 AAFUCs (1,884 + 25,470 AAFUCs) from the Mississippi Delta – In-Lieu Fee Program operated by Ducks Unlimited. The FEIS estimates that approximately 5,722 acres of wetland restoration would be necessary to generate these credits and that these offsets would be provided through wetland restoration within the post-project 2- and 5-year floodplains with the following caveat: to provide the necessary offsets for impacts to fisheries spawning and rearing habitat, approximately 3,106 acres of this wetland restoration would be provided within the post-project 2-year floodplain (see Table 2). In addition, the Corps will purchase credits totaling 352 Average Annual Habitat Units, or AAHUs, from the Mississippi Delta – In-Lieu Fee Program to offset remaining impacts to shorebirds. Importantly, the Corps has committed to purchasing all necessary credits and, if necessary, securing all Corps-constructed compensatory mitigation sites, prior to any work in waters of the United States associated with the 2024 Plan.

4. Memorandums of Agreement

Another important component of the 2024 Plan is the inclusion of three Memorandums of Agreement between the Corps, the EPA and the USFWS.

- **Water Control Plan MOA:**⁹ An agreement on the final water control operations which provides that the Corps will obtain concurrence from the EPA prior to implementing any changes to or non-

⁷ Smith, R.D., and C.V. Klimas. 2002. A regional guidebook for applying HGM approach to assessing wetland functions of selected regional wetlands subclasses, Yazoo basin, Lower Mississippi River alluvial valley. U.S. Army Corps of Engineers ERDC/EL TR-02- 4.

⁸ Smith, R.D., and J. Lin. 2007. Yazoo Backwater Project: Assessing Impacts to Wetland Functions and Recovery of Wetland Functions in Restoration Areas. U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Environmental Laboratory, Vicksburg, MS. Report to the U.S. Army Corps of Engineers – Vicksburg District.

⁹ Memorandum of Agreement Between the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency and the U.S. Fish and Wildlife Service Concerning the Yazoo Backwater Water Management Plan Pump and Water Control Structure

emergency deviations from the pump operation plan and water control structure operation plan described in the 2024 FEIS.

- **Compensatory Mitigation MOA:**¹⁰ An agreement on procedures for the review, approval and oversight of the compensatory mitigation for the 2024 Plan. As part of this MOA, proposed work will not commence in waters of the United States until the Corps has obtained concurrence from the EPA on the mitigation plan for each compensatory mitigation component and all in-lieu fee program/mitigation bank credits have been purchased and/or Corps-constructed compensatory mitigation sites have been secured.
- **Monitoring and Adaptive Management MOA:**¹¹ An agreement on procedures for the development, review, approval and oversight of long-term monitoring efforts designed to help identify actual project-induced, landscape-scale changes and thereby inform adaptive management decisions regarding ongoing implementation of water management and compensatory mitigation efforts in the YSA.

II. Applicability of the 2008 FD to the 2024 Yazoo Pumps Project

This section sets forth the results of the EPA’s determination regarding the applicability of its 2008 FD to the 2024 Plan for the Yazoo Pumps Project. As discussed below, the EPA has concluded that its 2008 FD does not apply to the 2024 Plan for the Yazoo Pumps Project proposed in the 2024 FEIS.

In determining the applicability of the 2008 FD to the 2024 Plan, the EPA has carefully evaluated the text of the 2008 FD, its administrative record, the EPA’s 2021 findings and the administrative records for the 2007 FSEIS and 2024 FEIS. The agency has also consulted the relevant text of CWA Section 404(c) to inform our understanding of the scope of the 2008 FD. For the reasons below, the EPA has concluded that the 2024 Plan is not subject to the prohibition contained in the 2008 FD.

As described above, an action under CWA Section 404(c) includes four key components: a prohibition, restriction, denial, and/or withdrawal (the 2008 FD includes a prohibition); the “defined area” subject to the prohibition; the materials subject to the prohibition (referred to below as the “prohibited discharges”); and the basis for the EPA determining that the discharge “will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas” (in this case unacceptable adverse effects on fishery areas and wildlife).

If the EPA finds that the proposed discharges of dredged or fill material are not in the “defined area” subject to the prohibition or that the proposed discharges are not the prohibited discharges, the 2008

Operation Plans, dated November 25, 2024. Available at: <https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Yazoo-Backwater/FileId/401737/>.

¹⁰ Memorandum of Agreement Between the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency and the U.S. Fish and Wildlife Service Concerning the Yazoo Backwater Water Management Plan Compensatory Mitigation Plan, dated November 25, 2024. Available at: <https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Yazoo-Backwater/FileId/401738/>.

¹¹ Memorandum of Agreement Between the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency and the U.S. Fish and Wildlife Service Concerning the Yazoo Backwater Water Management Plan Monitoring and Adaptive Management Plan, dated November 25, 2024. Available at: <https://www.mvk.usace.army.mil/Missions/Programs-and-Project-Management/Yazoo-Backwater/FileId/401739/>.

FD does not apply, regardless of the level of estimated impacts.¹² Thus, the applicability of the 2008 FD to the 2024 Plan for the Yazoo Pumps Project turns on the second and third of the statutory components: i.e., does the project lie within the “defined area” and involve “prohibited discharges” identified by the 2008 FD. After evaluation, the agency concludes the answer to the first question is yes, and the answer to the second question is no. The EPA’s basis for its conclusions is explained below.

A. The 2024 Yazoo Pumps Project is located within the “defined area” subject to the prohibition in the 2008 FD

The EPA’s November 17, 2021, letter referenced above includes a detailed discussion of the “defined area” subject to the prohibition in the 2008 FD. As discussed in that letter, the “defined area” is the boundary of the 2007 FSEIS Yazoo Backwater Project Area. According to the 2007 FSEIS, the “Yazoo Backwater Project Area, as depicted on Plate 4-1, lies in west-central Mississippi between the mainline Mississippi River east bank levee and the hill line on the east. The triangular shaped area extends northward about 65 miles to the latitude of Hollandale and Belzoni, Mississippi, and comprises about 1,446 square miles (926,000 acres).” (2007 FSEIS Main Report, p. 20).

The 2007 Recommended Plan for the Yazoo Pumps Project was located at the Steele Bayou site adjacent to the Steele Bayou WCS within the Yazoo Backwater Project Area. The 2024 Plan for the Yazoo Pumps Project is also proposed to be located at the Steele Bayou site adjacent to the Steele Bayou WCS. Thus, the proposed discharges of dredged or fill material associated with the 2024 Plan are in the “defined area” subject to the prohibition.

B. Discharges from the 2024 Yazoo Pumps Project are not prohibited by the 2008 FD

The 2008 FD does not prohibit all CWA Section 404 discharges in the defined area; rather it prohibits “the discharge of dredged or fill material for the purpose of construction of [2007] FSEIS Plans 3 through 7, and Modified Plan 6.” (2008 FD, p.73).¹³ The record, as described below, supports the conclusion that the 2024 Plan for the Yazoo Pumps Project is not one of the prohibited plans and thus does not include prohibited discharges. The 2008 FD states the following:

“The adverse effects associated with the prohibited projects are the result of a combination of operational factors including the capacity of the pumping station and its associated pump-on elevations. While this Final Determination prohibits the construction of FSEIS Plans 3 through 7, and Modified Plan 6, the data supporting this Final Determination indicates that derivatives of the prohibited projects that involve only small modifications to the operational features or

¹² Nothing in such a finding limits the EPA’s discretion to initiate a new CWA Section 404(c) review process.

¹³ The proposed scope of the discharges subject to the prohibition narrowed between the Proposed Determination and Recommended Determination and the scope identified in the Final Determination. The scope of the prohibited discharges in the Proposed Determination included those “for the purpose of constructing the Yazoo Backwater Area Project’s pumping station or any other pumping proposal in the Yazoo Backwater Area that would involve significant adverse impacts on waters of the United States.” (73 FR 14819). Similarly, the scope of the prohibited discharges in the Recommended Determination included those “for the purpose of construction of the proposed project or any similar pump project in the Yazoo Backwater Area that would result in an unacceptable adverse effect to the waters of the United States.” (2008 RD, p.69).

location of these proposals would also likely result in unacceptable adverse effects and would generate a similar level of concern and review by EPA.” (2008 FD, p.73).

As the EPA indicated in its November 17, 2021, letter from EPA Assistant Administrator for the Office of Water, Radhika Fox, to Acting Assistant Secretary of the Army (Civil Works), Jaime Pinkham, referenced above, this text was included in the 2008 FD to provide advance notice to the Corps regarding what to expect if it asks the EPA to modify the 2008 FD based on “only small modifications to the operational features or location” of the pumping station. Namely that small modifications to the pumping station that do not result in significant reductions in the environmental impacts of the project “would generate a similar level of concern and review by EPA” and any requests to modify the 2008 FD based on such inconsequential project changes “would also likely result in unacceptable adverse effects” and thus, would likely not support such modification requests to the 2008 FD. Thus, the 2008 FD prohibits discharges from the specified plans and future plans with the exact same operational features (e.g., pump capacity and pump on elevation) as the 2007 Plans as well as future plans with “small modifications” to the operational features of the 2007 Plans.

The 2024 Plan includes modifications to the operational features that qualify as more than small modifications from the plans prohibited by the 2008 FD. It includes a 25,000 cfs pumping station and different seasonal variations in the pump on elevation that allow water to reach a maximum of 93.0 feet (significantly higher than any of the plans prohibited by the 2008 FD). Because the 2024 Plan does not contain the same operational features (e.g., pump capacity and pump on elevation) as the plans prohibited by the 2008 FD, and because the operational features include more than small modifications to the operational features of the plans prohibited by the 2008 FD (Table 1), the 2024 Plan is not prohibited by the 2008 FD. These differences were designed by the Corps to help ensure that the 2024 Plan would be less environmentally damaging than those prohibited by the 2008 FD. Importantly, the Corps has signed an MOA with the EPA and the USFWS that provides assurances that the water control plans will not change without concurrence from the EPA.

1. The pumping elevations for the 2024 Plan are considerably different from the plans prohibited by the 2008 FD

The YSA is home to highly functional, forested riverine wetlands, known as riverine backwater wetlands, which require periodic flooding at intervals at least every one to five years to deliver their full suite of wetland ecological functions (Smith and Klimas 2002). According to Smith and Klimas (2002), riverine backwater wetlands are found in the 5-year floodplain which the 2024 FEIS estimates to be bounded by the 92.8-foot elevation. Pumping elevations proposed in the prohibited plans never exceeded 91 feet and thus would have significantly reduced or in some cases eliminated the periodic flooding necessary for these wetlands to deliver their full suite of wetland ecological functions. According to the 2024 FEIS, to minimize impacts to riverine backwater wetlands, it was recognized that some level of periodic flooding would need to be provided to the entire 5-year floodplain. As a result, the 2024 Plan allows flooding to reach the 93.0-foot elevation during the non-crop season (16 October - 24 March) (2024 FEIS, Section 3).

The 2024 FEIS (Appendix F-3 – Wetlands) demonstrates how the higher pumping elevations in the 2024 Plan make it less environmentally damaging than the 2007 Plans. The plans evaluated in the 2007 FSEIS used a narrow wetland assessment area that only evaluated the impacts of those plans to the subset of

wetlands in the 2-year flood frequency that experience at least 14 consecutive days of flood inundation. Using the same narrow assessment area, the 2024 FEIS compares the wetland impacts of the 2024 Plan to both 2007 Plan 5 (the 2007 Recommended Plan) and 2007 Plan 7 (the least environmentally damaging of the plans prohibited by the 2008 FD) and finds that implementation of the 2024 Plan would reduce total wetland functional losses by 74 percent compared with 2007 Plan 5 and 10 percent compared with 2007 Plan 7 (2024 FEIS, Appendix F-3 – Wetlands, p.24 and Table 99). These levels of reductions in impacts demonstrate that the changes to the operational features, and specifically the pumping elevations, associated with the 2024 Plan are more than “small modifications.”

2. The pumping capacity for the 2024 Plan is distinguishable from the plans prohibited by the 2008 FD

To ensure that the pump station would be able to effectively manage water elevations at 90.0 feet during crop seasons and up to 93.0 feet during non-crop seasons, varying pump capacities were considered. The 2024 FEIS evaluates the following pump capacities: 14,000 cfs; 17,500 cfs; 20,000 cfs; 22,100 cfs; and 25,000 cfs (2024 FEIS, Appendix A – Engineering Report, Table 2-26). However, pumping capacities less than 25,000 cfs were screened out for two reasons:

- First, they would not allow the Corps to effectively manage water levels to 93 feet. These lower pump capacities would require pumping to be initiated at much lower elevations to manage water at 93 feet. Initiating pumping at lower levels would increase impacts to riverine backwater wetlands by reducing the frequency and duration of flooding for these wetlands located between 90 and 93 feet. (2024 FEIS, Section 3).
- Second, they would not allow the Corps to fully utilize the 1985 Water Control Manual which allows rising water from the Mississippi and Yazoo Rivers to flow into the YSA up to an elevation of 75 feet. The smaller pump capacities would require the Corps to close the gates at lower water elevations to preserve more storage capacity in the YSA sump areas in the event of rainfall occurring within the YSA drainage during periods of backwater flooding. The current practice of closing the gates at lower water elevations would continue existing conditions that limit fish passage. (2024 FEIS, Section 3).

All the 2007 Plans prohibited by the 2008 FD included a 14,000 cfs pumping station. The 2024 FEIS makes clear that this size pumping station would not be able to deliver the environmental benefits associated with the higher pumping elevations and the proposed management of the Steele Bayou WCS that are central to the 2024 Plan. The size of the pump itself and its purpose to deliver these levels of environmental benefits demonstrate that the change to the pumping capacity associated with the 2024 Plan is more than a “small modification.”

3. Water Control Plan MOA provides assurances that neither the pump operation plan nor the water control structure operation plan will change without concurrence from EPA

Concerns have been raised that the Corps could unilaterally change aspects of the pump operation plan or water control structure operation plan for the Recommended Plan described in the 2024 FEIS, as it is not uncommon for the Corps to make changes in its water control plans. However, in this case, the Corps has entered into an MOA with the EPA and the USFWS that assures, among other things, that the Corps will obtain concurrence from the EPA that the adverse environmental effects of changes or deviations have been adequately mitigated before the Corps implements any changes or non-

emergency deviations to the pump operation plan or water control structure operation plan for the Recommended Plan described in the 2024 FEIS. The assurances provided in the Water Control Plan MOA are an important consideration in this determination.

III. Evaluation of proposed compensatory mitigation

Even though the 2024 Plan represents a less environmentally damaging project than the plans prohibited by the 2008 FD, the direct wetland impacts of the 2024 Plan are greater than those of the 2007 Plans, and the total wetland impacts (direct and secondary/indirect) are within the range discussed in the 2008 FD. The record, as described below, explains why the estimated wetland impacts of the 2024 Plan remain high despite the environmental improvements in the project and why the proposed compensatory mitigation is expected to reduce these impacts to an acceptable level.¹⁴

A. Effects of increasing pumping capacity and broadening the impact assessment area

1. Direct Impacts to Wetlands

The lower the pumping elevations, the greater the secondary/indirect impacts to wetlands because of reductions in the frequency and duration of backwater flooding in the YSA necessary to sustain riverine backwater wetland functions (Smith and Klimas 2002). As discussed above, according to the 2024 FEIS, to effectively manage floodwaters at the higher pumping elevations contemplated in the 2024 Plan (and thereby reduce secondary/indirect impacts to wetlands), a larger pumping capacity than was proposed in 2007 (i.e., 14,000 cfs) was necessary. According to the 2024 FEIS, a pumping capacity of 25,000 cfs is necessary to effectively manage floodwaters at the higher pumping elevations in the 2024 Plan, and this larger capacity pumping station requires a larger project construction footprint. Thus, to effectuate a large reduction in the secondary/indirect impacts to wetlands, an increase in direct wetland impacts was necessary. This explains why the direct impacts to wetlands have increased from the loss of 38 acres/240 AAFCUs for the 2007 Recommended Plan to the loss of 432 acres/1,884 AAFCUs for the 2024 Plan.

2. Secondary/Indirect Impacts to Wetlands

Despite implementing higher pumping elevations which are designed to reduce the secondary/indirect impacts of the pumping station to wetlands, the 2024 FEIS reports that the 2024 Plan would result in secondary/indirect impacts to wetlands comparable to those reported for the plans prohibited by the

¹⁴ Under CWA Section 404(c), the EPA has discretionary authority to prohibit, restrict, deny and/or withdraw the use of any defined area as a disposal site “whenever” it determines that the discharge of dredged or fill material will have an unacceptable adverse effect on statutorily enumerated aquatic resources. The statutory standard does not direct the EPA to consider mitigation when determining what constitutes an unacceptable adverse effect, nor restrict the EPA to exercising its authority unless and until the EPA has before it a Corps permit identifying required mitigation. The EPA’s regulations provide that “[i]n evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the section 404(b)(1) guidelines.” (40 CFR 231.2). The EPA may consider mitigation a relevant portion of the CWA Section 404(b)(1) guidelines when certainty regarding mitigation exists, such as when a permit has been issued with an approved compensatory mitigation plan or, as here, where the Corps plans to proceed with a Civil Works Project authorized under 33 CFR 335.2 in lieu of a permit and has committed to implement a specific compensatory mitigation plan and agreed, among other things, to obtain EPA concurrence on any changes to that plan.

2008 FD (i.e., the loss of approximately 25,470 AAFcUs affecting approximately 92,867 acres of wetlands). The reason for this similarity is that the 2024 FEIS uses a larger assessment area that provides a more comprehensive estimate of wetland impacts than the narrow assessment area used in the 2007 FSEIS.

As discussed above, the 2007 FSEIS evaluates secondary/indirect impacts to wetlands in a narrow assessment area, identifying impacts to just the subset of wetlands in the 2-year flood frequency that experience at least 14 consecutive days of flood inundation (an assessment area including approximately 139,000 acres of potential wetland area according to the 2024 FEIS, Appendix F-3 – Wetlands, Table 29¹⁵). In response to critiques from the EPA, the USFWS and others on the 2007 FSEIS, the 2024 FEIS evaluates secondary/indirect impacts to wetlands that experience any period of flood inundation in the entirety of the 5-year flood frequency, a larger geographic area more likely to provide a comprehensive estimate of these wetland impacts (an assessment area including approximately 330,000 acres of potential wetland area according to the 2024 FEIS, Appendix F-3 – Wetlands, Table 29). This more thorough accounting of impacts to riverine backwater wetlands consistent with the Hydrogeomorphic assessment method helped the Corps to design a compensatory mitigation strategy that would fully offset anticipated wetland impacts.

B. Compensatory mitigation is expected to reduce adverse effects to an acceptable level

As discussed above, the 2008 FD identified extensive deficiencies with the compensatory mitigation proposed to address the impacts of the 2007 Plans (2008 FD, pp. 60-62). The 2008 FD raised concerns that impacts were underestimated for several reasons. First, impact assessment areas for wetlands and fisheries/aquatic resources were overly narrow and failed to capture functional losses to aquatic and terrestrial resources that occurred outside the boundaries of the 14-day flood duration interval within the 2-year floodplain. Additionally, the 2007 FSEIS did not ensure that compensatory mitigation sites would be located where they would continue to receive flooding at a frequency and duration sufficient to support the suite of ecological functions provided by riverine backwater wetlands. The 2008 FD determined that reforesting lands within areas potentially impacted by the proposed project was insufficient to compensate for project impacts. Numerous other deficiencies identified in the 2008 FD include lack of sufficient suitable (i.e., restorable) acreage available in the targeted area, the lack of hydrologic restoration measures to offset functional losses caused by reduced flood frequency and duration, failure to identify specific compensation sites, and complete reliance on compensation sites not yet acquired via purchase of conservation easements from willing landowners. The 2008 FD notes that this reliance on future willing sellers would likely result in a noncontiguous patchwork of fragmented compensation sites unlikely to deliver the ecological benefits predicted by the 2007 FSEIS. Accordingly, the 2008 FD “finds that the Corps has not demonstrated that potential impacts of the Yazoo Backwater Area Project can be adequately mitigated to reduce the impacts to an acceptable level.” (2008 FD, p. 73).

The Corps designed its 2024 Plan to address these deficiencies. The 2024 FEIS’ use of a larger assessment area (i.e., the entirety of the 5-year flood frequency) for its wetlands and fisheries/aquatic resources impacts assessments (Appendix F-3 – Wetlands and Appendix F-6 – Aquatic Resources/Fisheries) ensures that likely impacted resources are fully assessed (2024 FEIS, p. iii). The

¹⁵ This value reflects the sum of potential wetland areas in the 2-year flood frequency interval that are flooded at 5 percent or greater duration intervals.

2024 FEIS also commits to ensuring that all compensatory mitigation sites will be located where they will continue to receive flooding at a frequency and duration sufficient to adequately support target ecological resources. As previously noted, all wetland compensation would be located within the post-project 2- and 5-year floodplains, and all necessary offsets for impacts to fisheries spawning and rearing habitat would be located within the post-project 2-year floodplain (2024 FEIS, p. 181). These changes ensure that the project impacts are accounted for, and sufficient compensation is being required to offset impacts to wetlands and the fish and wildlife resources that depend on them.

In addition, the higher pumping elevations of the 2024 Plan ensure that there is sufficient suitable (i.e., restorable) acreage available in the targeted area since larger portions of the YSA will remain below the pumping elevations as compared to the 2007 and 2020 Recommended Plans (2024 FEIS, Appendix F-3 – Wetlands p. 21). Finally, the use of the Mississippi Delta – In-Lieu Fee Program will ensure that regulatory requirements for mitigation planning are being addressed and that compensation sites are appropriately sized and located to deliver anticipated ecological benefits (2024 FEIS, pp. 179-183). As part of the Interagency Review Team that oversees the work of this in-lieu fee program, the EPA will be closely involved in the review and oversight of mitigation project implementation by the in-lieu fee program.

Most importantly, the Corps' commitment to purchase all necessary in-lieu fee program credits prior to any work in waters of the United States associated with the 2024 Plan ensures that appropriate compensatory mitigation sites will be secured, and environmental benefits will accrue on those sites before any impacts from the proposed project occur (2024 FEIS, p. 181 and Compensatory Mitigation MOA, p. 1). Fulfilling this commitment to fully compensate for the 2024 Plan's impacts in advance of proposed discharges of dredged or fill material will ensure timely and effective compensation so that the 2024 Plan would not exacerbate cumulative wetland impacts in the YSA and the Lower Mississippi River Alluvial Valley (2024 FEIS, Appendix I, pp. 30-32).

The Compensatory Mitigation MOA associated with the 2024 Plan includes further assurances that its compensatory mitigation will be timely and effective in addressing anticipated project impacts, including a commitment that the Corps will obtain concurrence from the EPA on any changes to the compensatory mitigation plan prior to any work in waters of the United States associated with the 2024 Plan.

Similarly, the Monitoring and Adaptive Management MOA includes important agreements among the Corps, the EPA and the USFWS on procedures for the development, review, approval, and oversight of long-term monitoring efforts designed to help identify actual project-induced, landscape-scale changes and thereby inform adaptive management decisions regarding ongoing implementation of water management and compensatory mitigation efforts in the YSA.

The USFWS has also evaluated the proposed compensatory mitigation plan. As discussed in its December 10, 2024, final *Fish and Wildlife Coordination Act* Report for the proposed project, the USFWS finds that the proposed compensatory mitigation would fully offset impacts to wetlands as well as estimated impacts to aquatic resources/fisheries, waterfowl and wildlife.

For these reasons, the EPA finds that the proposed compensatory mitigation plan is expected to reduce the adverse effects of the 2024 Plan to an acceptable level.

IV. Conclusions

Based on a comprehensive evaluation of the 2008 FD and the record for the 2008 FD, 2007 FSEIS and 2024 FEIS, the agency has concluded that the CWA Section 404 discharges from the 2024 Yazoo Pumps Project are not prohibited by the 2008 FD. Therefore, the 2008 FD does not apply to the 2024 Plan for the Yazoo Pumps Project. This analysis is based on the 2024 Plan for the Yazoo Pumps Project as presented in the 2024 FEIS and assumes implementation of the Memorandums of Agreement referenced above. This letter is limited to the 2024 Plan as proposed and does not address the applicability of the EPA's 2008 FD to any potential future plans, including modifications to the 2024 Plan, that the Corps may propose.

Also, as part of our review, the EPA separately evaluated and considered the proposed compensatory mitigation designed to offset the project's unavoidable impacts to wetlands and other aquatic resources, as well as fish and wildlife species. Although the estimated impacts for the 2024 Plan remain high due in part to the broader scope of the impact assessment area and the larger project construction footprint associated with the proposed pumping station (which is necessary so the greater pumping capacity can deliver the environmental benefits discussed above), the proposed compensatory mitigation is expected to reduce adverse effects to an acceptable level. Of particular importance is the commitment to purchase all necessary in-lieu fee program/mitigation bank credits and/or secure all Corps-constructed compensation sites prior to commencing any work in waters of the United States associated with the 2024 Plan. Any changes to the compensatory mitigation plan, including failure to purchase necessary in-lieu fee program/mitigation bank credits and/or secure Corps-constructed compensation sites prior to commencing work in waters of the United States, would raise serious questions regarding whether impacts will be reduced to an acceptable level and thus the EPA would consider the Plan for review pursuant to CWA Section 404(c).

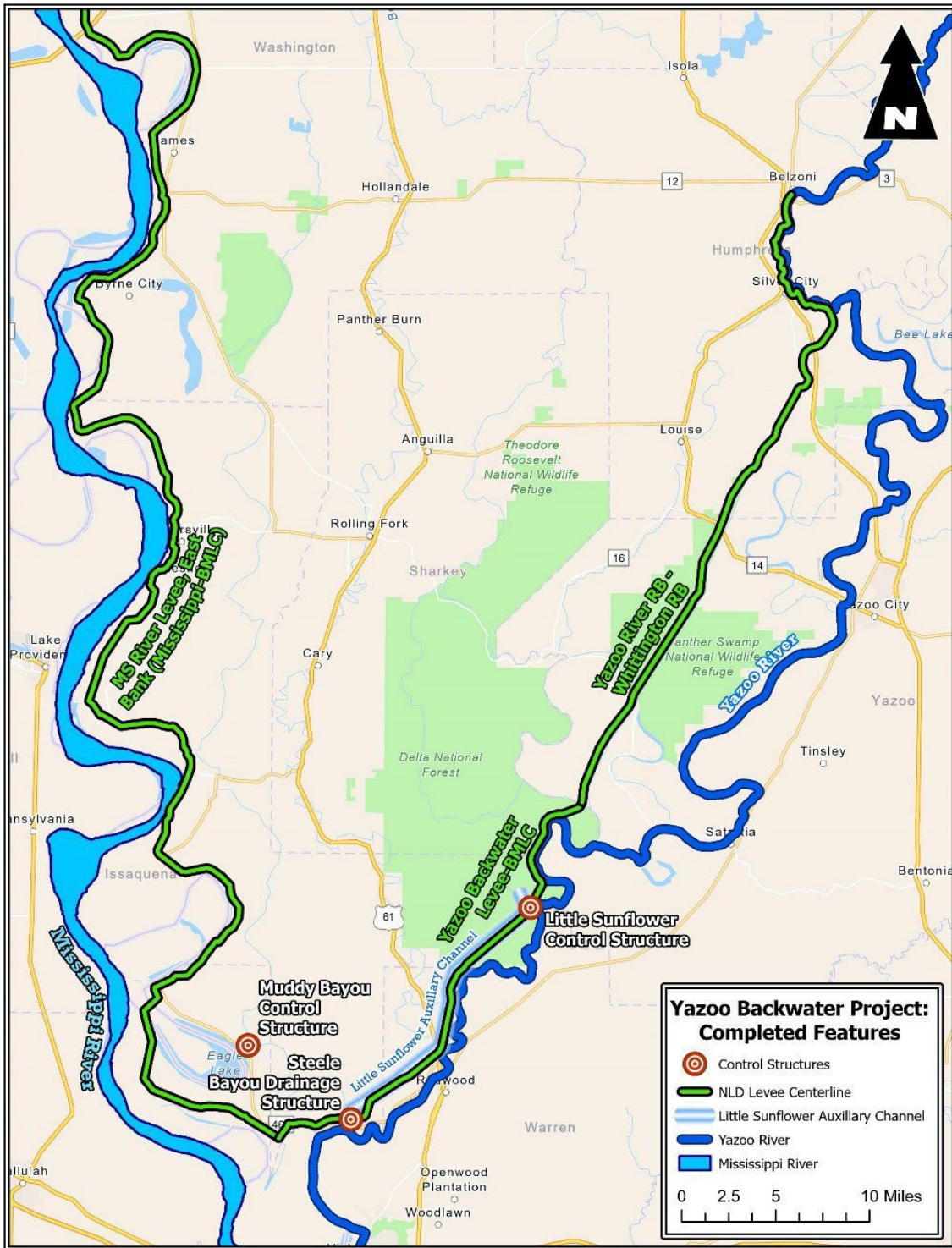


Figure 1. Completed features of the Yazoo Basin, Yazoo Backwater, Mississippi, Project (Yazoo Backwater Project). Figure obtained from the 2024 FEIS (Figure 1-2).

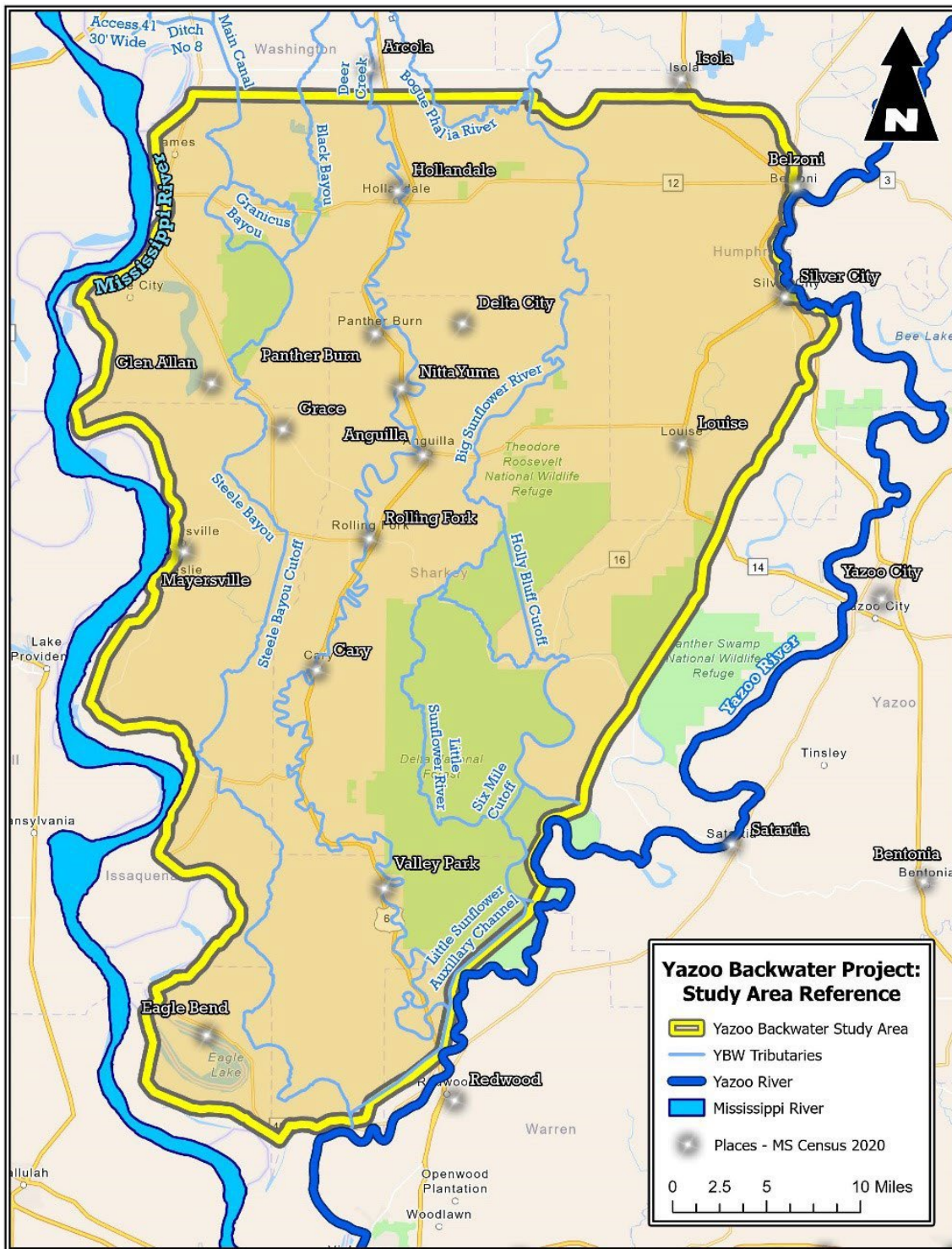


Figure 2. Yazoo Backwater Study Area (YSA). Figure obtained from the 2024 FEIS (Figure 1-1).

Table 1. Comparison of Yazoo Pump Plans prohibited in the 2008 Final Determination and proposed 2024 Pump Plan^a.

	2007 Plan 3	2007 Plan 4	2007 Plan 5	2007 Plan 6	2007 Plan 6 Modified	2007 Plan 7	2024 Plan
Pump Station Capacity (cfs ^b)	14,000	14,000	14,000	14,000	14,000	14,000	25,000
Crop Season Pump Elevation (NGVD ^c)	80.0'	85.0'	87.0'	88.5'	88.5'	91.0'	90.0'
Crop Season Date	1 MAR to 31 OCT	N/A	N/A	N/A	1 MAR to 31 OCT	N/A	25 MAR to 15 OCT
Non-Crop Season Pump Elevation (NGVD)	85.0'	85.0'	87.0'	88.5'	91.0'	91.0'	93.0'
Non-Crop Season Date	1 NOV to 28 FEB	N/A	N/A	N/A	1 NOV to 28 FEB	N/A	16 OCT to 24 MAR
Wetland Direct Impacts (acres)	38	38	38	38	38	38	432
Wetland Direct Impacts (AAFCUs ^d)	-240	-240	-240	-240	-240	-240	-1,884
Wetland Indirect Impacts using 2007 Assessment Area (acres)	118,486	101,629	66,945	48,066	28,408 to 48,066 ^e	28,408	Not available
Wetland Indirect Impacts using 2007 Assessment Area (AAFCUs)	-43,990	-28,132	-14,188	-9,300	-3,949 to -9,300 ^e	-3,949	-1,881
Wetland Indirect Impacts using 2024 Assessment Area (acres)	Not available	Not available	Not available	Not available	Not available	Not available	92,867
Wetland Indirect Impacts using 2024 Assessment Area (AAFCUs)	Not available	Not available	Not available	Not available	Not available	Not available	-25,470
Nonstructural: Acquisition of Structures	N/A	N/A	N/A	N/A	N/A	N/A	Voluntary below 93.0'
Nonstructural: Voluntary Acquisition of Agricultural land (acres)	0	Up to 37,200 ^f	Up to 55,600 ^{f,g}	Up to 81,400 ^f	Up to 81,400 ^f	Up to 124,400 ^f	Up to 11,816 at or below 2-yr floodplain and up to 27,675 between 2-yr and 5-yr floodplain

	2007 Plan 3	2007 Plan 4	2007 Plan 5	2007 Plan 6	2007 Plan 6 Modified	2007 Plan 7	2024 Plan
Compensatory Mitigation (acres)	53,363	27,230	15,029 ^{h,i}	6,913 ^h	9,156 ^h	0	5,722 ^j
Compensatory Mitigation Acquisition	Willing sellers; Easement	Willing sellers; Easement	Willing sellers; Easement	Willing sellers; Easement	Willing sellers; Fee Title or Easement	N/A	Purchase ILF credits
Timing of Compensatory Mitigation Acquisition	N/A	N/A	15,029 acres secured prior to operation of pumps	N/A	N/A	N/A	All credits secured prior to any work in WOTUS
Water Control Structure Management	Hold water 70.0 to 73.0' during low-water periods	Hold water 70.0 to 73.0' during low-water periods	Hold water 70.0 to 73.0' during low-water periods	Hold water 70.0 to 73.0' during low-water periods	Hold water 70.0 to 73.0' during low-water periods	Hold water 70.0 to 73.0' during low-water periods	Allow water up to 75.0' during high-water events
Interagency MOAs – between Army, EPA, and USFWS	N/A	N/A	N/A	N/A	N/A	N/A	1) Water Control Manual 2) Mitigation 3) Monitoring and Adaptive Management

^a Sources 2007 FSEIS Table SEIS-12, Table SEIS-21, pages SEIS-43 to 52, Table 10-20, and materials provided by the Corps at the February 29, 2008, meeting with EPA Region 4 as well as 2024 FEIS Section 3 and Wetlands Appendix Tables 53, 92, 98, and 99.

^b Cubic feet per second.

^c National Geodetic Vertical Datum.

^d Average Annual Functional Capacity Units

^e In 2008, the Corps indicated that it had not calculated this estimate but that its value would fall between the impact estimates for FSEIS Plans 6 and 7.

^f Total includes historic and current compensatory mitigation.

^g The EPA views this number to be 40,571 acres of reforestation because the 55,600-acre figure includes 10,662 acres of compensation for the proposed project as well as 4,367 acres of compensation for impacts associated with already implemented aspects of related projects. Acquisition would have started 2 months after the Record of Decision was signed and continued for 14 years.

^h These totals were provided by the Corps in the materials they shared at the February 29, 2008, meeting with EPA Region 4.

ⁱ Minimum amount of acreage required prior to operation of the pumps.

^j In addition, the Corps proposes to offset the loss of approximately 352 Average Annual Habitat Units (AAHUs) for shorebirds (i.e., through the establishment of approximately 400 additional acres of managed wetlands).

Table 2. Estimated functional impacts and mitigation required for 2024 Plan. Values obtained from the 2024 FEIS (Table 6.1).

Assessment	2024 FEIS Reference	2024 Recommended Plan	
		Functional Impacts	Mitigation Required (acres)
Wetlands	Appendix F-3	27,354 AAFCU ^a	5,722
Aquatic Resources and Fisheries	Appendix F-6	3,851 ADFA ^b	3,106
Waterfowl	Appendix F-5	196,721 Annual DUD ^c	338
Terrestrial Wildlife - Migratory Landbirds (Prothonotary Warbler, Kentucky Warbler, Wood Thrush, Acadian Flycatcher)	Appendix F-4, Sub-appendix A	694 AAHU ^d	1,056
Terrestrial Wildlife - Shorebirds	Appendix F-4, Sub-appendix B	352 AAHU	403
Terrestrial Wildlife - Great Blue Heron	Appendix F-4, Sub-appendix C	698 AAHU	776 to 2,742 ^e

^a Average Annual Functional Capacity Units.

^b Average Daily Flooded Acres.

^c Annual Duck-Use-Days.

^d Average Annual Habitat Units.

^e Varies depending on proximity to existing nesting colonies and foraging habitat, see 2024 FEIS, Appendix F-4, Sub-appendix C, Table C-5.