Comments on the
Pearl River Basin, Mississippi Federal Flood Risk Management Project
Revised Draft Environmental Impact Statement (July 2025)

Submitted by the

National Wildlife Federation

August 18, 2025

Submitted by electronic mail to pearlriverfrm@usace.army.mil

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The National Wildlife Federation appreciates the opportunity to provide these comments on the Revised Draft Environmental Impact Statement for the Pearl River Basin, Mississippi Federal Flood Risk Management Project (July 2025) (the RDEIS) prepared by the Army Corps of Engineers (Corps).

The National Wildlife Federation urges the Corps to reject the environmentally devastating Alternatives D1 (with weir) and E1 (without weir) and any and all derivatives of those plans that involve damming the Pearl River or dredging the Pearl River and/or its vital floodplain. Instead, the Corps should recommend an expanded version of Alternative A1 that includes the robust use of natural and nature-based measures to provide meaningful flood relief to vulnerable Jackson neighborhoods while protecting the vital Pearl River and its floodplain wetlands and forests.

The National Wildlife Federation is the nation's largest conservation education and advocacy organization with more than 6.4 million members and supporters and conservation affiliate organizations in 52 states and territories. The National Wildlife Federation has a long history of advocating for the protection, restoration, and ecologically sound management of the nation's rivers, floodplains, and wetlands, including through modernizing federal water resources planning.

General Comments

The National Wildlife Federation urges the Corps to reject the environmentally devastating Alternative D1 (with weir) and Alternative E1 (without weir) which will both cause significant damage to the Pearl River and its vital floodplain wetlands and forests and the fish and wildlife that rely on these essential habitats. These alternatives will expose vulnerable communities to dangerous toxins. These alternatives will increase flood risks for some communities without addressing the root causes of flooding in vulnerable Jackson neighborhoods. These alternatives will destroy vital recreational opportunities. These alternatives cannot be economically justified and cannot be recommended for construction unless the Corps first prepares a comprehensive feasibility study and environmental impact statement that comply with all applicable federal laws and support the recommended alternative.[1]

Instead of pursuing Alternative D1 or E1, the Corps should develop and recommend an expanded version of Alternative A1 that includes the robust use of natural and nature-based measures to provide meaningful flood relief to vulnerable Jackson neighborhoods while protecting the vital Pearl River and its floodplain wetlands and forests. The expanded Alternative A1 should:

1. Increase the number of homes elevated and the number of businesses flood proofed to provide additional protections.

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[1] Congress would also need to authorize any such recommendation before the Corps could proceed with construction, as acknowledged in the RDEIS.

2. Eliminate the arbitrarily imposed barriers to community participation that require all structure owners to pay for an extensive array of so-called "ineligible" costs associated with elevations regardless of the owner's ability to pay.[2]
3. Incorporate natural and nature-based flood measures to reduce flooding, including restoring key reaches of the Pearl River, restoring key reaches of tributaries to the Pearl River that flow through vulnerable Jackson neighborhoods, and implementing carefully planned levee setbacks.
4. Implement carefully planned small-reach levees for vulnerable Jackson neighborhoods that suffer from recurring floods if supported by additional study.
5. Reconfigure targeted Pearl River bridges to eliminate pinch points along the Pearl River.
6. Elevate targeted road segments with a documented history of flooding.
7. Ensure close coordination with the managers of the Ross Barnett Reservoir and robust review of potential modifications to the Reservoir's operating regime.
8. Establish a reliable flood warning system.
9. Implement these measures through an incremental approach that ensures prompt completion of measures that protect the most vulnerable homes and communities, including home elevations and tributary restoration.

The National Wildlife Federation highlights that we and other organizations have presented many of the elements of our detailed comments to the Corps on multiple occasions. Our most recent comment letters are provided at Attachment A and are incorporated into these comments as though fully set forth herein.

Detailed Comments

A. The RDEIS Demonstrates that Alternatives D1 and E1 Must Be Rejected

The RDEIS shows that Alternatives D1 and E1 must be rejected because each alternative would cause extensive, highly destructive impacts. Each alternative is an unacceptable derivative of the One Lake Plan that was properly rejected by the Corps in 2024 (and was "the most environmental damaging plan"[3] evaluated by the non-federal sponsor[4] in its 2018 Draft EIS as confirmed by the U.S. Fish and Wildlife Service[5]).

- Alternative D1 includes a major new dam that will turn a large swath of free-flowing river into a 1,500-plus acre reservoir,[6] and excavation of 954 acres of river and

[2] These barriers are outlined at RDEIS, Main Report at 3-36 to 3-37.
[3] Letter from Joseph A. Ranson (U.S. Fish and Wildlife Service Field Supervisor, Louisiana Ecological Services) to Michael E. Goff dated August 16, 2018 (providing the Services' comments on the 2018 Draft EIS).
[4] The non-federal sponsor is the Rankin-Hinds Pearl River Flood and Drainage Control District.
[5] Integrated Draft Feasibility Study & Environmental Impact Statement, Pearl River Basin, Mississippi Federal Flood Risk Management Project Hinds & Rankin Counties, MS (June 13, 2018) (the "2018 Draft EIS").
[6] See, USACE, Pearl River Basin, Mississippi, Federal Flood Risk Management Project – Commander's Report and Environmental Impact Statement (June 11, 2024) (the 2024 Commander's Report) at 8 ("The

floodplain habitat across 9 river miles, among other elements. Alternative D1 will directly impact a minimum of 1,317 acres of vital habitat—including the destruction of 740 acres of forested wetlands, 260 acres of forested uplands, and 232 acres of riverine habitat (main channel and feeder streams).[7] Alternative D1 will "likely" adversely affect six species listed under the federal Endangered Species Act and "may" adversely affect two additional listed species.[8] Alternative D1 will cause significant, long-term impacts to wildlife and significant impacts to fisheries and aquatic resources.[9] Construction of Alternative D1 would also impact HTRW sites (i.e., there is a high probability of encountering HTRW during construction).[10] The RDEIS has not assessed the indirect impacts from Alternative D1,[11] despite the mandatory legal requirement to do so.

- Alternative E1 includes all the same elements as Alternative D1 except for the dam. Alternative E1 will directly impact a minimum of 1,035 acres of vital habitat—including the destruction of 740 acres of forested wetlands, 260 acres of forested uplands, 81 acres of lacustrine habitat, and .1 acres of stream habitat.[12] Alternative E1 will "likely" adversely affect three species listed under the federal Endangered Species Act and "may" adversely affect five additional listed species.[13] Alternative E1 will cause significant, long-term impacts to wildlife and long-term minor negative impacts to fisheries and aquatic resources.[14] Construction of Alternative E1 would also impact HTRW sites (i.e., there is a high probability of encountering HTRW during construction).[15] The RDEIS has not assessed the indirect impacts from Alternative E1,[16] despite the mandatory legal requirement to do so.

Summaries of the D1 and E1 project elements and impacts, as presented in the RDEIS, are provided in the tables below.

Alternatives D1 and E1 would also create significant Reservoir-related risks to public safety, as documented in comments on the RDEIS submitted by the Pearl River Valley Water Supply District (which manages the Ross Barnett Reservoir).[17] As highlighted in those comments:

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existence of the proposed weir could impact sediment load within the newly formed reservoir due to reduced velocities and entrainment potential.").

[7] RDEIS, Appendix F—Preliminary Mitigation Plan at 13, 20.
[8] RDEIS, Main Report at ES-xii.
[9] RDEIS, Main Report at 4-9 to 4-10.
[10] RDEIS, Main Report at ES-xiii.
[11] RDEIS, Appendix F—Preliminary Mitigation Plan at 18.
[12] RDEIS, Appendix F—Preliminary Mitigation Plan at 13, 20.
[13] RDEIS, Main Report at ES-xii.
[14] RDEIS, Main Report at 4-9 to 4-10.
[15] RDEIS, Main Report at ES-xiii.
[16] RDEIS, Appendix F—Preliminary Mitigation Plan at 18.
[17] A copy of the Water Supply District comment letter is provided at Attachment B to these comments.

- It “would be risky and dangerous” to reduce discharges from the Barnett Reservoir Dam by 20% when discharging more than 35,000 cubic feet per second (cfs) as proposed in the RDEIS because doing so could result in water “quickly” topping the emergency spillway, “causing catastrophic failure and flooding” that would also jeopardize water flow to the O.B. Curtis Water Treatment Plant, and cause “profound” economic damages to the areas around the Reservoir.

- Raising the low flow surface elevation on the downside of the dam from 250.50 to 256.50 feet as proposed, would mean that “many sections of the downstream aprons of the spillway would be permanently submerged, making inspections and repairs much more complicated.”

- The “hazards associated with Barnett Reservoir dam breaches or high-water events may not have been considered. The loss of life from a breach of the Barnett Dam is very low, but that’s because the floodway downstream is typically unoccupied. We’re concerned that recreational usage of the proposed lake could increase this risk.”

- Spikes in discharges (that may be required because the Reservoir has very little excess storage capacity) may not be possible “without creating unacceptably high downstream water levels or damaging the proposed improvements.”

- The proposed projects could affect Brashear Creek, including raising the creek’s water surface elevations which could exacerbate flash flooding around the creek.

- The Corps has made no attempt to discuss the project or the proposed changes to the Reservoir’s operating plan with the Water Supply District, despite committing to do work closely with the District on those modifications in the RDEIS.

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RDEIS Project Elements	Alternative D1 ("One Lake")	Alternative E1 (D1 without dam)
Dam—256 feet high (RM 286.5)	1 likely “significant hazard” • **No Flood Control Benefits**	N/A
New Drainage Pump	1	N/A
Fish Ladder	1 • 5,000 to 6,000 feet long	N/A
Excavation (RM 285-RM 294)	945 acres • 9 river miles • 500 to 2,600 feet wide • Up to 13 feet deep	Same
Fill Disposal	523 acres	Same
Rock Armoring (JH Fewell and Mays Lake)	98,000 tons of rock	Same
Bridge Stabilization	7 bridges	Same
Hard Point in Tributaries	525 feet	Same
Canton Club Levee (NE Jackson)	1.4 miles	Same
McLeod Levee (NE Jackson)	2.3 miles	Same
Cany Creek Levee (S Jackson)	0.75 to 1 mile	Same
Richland Levee	1.15 miles	Same
Savannah Street Wastewater Treatment wall	6,000 feet	Same

Source: 2025 RDEIS Main Report, Appendix E, and Appendix F

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RDEIS Adverse Impacts	Alternative D1 ("One Lake")	Alternative E1 (D1 without dam)
New "Lake" Surface Area (reservoir impoundment)	1,556 acres	N/A
Preliminary Direct Impacts	1,556 acres of new impoundment 1,317 acres • 740 acres forested wetlands • 260 acres forested uplands • 232 acres riverine habitat (main channel and feeder streams) • 81 acres lacustrine (open water) • Unassessed fish ladder impacts	1,085 acres • 740 acres forested wetlands • 260 acres forested uplands • 81 acres lacustrine (open water) • .1 acres stream habitat
Indirect Impacts	Not Yet Assessed	Not Yet Assessed
Excavation—Acres / Miles (RM 285-RM 294) (9.38 MCY)	954 acres / 9 river miles • 500 – 2,600 feet wide • Up to 13 feet deep	Same
Acres Buried Under Fill	523 acres	Same
Endangered Species Impacts	Likely Adversely Affect: • Gulf Sturgeon • Ringed map turtle • Alligator Snapping Turtle • Pearl River Map Turtle • Louisiana pigtoe • Monarch butterfly May Adversely Affect: • Northern Long Eared Bat • Tricolored Bat	Likely Adversely Affect: • Ringed map turtle • Alligator Snapping Turtle • Pearl River Map Turtle May Adversely Affect: • Northern Long Eared Bat • Tricolored Bat • Gulf Sturgeon • Louisiana pigtoe • Monarch butterfly
Fish and Wildlife (Direct Impacts)	Wildlife: • Significant, long-term impacts Fisheries and Aquatic Resources: • Significant impacts	Wildlife: • Significant, long-term impacts Fisheries and Aquatic Resources: • Long-term minor negative impacts
Increased Sedimentation	Not Assessed	Same
Water Quality	Not Assessed	Same
HTRWs Affected	High Probability	Same
Preliminary Mitigation	5,512 – 11,612 acres	Same

Source: 2025 RDEIS Main Report, Appendix E, and Appendix F

Alternatives D1 and E1 are fundamentally at odds with the statutory objectives of federal water resources investments[18] (recently enshrined in regulation[19]) which direct the Corps to plan water resources projects that protect and restore the functions of natural systems, mitigate any unavoidable damage to natural systems, seek to avoid the unwise use of floodplains and flood-prone areas and minimize adverse impacts and vulnerabilities in any case in which a floodplain or flood-prone area must be used, and seek to maximize sustainable economic development.[20] Neither Alternative D1 nor E1 meet these objectives, including because they would cause extensive damage to the Pearl River and its floodplain and use a significant amount of fill material to create land for development in the floodplain.[21] Alternatives D1 and E1 are also fundamentally at odds with the Corps' statutory "long-term goal to increase the quality and quantity of the Nation's wetlands, as defined by acreage and function."[22]

In addition to these many problems, the RDEIS fails to evaluate a wide array of likely direct, indirect, and cumulative impacts, and fails to include multiple, legally required analyses as discussed throughout these comments.

B. The Corps Should Develop and Adopt an Expanded Version of Alternative A1

The National Wildlife Federation supports the measures included in Alternative A1 but urges the Corps to expand Alternative A1 to more meaningfully address the flood relief needs of metro Jackson.

Alternative A1 is clearly supported by the information in the RDEIS. Alternative A1 is the only RDEIS alternative that could provide prompt, effective flood relief without harming public health, inducing flooding, or creating other public safety risks. Alternative A1 would cause far less ecological harm than Alternative D1 or E1—A1 would impact 44 acres of habitat even if it were expanded to include all four levee segments, resulting in a mere fraction of the direct habitat impacts of Alternative D1 or E1. Alternative A1 is also the only RDEIS "alternative with a positive benefit-to-cost ratio" and the only RDEIS alternative that could be carried out under the existing authorized cost limits.[23] The Corps nevertheless improperly rejected the highly

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[18] Water Resources Development Act of 2007, Section 2031. *Pub. L. 110-114; 42 U.S.C. 1962-3.*
[19] 33 C.F.R. § 234.4 and §234.2(g)(effective as of January 18, 2025).
[20] 33 C.F.R. § 234.4 (quoting *42 U.S.C. 1962-3).*
[21] For example, the RDEIS acknowledges that the fill material will be used to "create" up to 93 acres of "land areas" with an additional 100 acres of fill (up to 10 feet high) being provided to the Rankin-Hinds Pearl River Flood and Drainage Control District for additional use in the project area. RDEIS, Appendix E at 48-49.
[22] 33 U.S.C. § 2317(a).
[23] The cost of Alternative A1 as currently proposed is well below the total authorized project cost, which provides the opportunity to add additional features without requiring new authorization.

practicable Alternative A1 without analyzing it in the final array of alternatives, despite the requirement to do so,[24] as discussed in more detail below.

As noted above—and as recommended in our previous comments on this project—the National Wildlife Federation urges the Corps to adopt an expanded version of Alternative A1 that utilizes a full array of nonstructural, natural, and nature-based measures to more meaningfully address the flood relief needs of metro Jackson. While Alternative A1 includes a limited number of home elevations and structural floodproofing measures, it leaves a significant array of highly effective natural and nature-based measures off the table, including such things as floodplain restoration, tributary restoration, levee setbacks, and voluntary relocations that have been successfully used across the country to protect communities and the environment.

Critically, an expanded Alternative A1 should include restoration of the Pearl River tributaries that flow through metro Jackson, and other measures that redress flood impacts along those tributaries. Many of the flooding problems experienced in the Greater Jackson area are the result of rain-induced flash flooding that impacts urban neighborhoods located along the 12 creeks that flow into the Pearl River. These neighborhoods are predominantly low-income communities of color making tributary flooding a serious environmental justice issue.

Addressing tributary flooding is a fundamental component of the watershed approach that the Corps is required to take when developing alternatives:

> (6) *Watershed approach.* When developing alternatives, the water resources problem being addressed should be analyzed on a watershed based level to facilitate inclusion of a complete range of solutions, after considering the breadth of impacts across the watershed. A key aspect of the watershed approach is the analysis of information regarding watershed conditions and needs, allowing for consideration of upstream and downstream conditions and needs; consideration of other projects and actions in place, underway or planned by other agencies within the watershed; and the more thorough addressing of the potential impacts of a proposed action. . . . The watershed scale used to develop alternatives should encompass a geographical area large enough to ensure plans address cause and effect relationships among affected resources and activities, both upstream and downstream, and cumulative in nature, that are important to gaining public benefits or avoiding harm from the project. The watershed approach ensures that the interconnectedness of systems is evaluated to fully understand the root causes and symptoms of the water resources problem and the full range of potential public benefits.[25]

[24] RDEIS, Main Report at 4-26 ("While the impacts of Alternative A1 are presented within Section 4, they primarily reflect potential future programmatic measures. As a result, Alternative A1 has been excluded from the final array of alternatives.")
[25] 33 C.F.R. § 234.6(c)(6).

The Corps' decision to eliminate consideration of tributary flooding is unavailing. According to the RDEIS, tributary measures (which were arbitrary restricted to tributary channel clear out and maintenance) were "removed from further consideration in Alternatives D1 and E1 upon identifying that this work is being undertaken by the NRCS, State and other local entities through the Mississippi Watershed projects."[26] The Corps should instead take advantage of these disparate efforts as components of a more comprehensive approach to addressing this significant problem. At an absolute minimum, the Corps should reject any measure—including Alternatives D1 and E1—that would increase flooding along these tributaries.

The National Wildlife Federation urges the Corps to work closely with community members, the conservation community, and academic experts to develop and recommend an expanded version of Alternative A1 that:

1. **Increases the number of homes elevated and the number of businesses flood proofed.** An alternative presented by the Corps in August 2023 recommended elevating or flood-proofing 600 structures in the 100-year floodplain.[27] According to the Corps, that alternative would have an estimated cost of $199 million and a benefit cost ratio of 2.7. As a result, these measures could be pursued immediately upon the issuance of a Record of Decision using funding that has already been appropriated (at least $221 million is currently available to the Corps). The Corps should prioritize elevations and floodproofing of structures that have suffered from repeated flooding. In developing an expanded Alternative A1, the Corps should also consider targeted voluntary relocations or voluntary buyouts of properties with a documented history of flooding problems.[28] The RDEIS suggests that voluntary buyouts are an unlikely solution because they would require a policy waiver,[29] but such waivers are clearly possible as the Vicksburg District recently recommended voluntary buyouts for 152 homes as part of the Yazoo Backwater Pumping Plant project in Mississippi's South Delta.[30] T

   The Corps is also relying extensively on home elevations and floodproofing in the Southwest Coastal Louisiana Non-Structural Coastal Storm Risk Management Project which will protect up to 3,500 structures, including 1,000 homes in just the initial phase.[31] This project has an 80% participation rate, as highlighted in the RDEIS.[32] As

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[26] RDEIS, Main Report at 3-17; see also RDEIS, Main Report at 3-10.
[27] USACE August 2023 PowerPoint presentation prepared for the Rankin-Hinds Pearl River Drainage and Flood Control District (Levee Board), which was obtained in response to a Freedom of Information Act request.
[28] Removal of some of the highest flood risk structures and restoring those properties to green space/habitat would support natural infrastructure approaches to capture floodwater, especially from localized rain-induced events.
[29] RDEIS, Main Report at ES-ix.
[30] USACE, Yazoo Backwater Area Water Management Project Final Environmental Impact Statement (November 2024); USACE, Record of Decision Yazoo Backwater Area Water Management Project Final Environmental Impact Statement Yazoo Basin, Mississippi (January 16, 2025).
[31] Source: https://cims.coastal.louisiana.gov/outreach/Projects/SWCoastal (accessed July 27, 2024).
[32] RDEIS, Main Report at 3-36.

highlighted by the Corps, "[r]ather than constructing costly levees that may disrupt the environment," the state- and federally funded Southwest Coastal Louisiana Non-Structural Coastal Storm Risk Management Project "targets homes most at risk of flooding by lifting them with hydraulic jacks and securing them on beams about the 100-year floodplain. The system is designed to help houses withstand flooding from Category 3 and Category 4 storms. Homeowners pay nothing, aside from possible minor code compliance repairs and their own expenses while they must be out of the house during the lifting phase."[33]

Under this project, one home was recently raised six feet in a single day and the Corps also installed an outdoor elevator-like lift so the elderly residents didn't have to climb stairs. The Corps was able to do all of this work for just $200,000 and the homeowners are now saving $5,000 a year in flood insurance premiums.[34] The homeowners were thrilled because the elevation happened so quickly, nothing in the house was touched or broken—not even one dish—and the electricity stayed on through the whole process.[35] As highlighted by the Corps, this Louisiana project "represents a strong return on investment, as every dollar invested is projected to save five dollars in potential damages, and it's being used nationwide to establish criteria for such projects in coastal areas elsewhere."[36]

2. **Eliminates the arbitrarily imposed barriers to community participation.** As noted above, the Corps has arbitrarily imposed barriers to community participation that require structure owners to pay for an extensive array of so-called "ineligible" costs associated with elevations and other nonstructural measures.[37,38] These barriers are particularly inappropriate since the majority of identified flood prone areas in metro Jackson are in environmental justice communities. The Corps should eliminate burdening these communities with costs that can be—and should be—covered by the federal government and non-federal sponsor. The Corps could also explore taking a whole of government approach to covering such costs through existing federal programs such as the: Federal Emergency Management Agency's (FEMA) Building

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[33] U.S. Army Corps' *Our Mississippi* newsletter, "Rising About the Storm", Summer 2025. As highlighted by the Corps, "[r]ather than constructing costly levees that may disrupt the environment, this precedent-setting, sate- and federally funded initiative targets homes most at risk of flooding by lifting them with hydraulic jacks and securing them on beams about the 100-year floodplain. The system is designed to help houses withstand flooding from Category 3 and Category 4 storms. Homeowners pay nothing, aside from possible minor code compliance repairs and their own expenses while they must be out of the house during the lifting phase." Id.
[34] Id.
[35] Id.
[36] Id.
[37] These barriers are outlined at RDEIS, Main Report at 3-36 to 3-37.
[38] The National Wildlife Federation has been unable to locate any statutory or regulatory language that requires the Corps to assign these costs to structure owners. Absent such requirements, there would be no legal impediment to the Corps including all, or at least some, of these costs as a project cost which would be paid by the federal government and the non-federal sponsor.

Resilient Infrastructure and Communities Program, Flood Mitigation Assistance Program, and Hazard Mitigation Grant Program; Housing & Urban Development's (HUD) Community Development Block Grants for Mitigation and Disaster Recovery; and U.S. Environmental Protection Agency's (EPA) Environmental Justice Small Grants Program and Sewer Overflow & Stormwater Reuse Municipal Grants Program.

The RDEIS identifies a wide range of "ineligible costs", which are costs that would have to be borne by the structure owner, instead of the Federal government and non-federal interest.[39] According to the RDEIS, these ineligible costs include such things as structural and system repairs required to address existing deficiencies; costs associated with bringing a non-conforming structure into compliance with current building code, housing code, and/or other applicable codes; remediation, removal and disposal or environmental contaminants including but not limited to HTRW, asbestos, and asbestos-containing materials; and costs associated with special access improvements (aside from those covered by the Americans with Disabilities Act (ADA), that are not deemed eligible), among numerous other things.[40]

As accurately recognized in the RDEIS, these ineligible costs could prevent many structure owners from being able to take advantage of the non-structural measures:

> Significant portions of the Study Area have been identified as low-income communities; therefore, it is likely that some structure owners may not have the financial ability to address any potential additional, ineligible project costs. Preliminary visual assessment of the residences within the Project Area has indicated that many of these structures may require rehabilitation to be eligible to participate in the non-structural alternative. The potential owner-borne costs may prevent structure owners from participating thereby reducing the effectiveness provided by the nonstructural plan."[41]

3. **Incorporates natural and nature-based flood measures to reduce flooding.** Natural and nature-based measures, including river and floodplain restoration and levee setbacks, could provide important protections for Jackson neighborhoods while protecting and restoring the environment.

   ***Restoration*:** Critically, the Corps should take action to restore the in-stream functions, wetlands, and green spaces along the Pearl River mainstem (including between RM 284 and RM 290) and the 12 Pearl River tributaries that flow through the Greater Jackson area where much of the documented flooding occurs. In developing these measures, particular attention should be paid to restoring Town and Lynch Creeks which flow through highly vulnerable neighborhoods and have a history of flash flooding.

[39] RDEIS, Main Report at 3-36.
[40] RDEIS, Main Report at 3-36 to 3-37.
[41] RDEIS, Main Report at 3-37.

***Levee Setbacks*:** Levee setbacks are a well-recognized tool for reducing flood risks as they create more room for the river to spread out during flood events, while helping to reduce erosion and supporting healthier and more dynamic river systems. Despite these well-recognized values, the RDEIS dismisses levee setbacks based on a single conclusory statement: "This feature was determined to provide limited flood risk reduction benefits and therefore was removed from further consideration."[42] The Corps should evaluate the existing levee system to identify segments that may require structural reinforcement or that need improvement, and with a critical goal of identifying potential segments where setting levees may be set back farther from the Pearl River to give the river more room to spread out during flood events. Key areas to consider include highly constricted reaches of the Pearl River (for example, from RM 288 to RM 291).

***Protective Value*:** The protective value of natural and nature-based measures is well recognized. Moreover, evidence of the effectiveness of natural systems in reducing flood and storm damages continues to mount, as highlighted in the National Wildlife Federation's report on The Protective Value of Nature[43] and in the examples highlighted below. As aptly noted by the Reinsurance Association of America: "One cannot overstate the value of preserving our natural systems for the protection of people and property from catastrophic events."[44]

As an example, wetlands prevented $625 million in flood damages in the 12 coastal states affected by Hurricane Sandy, and reduced damages by 20 to 30 percent in the four states with the greatest wetland coverage.[45] The forest and other conservation lands that make up the 28,000 acre Meramec Greenway along the Meramec River in southern Missouri contribute about $6,000 per acre in avoided flood damages annually.[46] Wetlands in the Eagle Creek watershed of central Indiana reduce peak flows from rainfall by up to 42 percent, flood area by 55 percent, and maximum stream

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[42] RDEIS, Main Report at 3-10, 3-17.

[43] Glick, P., E. Powell, S. Schlesinger, J. Ritter, B.A. Stein, and A. Fuller. 2020. The Protective Value of Nature: A Review of the Effectiveness of Natural Infrastructure for Hazard Risk Reduction. Washington, DC: National Wildlife Federation. See Attachment 2 to these comments for some of the studies cited in this section.

[44] Restore America's Estuaries, Jobs & Dollars BIG RETURNS from coastal habitat restoration (September 14, 2011).

[45] Narayan, S., Beck, M.B., Wilson, P., et al., . Scientific Reports 7, Article number 9463 (2017), doi:10.1038/s41598-017-09269-z.

[46] Kousky, C., M. Walls, and Z. Chu. 2014. Measuring resilience to climate change: The benefits of forest conservation in the floodplain. p 345–360. In: V.A. Sample and R.P. Bixler, eds. Forest Conservation and Management in the Anthropocene: Conference Proceedings. Proceedings RMRS-P-71. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

velocities by 15 percent. [47] As the Corps recognized in 1972 in its plan to reduce flooding along the Charles River in Massachusetts:

> Nature has already provided the least-cost solution to future flooding in the form of extensive [riverine] wetlands which moderate extreme highs and lows in streamflow. Rather than attempt to improve on this natural protection mechanism, it is both prudent and economical to leave the hydrologic regime established over millennia undisturbed.[48]

Natural and nature-based measures are also often more cost-effective than structural measures. For example, using natural infrastructure solutions for reducing coastal flood risks in Texas, Louisiana, Mississippi, and Florida would have a benefit-cost ratio of 3.5 compared to just 0.26 for levees and dikes. Restoring wetlands in this region could prevent $18.2 billion in losses while costing just $2 billion to carry out.[49] Natural and nature-based features also have the significant added benefits of being self-sustaining and avoiding the risk of catastrophic structural failures. Importantly, natural and nature-based measures can work both alone and in combination with more traditional grey infrastructure to reduce flood and storm risks.

Restoration and other nature-based measures could be carried out in a way that maximizes co-benefits, such as supporting public recreation opportunities.[50] The local interest in developing recreational opportunities is evidenced by a recent design plan created for a 178-acre nature preserve in northeast Jackson through the community-based organization, Mississippi Communities United for Prosperity.

4. **Implements carefully planned small-reach levees to protect vulnerable Jackson neighborhoods that suffer from recurring floods if supported by additional study.** The National Wildlife Federation appreciates that the Corps incorporated the 1.4-mile Canton Club Levee into Alternative A1, as recommended by multiple organizations and community members. This levee is expected to reduce flooding for 250 structures. The National Wildlife Federation recommends that the expanded A1 also include the targeted, small-reach levee protections for the McLeod-Parkway and Cany Creek neighborhoods that are included in Alterantives D1 and E1[51] if those measures are

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[47] Javaheri, A., and M. Babbar-Sebens. 2014. On comparison of peak flow reductions, flood inundation maps, and velocity maps in evaluating effects of restored wetlands on channel flooding. Ecological Engineering 73: 132–145.

[48] American Rivers, Unnatural Disasters, Natural Solutions: Lessons from The Flooding of New Orleans (2006) (quoting USACE, from Massachusetts Department of Fish and Game, Functions of Riparian Areas for Flood Control, http://www.mass.gov/dfwele/river/pdf/riparian_factsheet_1.pdf.)

[49] Borja G. Reguero et al., "Comparing the Cost Effectiveness of Nature-Based and Coastal Adaptation: A Case Study from the Gulf Coast of the United States," PLoS ONE 13, no. 4 (April 11, 2018), https://doi.org/10.1371/journal.pone.0192132.

[50] For example, the City of Jackson owns 740 acres of property along the Pearl River that is currently unutilized.

[51] RDEIS, Main Report at ES-11.

supported by additional study. These levees, like the Canton Club Levee, are not dependent on D1 or E1 for their effectiveness, and as such could be included in an expanded A1.

The Corps' preliminary data shows that the Canton Club, McLeod-Parkway, and Cany Creek levees would provide important flood risk reduction for approximately 705 homes, as shown in the table below. These levees would have a combined length of 4.7 miles, causing measured ecological impacts to an estimated 6.6 acres of wetlands, 26.9 acres of forested upland, and 0.12 acres of stream habitat. The Corps should also consider including the Richland Levee in an expanded A1. This levee would benefit 40 mostly industrial structures and impact 9.45 acres of wetland and upland habitat as well as 0.02 acres of stream habitat.

The National Wildlife Federation agrees that further study is needed before these levee segments are approved or constructed as the RDEIS provides only the most preliminary information on the protections, environmental impacts, and the potential for the proposed levees to induce flooding in other locations. The National Wildlife Federation urges the Corps to prioritize flood risk reduction measures, including the identified targeted levees, for homes.

Preliminary Assessment of the Four Levee Segments Proposed in the RDEIS[52]

Proposed Levee	Structures Reduced Flooding	Levee Length (Miles)	Wetland Impacts (Acres)	Forested Upland Impacts (Acres)	Stream Impacts (Acres)	Total Impacts (Acres)
Canton Club	250+ homes	1.40	1.50	9.00	0.04	10.54
McLeod-Parkway	415 homes	2.30	5.10	11.90	0.06	17.06
Cany Creek	40 homes	1.00	0.00	6.00	0.02	6.02
.02Richland	40 structures (industrial)	1.20	1.05	9.45	0.02	10.52
Combined Total	**705 homes 40 structures**	**5.90**	**7.65**	**36.35**	**0.14**	**44.14**

The Corps should also consider adding the upgrade to the existing non-Federal levee around the Savanna Street Wastewater Treatment Plant (WWTP) as a component of an expanded A1. This element is currently included in Alternatives D1 and E1. This WWTP serves as critical infrastructure to Greater Jackson and experiences a high flood risk.

[52] Data presented in Table 1 was compiled from the RDEIS and personal email communication from Tammy Gilmore, Biologist/Senior NEPA Specialist, U.S. Army Corps of Engineers' New Orleans District to Jill Mastrototaro, Mississippi Policy Director, Audubon Delta, on August 4, 2025.

This levee upgrade is not dependent on D1 or E1, and as such could be included in an expanded Alternative A1.

5. **Reconfigures targeted Pearl River bridges to eliminate pinch points along the Pearl River**. As highlighted by a retired engineer with 30 years of experience working with the Corps, the pilings of multiple bridges along the Pearl River significantly restrict the river's flow, aggravating flooding problems along the Pearl.[53] This includes a railroad bridge that is no longer used or functionable. The Corps should fully investigate options for removing bridge pilings and other bridge elements that are no longer serving a purpose and for reconfiguring the pilings and elements of other bridges along the Pearl River that are significantly restricting the river's flow.

6. **Elevates targeted road segments with a documented history of flooding.** As noted in the 2024 Commander's Report, a "structure in a flood prone area may or may not receive flooding at and above its first floor, but that flooding does, at a minimum, impact transportation networks in the study area causing economic impacts including flooding of vehicles and travel delays for critical services."[54] The Corps should investigate those areas where road elevations could provide important relief including primary and secondary roads that are known to experience flooding problems and serve as key mobility routes. The Corps could also explore opportunities for using a whole of government approach to road elevations, including through the U.S. Department of Transportation's Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Program and Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants.

7. **Ensures close coordination with the managers of the Ross Barnett Reservoir and robust review of potential modifications to the Reservoir's operating regime.** As discussed above, the Pearl River Valley Water Supply District (which manages the Ross Barnett Reservoir) has raised significant concerns with elements of Alternatives D1 and E1 as they could create highly significant Reservoir-related risks to public safety. The Pearl River Valley Water Supply District also highlighted the Corps' failure to discuss any elements of the project's proposed changes to the Reservoir's operating plan with the Water Supply District. As part of an expanded A1, the Corps should work closely with the Water Supply District and other relevant state and local entities to evaluate possible to changes to the operating plan of the Ross Barnett Reservoir to help minimize flood risks. Since the last major flood of the Greater Jackson area in 1983 (a 100-year event), management of the Ross Barnett Reservoir and Spillway has become an increasingly important flood risk reduction tool. During 2018, Mississippi's second wettest year on record, which included several flood stage events on the Pearl, the reservoir was effectively managed to minimize flood threats and help protect structures. These benefits also were evident during the winter of 2020, which included

[53] Pearl River FRM - RDEIS Public Meeting July 29, 2025 - Monticello, MS Session (recording at 1:14:21-1:16).
[54] 2024 Commander's Report at 9.

the wettest January on record. As the 2024 Commander's Report noted, while the reservoir was not designed for flood control it is estimated to have provided a 28% flood peak reduction since 1979.[55]

8. **Establishes a reliable flood warning system.** As part of an expanded A1, the Corps should work closely with relevant local and state entities and the Federal Emergency Management Agency to develop and implement a reliable flood warning system for Jackson that prioritizes providing advanced and accurate notice of flood levels to vulnerable Jackson communities and residents.

9. **Adopts an incremental approach to implementation.** The Corps should evaluate opportunities for incrementally implementing the solutions included in an expanded A1 with a focus on promptly advancing measures (such as home elevations and tributary restoration) that protect the most vulnerable homes and communities.

A natural or nature-based alternative, like a non-structural alternative, must be fully evaluated in the final array of alternatives.[56] A nature-based alternative is an "alternative that can effectively address the problem through the feasible use of nature-based solutions (including natural systems and ecosystem processes)."[57] Nature-based solutions and nonstructural measures are also to "be considered as components of the other alternatives in the final array."[58] In analyzing the alternatives included in the final array of alternatives, the Corps "should describe, evaluate, and estimate the key social, environmental, and economic effects, and assess the contributions of each alternative to the Guiding Principles" among other things.[59] "All alternatives in the final array must be developed using a comparable level of rigor and detail."[60]

The RDEIS does not meet these requirements. In addition to failing to assess a full range of non-structural and nature-based measures that have repeatedly been presented to the Corps, the RDEIS improperly dismissed the more limited non-structural Alternative A1 without conducting the proper level of review. As acknowledged in the RDEIS: "While the impacts of Alternative A1 are presented within Section 4, they primarily reflect potential future programmatic measures. As a result, Alternative A1 has been excluded from the final array of alternatives."[61]

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[55] 2024 Commander's Report at 11. The 2024 Commander's Report also notes that "State and local entities may consider operational changes at the Ross Barnett Reservoir and revising the Ross Barnett Water Control Manual to formalize continued flood reduction capacity inform future discharge operations." Id. at 11.
[56] 33 C.F.R. § 234.8.
[57] Id.
[58] Id.
[59] 33 C.F.R. § 234.9.
[60] 89 Fed. Reg. 103992, 104013 (December 19, 2024).
[61] RDEIS, Main Report at 4-26.

The RDEIS also undermines the selection of Alternative A1 by suggesting that A1 does not meet the "completeness" requirement for Corps planning. The RDEIS states that A1 does not satisfy the Corps' planning criteria for "completeness" because successful implementation of the plan "is dependent on actions from others (i.e. the homeowners)."[62] This is not, however, a relevant factor for assessing project "completeness" under the Corps' planning regulations. Indeed, if this were a relevant factor, a non-structural component could never be deemed as providing an acceptably "complete" solution, rendering meaningless the multiple statutory and regulatory directives requiring the Corps to fully evaluate non-structural and nature-based solutions.

Corps regulations define "completeness" as:

> The extent to which an alternative provides and accounts for all features, investments, and/or other actions necessary to realize the planned effects, including any necessary actions by others. It does not necessarily mean that alternative actions need to be large in scope or scale."[63]

"Completeness does not equate to a particular scope or scale to be considered complete,"[64] as explicitly acknowledged by the Corps. Completeness is just one of many factors that must be considered during project planning.

Moreover, the RDEIS also acknowledges that homeowner participation for Alternative A1 "has not been projected with specificity." Instead, the RDEIS provides examples of participation in two different non-structural projects. According to the RDEIS, the "ongoing structure elevation program associated with the Southwest Coastal study in southwest Louisiana is currently tracking at approximately 80%. However, pilot programs across a thirty-year period in the Cumberland Basin in Tennessee have stayed at a consistent 50%."[65]

The Louisiana Southwest Coastal Louisiana Project Nonstructural Coastal Storm Damage Risk Reduction, which has the identified 80% participation rate, will elevate or flood-proof 800 to 1,000 structures in the first phase alone[66]—far more homes than would be elevated under Alternative A1. Notably, the RDEIS also fails to reference a similar non-structural project in Mandeville, Louisiana with a participation rate that is projected to reach 96% by next year.[67]

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[62] RDEIS, Main Report at 3-7 ("*Completeness:* Alternative A1 includes a non-structural component, which includes the raising of residential homes and flood proofing of non-residential structures. Successful implementation of this plan is dependent on the participation rate of owners and may include additional cost incurred by the homeowners that are not covered in the Federal cost. As a result, implementation of the non-structural plan is dependent on actions from others (i.e. the homeowners). Homeowner participation has not been projected with specificity.").
[63] 33 C.F.R. § 234.2.
[64] 89 Fed. Reg 103992, 103995 (December 19, 2024).
[65] RDEIS, Main Report at 3-36.
[66] Source: https://cims.coastal.louisiana.gov/outreach/Projects/SWCoastal (accessed July 27, 2024).
[67] This project is funded through the Flood Emergency Management Agency's Hazard Mitigation Grant Program and Flood Mitigation Assistance Program. Source: https://www.fema.gov/case-

The RDEIS also fails to discuss the differences between the older Cumberland Basin pilot program and the more recent nonstructural projects in Louisiana, which could shed additional light on the different participation levels. Moreover, the Corps has not reached out to homeowners to assess their interest in participating in such a program, as acknowledged in the RDEIS ("Homeowner participation has not been projected with specificity.").

C. The Corps May Not Defer Feasibility and EIS Analyses for Alternatives D1/E1 to PED

The RDEIS acknowledges that the Corps' analysis of Alternatives D1 and E1 are "preliminary" and "based off the information currently on hand,"[68] and that the "level of analysis is commensurate with the level of data and information available at this time.[69] Because of this minimal level of analysis, the also RDEIS acknowledges that:

> Further analysis and a supplemental NEPA document would be necessary to fully assess the alternative selected for construction, including any potential compensatory mitigation in the next phase of the study.[70]

The RDEIS also acknowledges that Alternatives D1 and E1 require "additional analysis and design, feasibility level decision documents, and project specific mitigation plan."[71] If either of these alternatives is selected, the Corps also will have to develop a "detailed cost estimate" during the PED phase that "will be based on additional analysis and design, feasibility level decision documents, and project specific mitigation plan. If the cost exceeds the 902 limit a decision document to request revised authority will be prepared. In addition, supplemental NEPA documentation will be required during the PED phase if such solutions are recommended."[72]

However, the Corps may not defer these analyses—which are fundamental to understanding adverse impacts and benefits of Alternatives D1 and E1—until PED. To the contrary, both the

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study/mandeville-louisiana-city-stays-afloat-promoting-elevations (accessed Juley 27, 2024). The National Wildlife Federation highlighted this project in our comments on the 2024 DEIS.

[68] RDEIS, Main Report at 4-1. See, also e.g., RDEIS, Main Report at 4-28 (referencing preliminary assessment of HTRW sites); RDEIS, Main Report at 5-1 (stating that the "Indirect impacts have not been quantified yet and therefore the mitigation need for indirect impacts has not been determined" and highlighting the preliminary nature of the RDEIS mitigation assessment); RDEIS, Main Report at 5-2 (repeatedly referencing the preliminary nature of both the impacts assessment and the proposed mitigation); RDEIS, Main Report at 6-4 ("additional analysis" is needed to determine if the water quality and downstream flood conveyance "impacts are acceptable" for Alternatives D1 and E1, and "updated modeling" is needed to confirm water quality impacts for D1 and E1); RDEIS, Main Report at 6-12 (referencing unknown extent of impacts to Endangered Species Act listed mussels and preliminary nature of costs required to comply with the Reasonable and Prudent Measures identified in the draft Biological Opinion).

[69] RDEIS, Main Report at 4-1.

[70] RDEIS, Main Report at 4-1.

[71] RDEIS, Main Report at 6-1.

[72] RDEIS, Main Report at 6-1.

National Environmental Policy Act and the Water Resources Development Acts require the Corps to conduct these analyses **before** a project moves into the PED phase.

1. NEPA and WRDA Prohibit the Corps from Deferring the Analyses to PED

The Corps may **not** recommend Alternative D1 or E1 for construction without **first** preparing a comprehensive feasibility report and environmental impact statement that comply with the National Environmental Policy Act (NEPA), the Water Resources Development Act (WRDA) planning requirements, the Clean Water Act, the Endangered Species Act, the Fish and Wildlife Coordination Act, and other applicable federal laws. Those studies would then have to support any alternative that is recommend in a Record of Decision. The RDEIS violates these legally required, common sense requirements by selecting alternatives with a promise of studying them in the future.

As the Corps is well-aware, it must prepare a feasibility study **before** it can recommend a (non-CAP) project to Congress for construction.[73] The feasibility study includes the required environmental impact statement (EIS) by definition.[74] The RDEIS repeatedly acknowledges that Alternatives D1 and E1 must be assessed through a feasibility study and EIS, a need reinforced by the fundamental lack of information on either of those Alternatives. The Corps would then have to obtain Congressional authorization to construct the recommended alternative, as neither D1 nor E1 are authorized by Section 3104 of WRDA 2007, as discussed below.

NEPA also unquestionably requires the Corps to prepare an EIS **before** recommending a project for construction. Indeed, the very purpose of NEPA is to ensure a "coherent and comprehensive up-front environmental analysis to ensure informed decision making to the end that 'the agency will not act on incomplete information, only to regret its decision after it is too late to correct.'"[75]

To comply with NEPA, an EIS must rigorously explore and objectively evaluate "a reasonable range of alternatives to the proposed agency action" that "are technically and economically feasible, and meet the purpose and need of the proposal."[76] The EIS must be carried out **before** a decision is made; it is not to be used to justify a decision that has already been made.[77,78] But that is precisely what the Corps has proposed in the RDEIS.

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[73] 33 U.S.C. 2282.
[74] Id.
[75] Marsh v. Ore. Natural Res. Counc., 490 U.S. 360, 371 (1989); see also Robertson v. Methow Valley Citizens, 490 U.S. 332, 349 (1989).
[76] 42 U.S.C. 4332.
[77] City of Bridgeton v. FAA, 212 F.3d 448, 458 (8th Cir. 2000) (quoting Citizens Against Burlington, Inc. v. Busey, 938 F.2d 190, 196 (D.C. Cir. 1991), cert. denied 502 U.S. 994 (1991); citing Simmons v. U.S. Army Corps of Eng'rs, 120 F.3d 664, 666 (7th Cir. 1997)); 40 CFR § 1502.2(g) ("Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.").
[78] Indeed, "[p]roper timing is one of NEPA's central themes." Save the Yaak Comm. v. Block, 840 F.2d 714, 718–19 (9th Cir. 1988). Timely NEPA analysis that is integrated at the earliest possible time ensures

In a clear-cut violation of NEPA, the Corps proposes to pre-select Alternative D1 or Alternative E1 **before** completing the legally required analyses needed to make an informed decision.[79] The Corps then says it will study the selected alternative once it moves to the PED phase—that is, after the decision has been made to select that alternative. But at that point the Corps would be locked into Alternative D1 or E1 without having the information it needed to make an informed decision and without having considered a range of reasonable alternatives.

Such an approach has long been rejected as a clear violation of NEPA. For example, in 1982 the Ninth Circuit Court of Appeals ruled that the Forest Service could not designate an area as nonwilderness without first conducing an EIS to assess the site-specific consequences[80]. The Court ruled that a future EIS looking at these impacts would be "meaningless" if the "later analysis cannot consider wilderness preservation as an alternative to development" and as result must be "carefully scrutinized now" and not at some point in the future when specific development proposals are made.[81] The Court also ruled that "the 'critical decision' to commit these areas for nonwilderness uses, at least for the next ten to fifteen years, is 'irreversible and irretrievable.'"[82]

2. The WRDA 2007 Authorization Does Not Support Deferring the Analyses to PED

The contingent authorization in Section 3104 of WRDA 2007 does not support the Corps' decision to recommend Alternatives D1 or E1 based on the promise of a future feasibility study and EIS during the PED phase.

Section 3104 authorizes construction of the Comprehensive Levee Plan described in the February 2007 Pearl River Watershed, Mississippi, Feasibility Study Main Report, Preliminary Draft. Section 3104 also allows the Secretary to assess the project once again, and contingently authorizes the Secretary to construct the "national economic development plan,

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that "planning and decisions reflect environmental values....'" Id. (citing Andrus v. Sierra Club, 442 U.S. 347, 351, 99 S.Ct. 2335, 2338, 60 L.Ed.2d 943 (1979) (citations omitted); California v. Block, 690 F.2d 753, 761 (9th Cir.1982)). "The rationale behind this rule is that inflexibility may occur if delay in preparing an EIS is allowed: 'After major investment of both time and money, it is likely that more environmental harm will be tolerated.'" Id. (citing Confederated Tribes and Bands of the Yakima Indian Nation v. FERC, 746 F.2d 466, 471–72 (9th Cir.1984) (quoting Environmental Defense Fund v. Andrus, 596 F.2d 848, 853 (9th Cir.1979)), cert. denied, 471 U.S. 1116, 105 S.Ct. 2358, 86 L.Ed.2d 259 (1985)).

[79] California v. Block, 690 F.2d 753, 763 (9th Cir. 1982) (rejecting the Forest Services' decision to conduct a NEPA analysis as part of future forest plan revisions, because those future decisions would already have been constrained by the agency's decision—carried out without the benefit of NEPA review—to designate the area at issue as non-wilderness).

[80] Id.

[81] Id.

[82] Id.

or the locally preferred plan, or some combination thereof" if that reevaluation establishes that <u>each</u> of three conditions[83] are met:

(1) The locally preferred plan provides a level of flood protection that is equal two or exceeds the level of protection provided by the national economic development (NED) plan.

(2) The locally preferred plan is environmentally acceptable.

(3) The locally preferred plan is technically feasible.

Neither Alternative D1 nor E1 are authorized by WRDA 2007 because:

(1) Neither D1 nor E1 are the NED plan authorized in WRDA 2007.

(2) Neither D1 nor E1 are the locally preferred plan identified in WRDA 2007. The WRDA 2007 locally preferred plan was the LaFleur's Lake Plan.[84] The LaFleur's Lake Plan did not satisfy the contingent authorization criteria and has been out of consideration for many years.

(3) The locally preferred plan in this current round of planning was Alternative C. However, the Corps properly rejected Alternative C precisely because it was not environmentally acceptable.[85] As a result, the Corps may not construct Alternative C or a derivative of that plan, including Alternative D1 and Alternative E1 under WRDA 2007.

(4) The RDEIS contends that Alternative D1 is the "Likely Locally Preferred Plan."[86] However, D1 bears no relation to the LaFleur's Lake plan contingently authorized in WRDA 2007 and even if it did, it does not meet the contingent authorization criteria (i.e., it is not environmentally acceptable). In addition, D1 is not economically justified and D1 vastly exceeds the Section 902 cost limit for the project—Alternative D1 would cost more than two and a half times that limit—as fully recognized in the RDEIS.[87] As a

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[83] WRDA 2007, Section 3104(c)(1)("IN GENERAL.-If the Secretary determines under subsection (b) that the locally preferred plan provides a level of flood damage reduction that is equal to or greater than the level of flood damage reduction provided by the national economic development plan and that the locally preferred plan is environmentally acceptable and technically feasible, the Secretary may construct the project identified as the national economic development plan, or the locally preferred plan, or some combination thereof.").
[84] RDEIS, Main Report at 1-10.
[85] RDEIS, Main Report at ES-ii; 2024 DEIS.
[86] RDEIS, Main Report at 1-1.
[87] RDEIS, Main Report at 6-1 ("Section 3104 of WRDA 2007 authorizes construction of Pearl River Basin, MS project to include a flood damage reduction at a total cost of $205,800,000 based on 2007 dollars. The features of the flood damage risk reduction project will be determined by the ASA-CW decision on which alternative to implement. The current cost estimate at the current FY25 price level is

result, Alternative D1 (like Alternative E1) could not be approved under the WRDA 2007 contingent authorization.

The Corps must complete a full feasibility study and environmental impact statement that evaluates Alternatives D1, E1 and reasonable alternatives to those plans before it could recommend either of those alternatives. Those studies would need to comply with the full array of applicable water resources planning and federal environmental laws before the Corps could recommend either of those alternatives. The Corps would have to prepare a detailed cost-benefit analysis, before it could recommend Alternative D1 or E1. The Corps would then have to obtain a new project authorization from Congress before Alternative D1 or E1 could be constructed.

3. The Preliminary NED Determination Does Not Support Deferring the Analyses to PED

The RDEIS identifies Alternative E1 as the "Preliminary NED Plan."[88] However, the Corps does not have the data it needs to make this determination, including because it has not assessed Alternative E1 through a feasibility study and environmental impact statement. As a result, this determination is arbitrary and capricious—and it cannot provide any type of support for the Corps' inappropriate attempt to defer the required feasibility study and environmental impact statements until PED.

To determine the NED plan, the Corps must first account for the costs and benefits of the plans being assessed. The Corps cannot have done this for Alternative E1 (or D1), including because:

(1) The Corps cannot account for the project costs associated with construction and operation and maintenance without first developing the actual plan. This has not been done in the RDEIS but has instead been deferred to the PED phase.

(2) The Corps cannot account for the project costs associated with mitigating adverse impacts (as required by law) without first fully assessing the impacts to wetlands and other aquatic habitats, and the fish and wildlife species that rely on those resources. This has not been done in the RDEIS but has instead been deferred to the PED phase.

(3) The Corps cannot account for the project costs associated with ameliorating toxic discharges from HTRW sites without first assessing which sites will be disturbed and the actions that will be required to prevent and mitigate toxic discharges. This has not been done in the RDEIS but has instead been deferred to the PED phase.

$1,033,106,000 with a fully funded cost estimate of $1,226,079,000. The USACE Section 902 Cost Limit recalculated for FY 2025 as the maximum cost is $475,688,000.").

[88] RDEIS, Main Report at 9-1.

(4) The Corps cannot account for the project costs associated with ensuring the stability of impacted bridges without first assessing which bridges will be affected and the actions needed to ensure stability of the affected bridges. This has not been done in the RDEIS but has instead been deferred to the PED phase.

(5) The Corps cannot assess the project costs associated with mitigating the adverse impacts of induced flooding, without fully assessing where and what those impacts will be. This has not been done in the RDEIS but has instead been deferred to the PED phase.

(6) The Corps cannot assess the project benefits without first having an actual plan and then carefully assessing the full array of benefits that may accrue from that plan.

We also note that the Corps cannot assess whether the Alternative D1 weir is independently justified by recreation benefits, without doing a substantial amount of additional analysis. The Alternative D1 weir must be independent justified through demonstrable recreation benefits because the weir "does not provide any flood risk reduction benefits."[89] To independently (i.e., incrementally) justify the recreation weir, the Corps must first identify the full costs associated with constructing the weir, including among other things: (a) the cost of constructing the weir; (b) the costs of construction and operating the additional measures required as a result of the weir—including the costs of providing additional pumping needs at existing levees as well as seepage protection in the form of berms and slurry walls on existing levee features upstream of the weir; (c) the costs to operate and maintain the weir; and (d) the costs of the compensatory mitigation needed to fully offset the weir's adverse impacts to fish and wildlife and their habitats. The Corps must then be able to show that these combined costs are less than the documentable recreation benefits that would be gained due to the weir less the recreation benefits that would be lost as a result of the weir.

The Corps' planning guidance also prohibits the Corps from recommending the Alternative D1 weir. That guidance prohibits the agency from recommending a weir for recreational purposes unless the recreation activities "have a strong, direct relationship to the proposed flood control measures, for example trails along the channel or levee right-of-way."[90] The weir proposed as part of Alternative D1 does not have this required relationship. This weir would also have to be economically justified independently, and the project without the weir would have to "attain a benefit to cost ratio greater than unity without recreation."[91] We also note that the non-federal sponsor would be required to pay 50% of the costs of this weir, not 35% as incorrectly stated in the 2024 Commander's report.[92]

[89] RDEIS, Main Report at 4-1.
[90] ER 1105-2-100 (Dec. 2023) at E-89, E-287 (adding recreation to non-lake projects).
[91] ER 1105-2-100 (Dec. 2023) at E-287. That Alternative D1 could provide "future opportunities to address water supply, that result from construction of the weir"—a statement that is entirely speculative and unsupported by any documented need—does not alter the fundamental purpose of the weir as a recreational amenity. RDEIS, Main Report at 3-8.
[92] 33 USC 2213(c)(4) (assigning a 50% non-federal cost share for separable costs associated with recreation).

Notably, significant additional detail and design are required to develop the Class 3 level cost estimate[93] (with a least a 35% design maturity) currently required for all Chief's Reports to Congress as directed by the Chief of Engineers.[94] We have been advised that the RDEIS Class 4 cost estimates are based on a design maturity that is less than 15%.[95]

D. The RDEIS Does Not Support Implementation of Alternatives D1 or E1

The RDEIS does not support the implementation of Alternative D1 or E1, including because the RDEIS fails to include multiple essential analyses required by NEPA, the Clean Water Act, WRDA, and other federal environmental laws. The limited analyses that are included are profoundly incomplete and are not supported by the legally required "quantified or detailed information."[96]

The Corps is required to obtain information that "is essential to a reasoned choice among alternatives" and include that information in the DEIS if "the overall costs and timeframe of obtaining it are not unreasonable."[97] Conclusory statements "unsupported by empirical or

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[93] "Class 3 cost estimates require an intermediate level of design for the entirety of a project, which must include thorough investigation of the factors that present the most risk during construction if not properly characterized during feasibility—namely, geotechnical surveys, hydrologic and hydraulic modeling, and site characterization, to include utility mappings. The Committee believes this standard, which gained recent emphasis within the organization but is by no means new, will set projects on a path to success and stability. The Corps is reminded that the maturity of the project design and level of technical detail is the primary factor that determines the class of the estimate; the cost estimate classification cannot come first. The Corps is further reminded that a certified class 3 cost estimate does not retain its classification forever. A proper emphasis on design maturity and scope definition prior to construction fails without timely and regular updates to projects cost, and these project cost updates must go beyond indexing and instead be undertaken to ensure a class 3 cost estimate is achieved." FY26 House E&W Appropriations Committee Report at 10-11 (https://www.congress.gov/119/crpt/hrpt213/CRPT-119hrpt213.pdf).

[94] Testimony of Lt. General Butch Graham (USACE Chief of Engineers) before the Energy and Water Development Subcommittee of the Senate Appropriations Committee, Army Corps of Engineers and Bureau of Reclamation FY26 Budgets (June 11, 2025).

[95] Personal communication between Corps Economist Ben Logan and Pearl Riverkeeper Abby Braman at the July 2025 public meeting in Monticello.

[96] Neighbors of Cuddy Mountain v. U. S. Forest Service, 137 F.3d 1372, 1379 (9th Cir. 1998); Ecology Center v. Castaneda, 574 F.3d 652, 666 (9th Cir. 2009) (requiring "quantified or detailed data"); Natural Resources Defense Council v. Callaway, 524 F.2d 79, 87 (2d Cir. 1975).

[97] 42 U.S.C. 4335(b)(3).

experimental data, scientific authorities, or explanatory information"[98] are not sufficient and cannot satisfy NEPA. The Corps may not rely on an EIS that omits entire sections of analysis.[99]

The Corps has made it clear that the RDEIS does not include the analyses or level of detailed needed. For example, the RDEIS states:

- "Further analysis and a supplemental NEPA document would be necessary to fully assess the alternative selected for construction, including any potential compensatory mitigation in the next phase of the study."[100]

- "Should the ASA select a different combination of features, or all of the features, as the CTO, additional analysis, modeling, and supplemental NEPA analysis would be required."[101]

- "If alternative D1 or E1 were to be selected for implementation based on the estimated total project cost additional authority would be required. . . . [The required] cost estimate will be based on additional analysis and design, feasibility level decision documents, and project specific mitigation plan. If the cost exceeds the 902 limit a decision document to request revised authority will be prepared. In addition, supplemental NEPA documentation will be required during the PED phase if such solutions are recommended.[102]

- "Borrow opportunities would be further investigated during PED and a supplemental NEPA document would be prepared at that time."[103]

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[98] Seattle Audubon Society v. Moseley, 798 F. Supp. 1473, 1479 (W.D. Wash. 1992), aff'd 998 F.2d (9th Cir. 1993); see also, e.g., Klamath-Siskiyou Wildlands Ctr. v. BLM, 387 F.3d 989,995-996 (9th Cir. 2004) ("generalized or conclusory statements" in cumulative effects analyses do not satisfy NEPA); Friends of the Earth v. Army Corps of Engineers, 109 F. Supp. 2d 30, 38 (D.D.C. 2000) (ruling that the Corps must "provide further analysis" to satisfy NEPA because the Corps did not provide "the basis for any" of its claims that the project would have an insignificant impact or that fish and other organisms would simply move to other areas); Sierra Club v. Norton, 207 F. Supp. 2d 1310, 1335 (S.D. Ala. 2002) (stating "Defendant's argument in this case would turn NEPA on its head, making ignorance into a powerful factor in favor of immediate action where the agency lacks sufficient data to conclusively show not only that proposed action would harm an endangered species, but that the harm would prove to be 'significant'").

[99] Cal. ex rel. Lockyer v. United States Dep't of Agric., 575 F.3d 999, 1014-16 (9th Cir. 2009) ("Lockyer II") (holding that agency violated NEPA by failing to analyze impacts of rescinding nationwide regulation); Anderson v. Evans, 371 F.3d 475, 489–92 (9th Cir. 2004) (rejecting as a "major analytical lapse" agency's failure to consider local impacts of broad management plan).

[100] RDEIS, Main Report at 4-1.

[101] RDEIS, Main Report at 3-11

[102] RDEIS, Main Report at 6-1.

[103] RDEIS, Main Report at 3-35.

- "Further planning and analysis would be completed during PED to determine which [mitigation] strategies, stand alone, or combined, would fully compensate for habitat impacts."[104]

- "Potential direct impacts to water supply due to the deterioration of water quality from the existence of the proposed weir could impact sediment load within the newly formed reservoir due to reduced velocities and entrainment potential. During design, additional study and verification would be needed to confirm that adding a large weir would not induce sediment loads to alter the incoming chemistry in such a way to induce failure at the existing J.H. Fewell Plant or any other proposed structure along the newly ponded area. A sedimentation study has been proposed to be completed during the PED phase of this study.[105]

- "Local Levees included within the project have not had analysis due to lack of design and will be further analyzed in PED, if selected."[106]

The 2024 Commander's Report also explicitly states that: "Additional analysis and design, feasibility level decision documents, and NEPA documentation will be required during the PED phase if [flood risk reduction measures not authorized under WRDA 2007] are recommended."[107]

Some of the many missing analyses are discussed below.

1. Dredging Impacts Are Not Assessed

Alternatives D1 and E1 involve extensive dredging (which the RDEIS refers to as excavation) of the Pearl River floodplain and extensive disposal of those dredged spoils, including excavation of 954 acres across 9 miles of river/floodplain habitat and disposal of that dredged spoil which will impact at least 523 acres. As a result of this dredging, additional damaging project features are also required, including at least 525 feet of hard points in tributary channels to prevent tributary incision, stabilization or armoring for bridge abutments, stabilization or armoring for railroad bridge abutments, and placement of 98,000 tons of rock to armor the J.H. Fewell plant and Mays Lake.[108]

These actions will destroy vital wildlife habitat, including bottomland hardwood and other wetlands, small streams, sloughs, and diverse instream habitats that also provide critical ecosystem services, including natural flood protection. None of these impacts have been meaningfully assessed for Alternatives D1 and E1. Instead, the RDEIS provides only the most generalized preliminary statement of the acres that will be affected. This does not provide the

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[104] RDEIS, Main Report at 3-35 to 3-36.
[105] RDEIS, Main Report at 4-28.
[106] RDEIS, Main Report at 6-11.
[107] 2024 Commander's Report at paragraph 6c.
[108] RDEIS, Main Report at 3-18. See also, Section A of these comments.

required analysis of direct, indirect, and cumulative impacts from the extensive and highly damaging dredging (excavation) that are central to Alternatives D1 and E1.

These activities will result in fundamental changes to the Pearl River and its floodplain, with highly significant adverse impacts. These impacts must be assessed before the Corps can recommend construction of Alternative D or E.

2. Fish and Wildlife Impacts Are Not Assessed

Hundreds of species of fish and wildlife, including numerous species listed under the Federal Endangered Species Act or otherwise at-risk, rely on the Pearl River ecosystem and would be harmed by the destruction of vital habitat and transformation of the form and function of the Pearl River ecosystem that would occur under Alternative D1 and E1. Despite this damage, the Fish and Wildlife Service has not been able to provide a final Fish and Wildlife Coordination Act Report for Alternatives D1 or E1; the Service has provided only a preliminary report on Alternatives C, D, and E because it also was not provided enough information to issue a final Fish and Wildlife Coordination Act Report on those alternatives.[109]

As the U.S. Department of the Interior has previously advised, "[w]ildlife resources within the Pearl River Basin are dependent upon the diverse floral composition of associated forested wetlands" and "a higher percentage" of vertebrate wildlife species in the Basin "use bottomland hardwoods as primary habitat (habitat a species depends upon for reproduction and/or feeding during all or a portion of the year) than any other habitat type."[110] Understanding the impacts to fish and wildlife resources requires multiple, detailed analyses of impacts, including such things as:

- Impacts to the fish and wildlife that rely on diverse instream habitats such as braided channels, crossover habitat, sand bars, and backwater habitats and on riverine and floodplain wetlands. Dredging, widening the river, and disrupting the river's flow through impounding the riverine habitat will destroy and damage many of these critical habitats with detrimental effects on a multitude of riverine organisms, ranging from the tiniest of insect larvae, to pearly mussels, to riverine turtles and fishes. As noted by the U.S. Fish and Wildlife Service: "Even though water flow will be maintained through the lake, it will not provide the habitat required for those species needing a riverine environment to survive, thus representing a net loss of approximately 250 aces of this habitat type."[111]

- Impacts to the 124 species of fish that utilize the Pearl River, including many that spawn and rear in the river's floodplain. Floodplains accessed by overbank flows provide vital habitat for a wide array of fish species.

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[109] DEIS, Appendix J, Fish and Wildlife Coordination Act letter dated November 13, 2024.
[110] U.S. Department of the Interior, Fish and Wildlife Service letter to Michael E. Goff at 1 (August 16, 2018) (providing official comments on the DEIS).
[111] Id. at 9.

- Impacts to the 220 bird species that breed, winter, or migrate through the Pearl River.[112] An estimated minimum of 32 million birds depend on the central-lower Pearl River Basin for nesting and migration. More than 17 million birds use this region of the Pearl River basin each year during spring migration, with more than 28 million birds using this region of the Pearl River basin annually during fall migration.[113] Species of particular concern that utilize that Project Area and the Pearl River Basin include: Prothonotary Warbler, Swainson's Warbler, Swallow-tailed Kite (Mississippi State Listed Endangered), Reddish Egret, Clapper Rail, and Wood Stork (Federal and Mississippi State Listed Endangered). The Project is also likely to impact Important Bird Areas (IBAs)[114], including LeFleur's Bluff State Park, Hancock County Marsh Coastal Preserve (MS), East Delta Plain (LA), and Pearl River (LA; nominated).

  The assessment of impacts to migratory birds must account for the cumulative impacts of climate change which can significantly exacerbate the impacts on the many migratory species that utilize the Pearl River and its floodplain. Migratory birds, as with all migratory wildlife, are particularly vulnerable to the impacts of climate change, as recognized by the United Nations Environment Program and the Convention on the Conservation of Migratory Species of Wild Animals.[115] Among many other things, migratory birds are affected by habitat losses, habitat shifts, changes in water regimes, losses and mismatches with food supply, changes in prey range, and increased storm frequency, which can all be greatly exacerbated by climate change, making a meaningful cumulative impacts analysis particularly critical.

- Impacts to the significant number of amphibian and reptile species that rely on the habitat provided by bottomland hardwood wetlands and the Pearl River. The Mississippi Department of Wildlife, Fisheries, and Parks has documented 146 species of reptiles and amphibians in Mississippi.[116] The Mississippi State Wildlife Action Plan

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[112] This information comes from an analysis conducted by the National Audubon Society that was discussed in more detail in the scoping comments on this study submitted by the National Audubon Society on June 29, 2023. A description of the peer-reviewed methodology used by Audubon to develop its model analysis is described in DeLuca, W.V., Meehan, T., Seavy, N., Jones, A., Pitt, J., Deppe, J.L. and Wilsey, C.B., 2021. The Colorado River Delta and California's Central Valley are critical regions for many migrating North American landbirds. *Ornithological Applications*, 123(1).
[113] Id.
[114] An IBA is an area that has been identified using an internationally agreed to set of criteria as being globally important for the conservation of bird populations. National Audubon Society administers the program in the U.S.
[115] UNEP/CMS Secretariat, Bonn, Germany, *Migratory Species and Climate Change: Impacts of a Changing Environment on Wild Animals* (2006) at 40-41 (available at http://www.cms.int/publications/pdf/CMS_CimateChange.pdf).
[116] This species list can be accessed at https://www.mdwfp.com/media/3283/mississippi_herpetology_checklist_013012.pdf (visited August 31, 2018).

2015-2025 identifies 10 species of reptiles and amphibians as Species of Greatest Conservation Need in the Pearl River and the state's bottomland hardwood forests.[117] Amphibians and reptiles are facing unprecedented risks of extinction. In the United States, the IUCN Red List of Threatened Species lists 56 amphibian species and 37 reptile species as known to be critically endangered, endangered, or vulnerable.[118] Notably, Amphibians thrive in cool wetland environments, and are found in all types of wetlands except more saline coastal environments with small, isolated wetlands playing especially important roles in amphibian productivity.[119] Amphibian populations thrive when there are a variety of small ecosystems within a regional landscape in which a "dynamic equilibrium" of different populations becomes established.[120] However, if the environment becomes overly fragmented, the dynamic equilibrium is disturbed because patterns of emigration and immigration may be disrupted.

- Impacts to the many mammal species found in the Pearl River Basin and Project Area, including many that utilize riparian areas.

Instead of comprehensively analyzing the impacts of Alternatives D1 and E1 to the vast array of fish and wildlife that rely on the Pearl River and its floodplain, the RDEIS provides only the most general and conclusory statements regarding potential impacts.

Fish and Other Aquatic Species: Despite the significance of the Pearl River to fish and other aquatic species, the DEIS "analysis" of impacts to non-ESA listed fish and aquatic species is limited to two conclusory paragraphs for Alternative D1 and one conclusory paragraph for Alternative E1. While the RDEIS does acknowledge that Alternative D1 would cause "major long-term negative impacts to fisheries and aquatic resources" it then concludes—with no supporting data or other evidence—that "mitigation actions would fully compensate" for those impacts.[121]

> ***4.2.3.3 Alternative D1 (With Weir)***
> The impacts to fisheries and aquatic resources are similar to those from Alternative C found within Appendix Q, section 4.2.1.1.11. It is assumed that Alternative D1 will still

[117] Mississippi State Wildlife Action Plan 2015-2025 at 25. The Action Plan is accessible at https://www.mdwfp.com/media/251788/mississippi_swap_revised_16_september_2016__reduced_.pdf (visited August 31, 2018). One of the key conservation actions for these species is to: "Encourage retention, preservation, and conservation of remaining natural habitat through purchase, easements or MOAs." Id. at 134.
[118] IUCN Red List version 2013:2, Table 5: Threatened species in each country (totals by taxonomic group), available at http://cmsdocs.s3.amazonaws.com/summarystats/2013_2_RL_Stats_Table5.pdf (visited on November 24, 2013.)
[119] Gibbons, J. Whitfield, Christopher Winne, et. al. 2006. Remarkable Amphibian Biomass and Abundance in an Isolated Wetland: Implications for Wetland Conservation. Conservation Biology Volume 20, No. 5, 1457–1465.
[120] Mann, W., P. Dorn, and R. Brandl. 1991. Local distribution of amphibians: The importance of habitat fragmentation. Global Ecology and Biogeography Letters 1:36-41.
[121] RDEIS, Main Report at 4-9.

> result in the loss of all riverine habitat, and the direct, indirect, and cumulative impacts will be similar except for the additional impacts caused by the construction of the McCleod, Richland, and Cany Creek levees and their associated features. Alternative D also includes the construction of hardpoints at the tributaries as they enter the river to prevent erosion. These additional construction activities will displace mobile aquatic species and may smother sessile species. Temporary impacts due to increased turbidity may also occur. Overall, this alternative will still cause major long-term negative impacts to fisheries and aquatic resources.
>
> The direct adverse impacts are considered significant. However, mitigation actions would fully compensate for these impacts and therefore the significance of the impacts would be offset.[122]
>
> ***4.2.3.4 Alternative E1 (Without Weir)***
> Impacts from Alternative E1 will be similar to Alternative D1, but it will not include the construction of a new weir. This will preserve the riverine habitat in low to normal water levels. During high water events, aquatic species will be able to temporarily use the space created by excavation as lacustrine habitat, but benthic species would not likely utilize the maintained turf as habitat. The excavation activities will still have a negative long-term effect on the riparian habitat around Pearl River. Impacts to lacustrine habitat from excavation will be mitigated through the creation of oxbow lakes and/or ponds. Additionally, instream habitat restoration may be included as part of this project as design maturity increases. Overall, this alternative will cause minor long term negative impacts to fisheries and aquatic species.[123]

The reliance on the assessment of "Alternative C found within Appendix Q, section 4.2.1.1.11" is unavailing, including because that assessment is equally vague and conclusory as documented in the National Wildlife Federation's comments on the 2024 DEIS (including at pages 21-25), provided at Attachment A to these comments.

Wildlife: Despite the significance of the Pearl River and its floodplain to wildlife, the RDEIS "analysis" of the impacts to non-ESA listed species is limited to one conclusory paragraph for Alternative D1 and three conclusory paragraphs for Alternative E1. The RDEIS then concludes—with no supporting data or other evidence—that "mitigation actions would fully compensate for these impacts."[124]

> ***4.2.4.3 Alternative D1 (With Weir)***
> With implementation of this alternative, approximately 998 acres of wildlife habitat would be directly impacted by excavation, fill activities, and the construction of levees. This habitat would no longer be available for use by wildlife discussed in section 2.1.11. Indirect impacts to wildlife would be displacement due to loss of habitat and potential

[122] RDEIS, Main Report at 4-9.
[123] RDEIS, Main Report at 4-9.
[124] RDEIS, Main Report at 4-10 to 4-11.

fatalities due to vehicular strikes and human interaction. Construction of Alternative D1 would likely eliminate riverine habitat that many aquatic species depend on. For this draft, a conservative approach is being taken and therefore this alternative is expected to have the same direct, indirect, and cumulative impacts as Alternative C found within Appendix Q, section 4.2.1.1.15. However, these impacts would be to a lesser degree as approximately 232 acres of riverine habitat would be converted to lacustrine habitat. Wildlife dependent on riverine system ecology would suffer with this conversion. Velocity analysis, like that conducted for Alternative C, will be conducted to better understand the potential impact of Alternative D1 on the riverine system. This data will be conducted and included in subsequent phase(s). These impacts are considered significant and long-term. However, mitigation actions would fully compensate for these impacts; therefore, these impacts would be offset.[125]

4.2.4.4 Alternative E1 (Without Weir)

Direct and indirect impacts to wildlife from this alternative would be similar to those for Alternative D1. Excavation for channel improvements and the use of fill areas for dredge disposal would result in permanent loss of habitat and associated resources that would be long term as the excavated and fill areas would not be revegetated. However, the wildlife dependent on riverine system ecology would not be impacted as the Pearl River would continue to function as a riverine system except in high water events. This would not be much different from the current conditions during high water events and the impacts would be temporary and to a much lesser extent than with a weir.

The conversion of existing wildlife habitats within the Project Area would result in cumulative, adverse impacts that would be moderate in intensity and long-term in duration. Impacts to wildlife from Alternative E1 would add to continued degradation of ecosystem structure and function expected from ongoing urban growth and development adjacent to the Project Area. Ongoing maintenance within the Project Area associated with flood control would also continue to impact wildlife habitat quality and availability, including contributing to increases in invasive species such as feral hogs. These impacts are considered significant and long-term. However, mitigation actions would fully compensate for these impacts; therefore, these impacts would be offset.

The Service recommended some restoration features under ESA Section 7(a)(1) for Alternative E. Those features include protection, enhancement, or creation of instream habitat such as shoals, gravel bars, woody debris, and sandbars as well as reforestation of the riparian buffer along the Pearl River within the Project Area. If these features are implemented, various wildlife species would likely benefit from this alternative as the features would provide suitable habitat for various species and uses. These features will be considered in subsequent phase(s).[126]

[125] RDEIS, Main Report at 4-10.
[126] RDEIS, Main Report at 4-10 to 4-11.

The reliance on the assessment of "Alternative C found within Appendix Q, section 4.2.1.1.15" is unavailing, including because that assessment is equally vague and conclusory as documented in the National Wildlife Federation's comments on the 2024 DEIS (including at pages 21-25) provided at Attachment A to these comments.

Notably, these conclusory paragraphs reach conclusions that are not supported by the preliminary Fish and Wildlife Coordination Act Report provided at Appendix J.[127] For example, that preliminary report highlights the importance of the system's natural hydrology and habitats, including the high value of the Pearl River and its bottomland hardwood wetlands and floodplain forests, the significant adverse impacts to those habitats from the project alternatives analyzed, and the highly significant challenges to effectively mitigating those impacts.[128]

3. Tributary Impacts Are Not Assessed

The RDEIS does not evaluate the impacts of Alternatives D1 and E1 on tributary flooding, despite previously acknowledging that Alternative C (upon which D1 and E1 are based) would increase flooding along the Pearl River tributaries that flow through Jackson. The RDEIS should have assessed the impacts of Alternatives D1 and E1 on tributary flooding given the significant public safety implications and well-documented community concerns regarding tributary flooding.

Alternative D1 would permanently elevate water levels in portions of the Pearl River tributaries that flow through Jackson, which like Alternative C, would increase tributary flooding. Alternatives D1 and E1 will both significantly widen a long reach of the river which will also affect downstream tributary reaches. While Alternative E1 does not include construction of a new weir (so would not induce additional backwater flooding in the way that Alternative D1 does), Alternative E1 does <u>not</u> remove the existing weir so could result in cumulative tributary flooding impacts that are similar to those caused by Alternatives D1.

Tributary flooding is a significant problem in Jackson. It is unacceptable to proceed with any project that would add to this problem by increasing tributary flash flooding that plagues Jackson's underserved neighborhoods, increasing vulnerability to backwater flooding from high river events, or otherwise magnifying flood risk from rain events in the upper reaches of the tributaries. Tributaries that would be affected by Alternatives D1 and E1 include those that regularly experience flash flooding, run through environmental justice communities, and pass by public schools, museums, and other important community facilities and resources. The elevated water levels and increased flooding would also add to the City's many stormwater permit violations. Urban stormwater flooding already affects mainly Black neighborhoods located along Town Creek and Lynch Creek, which are Pearl River tributaries that flow through majority Black census tracts in downtown Jackson.

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[127] DEIS, Appendix J, Fish and Wildlife Coordination Act letter dated November 13, 2024 and preliminary Fish and Wildlife Coordination Act Report.
[128] Id.

The RDEIS improperly rejects consideration of tributary flooding by pointing to a laundry list of disparate projects being studied or constructed by local government entities, the majority of which remain in in the planning or design stage.[129] This list (which fails to provide critical information on the listed projects, including such things as the likelihood of funding, the potential flood damage reduction benefits, the communities that would benefit, and the cumulative effects of the listed projects) falls far short of the systematic approach to flood risk management needed to develop effective solutions for Jackson's residents. The Corps' reliance on this laundry list of projects also falls short of the requirements established by NEPA, WRDA, and the Corps' planning regulations.

4. Downstream Impacts During Low Flow Conditions Are Not Assessed

The Pearl River is a major source of freshwater to Mississippi Sound, Lake Borgne, and the Gulf of Mexico. Alternatives D1 and E1, and particularly Alternative D1 (with weir) poses a significant risk to those ecosystems during both traditional low flow conditions and during drought conditions. Despite repeated requests and a Congressional directive to fully assess these impacts, the RDEIS does not examine these impacts.

Natural flow regimes are vital for maintaining the ecological health of rivers, regulating nutrient cycling, water temperature and chemistry, dissolved oxygen availability, the amount, diversity, and health of habitat, and the abundance and diversity of species that can use that habitat.[130] It has long been known that the typical pattern of flow variation of a river, both the highs and the lows, is both a driver of a river's structure and function. Long-term patterns of variability are integral in most intact ecosystems and control species abundance and diversity across spatial and temporal scales.[131]

Peak river flows provide diverse habitat by flushing fine sediments and providing connections to adjacent riparian areas. This is especially important for fish that use complex riverine habitats for spawning and rearing.[132] During low river flows, riparian and upland habitat become disconnected, and the river channel habitat narrows, reducing habitat complexity.[133]

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[129] RDEIS, Main Report at 1-12, 1-15 through 1-20.

[130] Palmer, M., and A. Ruhi. 2019. Linkages between flow regime, biota, and ecosystem processes: implications for river restoration. Science doi: 365:eaaw2087. See Attachment 3 to these comments for copies of the studies referred to in this Section of the comments.

[131] D. A. Lytle, N. L. Poff, Adaptation to natural flow regimes. 2004. Trends Ecol. Evol. 19,94–100 (2004). doi: 10.1016/ j.tree.2003.10.002; pmid: 16701235.

[132] D. A. Lytle, D. M. Merritt, J. D. Tonkin, J. D. Olden, L. V. Reynolds, Linking river flow regimes to riparian plant guilds: A community-wide modeling approach. Ecol. Appl. 27, 1338–1350 (2017). doi: 10.1002/eap.1528; pmid: 28263426.

[133] Grams, P. E., D. J. Dean, A. E. Walker, A. Kasprak, and J. C. Schmidt. 2020. The roles of flood magnitude and duration in controlling channel width and complexity on the Green River in Canyonlands, Utah, USA. Geomorphology 371:107438.

Since variability in flow is critical to the form and function of a river, any alteration in the natural flow has cascading consequences for ecological health and alters several of the river system's ecosystem services.[134] Alterations, such as dam and weir building, reduces the magnitude of high flows and exacerbates drought conditions, also shifting the frequency, duration, and timing of river flows. This can lead to loss of critical in-stream, riparian, and downstream habitat and shift once healthy and diverse river systems to ones dominated by drought or pollutant-tolerant species or open new habitat to non-native and even invasive species. Structures can also alter the food chain and isolate organism populations, harming organisms that migrate as part of their lifecycles. Under low flow conditions, these altered systems can also have the development of low oxygen condition in isolated pools and streams.[135] Research also indicates that alteration of a river system may reduce the ability of the system to withstand further change without catastrophic results, such a shifting climate may bring.[136]

Reducing freshwater flows below the new dam (referred to as a weir in the RDEIS) could alter water quality and coastal salinities, affect sediment transport, and increase saltwater intrusion upriver. This would threaten the health and productivity of many downstream habitats including more than 125,000 acres of existing—and mostly public—conservation lands such as Bogue Chitto National Wildlife Refuge, Pearl River Wildlife Management Area, and Hancock County Coastal Preserve. Altered flows could also affect the already struggling oyster sector that relies on a well-balanced mix of fresh and salt water to ensure oyster survival and harvest.

The realities of climate change also support the critical need to assess downstream impacts during low flows, as climate change typically increasing the number of extreme and intensity of extreme events, resulting in more frequent high flows and increased water levels during those high flow periods, and more frequent low flow and drought conditions, with lower water levels during those periods.

These realities are supported by the following statement in the Corps' 2024 DEIS:

> According to USACE CHAT analyzing the data between 1950 to 2023, between 2023 to 2100, the annual-accumulated precipitation shows a steady decrease of annual precipitation while the Drought Indicator: Annual-Maximum of Number of Consecutive Dry Days shows a steady increase of drought like conditions within the study area.[137]

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[134] Palmer, M., and A. Ruhi. 2019. Linkages between flow regime, biota, and ecosystem processes: implications for river restoration. Science doi: 365:eaaw2087.
[135] J. R. Blaszczak, J. M. Delesantro, D. L. Urban, M. W. Doyle, E. S. Bernhardt, Scoured or suffocated: Urban stream ecosystems oscillate between hydrologic and dissolved oxygen extremes. Limnol. Oceanogr. 64, 877–894 (2019). doi: 10.1002/lno.11081.
[136] Palmer, M., and A. Ruhi. 2019. Linkages between flow regime, biota, and ecosystem processes: implications for river restoration. Science doi: 365:eaaw2087.
[137] 2024 DEIS, Main Report at 22.

Moreover, the 2018 DEIS found that summer evaporation from the lake created by Alternative C would be about 10 cfs, which could exacerbate low flow conditions and waste assimilative capacity below the Savanna Street sewage treatment plant. Although the smaller lake under Alternative D1 would reduce evaporative losses to some extent, climate change will increase the amount of evaporation from the Ross Barnett Reservoir and the lake created by Alternative D1 which in turn will result in lower water levels during low flow conditions.

Ensuring maintenance of natural flood regimes is extremely important for ecosystem health. For example, spring floods that overflow the Pearl River's banks are critical for nourishing bottomland hardwood and other wetlands, including the Bogue Chitto National Wildlife Refuge, the Pearl River Wildlife Management Area, and Honey Island Swamp in Louisiana. Indeed, part of the reason that the Pearl River Basin forests remain healthy and thriving, and the Basin's coastal wetlands continue to regenerate (unlike many other areas on the coast), is because the river experiences a somewhat natural flooding regime. This flood cycle results in the flooding of the higher elevation bottomland hardwood forests periodically and the lower elevation swamps and sloughs in most years. From 1995 to 2018, the Pearl River gauge at highway 59 (USGS 02492600) flooded its banks (over 16.5 feet) in fourteen of the 24 years and reached flood stage (14 feet) in all 24 years. Changes to this flood regime could result in major degradation and put the public at risk.

Lowering flood stages could also cause significant adverse impacts to the ecological health of the Pearl River and its floodplain, including damaging fisheries resources that rely on access to the floodplain, degrading floodplain and other wetland habitats, causing head-cutting and incision in tributaries, reducing water quality, and elevating sediment influx including into the D1 impoundment.

Changes to the hydrograph that result in lower flows or more frequent low flows could also cause significant harm, including to downstream forested wetlands, Mississippi Sound, Lake Borgne, and the Gulf of Mexico. The Pearl River is a major source of freshwater to the Gulf of Mexico and reductions in flow could alter water quality and coastal salinities, affect sediment transport, and increase saltwater intrusion upriver. Altered flows could also affect the already struggling oyster sector that relies on a well-balanced mix of fresh and salt water to ensure oyster survival and harvest.

5. Water Quality Impacts Are Not Assessed

The Pearl River is plagued by poor water quality[138] due to the raw sewage, toxics, and other pollutants that have long been—and continue to be—discharged directly into the river. For example, between April and June of 2022, 56.5 million gallons of raw sewage were discharged

[138] The Pearl River is currently listed as an impaired water on Mississippi's Clean Water Act section 303(d) list, is classed as eutrophic, has a nutrient TMDL, and has been under a Mississippi Department of Environmental Quality water contact advisory for four years due to the presence of sewage bacteria.

into 6 of the tributaries that flow into the CTO project area.[139] In 2021, 64.5 million gallons of raw sewage were discharged into the project area.[140] Many facilities regularly discharge toxic pollutants into the One Lake project area.[141]

The large-scale dredging, major construction, large-scale destruction of wetlands that help filter pollutants, and the Alternative D1 impoundment of a once free-flowing stretch of river, all would adversely affect water quality and facilitate harmful algal blooms. Project-induced changes in flow would also make it harder for downstream industrial and municipal facilities to meet their environmental permit discharge limits without installing costly new water treatment technologies, threatening water quality all the way to the Gulf of Mexico. More than one hundred downstream industrial users and municipalities in Mississippi and eight in Louisiana—including the sewage treatment plants for Jackson, Bogalusa and Pearl River as well as Georgia-Pacific and International Paper—depend on a reliable flow of freshwater from the Pearl River to meet their environmental permit discharge limits.

Despite these realities, the RDEIS does not assess the water quality impacts of either D1 or E1. Indeed, the RDEIS recognizes that it cannot rely on existing analyses because the "impacts to water quality due to the proposed project are inconclusive due to the lack of data, modeling inaccuracies, and the usage of outdated modeling methodologies of the Project Area. The RDEIS acknowledges that significant additional water quality analysis is required "to determine if this project is viable"[142] as also highlighted in Section E.6 below.[143,144]

> ***4.2.16.3 Alternative D1 (With Weir)***
> This plan could potentially result in direct, indirect, and cumulative impacts to water quality. Potential direct impacts from the construction and existence of channel improvements, overbank modifications, maintenance berms, construction of a weir and gate with fish ladder, and improved levee segments would include temporary increases in turbidity and suspended solids in adjacent water bodies – the Pearl River and tributaries. Erosion control feature could decrease the amount of sedimentation, but the sheer volume of material to be moved makes turbidity in the system likely. The impacts to water quality due to the proposed project are inconclusive due to the lack

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[139] City of Jackson Sewer Consent Decree Quarterly Report for April-June 2022 (14.7 million gallons to Lynch Creek; 23.1 million gallons to Town Creek; 8.8 million gallons to Hanging Moss Creek; 4 million gallons to Belhaven Creek; 4 million gallons to Eastover Creek; and 1.9 million gallons to Eubanks Creek). The City of Jackson has been under a federal consent decree since 2013 due to extensive problems with the City's wastewater collection and treatment system. The Consent Decree, all reports, and related documents can be accessed at https://www.cojcd.org/document-library.

[140] These discharges resulted from 205 Sanitary Sewer Overflows.

[141] 2018 Draft EIS at 138-139 (Numerous facilities discharge toxics into the Project Area, including the Entergy Rex Brown Plant which discharges cooling water, storm water runoff, low volume wastewater, oil and grease, pH, TSS, temperature, total residual chlorine, chromium, and zinc into a tributary located within the area to be impounded.

[142] RDEIS, Main Report at 4-27.

[143] RDEIS, Main Report at 3-41.

[144] RDEIS, Draft Appendix E—Hydrology and Hydraulics at 153.

> of data, modeling inaccuracies, and the usage of outdated modeling methodologies of the Project Area. In order to determine if this project is viable additional analysis is required. . . . .[145]
>
> ***4.2.16.4 Alternative E1 (Without Weir)***
> This plan could potentially result in direct, indirect, and cumulative impacts to water quality. Potential direct impacts from the construction and existence of channel improvements, overbank modifications, maintenance berms, and improved levee segments would include temporary increases in turbidity and suspended solids in adjacent water bodies – the Pearl River and tributaries. Erosion control feature could decrease the amount of sedimentation, but the sheer volume of material to be moved makes turbidity in the system likely. The impacts to water quality due to the proposed project are inconclusive due to the lack of data, modeling inaccuracies, and the usage of outdated modeling methodologies of the Project Area. In order to determine if this project is viable additional analysis is required. . . .[146]

In addition, the RDEIS lacks other assessments that are critical for understanding the water quality impacts of Alternative D1 and E1, including such things as: (1) impacts to hydrology, morphology, and river flow that can greatly reduce water quality; (2) increased sedimentation resulting from those changes and from construction that could also contaminate and pollute downstream waters and habitats; (3) resuspension of contaminated sediments and other toxic releases; (4) increased water surface area will affect water temperatures and evaporation rates, influencing water availability and quality; (5) loss of wetlands and complex in-stream habitats that provide important water quality benefits; and (6) increased urban runoff resulting from development that will be induced by the project.

6. Sedimentation, Velocity, and Geomorphic Impacts Are Not Assessed

Alternatives D1 and E1 would cause highly significant changes to the form and function of the Pearl River. As a result, the lack of sediment data and geomorphic analysis is a glaring and dangerous omission. In the absence of these analyses, the Corps has no way of knowing how the river will function under the conditions established by either of the Alternatives. The RDEIS recognizes that a sedimentation study is required to assess the viability of project features but that it has not been conducted.[147] Instead, that study has been deferred to the future.[148] For example:

> Further water quality and sedimentation studies will need to be performed to determine the potential for impacts from sewer overflows, storm sewer drainage,

[145] RDEIS, Main Report at 4-26 to 4-27.
[146] RDEIS, Main Report at 4-27.
[147] RDEIS, Main Report at 6-3 to 6-4, 3-41, 4-28.
[148] RDEIS, Draft Appendix E—Hydrology and Hydraulics at 153

> contamination during high floods, and sedimentation related to water treatment and supply for any identified plan.[149]

* * *

> A sedimentation study is necessary assess the viability of project features during a future phase of this study. The impacts to water quality and conveyance to the proposed project are inconclusive due to the lack of data, and modeling efforts within the project area. No sediment samples have been provided or analyzed from the Ross Barnett Reservoir or downstream project area either on the main Pearl River channel or tributaries, for use in this study. To determine if impacts are acceptable, additional analysis is needed. Verification would be needed to demonstrate that adding a large weir would not induce sediment loads to alter the incoming chemistry in such a way to induce failure at the existing J.H. Fewell Plant or any other proposed structure along the newly ponded area. Determination of Sediment Oxygen Demand (SOD) for Pearl River sediments that will lie under Preferred Project Lake. Impoundment will increase the depth over the sediments potentially decreasing the dissolved oxygen (DO) in water column immediately adjacent to sediments. Deeper waters when combined with SOD could possibly result in bottom water hypoxia and anoxia. Verification also would be needed to verify that sedimentation passed from the Ross Barnett Reservoir within a proposed ponded feature would not impact storage or conveyance of flood waters. Assessment of the tributaries for sediment load as well as the requirement of Hard Points in tributary channels to prevent incision and additional sediment into newly constructed lake would be needed.[150]

* * *

> Additional assessment of the changes to downstream boundary was conducted for the 1% AEP event. Further analysis would be needed to validate the total impacts, specifically to verify sediment and velocity impacts of the additional water moving downstream.[151]

Alternatives D1 and E1 could result in increased erosion, riverbed degradation, and additional fundamental changes to the river and its processes. Disturbance caused by excavating the floodplain will make the new artificially enlarged channel more vulnerable to erosion and the artificially enlarged channel could continue to become wider ad shallower as the erosion progresses. Geotechnical analysis of the banks upstream from the proposed weir would also be needed as elevated and fluctuating water levels could further induce channel and bank instability. The potential for these types of impacts is supported by the minimal information provided in the RDEIS:

[149] RDEIS, Main Report at 3-41.
[150] RDEIS, Draft Appendix E—Hydrology and Hydraulics at 153.
[151] RDEIS, Draft Appendix E—Hydrology and Hydraulics at 127.

> Updated calibration has shown that the system response has changed since the 1979 event to be more efficient. as illustrated by the comparable events from 1983 and 2020. The two events had similar flows at Pearl River gage in Jackson, but the stage was reduced by approximately 2.9 ft for the 2020 event.[152]

RDEIS Draft Appendix E also indicates that flood discharges were passing the USGS Jackson gage at lower stages that indicate a 1- to 2-foot degradation of the riverbed since construction of the Ross Barnett Reservoir and Dam.[153] Bed degradation like this is indicative of channel instability and should be fully analyzed through a geomorphic assessment of the river and sediment transport and bank erosion modeling.

The extensive dredging (excavation), restriction of flow, and destruction of the floodplain are intended to—and will—result in significant morphological changes to the Pearl River, the River's floodplain, small streams and sloughs, and tributary streams. Meaningfully assessing these changes and their biological implications requires extensive analysis and modeling of river hydrology, hydraulics, sediment loading, and sediment transport.

For example, understanding the sediment loading and transport processes, including the effect of the Project on those processes, is critical for determining whether the Alternative D1 impoundment will become a sediment trap; cause tributary head-cutting and erosion; or reduce the amount of sediments reaching, nourishing, and building critically important coastal wetlands. These sediment processes are fundamentally affected by river hydrology, hydraulics, and morphology.

To meaningful assess sediment loading and transport properties, among other things the RDEIS must examine particle size, settling velocity, specific gravity, and fraction distribution within each particle size—for both bed load and suspended load – in the Project Area and key tributaries. The RDEIS would also need to analyze and account for annual and seasonal sediment volumes entering the Pearl River, particularly in the Project Area, and how those volumes are affected by the combined influences of channel conveyance, flood hydrographs (i.e., rising leg and falling leg), bed load, suspended sediment load, and sediment transportation.

7. Toxic Exposure Impacts Are Not Assessed

The RDEIS acknowledges that there "is a high probability of encountering HTRW during construction with implementation of Alternative D1 and Alternative E1."[154] These sites are contaminated with a wide array of toxins, including Benzene, barium, cadmium, cobalt, creosote residuals, lead, lindane, manganese, mercury, nickel, raw sewage, sodium pentachlorophenate, pentachlorophenol (PCP), phenyl mercuric acetate, polynuclear aromatic

[152] RDEIS, Main Report at 3-17.
[153] RDEIS, Draft Appendix E—Hydrology and Hydraulics at 26.
[154] RDEIS, Main Report at ES-xiii.

hydrocarbons (PAHs), and zinc.[155,156] The extensive dredging that is central to Alternative D1 and E1 could re-suspend sediments contaminated with these toxins and could directly affect at least three highly contaminated sites—a former creosote wood treatment facility and two

[155] 2018 Draft EIS, Appendix C (Environmental Evaluation of Hazardous, Radioactive, and Toxic Waste (HTRW) Sites). E.g.,2018 Draft EIS at 91 ("Creosote residuals were disposed or released to backwater sloughs of the Pearl River adjacent to the west side of the site. Creosote residuals continue to exist in sediments in the slough and potentially in groundwater beneath the former facility treatment area adjacent to the slough."); 2018 Draft EIS at 138-139 (Numerous facilities discharge toxics into the Project Area, including the Entergy Rex Brown Plant which discharges cooling water, storm water runoff, low volume wastewater, oil and grease, pH, TSS, temperature, total residual chlorine, chromium, and zinc into a tributary located within the area to be impounded).

[156] RDEIS, Main Report at 4-28 to 4-29 ("Potential direct impacts to water supply due to the coexistence of known HTRW sites and probable exposure to contaminants within the ponded area created by the proposed weir. During the preliminary assessments, the NFI identified several recognized environmental conditions (RECs) within the Project Area. Within the Unpermitted Gallatin Street Landfill Site, the proposed construction details excavating roughly 40 acres of material and relocating the material to the western portion of the Gallatin Street Landfill. Within the NFI sponsor's consultant report, it was found that soil borings discovered garbage roughly 3 to 34 feet deep. Water samples from monitoring wells within this landfill resulted in concentrations of cadmium, lead, and nickel above the maximum contaminant levels for the Safe Drinking Water Act. The consultant who sampled this landfill stated there is a clay layer possibly holding the potential leachate material from entering the nearby groundwater. For the Unpermitted LeFleur's Landing "Jefferson Street Landfill", benzene was found within soil and water samples to be three times the regulated limit. Reconnaissance from the consultant showed that the landfill had evidence of waste/debris exposed due to possible erosion. It was also found that the landfill had no signs of a constructed cap or liner to prevent possible leachate from the landfill to nearby groundwater. In addition to the two landfills mentioned above, there is additional potential proposed work if a site is unable to be avoided due to construction: Gulf States Creosoting Company Site. EPA conducted an onsite soil sampling analysis in December 2003 and discovered chemicals such as barium, cobalt, manganese, zinc, and creosote residuals including a variety of semi-volatile polynuclear aromatic hydrocarbons. Though this site was not placed on the EPA's Superfund list, elevated levels of organic and inorganic chemicals remain onsite and are possibly being released into the oxbow lake water and into the Pearl River during high flows/flood events. Due to this risk, if dredging, bank stabilization, or any form of construction is done near the Gulf States Creosoting Company Site, there is a risk that the known chemicals discovered onsite could either leach into the Pearl River or to nearby groundwater.")

unpermitted landfills.[157,158] Another five highly contaminated sites could also be affected, including a remediated Superfund site.[159]

Despite the significant danger, the RDEIS does not assess the risk and impacts posed by the resuspension and other releases of highly contaminated river sediments and does not assess the risks associated with impacting highly contaminated sites but instead defers that assessment to a later stage[160]:

> ***4.2.23.3 Alternative D1 (with Weir)***
> A Phase I Environmental Site Assessment has not been conducted that included the additional FRM features for the alternative and would need to be done prior to construction to identify any recognized environmental conditions within the proposed Project Area. A technical memorandum was conducted by the NFI in December 2023 of the Project Area. Since a Phase I Environmental Site Assessment was not done, there are levels of uncertainty for portions of the Alternative D1 that was not evaluated within the NFI Phase I. A partial site visit of the LeFleur's Landing "Jefferson Street Landfill" and the Gulf States Creosoting Company Site was conducted on April 16, 2024. It was found that both sites exhibited the same RECs as identified within the NFI Phase I 2016 assessment. The Gallatin Street Landfill was not visited on this site visit. Due to the limited access during the site visits and the conditions they were in, it is recommended that further analysis, Phase I and/or Phase II, would be needed of all sites within the Project Area to ensure HTRW is not present during any form of construction or fill placement by the NFI.[161]
>
> ***4.2.23.4 Alternative E1 (without Weir)***
> A Phase I Environmental Site Assessment was not conducted for the additional FRM features added to Alternative E1 and would need to be done prior to construction to identify any recognized environmental conditions within the proposed Project Area. Since a Phase I Environmental Site Assessment was not done, there are levels of

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[157] 2018 Draft EIS Appendix C, Engineering, Environmental Analysis of HTRW Sites (Gulf States Creosoting Company Site and the Creosote Slough, Gallatin Street Dump Site, Lefleurs Landing Site also known as the Jefferson Street Landfill).

[158] RDEIS, Main Report at 3-26 ("Mitigation features may be required for the Creosote Slough that is located within the Project Area. The site, or portions thereof, may require avoidance, remediation, or some other mitigating features. Groundwater controls and a slurry wall may be appropriate remedial actions in this event. Final remedial designs would be coordinated with appropriate Federal and State agencies to determine necessary actions to prevent and/or eliminate potential leaching of chemicals to the groundwater and movement of groundwater into the proposed channel improvement area prior to the initiation of excavation activities at this location.").

[159] 2018 Draft EIS Appendix C, Engineering, Environmental Analysis of HTRW Sites (Sonford Products Lumber Mill Superfund Site, Rival Manufacturing Company, and multiple automotive junkyards).

[160] RDEIS, Main Report at ES-xiii ("Prior to construction, an ASTM E 1527-13 Phase I & II Environmental Site Assessment (ESA) would be completed due the findings that were discovered during the NFI's reconnaissance of the Study Area.").

[161] RDEIS, Main Report at 4-49.

uncertainty for portions of the alternative that was not evaluated within the NFI Phase I. If Alternative E1 does not include the construction of the new weir, there is a potential that the impacts to the recognized environmental conditions, could be lower depending on the details of Alternative D1.[162]

8. Plant Impacts Are Not Assessed

The RDEIS does not provide any assessment of the impacts to the wide array of plant species that would be affected by Alternative D1 and E1, including impacts to wetland plant species. The Corps must properly assess and consider these impacts and their implications for fish and wildlife before the Corps recommends Alternative D1 or E1.

The DEIS does not provide any information on plant species that will be affected by D1 and E1 and does not provide information on the current ecological health of any plant species or main plant types. Direct impacts to plant species and health will be significant. Indirect and cumulative impacts will also be significant, including through both large and small changes to hydrology. It is well-settled that even small changes in the extent and level of inundation can cause "massive changes in species composition and richness and in ecosystem productivity."[163] Understanding the impacts of E1 and D1 on plant species is also essential for fully understanding adverse impacts to fish and wildlife species.

This assessment should pay particular attention to at-risk species. For example, the Mississippi Natural Heritage Program identifies the following 19 plant species in Hinds and Rankin counties[164], including many wetland species, as being critically imperiled, imperiled, rare or uncommon:

County	Scientific name	Common name	Conservation Status[165]
Hinds	Adiantum capillus-veneris	Southern Maidenhair-fern	S2
Hinds	Asclepias hirtella	Green Milkweed	S2
Hinds	Camassia scilloides	Wild Hyacinth	S2
Rankin	Camassia scilloides	Wild Hyacinth	S2
Rankin	Carex fissa var. aristata	Hammock Sedge	S1
Hinds	Carya laciniosa	Big Shellbark Hickory	S2
Rankin	Cheilanthes lanosa	Hairy Lipfern	S1S2
Hinds	Deparia acrostichoides	Silvery Spleenwort	S1S2
Hinds	Frasera caroliniensis	Carolina Gentian	S2S3

[162] RDEIS, Main Report at 4-49.
[163] William J. Mitsch and James G. Gosselink, *Wetlands* (5th ed.) (2015) at 112.
[164] https://www.mdwfp.com/sites/default/files/2024-03/ms-natural-heritage-program-list-of-all-species-of-concern-by-county-2023-05-05.xlsx
[165] S1 = critically imperiled, S2 = Imperiled, S3 = Vulnerable.

Hinds	Gratiola floridana	Florida Hedge-hyssop	S1
Rankin	Juglans cinerea	Butternut	S2
Hinds	Magnolia tripetala	Umbrella Magnolia	S1
Hinds	Platanthera peramoena	Purple Fringeless Orchid	S2S3
Rankin	Quercus oglethorpensis	Oglethorpe's Oak	S2
Hinds	Spiranthes ovalis	Lesser Ladies'-tresses	S2S3
Hinds	Trillium ludovicianum	Louisiana Trillium	S1S2
Rankin	Triphora trianthophoros	Nodding Pogonia	S2
Rankin	Ulmus serotina	September Elm	S2
Hinds	Utricularia olivacea	Piedmont Bladderwort	S1

9. Water Supply Impacts Are Not Assessed

The City of Jackson draws 30% of its drinking water from the project area. This water is treated by Jackson's secondary drinking water treatment plant, the J.H. Fewell plant. This 100-year-old J.H. plant was able to operate throughout the recent crisis caused by the failure of the City's main water treatment plant, the O.B. Curtis plant.

Alternatives D1 and E1 could exacerbate the City's entrenched drinking water problems,[166] including by forcing Jackson to find an alternative source for 30% of Jackson's water supply throughout the time it takes to construct the selected alternative. Project construction would increase turbidity in the Pearl River to the point where the J. H. Fewell plant will not be able to operate, as acknowledged in the 2018 Draft EIS.[167] Alternatives D1 and E1, and particularly the D1 with weir, could adversely affect long-term operation of the J.H. Fewell plant and public

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[166] It is equally clear that the One Lake project would not have prevented Jackson's most recent crisis, which was caused by the collapse of the City's primary water treatment plant, the O.B. Curtis plant, which supplies up to 70% of Jackson's drinking water supply. That collapse was caused by flood-induced high turbidity (and other polluted runoff) in the Ross Barnett Reservoir, which is the water source for the O.B. Curtis plant and is located seven miles upstream of the proposed One Lake project. The One Lake project has no ability to—and will not—alleviate flood-induced high turbidity in the Reservoir.

[167] 2018 Draft EIS, Appendix C, Engineering at 16 ("Other immediate effects that may result from construction of the proposed project could include a temporary loss of the secondary water supply intake for the City of Jackson. Jackson utilizes an existing water treatment plant which is located on the Pear River at a location scheduled for dredging and development of the [One Lake project]. The water treatment plant is used as a secondary source and backup water supply source for the City. The dredging of sediments and subsurface soils in the Pearl River could potentially increase the turbidity of the surface waters to levels unacceptable for human consumption; therefore, the City of Jackson would need to evaluate a temporary water supply alternatives [sic] during the duration of dredging and construction activities.") As a result, the City of Jackson would be required to somehow find a "temporary" water supply alternative for 30% of the City's drinking water during project construction. Id.

health by further degrading water quality in the Pearl River, including by trapping billions of gallons of raw sewage, toxics, and other pollutants.[168]

Despite the critical importance of the Pearl River as a drinking water source for the City of Jackson, the RDEIS does not meaningfully analyze the impacts of Alternative D1 or E1 but instead defers that analysis to a later time:

> ***4.2.17.3 Alternative D1 (Without Weir)***
> There are potential positive and negative impacts to the water supply due to the implementation of Alternative D1. Per ER 1105-2-100 (ER 1105-2-103), USACE does not have authority/purpose for conveyance for water supply. This is under Section 219 of the Environmental Infrastructure Assistance.
>
> Potential direct impacts to water supply due to the deterioration of water quality from the construction of channel improvements, overbank modifications, maintenance berms, demolition of existent weir and construction of a weir and gate with fish ladder, and improved levee segments would include temporary increases in turbidity and suspended solids in adjacent water bodies. Additional assessment would be required to allow for planned construction of the project in a manner to limit impacts to potable water.
>
> Potential direct impacts to water supply due to the deterioration of water quality from the existence of the proposed weir could impact sediment load within the newly formed reservoir due to reduced velocities and entrainment potential. During design, additional study and verification would be needed to confirm that adding a large weir would not induce sediment loads to alter the incoming chemistry in such a way to induce failure at the existing J.H. Fewell Plant or any other proposed structure along the newly ponded area. A sedimentation study has been proposed to be completed during the PED phase of this study.
>
> Potential direct impacts to water supply due to the coexistence of known HTRW sites and probable exposure to contaminants within the ponded area created by the proposed weir. During the preliminary assessments, the NFI identified several recognized environmental conditions (RECs) within the Project Area. Within the Unpermitted Gallatin Street Landfill Site, the proposed construction details excavating roughly 40 acres of material and relocating the material to the western portion of the Gallatin Street Landfill. Within the NFI sponsor's consultant report, it was found that soil borings discovered garbage roughly 3 to 34 feet deep. Water samples from monitoring wells within this landfill resulted in concentrations of cadmium, lead, and nickel above the maximum contaminant levels for the Safe Drinking Water Act. The consultant who sampled this landfill stated there is a clay layer possibly holding the potential leachate

[168] The Pearl River is currently listed as an impaired water on Mississippi's Clean Water Act section 303(d) list, is classed as eutrophic, has a nutrient TMDL, and has been under a Mississippi Department of Environmental Quality water contact advisory for four years due to the presence of sewage bacteria.

material from entering the nearby groundwater. For the Unpermitted LeFleur's Landing "Jefferson Street Landfill", benzene was found within soil and water samples to be three times the regulated limit. Reconnaissance from the consultant showed that the landfill had evidence of waste/debris exposed due to possible erosion. It was also found that the landfill had no signs of a constructed cap or liner to prevent possible leachate from the landfill to nearby groundwater. In addition to the two landfills mentioned above, there is additional potential proposed work if a site is unable to be avoided due to construction: Gulf States Creosoting Company Site. EPA conducted an onsite soil sampling analysis in December 2003 and discovered chemicals such as barium, cobalt, manganese, zinc, and creosote residuals including a variety of semi-volatile polynuclear aromatic hydrocarbons. Though this site was not placed on the EPA's Superfund list, elevated levels of organic and inorganic chemicals remain onsite and are possibly being released into the oxbow lake water and into the Pearl River during high flows/flood events. Due to this risk, if dredging, bank stabilization, or any form of construction is done near the Gulf States Creosoting Company Site, there is a risk that the known chemicals discovered onsite could either leach into the Pearl River or to nearby groundwater.

Potential positive opportunities for impact to water supply would be the creation of the ponded area behind the proposed weir. Ancillary benefits of this water surface would be that the City of Jackson, or other municipalities adjacent to the proposed ponded surface, would have access to a larger area with readily available water, with which to site potential future water treatment facilities and to ensure the ongoing access for current water treatment facilities (Fewell).[169]

4.2.17.4 Alternative E1 (Without weir)

This alternative without weir could have limited impacts to existing water quality and thus existing water supply. However, without a new weir, the benefit to the City of Jackson for a larger area for future water supply does not happen. Per ER 1105-2-100 (ER 1105-2-103), USACE does not have authority/purpose for conveyance for water supply. This is under Section 219 of the Environmental Infrastructure Assistance.

Potential direct impacts to water supply due to the deterioration of water quality from the construction of channel improvements, overbank modifications, maintenance berms, demolition of existent weir and construction of a weir and gate with fish ladder, and improved levee segments would include temporary increases in turbidity and suspended solids in adjacent water bodies. Additional assessment would be required to allow for planned construction of the project in a manner to limit impacts to potable water[.][170]

[169] RDEIS, Main Report at 4-28 to 4-29.
[170] RDEIS, Main Report at 4-29.

10. Cumulative Impacts Are Not Assessed

The RDEIS does not provide any type of meaningful assessment of the cumulative impacts of Alternative D1 or E1. Indeed, the cumulative impacts of Alternatives D1 and E1 are never actually described or explained in any way. Instead, without analysis or supporting information the RDEIS variously describes some cumulative impacts as being major,[171] significant or moderate,[172] or minor. While the National Wildlife Federation appreciates the recognition by the Corps of the significance of some of the cumulative impacts, these impacts do not appear to have been meaningfully taken into account, including because the RDEIS says (without any supporting evidence) that all project impacts will be offset through mitigation. A meaningful and accurate cumulative impacts analysis is critical to ensure that the Corps does not "treat the identified environmental concern in a vacuum."[173]

A meaningful assessment of cumulative impacts must identify:

> "(1) the area in which effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions – past, present, and proposed, and reasonably foreseeable – that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate."[174]

The RDEIS does not provide a meaningful assessment of cumulative impacts, and as such it does not provide the information needed to make a reasoned choice among alternatives.

11. Environmental Justice Is Not Assessed

The RDEIS deletes all analyses related to environmental justice that were included in the 2024 DEIS. While the National Wildlife Federation is cognizant of the Presidential directives related to this issue, it is unacceptable for the Corps to not assess the significant implications of this project for vulnerable communities, including communities suffering from a long history of environmental injustice. The failure to assess environmental justice issues is also contrary to the Corps' planning regulations and to multiple Congressional directives.

Indeed, the consideration of environmental justice is a Guiding Principle for Corps planning, and the Corps' regulations require that the final array of alternatives include a discussion of environmental justice considerations:

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[171] RDEIS, Main Report at 4-6 (Bottomland Hardwood Wetlands), 4-7 (Forested Uplands).
[172] RDEIS, Main Report at 4-10 (Wildlife)
[173] Grand Canyon Trust v. FAA, 290 F.3d 339, 346 (D.C. Cir. 2002).
[174] TOMAC, Taxpayers of Michigan Against Casinos v. Norton, 435 F.3d 852 (D.C. Cir. 2006) (quoting Grand Canyon Trust, 290 F.3d at 345); Fritiofson v. Alexander, 772 F.2d 1225, 1245 (5th Cir. 1985) (holding this level of detail necessary even at the less detailed review stage of an Environmental Assessment).

The planning process will ensure that plan formulation, evaluation, and recommendations for proposed Corps investments reflect the Guiding Principles identified in the P&R: healthy and resilient ecosystems, sustainable economic development, floodplains, public safety, environmental justice, and a watershed approach.[175]

* * *

(c) *Guiding Principles.* The Guiding Principles provide the overarching concepts that the Corps seeks to promote through investments in water resources.

> (1) *Environmental justice.* Environmental justice refers to the just treatment and meaningful involvement of all people regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people:
>
> > (i) Are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and
> > (ii) Have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.
>
> Environmental justice shall be considered throughout the Civil Works program and in all phases of project planning and decision-making. Army Civil Works projects and programs shall advance equity by meeting the needs of communities, such as by reducing disparate environmental burdens, protecting Tribal treaty rights, removing barriers to participation in decisionmaking, and increasing access to benefits provided by Civil Works programs, including for disadvantaged communities. The planning process shall put these communities at the front and center of studies, providing robust opportunities for effective participation in the planning and decision-making processes. Any disproportionate adverse public safety, human health, or environmental burdens of project alternatives on communities with environmental justice concerns shall be avoided, minimized, or mitigated to the greatest extent reasonable. The Corps shall ensure that communities with environmental justice concerns have meaningful opportunities to identify potential alternatives, effects, and mitigation measures. The Corps shall also be transparent in fully

[175] 33 C.F.R. 234.6.

displaying, disclosing and considering the potential effects of alternative actions on communities with environmental justice concerns.[176]

* * *

> The discussion of the final array of alternatives should include the primary purpose of the analysis; the geographic size of the study area; the types of impacts; the number of people potentially affected and anticipated degree of impact; environmental justice considerations; the size and location of communities potentially affected including the presence of Federally recognized Tribes or Tribal members; and the type of data and information available from Indigenous Knowledge, collaboration, public involvement, and previous studies.[177]

Environmental justice considerations are such an important component of Corps' planning process that the term environmental justice is referenced 56 times throughout the Federal Register Notice finalizing the Corps' Agency Specific Procedures to Implement the Principles, Requirements, and Guidelines for Federal Investments in Water Resources.[178]

12. Mitigation Is not Assessed

The RDEIS must assess mitigation as required by NEPA and must include a detailed mitigation plan that complies with the requirements of the Water Resources Development Act (which are discussed in Section F of these comments). At the most fundamental level, the RDEIS cannot properly satisfy any of these requirements for Alternatives D1 and E1 because the RDEIS does evaluate the impacts of those fundamentally undeveloped plans, and as a result, cannot assess mitigation needs.

The RDEIS also fails to meet the NEPA mitigation requirements because the RDEIS: fails to discuss mitigation in "sufficient detail to ensure that environmental consequences have been fairly evaluated"; fails to discuss the effectiveness of proposed mitigation; and fails to demonstrate that proposed mitigation will be ecologically successful. [179]

NEPA requires that the EIS discuss mitigation measures "in sufficient detail to ensure that environmental consequences have been fairly evaluated."[180] A "perfunctory description" of the mitigating measures is not sufficient.[181] As the Supreme Court has noted, this is because:

> omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action-forcing' function of NEPA. Without such a

[176] 33 C.F.R. 234.6(c)(1).
[177] 33 C.F.R. 234.8(g).
[178] 89 Fed. Reg. 103992 (December 19, 2024).
[179] Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1380 (9th Cir.1998).
[180] Id.
[181] Id.

> discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects. An adverse effect than can be fully remedied by, for example, an inconsequential public expenditure is certainly not as serious as a similar effect that can only be modestly ameliorated through the commitment of vast public and private resources.[182]

The RDEIS also must discuss the effectiveness of the proposed mitigation:

> An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. The Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated environmental impacts can be avoided. A mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination.[183]

This should include a discussion of how the mitigation will effectively address temporal losses (i.e., it takes many years to restore a fully functioning, mature wetland and many decades to restore a fully functioning mature bottomland hardwood wetland forest). A bald assertion that mitigation will be successful is not sufficient. The effectiveness must instead be supported by "substantial evidence in the record."[184]

13. Costs and Benefits Are Not Assessed

It is well-established that NEPA requires an assessment of the "indirect, as well as direct, costs and consequences of the proposed action."[185] The failure to evaluate the costs and consequences of an alternative violates NEPA. The RDEIS, however, does not provide any meaningful information to compare the costs and benefits of either Alternative D1 or E1. As discussed in Section C.3 of these comments, the Corps does not have the data it needs to make these assessments.

In addition, because the Corps must prepare a cost-benefit analysis for Alternatives D1 and E1 under WRDA (since both require Congressional authorization), the Corps should include a properly developed cost-benefit analysis with the RDEIS, as NEPA requires that agency decision making gives "appropriate consideration to "unquantified environmental amenities and values … along with economic and technical considerations"[186] and study and assess "technically and economically feasible alternatives."[187]

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[182] Id.
[183] South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 727 (9th Cir. 2009) (internal citations omitted).
[184] Wyoming Outdoor Council v. U.S. Army Corps of Eng'rs, 351 F. Supp. 2d 1232, 1252 (D. Wyo. 2005).
[185] Jackson County, Mo. v. Jones, 571 F.2d 1004, 1013 (8th Cir 1978) (*Jackson City* was decided on February 7, 1978; the regulations were issued on November 22, 1978 (43 Fed. Reg. 55990)).
[186] 42 U.S.C. 4332(B).
[187] 42 U.S.C. 4332(F).

E. The RDEIS Does Not Include the Required Clean Water Act Section 404 Analysis Which Would Demonstrate that Alternatives D1 and E1 are Prohibited

The RDEIS does not include the required Clean Water Act Section 404 analysis. Instead, the RDEIS states that this required "evaluation will be conducted once when additional data is available." RDEIS at 7-2.

Alternatives D1 and E1 are both prohibited by the Clean Water Act 404(b)(1) Guidelines, including because:

1. Alternative D1 and E1 will each "will cause or contribute to significant degradation of the waters of the United States."[188] As highlighted in the 404(b)(1) Guidelines, effects that contribute to significant degradation include: (a) significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on . . . fish, shellfish, wildlife, and special aquatic sites; (b) significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems; (c) significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or (d) significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values. 40 C.F.R. § 230.10(c).

2. Neither Alternative D1 nor E1 are the least environmentally damaging practicable alternative as fully acknowledged by the RDEIS.[189] To the contrary, Alternative A1 is a far less damaging practicable alternative for reducing flood risks, which means that the Corps is prohibited from approving either Alternative D1 or E1 under the 404(b)(1) Guidelines.

3. Alternatives D1 and E1 fail to adequately minimize and compensate for wetland and other aquatic resource losses.[190] For example, the RDEIS does not include a specific mitigation plan that demonstrates how the Corps will be able to fully compensate for adverse impacts to wetlands and other aquatic resources as required by the Clean Water Act and the Water Resources Development Act.

4. The RDEIS fails to establish that Alternative D1 and E1 will not have unacceptable adverse environmental impacts.[191]

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[188] 40 C.F.R. § 231.10(c).

[189] 40 C.F.R. § 230.10. These alternatives are prohibited because it is not possible to demonstrate that there is no "practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem" or that the Corps has taken "appropriate and practicable" steps to minimize potential adverse impacts on the aquatic ecosystem. Id.

[190] *See* 40 C.F.R. § 230.10(a)–(d).

[191] 40 C.F.R. § 230.10(c).

Because consultation must be reinitiated under the Endangered Species Act as discussed in Section G of these comments, the RDEIS also fails to establish that Alternative D1 and E1 will not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat. Any of these outcomes would also result in the alternative being prohibited under the 404(b)(1) Guidelines.[192]

F. The RDEIS Does Not Comply with the WRDA Mitigation Requirements

The RDEIS does not include a detailed mitigation plan for either Alternative D1 or E1 as required by law, but instead improperly defers development of this plan until PED:

> When a recommendation is made on which FRM alternative(s) to fully analyze, the USACE will prepare additional NEPA documentation to adequately assess the impacts. This additional NEPA document will include a project specific mitigation plan which will include all required components. Construction of any FRM features will not commence in waters of the United States, or in any fish and wildlife habitat, until the USACE has coordinated with the interagency mitigation team (IMT) on the mitigation plan for each compensatory mitigation feature and all in-lieu fee program/mitigation bank credits have been purchased and/or compensatory mitigation sites have been secured for each mitigation feature (e.g., acquired via fee title acquisition or protected via conservation easement).[193]

All losses to fish and wildlife created by a federal water resources project must be mitigated unless the Secretary of the Army determines that the adverse impacts to fish and wildlife would be "negligible."[194] To comply with this mandate, the Corps must first assess the full suite of impacts to fish and wildlife and their habitats. As discussed throughout these comments, the RDEIS does not do this.

The mitigation planning requirements established by the Water Resources Development Act prohibits the Corps from selecting a "project alternative in any report" unless that report includes a "specific plan to mitigate fish and wildlife losses."[195] As acknowledged in the RDEIS, the Corps has not complied with this requirement.

Corps mitigation plans must ensure that "impacts to bottomland hardwood forests are mitigated in-kind and harm to other habitat types are mitigated to not less than in-kind conditions, to the extent possible."[196] Mitigation plans "shall include, at a minimum" each of the following components[197]:

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[192] 40 C.F.R. § 230.10.
[193] RDEIS, Main Report at 5-1.
[194] 33 U.S.C. § 2283(d)(1).
[195] 33 U.S.C. § 2283(d).
[196] 33 U.S.C. § 2283(d)(1).
[197] 33 U.S.C. § 2283(d).

1. The type, amount, and characteristics of the habitat being restored, a description of the physical actions to be taken to carry out the restoration, and the functions and values that will be achieved.

2. The ecological success criteria, based on replacement of lost functions and values, that will be evaluated and used to determine mitigation success.

3. A description of the lands and interest in lands to be acquired for mitigation, and the basis for determining that those lands will be available.

4. A mitigation monitoring plan that includes the cost and duration of monitoring and identifies the entities responsible for monitoring if it is practicable to do so (if the responsible entity is not identified in the monitoring plan it must be identified in the project partnership agreement that is required for all Corps projects). Corps mitigation must be monitored until the monitoring demonstrates that the ecological success criteria established in the mitigation plan have been met.

5. A contingency plan for taking corrective action in cases where monitoring shows that mitigation is not achieving ecological success as defined in the plan.

Corps mitigation must be monitored until the monitoring demonstrates that the ecological success criteria established in the mitigation plan have been met. The Corps is also required to consult yearly on each project with the appropriate Federal agencies and the states on the status of the mitigation efforts. The consultation must address the status of ecological success on the date of the consultation, the likelihood that the ecological success criteria will be met, the projected timeline for achieving that success, and any recommendations for improving the likelihood of success.[198]

Mitigation lands for Corps civil works projects must be purchased before any construction begins.[199] Any physical construction required for purposes of mitigation should also be undertaken prior to project construction but must, at the latest, be undertaken "concurrently with the physical construction of such project."[200]

The Water Resources Development Acts also require that mitigation for civil works projects comply with the mitigation standards and policies established pursuant to the regulatory programs administered by the Corps.[201] Under these additional requirements:

1. Mitigation must compensate for the aquatic resource functions that will be lost to the project, and "must be commensurate with the amount and type of impact" caused by

[198] 33 U.S.C. § 2283(d).
[199] 33 U.S.C. § 2283(a).
[200] *Id.*
[201] 33 U.S.C. § 2283(d).

the project. 33 C.F.R. § 332.3(a). Mitigation also "should provide, where practicable, the suite of functions typically provided by the affected aquatic resource." 33 C.F.R. § 332.3(c).

2. The mitigation "project site must be ecologically suitable for providing the desired aquatic resource functions." In determining the ecological suitability of the compensatory mitigation site, the Corps "must consider, to the extent practicable": the hydrological conditions, soil characteristics, and other physical and chemical characteristics; watershed-scale features including aquatic habitat diversity and habitat connectivity; and the size and location of the compensatory mitigation site relative to hydrologic sources (including the availability of water rights) and other ecological features. 33 C.F.R. § 332.3(d).
3. Mitigation should be in kind if possible and where out of kind mitigation is utilized, the record must explain why. 33 C.F.R. § 332.3(e).
4. The Corps "must require a mitigation ratio greater than one-to-one where necessary to account for the method of compensatory mitigation (e.g., preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resource and the compensation site. The rationale for the required replacement ratio must be documented in the administrative record for the permit action." 33 C.F.R. § 332.3(f).
5. Preservation can only be used to provide compensatory mitigation when all the following criteria are met: "(i) The resources to be preserved provide important physical, chemical, or biological functions for the watershed; (ii) The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological sustainability of the watershed, the district engineer must use appropriate quantitative assessment tools, where available; (iii) Preservation is determined by the district engineer to be appropriate and practicable; (iv) The resources are under threat of destruction or adverse modifications; and (v) The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust). 33 C.F.R. § 332.3(h).
6. "The aquatic habitats, riparian areas, buffers, and uplands that comprise the overall compensatory mitigation project must be provided long-term protection through real estate instruments or other available mechanisms, as appropriate." 33 C.F.R. § 332.7(a).
7. The compensatory mitigation requirements must be clearly stated and include special conditions that "must be enforceable." The special conditions must: "(i) Identify the party
responsible for providing the compensatory mitigation; (ii) Incorporate, by reference, the final mitigation plan approved by the district engineer; (iii) State the objectives, performance standards, and monitoring required for the compensatory mitigation project, unless they are provided in the approved final mitigation plan; and (iv) Describe any required financial assurances or long-term management provisions for the

compensatory mitigation project, unless they are specified in the approved final mitigation plan…." 33 C.F.R. § 332.3(k). "The special conditions must clearly indicate the party or parties responsible for the implementation, performance, and longterm management of the compensatory mitigation project." 33 C.F.R. § 332.3(l).

8. To the maximum extent practicable, compensatory mitigation must be implemented "in advance of or concurrent with the activity" causing the impacts. "The district engineer shall require, to the extent appropriate and practicable, additional compensatory mitigation to offset temporal losses of aquatic functions that will result from the permitted activity." 33 C.F.R. § 332.3(m).
9. The district engineer shall require sufficient financial assurances to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with applicable performance standards." 33 C.F.R. § 332.3(n).
10. "For compensatory mitigation projects on public lands, where federal facility management plans or integrated natural resources management plans are used to provide long-term protection, and changes in statute, regulation, or agency needs or mission results in an incompatible use on public lands originally set aside for compensatory mitigation, the public agency authorizing the incompatible use is responsible for providing alternative compensatory mitigation that is acceptable to the district engineer for any loss in functions resulting from the incompatible use." 33 C.F.R. § 332.7(a).

Importantly, these mitigation requirements also state that compensatory mitigation should be designed to be self-sustaining and should minimize the use of pumps and other active engineering features:

> "Compensatory mitigation projects shall be designed, to the maximum extent practicable, to be self-sustaining once performance standards have been achieved. This includes minimization of active engineering features (e.g., pumps) and appropriate siting to ensure that natural hydrology and landscape context will support long-term sustainability. Where active long-term management and maintenance are necessary to ensure long-term sustainability (e.g., prescribed burning, invasive species control, maintenance of water control structures, easement enforcement), the responsible party must provide for such management and maintenance. This includes the provision of long-term financing mechanisms where necessary…." 33 C.F.R. § 332.7(b).

The Clean Water Act regulations also require the Corps to include the following plan elements at a level of detail "commensurate with the scale and scope of the impacts" (33 C.F.R. 332.4(c)), that are in addition to the requirements discussed above:

1. "A description of the resource type(s) and amount(s) that will be provided, the method of ecoregion, physiographic province, or other geographic area of interest." 33 C.F.R. § 332.4(c)(2).
2. "A description of the factors considered during the site selection process. This should include consideration of watershed needs, onsite alternatives where applicable, and the practicability of accomplishing ecologically self-sustaining aquatic resource

restoration, establishment, enhancement, and/or preservation at the compensatory mitigation project site." 33 C.F.R. § 332.4(c)(3).

3. "A description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the compensatory mitigation project site." 33 C.F.R. § 332.4(c)(4).
4. "A description of the ecological characteristics of the proposed compensatory mitigation project site . . . . This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other site characteristics appropriate to the type of resource proposed as compensation. The baseline information should also include a delineation of waters of the United States on the proposed compensatory mitigation project site." 33 C.F.R. § 332.4(c)(5).
5. "A description of the number of credits to be provided, including a brief explanation of the rationale for this determination," including "an explanation of how the compensatory mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity." 33 C.F.R. § 332.4(c)(6).
6. "Detailed written specifications and work descriptions for the compensatory mitigation project, including, but not limited to**,** the geographic boundaries of the project; construction methods, timing, and sequence; source(s) of water, including connections to existing waters and uplands; methods for establishing the desired plant community; plans to control invasive plant species; the proposed grading plan, including elevations and slopes of the substrate; soil management; and erosion control measures." 33 C.F.R. § 332.4(c)(7).
7. "A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed." 33 C.F.R. § 332.4(c)(8).
8. "Ecologically-based standards that will be used to determine whether the compensatory mitigation project is achieving its objectives." 33 C.F.R. § 332.4(c)(9).
9. "A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting on monitoring results to the district engineer must be included." 33 C.F.R. § 332.4(c)(10). The mitigation plan must provide for a monitoring period that is sufficient to demonstrate that the compensatory mitigation project has met performance standards, but not less than five years. A longer monitoring period must be required for aquatic resources with slow development rates (e.g., forested wetlands, bogs). 33 C.F.R. § 332.6.
10. "A description of how the compensatory mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management." 33 C.F.R. § 332.4(c)(11).
11. "A management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project, including the party or parties responsible for implementing adaptive management measures. The adaptive

management plan will guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success." 33 C.F.R. § 332.4(c)(12).

12. "A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards." 33 C.F.R. § 332.4(c)(13).
13. The mitigation plan must provide for a monitoring period that is sufficient to demonstrate that the compensatory mitigation project has met performance standards, but not less than five years. A longer monitoring period must be required for aquatic resources with slow development rates (e.g., forested wetlands, bogs). 33 C.F.R. § 332.6.
14. The compensatory mitigation requirements must be clearly stated and include special conditions that "must be enforceable." The special conditions must: "(i) Identify the party responsible for providing the compensatory mitigation; (ii) Incorporate, by reference, the final mitigation plan approved by the district engineer; (iii) State the objectives, performance standards, and monitoring required for the compensatory mitigation project, unless they are provided in the approved final mitigation plan; and (iv) Describe any required financial assurances or long-term management provisions for the compensatory mitigation project, unless they are specified in the approved final mitigation plan…." 33 C.F.R. § 332.3(k). "The special conditions must clearly indicate the party or parties responsible for the implementation, performance, and longterm management of the compensatory mitigation project." 33 C.F.R. § 332.3(l).
15. "The real estate instrument, management plan, or other mechanism providing long-term protection of the compensatory mitigation site must, to the extent appropriate and practicable, prohibit incompatible uses (e.g., clear cutting or mineral extraction) that might otherwise jeopardize the objectives of the compensatory mitigation project." 33 C.F.R. § 332.7(a).

A key element of a legally adequate mitigation plan is the inclusion of ecological performance standards for assessing whether the mitigation is achieving its objectives:

> "Performance standards should relate to the objectives of the compensatory mitigation project, so that the project can be objectively evaluated to determine if it is developing into the desired resource type, providing the expected functions, and attaining any other applicable metrics (e.g., acres)." 33 C.F.R. § 332.5(a).
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> "Performance standards must be based on attributes that are objective and verifiable. Ecological performance standards must be based on the best available science that can be measured or assessed in a practicable manner. Performance standards may be based on variables or measures of functional capacity described in functional assessment methodologies, measurements of hydrology or other aquatic resource characteristics, and/or comparisons to reference aquatic resources of similar type and landscape position. The use of reference aquatic resources to establish performance standards will help ensure that those performance standards are reasonably

achievable, by reflecting the range of variability exhibited by the regional class of aquatic resources as a result of natural processes and anthropogenic disturbances. Performance standards based on measurements of hydrology should take into consideration the hydrologic variability exhibited by reference aquatic resources, especially wetlands. Where practicable, performance standards should take into account the expected stages of the aquatic resource development process, in order to allow early identification of potential problems and appropriate adaptive management." 33 C.F.R. § 332.5(b).

The RDEIS does not comply with these important mitigation requirements.

G. The RDEIS Fails to Ensure Compliance with the Endangered Species Act

The RDEIS and the 2024 Biological Opinion acknowledge that the project could adversely affect multiple species that fall under the aegis of the Endangered Species Act (ESA), including the Northern Long Eared Bat, the Tricolored Bat, the Gulf Sturgeon, ringed map turtle, Alligator Snapping Turtle, Pearl River Map Turtle, Louisiana pigtoe, and monarch butterfly. Despite this appropriate acknowledgement, however, the RDEIS lacks the level of information and detail needed to meaningfully assess the dangers posed to this listed species and to develop Reasonable and Prudent Measures and Terms and Conditions that will ensure protection of these listed species. The Corps and the Fish and Wildlife Service must reinitiate ESA consultation to assess the project based on an appropriate level of information and project planning details and correct flaws in the 2024 Biological Opinion.

Congress enacted the ESA in part to provide a "means whereby the ecosystems upon which endangered species and threatened species depend may be conserved…[and] a program for the conservation of such endangered species and threatened species…"[202] The ESA vests primary responsibility for administering and enforcing the statute with the Secretaries of Commerce and Interior.[203] The Secretary of the Interior has delegated this responsibility to the Fish and Wildlife Service for freshwater and terrestrial species, including the Northern Long Eared Bat, the Tricolored Bat, the Gulf Sturgeon, ringed map turtle, Alligator Snapping Turtle, Pearl River Map Turtle, Louisiana pigtoe, and monarch butterfly.[204]

The Corps and the Fish and Wildlife Service must reinitiate consultation on agency actions over which the action agency retains, or is authorized to exercise, discretionary involvement, or control if:

(1) the amount or extent of taking specified in the incidental take statement is exceeded;
(2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;

[202] 16 U.S.C. § 1531(b).
[203] 50 C.F.R. § 402.01(a).
[204] 50 C.F.R. § 402.01(b).

(3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or
(4) a new species is listed, or critical habitat designated that may be affected by the identified action.[205]

When reinitiation is required, "**the original opinion loses its validity**, as does its accompanying incidental take statement, which then no longer shields the action agency from penalties for takings."[206]

Once the agencies initiate or reinitiate consultation, under Section 7(d), the action agency may not make any irretrievable commitment of resources with respect to the agency action, which has the effect of "foreclosing the formulation or implementation of any reasonable and prudent measures which would not violate subsection (a)(2) of this section."[207] Congress enacted this provision "to ensure that the status quo is maintained during consultation, so as to avoid a circumstance in which a large-scale commitment of resources is made during the consultation process."[208]

During formal consultation, the Services and the action agency must evaluate the "[e]ffects of the action," including all direct and indirect effects of the proposed action, plus the effects of actions that are interrelated or interdependent, added to all existing environmental conditions—that is, the "environmental baseline."[209] "The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area . . . ."[210] The effects of the action must be considered together with "cumulative effects," which are "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation."[211] Impacts from any likely development induced by the proposed project is an important element of that analysis.[212]

Despite these requirements, the RDEIS relies on a 2024 Biological Opinion that does not assess the currently formulated Alterantives D1 and E1 but instead assess the already-rejected

[205] 50 C.F.R. § 402.16.
[206] City of Austin v. Kinder Morgan Texas Pipeline, LLC, 447 F. Supp. 3d 558, 574 (W.D. Tex. 2020) (quoting Ctr. for Biological Diversity v. BLM, 698 F.3d 1101, 1108 (9th Cir. 2012)(emphasis added)).
[207] 16 U.S.C. § 1536(d).
[208] Defs. of Wildlife v. Bureau of Ocean Energy Mgmt., Regul., Enf't, 871 F. Supp. 2d 1312, 1326 (S.D. Ala. 2012).
[209] 50 C.F.R. §§ 402.02, 402.14(g)(3).
[210] 50 C.F.R. § 402.02.
[211] *Id.*
[212] See Save Our Springs All., Inc. v. Texas Dep't of Transportation, No. 1:19-CV-762-RP, 2022 WL 1004776, at *9 (W.D. Tex. Mar. 31, 2022) (citing Nat' Wildlife Fed'n v. Coleman, 9 U.S. 359, 373 (5th Cir. 1976).

Alternatives D and E.[213] In addition, Alternatives D1 and E1 have only been loosely sketched out in the RDEIS, and the RDEIS fails to assess multiple direct, indirect, and cumulative impacts as discussed throughout these comments. For example, the RDEIS acknowledges that the "full extent of impacts to listed riverine species has not been properly captured as velocity, sedimentation, and water quality analysis needs to be conducted."[214] The RDEIS also ignores the impact of induced development from Alternatives D1 or E1, other than in passing references to increased recreation on the constructed lake. There are obvious development opportunities around the lake if constructed, including commercial, residential, and recreational facility construction, with associated infrastructure. These failings foreclose the ability to adequately assess impacts to ESA-listed species.

The 2024 Biological Opinion is also flawed as to specific species. First, FWS offers zero support for its conclusion that the project will not jeopardize the continued existence of the Monarch butterfly. FWS acknowledges that Alternatives C, D, and E will harm Monarchs "through a reduction in breeding and feeding habitat . . . from the clearing and grubbing of 2,301 acres for Alternative C and 1,501 acres for Alternatives D and E."[215] Furthermore, "Alternatives C and D will also result in the creation of a new water impoundment (2,562 and 1,706 acres respectively). These acres will see a *permanent loss* of suitable monarch butterfly habitat as milkweed and nectar plants would not exist in submerged water conditions."[216] FWS also states that "[i]f herbicides are used to maintain the impoundments, additional impacts to the species may occur."[217] Yet FWS articulates *no* explanation as to how, despite those significant adverse impacts, the project will not jeopardize the continued existence of the Monarch. FWS claims that "[t]he level of [Monarch] take is difficult to quantify because there is no information on density or demographics for the monarch butterfly in the Action area."[218] But FWS makes no attempt whatsoever to assess the project's impacts on Monarch populations—let alone propose sufficient Reasonable and Prudent Measures to minimize expected take of Monarchs[219]—so its conclusion that the project will not jeopardize the species is groundless.

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[213] Compare Appendix D—ESA at 2024 Biological Opinion sections 2.1 and 2.2 at 10-11 (describing Alternatives D and E) with RDEIS, Main Report at 3-18 to 3-19 and 4-1 to 4-4 (describing Alternatives D1 and E1).
[214] RDEIS, Main Report at 6-2.
[215] RDEIS, Appendix D, 2024 Biological Opinion at 90.
[216] *Id.* (emphasis added).
[217] *Id.* at 89.
[218] *Id.* at 94.
[219] FWS includes two Reasonable and Prudent Measures (RPMs) for Monarchs: one requires the Corps to "minimize effects of pesticide and insecticide exposure to the monarch butterfly within the project area by utilizing targeted applications or in a non-targeted manner with a Service-approved plan." *Id.* at 95. The other requires the Corps to "promote milkweed and nectar source plantings for impoundments and levees." *Id.* In addition to being vague and unenforceable, these RPMs are too small in scope to mitigate the project's anticipated harm to Monarchs.

Second, FWS erroneously relies on *not yet developed* mitigation plans to conclude that the project is not likely to jeopardize the continued existence of the Gulf sturgeon.[220] FWS itself admits that because these mitigation plans are still only preliminary, the Proposed Action's impacts on Gulf sturgeon are highly uncertain:

> The DEIS states that a stormwater pollution prevention plan would be developed during the PED phase to minimize any potential effects to water quality during construction. *Provided a plan is successfully developed and implemented*, then adverse impacts to Gulf sturgeon associated with channel improvements activities are not likely to rise to the level where take of Gulf sturgeon would be expected. Further coordination with the Service will be required during the PED once a stormwater pollution prevention plan is developed.[221]

In fact, while FWS acknowledges that "[l]ow head dams, such as weirs, impede migratory pathways of fish including the Gulf sturgeon," the agency admits that a Corps-proposed fish passage channel "has *never been constructed for Gulf sturgeon* and therefore is an *untested* mitigation feature for this species."[222] Therefore, FWS cannot say with any certainty that the fish passage channel will be successful:

> With the addition of a fish passage channel in the design of the project, impacts *may* be minimized to Gulf sturgeon migration providing that flow conditions would meet the needs of the species to be able to navigate the passage. . . . At this time, there is only a conceptual model of the fish passage channel . . . with the possible velocities ranging anywhere from 1 to 7 fps. The maximum velocity of 7 fps would push the limits of adult Gulf sturgeon's ability to swim against the current and any juveniles attempting to migrate through the passage would be unable to swim through it. However, depending on where in the channel the velocities would occur at that speed the fish *may* be able to migrate successfully through it; therefore, the proposed passage feature should be monitored for water velocity and water level conditions.[223]

Ultimately, FWS admits that because "no such [fish passage channel] has ever been built for Gulf sturgeon within its range, we must consider the possibility that the fish passage structure may not work as designed."[224] Because FWS lacked a rational basis to conclude that the stormwater pollution prevention plan, fish passage channel, and any other preliminary mitigation measures would be sufficient to render the Proposed Action unlikely to jeopardize the continued existence of the Gulf Sturgeon, the Corps and FWS must reinitiate ESA consultation.

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[220] *Id.* at 28.
[221] *Id.* at 23 (emphases added).
[222] *Id.* (emphases added).
[223] *Id.* at 24-25 (emphases added).
[224] *Id.* at 28.

Conclusion

For at least the reasons highlighted above, the National Wildlife Federation urges the Corps to reject Alternatives D1 and E1. The Corps should instead pursue effective, sustainable flood relief through an expanded version of Alternative A1 that assists additional vulnerable neighborhoods in Jackson; addresses tributary flooding; and includes nature and river and floodplain restoration, levee setbacks and other natural and nature-based measures.

Please reach out to me at 415-762-8264 or sametm@nwf.org if you have any questions or would like additional information.

Respectfully submitted,

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Attachments