Comments on the
Pearl River Flood Risk Management Project
Draft Environmental Impact Statement (June 2024)

Submitted by the

National Wildlife Federation

August 5, 2024

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 Draft Environmental Impact Statement for the Pearl River Basin, Mississippi Federal Flood Risk Management Project (June 2024) (the DEIS) prepared by the Army Corps of Engineers (Corps). As discussed in detail below, the National Wildlife Federation urges the Corps to reject Alternatives C, D, and E in the final EIS. The Corps should instead pursue effective, sustainable flood relief through an expanded version of Alternative A1 that assists additional vulnerable neighborhoods in Jackson and includes nature and nature-based measures.

The National Wildlife Federation is the nation's largest conservation education and advocacy organization with more than 6.6 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 appreciates that the DEIS appropriately rejects Alternative C, the non-federal sponsor's preferred "One Lake" plan, and urges the Corps to also reject derivatives of that dredging plan, including Alternative D (CTO with weir) and Alternative E (CTO without weir). The Corps should instead pursue effective, sustainable flood relief through an expanded version of Alternative A1 that: (1) increases the number of homes that are elevated and the number of businesses that are flood-proofed; (2) carries out river and floodplain restoration of the Pearl River and its tributaries; (4) implements targeted road elevations; and (5) includes levees setbacks and other carefully planned protections (including a Canton Club neighborhood levee) to protect additional vulnerable Jackson neighborhoods.

While there are significant failings with the DEIS, it is clear from the information provided that Alternative C (locally preferred One Lake plan), Alternative D (CTO with weir) and Alternative E (CTO without weir) are environmentally unacceptable, economically unjustified, and not the least environmentally damaging practicable alternative. Each of these alternatives would cause an array of significant problems for the residents of Jackson and destroy vitally important fish and wildlife habitat without providing meaningful flood relief. As a result, each of these alternatives must be rejected.

Because the locally preferred plan (Alternative C) is not environmentally acceptable, the Corps may not rely on Section 3104 of the Water Resources Development Act (WRDA) of 2007 to construct either of the identified CTO plans (Alternatives D and E).[1]

Furthermore, as repeatedly and properly stated in both the DEIS and Commanders Report, the Corps cannot recommend Alternative D or E without first preparing a comprehensive feasibility report and its

[1] Section 3104 states that the Corps may construct a "combination" if the national economic development plan and the locally preferred plan only if the "locally preferred plan is environmentally acceptable and technically feasible." Water Resources Development Act of 2007, Section 3104 ("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.").

related environmental impact statement.[2] In addition to fully complying with the National Environmental Policy Act (NEPA) and Water Resources Development Act planning requirements, the Corps also must comply with the Clean Water Act, Endangered Species Act, Fish and Wildlife Coordination Act, and other applicable federal laws before the Corps can recommend construction of Alternative D or E. The Corps has not complied with these important laws, as discussed throughout these comments.

NEPA prohibits the pre-selection of an alternative without having completed the legally required analyses needed to make an informed decision among alternatives. As a result, the Corps may not move into the PED phase—where it would be locked into Alternative D or E—before it has thoroughly considered a full range of alternatives. That would be a clear-cut violation of NEPA and an irretrievable commitment of resources, which is prohibited without first conducting the required NEPA analysis.[3]

Because the Corps has not assessed Alternative D through a feasibility study and environmental impact statement, the Corps also lacks the data it needs to determine that Alternative D is the preliminary National Economic Development (NED) plan, as discussed in Section D.3 of these comments. As a result, this determination is arbitrary and capricious—and cannot form the basis for the Corps' decision to recommend these plans.

The Corps' planning guidance also prohibits the Corps from recommending the Alternative D 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."[4] The weir proposed as part of Alternative D 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."[5] 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 Commander's report.[6]

The Corps must prepare a feasibility study and environmental impact statement and comply with all applicable federal laws before the Corps can recommend Alternative D or E for construction.[7] To do this, the Corps would have to initiate a fundamentally new planning process—one that does not rely on the flawed non-federal sponsor study or this DEIS—in what will be a futile attempt to justify construction of Alternatives that will cause significant adverse impacts to vital aquatic resources while inducing flooding in vulnerable communities.

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[2] The Corps also cannot construct Alternative D or E without first completing those reports, submitting them to Congress, and obtaining Congressional authorization for construction.

[3] *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).

[4] ER 1105-2-100 (Dec. 2023) at E-89, E-287 (adding recreation to non-lake projects).

[5] ER 1105-2-100 (Dec. 2023) at E-287. That the weir could provide "a lake surface for future water supply concerns"—as statement that is entirely speculative and unsupported by any documented need—does not alter the fundamental purpose of the weir as a recreational amenity. DEIS, Main Report at 113.

[6] 33 USC 2213(c)(4) (assigning a 50% non-federal cost share for separable costs associated with recreation).

[7] As the DEIS acknowledges, Congress would also need to authorize any such recommendation before the Corps could proceed with construction.

The National Wildlife Federation urges the Corps to abandon these unacceptable alternatives and instead pursue effective, sustainable flood relief through an expanded version of Alternative A1 that includes: (1) increasing the number of homes that are elevated; (2) increasing the number of businesses that are flood-proofed; (3) targeted river and floodplain restoration of the Pearl River and its tributaries; (4) targeted road elevations; and (5) levee setbacks and other protections (including a Canton Club neighborhood levee) to protect additional vulnerable Jackson neighborhoods. As a core component of that expanded Alternative A1, the Corps should remove its arbitrarily imposed barriers to community participation, which require structure owners to pay for an extensive array of so-called "ineligible" costs associated with elevations and other nonstructural measures.[8,9]

Detailed Comments

A. The DEIS Properly Rejects Alternative C—the One Lake Plan

The DEIS properly rejects Alternative C, the One Lake Plan, because among other things, Alternative C is environmentally unacceptable, economically unjustified, and dangerous. Alternative C would cause devastating and irreparable harm to the Pearl River and its vital floodplain wetlands and the fish and wildlife that rely on those critical resources while exacerbating the flash flooding that already plagues many communities in the City of Jackson. These adverse impacts caused the U.S. Fish and Wildlife Service to properly conclude that One Lake "is the most environmental damaging plan"[10] evaluated by the non-federal sponsor[11] in its 2018 Draft EIS.[12]

Among other damage, Alternative C would:

- **Fundamentally and irreparable harm the Pearl River ecosystem.** One Lake would require construction of a new low-head dam on the Pearl River and dredging 25 million cubic yards of sediment from the Pearl River—enough to fill 7,500 Olympic size swimming pools. These combined actions would transform a 10 mile stretch of riverine ecosystem into a 2,500-acre impoundment. The dredged sediment would then be used to enlarge a number of major levees and bury floodplain habitat to create new land for development purposes.

- **Destroy vital wildlife habitat, including wetlands, small streams, sloughs, and diverse instream habitats that also provide critical ecosystem services, including natural flood protection.** One Lake would destroy more than 2,000 acres of wildlife habitat, including at least 1,500 acres of vital bottomland hardwood wetlands. An additional 2,500 acres of diverse in-stream riverine habitat and ecologically vital small streams would be destroyed and turned into an impoundment. Though not acknowledged in the 2018 Draft EIS, even more habitat would be

[8] These barriers are outlined at pages ix and 137 of the DEIS, and at pages 23-27 of Appendix N.
[9] 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. As a result, there appears to 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.
[10] 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 U.S. Fish and Wildlife Services' comments on the 2018 Draft EIS).
[11] The non-federal sponsor is the Rankin-Hinds Pearl River Flood and Drainage Control District.
[12] 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").

lost as the fundamental changes to the form and function of the Pearl River system play out over time, including reduction and elimination of natural floodplain inundation.

- **Harm hundreds of species of fish and wildlife, including numerous species listed under the Federal Endangered Species Act or otherwise at-risk, including by destroying vital habitat and fundamentally transforming the form and function of the Pearl River ecosystem.** As the U.S. Department of the Interior has 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."[13] A recent analysis carried out by the National Audubon Society documents that a healthy Pearl River is vitally important to 220 bird species that breed, winter, or migrate through the Pearl River.[14] That analysis estimates that a 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. This analysis is discussed in more detail in the scoping comments submitted by the National Audubon Society on June 29, 2023.

- **Threaten the health and productivity of vital downstream habitats, including the Mississippi Sound, Lake Borgne, and the Gulf of Mexico, including by reducing freshwater flows below the new dam, particularly during traditional low flow periods.** The Pearl River is a major source of freshwater to the Gulf of Mexico and such reductions in flow 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.

- **Expose people and fish and wildlife to high levels of toxins.** One Lake's extensive dredging will re-suspend contaminated sediments[15], and would directly affect at least three highly

[13] Id. at page 1.

[14] 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).

[15] The 2018 Draft EIS acknowledges that toxics are present in sites located in or near the Project Area, including: Benzene, barium, cadmium, cobalt, creosote residuals, lead, lindane, manganese, mercury, nickel, raw sewage, sodium pentachlorophenate, pentachlorophenol (PCP), phenyl mercuric acetate, polynuclear aromatic hydrocarbons (PAHs), and zinc. 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).

contaminated sites—a former creosote wood treatment facility and two unpermitted landfills.[16] One Lake also is expected to affect up to five additional highly contaminated sites, including a remediated Superfund site.[17]

- **Impair water quality.** One Lake's large-scale dredging operations, major construction, and impoundment of a once free-flowing stretch of river, and large-scale destruction of wetlands that help filter pollutants all would adversely affect water quality and could 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. These impacts will add to the Pearl River's already significant water quality problems. The Pearl River is 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.

- **Increase flooding along Pearl River tributaries that flow through Jackson.** The One Lake impoundment would permanently elevate water levels in portions of the Pearl River tributaries that flow through Jackson, a problem recognized in the 2018 Draft EIS.[18] This would further exacerbate localized flash flooding, increase underserved neighborhoods' vulnerability to backwater flooding from high river events, and magnify flood risk from rain events in the upper reaches of the tributaries that ultimately flow into the now-elevated creek channels. Affected tributaries 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.

- **Exacerbate the City of Jackson's entrenched drinking water problems, including by compromising Jackson's secondary drinking water treatment plant, the J.H. Fewell plant.** The 100-year-old J.H. Fewell plant supplies up to 30% of Jackson's drinking water and 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. The One Lake project would exacerbate the City's entrenched drinking water problems,[19] including by:

[16] 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).

[17] 2018 Draft EIS Appendix C, Engineering, Environmental Analysis of HTRW Sites (Sonford Products Lumber Mill Superfund Site, Rival Manufacturing Company, and multiple automotive junkyards).

[18] 2018 Draft EIS, Appendix C, Engineering Hydrologic and Hydraulic Analysis at 32-36.

[19] 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

(1) **Forcing the City of Jackson to find an alternative source for 30% of Jackson's water supply for <u>at least three to four years</u>.** The J.H. Fewell plant draws water directly from the area in the Pearl River that would be extensively dredged and ponded to build One Lake. 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.[20] 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,[21] which would take at least "three or four years" according to the project's non-federal sponsor.[22]

(2) **Adversely affect long-term operation of the J.H. Fewell plant and public health by further degrading water quality in the Pearl River.** By transforming 10 miles of flowing Pearl River into a 2,000-acre slow-moving impoundment, the One Lake project would further degrade the River's water quality, including by trapping billions of gallons of raw sewage, toxics, and other pollutants.[23] From just April to June of 2022, **56.5 million gallons of raw sewage** were discharged into 6 of the tributaries that flow into the One Lake project area.[24] In 2021, **64.5 million gallons of raw sewage** were discharged into the One Lake project area.[25] Many facilities regularly discharge toxic pollutants into the One Lake project area,[26] and construction of One Lake would directly affect 3 highly

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<u>upstream</u> 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.

[20] 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.")

[21] Id.

[22] Northside Sun, Moving Ahead: Final Public Comment Period For One Lake Coming Soon, 06/14/22 (available at https://www.northsidesun.com/local-content-top-stories/moving-ahead-final-public-comment-period-one-lake-coming-soon#sthash.bggohcen.dpbs)("Keith Turner, attorney for the Rankin-Hinds Pearl River Flood & Drainage Control District said . . . After funding is secured, the project will require three or four years of construction, and then several more years for developers to produce plans for the economic development component.")

[23] As noted above, 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.

[24] 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.

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

[26] See footnote 11, above.

contaminated toxic waste sites and resuspend highly contaminated sediments.[27] One Lake also is expected to affect up to 5 additional highly contaminated sites, including a remediated Superfund site.[28]

- **Induce development in areas that will remain at high risk of flooding, putting more people, homes, businesses, and properties at risk.** The 2018 Draft EIS acknowledges that additional future development is both a goal and likely outcome of One Lake. This new development would occur in areas that will continue to have a high risk of flooding, including potentially catastrophic flooding when One Lake and/or existing levees overtop or fail. One Lake would at best only provide protection for the 100-year flood event, leaving this newly induced (and existing development) at risk from larger floods that inevitably will happen.

- **Place unacceptable economic burdens on low-income and other residents who will be forced to pay for the project's substantial non-federal cost share and divert scarce resources away from addressing the City's water crisis and tributary flooding.** Thirty-five percent of the costs of constructing the One Lake project plus 100% of the costs of operating, maintaining, and rehabilitating the project must be paid by the non-federal sponsor. These funds are expected to come from a tax levied on the residents of Jackson.[29] The actual costs—and as a result, the non-federal cost share—will be much higher than the current estimate which does not account for such things as: the costs of required toxic remediation for up to 8 highly contaminated sites; the Mississippi Department of Transportation's request that the project cover the costs of replacing 9 bridges threatened by collapse if One Lake is constructed[30]; the development and implementation of a plan to protect public health; the true costs of the mandatory environmental mitigation; additional costs that will be revealed during the detailed technical design process for the project; and economic realities including that the "Corps has seen bids on important navigation and flood control projects come in at double or triple the previous cost estimates."[31] Such a tax would disproportionately burden low-income residents, and divert extremely limited resources away from addressing the City's water crisis and many other problems.

[27] 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).

[28] 2018 Draft EIS Appendix C, Engineering, Environmental Analysis of HTRW Sites (Sonford Products Lumber Mill Superfund Site, Rival Manufacturing Company, and multiple automotive junkyards).

[29] MS Code § 51-35-333 (2017) gives local drainage districts—including the One Lake project's non-federal sponsor, the Rankin-Hinds Pearl River Flood Control and Drainage District—the authority to raise property taxes to cover the costs of a "flood and drainage control improvement project" by levying "a special improvement assessment" on "property in the district that is directly or indirectly benefited by the project."

[30] Letter from the Mississippi Department of Transportation to the Rankin-Hinds Pearl River Flood & Drainage Control District (September 5, 2018)(If the One Lake Project moves forward "all nine (9) bridges will need to be replaced and the cost to replace the nine (9) bridges should be reflected in the cost of the Pearl River Basin Federal Flood Risk Management Project.").

[31] House Committee Report, FY23 E&W Appropriations Bill at 7 (https://docs.house.gov/meetings/AP/AP00/20230622/116151/HMKP-118-AP00-20230622-SD003.pdf).

Alternative C is clearly prohibited by the Clean Water Act 404(b)(1) Guidelines, including because:

1. Alternative C "will cause or contribute to significant degradation of the waters of the United States;"[32]
2. A less damaging practicable alternative is available;[33]
3. Alternative C fails to adequately minimize and compensate for wetland and other aquatic resource losses;[34] and
4. The DEIS fails to establish that the project will not have unacceptable adverse environmental impacts.[35]

Alternative C is clearly 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."[36] Alternative C is also at odds with this Administration's critically important goal of protecting, restoring, and reconnecting 8 million acres of wetlands and 100,000 miles of our nation's river and streams by 2030.[37]

The impacts of Alternative C and the legal prohibitions to constructing this project are discussed in more detail in the National Wildlife Federation's scoping comments on the Pearl River Flood Risk Management Project, which are incorporated by reference herein and provided at Attachment 1 to these comments.

B. The DEIS Demonstrates that Alternatives D and E Also Must Be Rejected

The DEIS shows that Alternatives D and E must also be rejected because each alternative would cause similarly destructive impacts as the properly rejected Alternative C. Alternative D is merely a slightly smaller version of Alternative C. Alternative D unquestionably creates a new reservoir, as acknowledged in the Commander's Report.[38] Alternative E includes the same elements as Alternative D except for the weir.

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[32] 40 C.F.R. § 231.10(c).
[33] 40 C.F.R. § 230.10(a).
[34] *See* 40 C.F.R. 230.10(a)–(d).
[35] 40 C.F.R. § 230.1(c).
[36] 33 U.S.C. § 2317(a).
[37] The America the Beautiful Freshwater Challenge (April 2024), available at https://www.whitehouse.gov/wp-content/uploads/2024/04/America-the-Beautiful-Freshwater-Challenge.pdf.
[38] Commander's Report at 8 ("The existence of the proposed weir could impact sediment load within the newly formed reservoir due to reduced velocities and entrainment potential.")

The DEIS demonstrates that all three Alternatives will require extensive construction that will result in equally extensive ecological destruction:

Features	Alt C ("One Lake")	Alt D (CTO w/weir)	Alt E (CTO no weir)
Lake Surface Area	2562.25 acres	1706 acres	N/A
Channel Excavation	1443.25 acres	1016 acres	1016 acres
Channel River Miles	RM 284-RM 294	RM 285-RM 294	RM 285-RM 294
Channel Excavation Width	400-2,000 feet	500-2,600 feet	500-2,600 feet
Channel Excavation Depth	5-20 feet	0-15 feet	0-15 feet
Weir and new gate	1	1	N/A
Weir Location	RM 284.3	RM 286.5	N/A
Weir Elevation	258 feet (current weir 250')	256 feet	N/A
Weir Flood Control Benefits	None	None	N/A
Bridge Stabilization	7 bridges	7 bridges	7 bridges
Hard Point in Tributaries	850 feet	750 feet	750 feet
New drainage pumps	2	1	N/A

Chart Provided Courtesy of Pearl Riverkeeper (Information from DEIS)

Even if Alternatives D or E could be shown—through a feasibility study and environmental impact statement—to be less destructive than Alternative C, the adverse impacts of each CTO Alternative would be highly significant. The DEIS certainly does not provide any information to suggest otherwise, as documented in Section E of these comments.

Based on our extensive experience in evaluating the impacts of large-scale civil works projects, the National Wildlife Federation believes that Alternatives D and E (like Alternative C) will be prohibited by the Clean Water Act 404(b)(1) Guidelines, including at a minimum, because the CTO plans "will cause or contribute to significant degradation of the waters of the United States" and there are other far less damaging (and more effective) practicable alternatives for reducing flood risks.[39] Under the 404(b)(1) Guidelines, effects that contribute to significant degradation include:

- 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;
- Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems;

[39] 40 C.F.R. § 230.10. As a result, 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.

- 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
- Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.[40]

Critically, Alternatives D and E would cause far more harm than Alternative A1 and thus cannot serve as the least environmentally damaging practicable alternative—a fundamental pre-requisite of the 404(b)(1) Guidelines.

Alternatives D and E (like Alternative C) 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."[41] Alternatives D and E (like Alternative C) is also at odds with this Administration's critically important goal of protecting, restoring, and reconnecting 8 million acres of wetlands and 100,000 miles of our nation's river and streams by 2030.[42]

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

As currently proposed, Alternative A1 would elevate 81 homes, flood-proof 62 businesses, and offer voluntary buyouts in Jackson's flood-prone areas. This alternative is clearly supported by the information in the DEIS as this plan: will not cause harm to the environment; will not induce flooding or otherwise put the public at risk; will not damage public health; will not require compensatory mitigation; and can be carried out under the existing authorization as recognized in the DEIS.[43]

While the National Wildlife Federation supports these types of measures, Alternative A1 does not go far enough to adequately address the flood relief needs of metro Jackson and leaves a significant array of highly effective natural and nature-based measures off the table, even though such measure, including such things as floodplain restoration, tributary restoration, levee setbacks, and voluntary relocations, have been successfully used across the country to protect communities and the environment. Notably, the DEIS also undermines the selection of Alternative A1 based on the Corps' contention that participation in this alternative is unlikely to exceed 50%.[44] This contention is not supported by information in the record, is not based on discussions with community members, and is driven in part by the arbitrary imposition of burdensome participation costs on structure owners. In fact, it runs contrary to evidence before the Corps. For example, the DEIS references Louisiana's Southwest Coastal Louisiana Project Nonstructural Coastal Storm Damage Risk Reduction, but this project (which will elevate or

[40] 40 C.F.R. § 230.10(c).
[41] 33 U.S.C. § 2317(a).
[42] The America the Beautiful Freshwater Challenge (April 2024), available at https://www.whitehouse.gov/wp-content/uploads/2024/04/America-the-Beautiful-Freshwater-Challenge.pdf.
[43] 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.
[44] DEIS, Main Report at 135.

flood-proof 800 to 1,000 structures) has a current participation rate of 80%.[45] A similar project in Mandeville, Louisiana has a participation rate that is projected to reach 96% by next year.[46]

Critically, an expanded Alternative A1 should include the Pearl River tributaries that flow through metro Jackson. 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. The Corps' decision to eliminate consideration of tributary flooding is unavailing. According to the Corps this "was removed from further consideration in the CTO alternative upon identifying that this work is being undertaken by the NRCS, State and other local entities through the Mississippi Watershed projects."[47] 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 C, D, and E—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.[48] 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 finalization of the EIS using funding that has already been appropriated ($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.[49]

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.[50,51] These barriers are particularly inappropriate since the majority of

[45] Source: https://cims.coastal.louisiana.gov/outreach/Projects/SWCoastal (accessed July 27, 2024).
[46] 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-study/mandeville-louisiana-city-stays-afloat-promoting-elevations (accessed Juley 27, 2024).
[47] DEIS, Main Report at 93.
[48] 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.
[49] 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.
[50] These barriers are outlined at pages ix and 137 of the DEIS, and at pages 23-27 of Appendix N.
[51] 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. As a result, there appears to be no legal impediment to the

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 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

3. **Incorporates natural and nature-based flood measures**. There are many significant opportunities for reducing flood impacts to Jackson communities while protecting the environment. For example, the Corps could—and should—take action to restore the in-stream functions, wetlands, and green spaces along the 12 Pearl River tributaries that flow through the Greater Jackson area where much of the documented flooding occurs; and along the Pearl River mainstem (including between RM 284 and RM 290). The Corps should also evaluate options for levee setbacks, particularly along highly constricted reaches of the Pearl River (for example, from RM 288 to RM 291).

   In developing this measures, particular attention should be paid to Town and Lynch Creeks which flow through highly vulnerable neighborhoods and have a history of flash flooding. These restoration activities could be carried out in a way that maximizes their co-benefits, such as supporting public recreation opportunities.[52] 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.

   The value of these types of activities for protecting communities 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[53] 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."[54]

   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.[55] The forest and other conservation lands that make up the 28,000 acre Meramec Greenway along the Meramec River in southern Missouri contribute

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.

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

[53] 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.

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

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

about $6,000 per acre in avoided flood damages annually.[56] 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 velocities by 15 percent. [57] As the Corps recognized in 1972 in its plan to reduce flooding along 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.[58]

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.[59] 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.

4. **Includes targeted road elevations that address transportation corridors with a demonstrated history of flood issues.** As noted in the 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."[60] 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.

5. **Includes levee setbacks and other carefully planned protections for vulnerable Jackson neighborhoods.** The DEIS dismisses levee setbacks based solely on the conclusory statement that: "This feature was determined to provide limited flood risk reduction benefits and

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[56] 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.

[57] 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.

[58] 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.)

[59] 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.

[60] Commander's Report at 9.

therefore was removed from further consideration."[61] 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. Setback levees also help reduce erosion and support healthier and more dynamic river systems. 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).

The DEIS proposes that A1 could be adapted to incorporate a 1.5-mile levee segment to serve the Canton Club neighborhood; this new levee is expected to provide flood protection for 250 structures of which 165 structures would no longer flood at an estimated construction cost of $10 million. Community partners in northeast Jackson have highlighted the need to consider a new levee segment to provide targeted flood protection for the Canton Club neighborhood as well as the adjoining Parkway and McLeod neighborhoods. A levee that considers these three neighborhoods could provide flood protection for 1,000 structures. Careful study of this option must consider the flood risks and needs of those adjacent to these three neighborhoods along with careful planning to avoid ecological damage.

The DEIS identifies upgrading an existing non-Federal levee into a Federalized ring levee around the Savanna Street Wastewater Treatment Plant (WWTP) as a component of Alternatives C, D, and E. The 2018 Draft Study estimates that doing so would cost $1.9 million. This WWTP serves as critical infrastructure to Greater Jackson and experiences a high flood risk. This levee upgrade is not dependent on those three alternatives, and as such should be done as part of an expanded Alternative A1.

In addition, the Corps should work with the state and local entities to advance 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 the wettest January on record. As the Commander's Report notes, while the reservoir was not designed for flood control it is estimated to have provided a 28% flood peak reduction since 1979.[62]

D. The Corps May Not Defer the Feasibility Study and EIS for Alternatives D and E to PED

The DEIS and Commander's Report repeatedly acknowledge that the Corps' analysis of Alternatives D and E (the CTO alternatives) is "preliminary" and based on limited information.[63] The Commanders'

[61] DEIS, Main Report at 93.
[62] Commander's Report at 11. The 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.
[63] See, e.g., DEIS, Main Report at 143 ("The CTO alternative as described in Section 3.4.3 was used to assess potential resource impacts that could occur if this combination of features were selected. At this phase of the study, the analysis of the CTO plan is preliminary and based off the information currently on hand. Further analysis

Report explicitly acknowledges that implementation of either CTO plan will require extensive additional study—"Additional analysis and design, feasibility level decision documents, and NEPA documentation will be required"[64]—that will be carried out during PED.

However, the Corps may not defer these analyses—which are fundamental to understanding adverse impacts and benefits of Alternatives C, D, E—until PED. To the contrary, NEPA and the Water Resources Development Acts (WRDA) require the Corps to carry out these analyses before a project moves into the PED phase.

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

The National Environmental Policy Act (NEPA) and the Water Resources Development Acts (WRDA) require the Corps to prepare an environmental impact statement and feasibility study before recommending Alternative D or E. Those studies would then have to support one or both of those Alternatives before the Corps could recommend them in a Record of Decision. The DEIS violates this legally required, common sense requirement 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.[65] The feasibility study includes the required environmental impact statement (EIS) by definition.[66] The DEIS and Commander's report repeatedly acknowledge that Alternatives D and E must be assessed through a feasibility study and EIS, a need reinforced by fundamental lack of information on Alternative D and E in the DEIS, and the fact that neither of those Alternatives is 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.'"[67]

To comply with NEPA, an EIS must rigorously explore and objectively evaluate all reasonable alternatives which are defined to mean "a reasonable range of alternatives that are technically and economically feasible and meet the purpose and need for the proposed action."[68] The EIS must be carried out before

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and a supplemental NEPA document would be necessary to fully assess the alternative including any potential compensatory mitigation in the next phase of the study. The CTO alternative is assessed for potential impacts with a new weir and without a weir since construction of the weir does not provide any flood risk reduction benefits but does provide opportunity for recreational benefits if constructed. The level of analysis is commensurate with the level of data and information available at this time.").

[64] Commander's Report at Paragraph 6c.

[65] 33 U.S.C. 2282.

[66] Id.

[67] 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).

[68] 40 C.F.R. § 1508.1(z). The Council on Environmental Quality has long made it clear that "[r]easonable alternatives include those that are practical or feasible from a technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant." Forty Most asked Questions Concerning CEQ's NEPA Regulations, 46 Fed. Reg. 18,026 (March 23, 1981).

a decision is made; it is not to be used to justify a decision that has already been made.[69,70] But that is precisely what the Corps has proposed in the DEIS.

In a clear-cut violation of NEPA, the Corps proposes to pre-select Alternatives D and E ***before*** completing the legally required analyses needed to make an informed decision.[71] 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 D or E 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 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[72]. 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.[73] 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.'"[74]

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

The Corps may not attempt to rely on the contingent authority provided in Section 3104 of WRDA 2007 to recommend Alternatives D or E to support its inappropriate attempt to defer the required feasibility study and environmental impact statements until PED.

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

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[69] 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.").

[70] 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 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)).

[71] *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).

[72] State of Cal. v. Block, 690 F.2d 753, 763 (9th Cir. 1982).

[73] Id.

[74] Id.

construct the "national economic development plan, or the locally preferred plan, or some combination thereof" if that reevaluation establishes that each of three conditions[75] 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 NED plan;
(2) The locally preferred plan is environmentally acceptable; and
(3) The locally preferred plan is technically feasible.

The DEIS properly rejects the locally preferred plan—Alternative C—precisely because it is not environmentally acceptable. As a result, the Corps may not construct Alternative C or a derivative of that dredging plan, including Alternative D (CTO with weir) and Alternative E (CTO without weir) under WRDA 2007.

Instead, the Corps must complete a full feasibility study and environmental impact statement that evaluates Alternative D and Alternative E and a full range of reasonable alternatives and complies with the full array of applicable water resources planning and federal environmental laws before it could recommend Alternative D or E.

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

The DEIS identifies Alternative D as the "Preliminary NED Plan".[76] However, the Corps does not have the data it needs to make this determination. As a result, this determination is arbitrary and capricious—and cannot support 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 D, 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 DEIS 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 DEIS 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 DEIS but has instead been deferred to the PED phase.

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[75] 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.").

[76] E.g. DEIS, Main Report at 205 and x.

(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 DEIS 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 DEIS but has instead been deferred to the PED phase.

(6) Importantly, the Corps cannot assess whether the Alternative D weir is independently justified by recreation benefits, without doing a substantial amount of additional analysis. The Alternative D weir must be independent justified through demonstrable recreation benefits because the weir "does not provide any flood control benefits."[77] The Corps has not carried out this analysis and as a result, has no basis for its determination that Alternative D is the preliminary NED plan.

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"[78]; (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 by the weir less the recreation benefits that would be lost from the weir.

E. The DEIS Does Not—and Cannot—Support Implementation of Alternatives C, D, or E

As discussed above, the DEIS acknowledges that Alternative C cannot be economically justified and is environmentally unacceptable. It is equally clear that the DEIS does not justify implementation of Alternatives D or E. Indeed, the DEIS and Commander's Report explicitly acknowledge that critically important and mandatory analyses have not been carried out.

The DEIS fails to include multiple essential analysis of Alternatives D and E that are required by NEPA, the Water Resources Development Act, 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."[79] Indeed, as repeatedly acknowledged in the DEIS and Commander's Report, "Additional analysis and design, feasibility level decision documents, and NEPA documentation will be required."[80]

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[77] DEIS, Main Report at viii.
[78] DEIS, Main Report at viii.
[79] *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).
[80] Commanders Report at paragraph 6c.

However, a DEIS that fails to include required analyses supported by quantified or detailed information violates NEPA or relies on conclusory statements "unsupported by empirical or experimental data, scientific authorities, or explanatory information"[81] is not sufficient and cannot satisfy NEPA:

> To the fullest extent practicable, the draft statement must meet the requirements established for final statements in section 102(2)(C) of NEPA and in the regulations in this subchapter . . . At appropriate points in the draft statement, the agency shall discuss all major points of view on the environmental effects of the alternatives, including the proposed action."[82]

The Corps is also required to obtain information that "is essential to making a reasoned choice among alternatives" and include that information in the DEIS if "the overall costs of obtaining it are not unreasonable."[83] Conclusory statements "unsupported by empirical or experimental data, scientific authorities, or explanatory information"[84] are not sufficient and cannot satisfy NEPA. The Corps must supplement a DEIS that is incomplete[85], and it may not rely on an EIS that omits entire sections of analysis.[86]

The lack of fundamentally critical analyses of Alternatives D and E are even more troubling given the fact that these alternatives will have many, and perhaps, virtually all the impacts that rendered Alternative C environmentally unacceptable.

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[81] *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'").

[82] 40 C.F.R. § 1502.9(b).

[83] 40 C.F.R. § 1502.21(b).

[84] *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'").

[85] 40 C.F.R. § 1502.9(b) ("If the agency determines that a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and publish a supplemental draft of the appropriate portion.").

[86] 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).

Examples of just some of the analyses that must be carried out to comply with NEPA and develop alternatives that would protect communities and vital fish and wildlife resources are provided below.

1. CTO Dredging Impacts Are Not Assessed

Alternatives D and E involve extensive dredging of the Pearl River and extensive disposal of those dredged spoils. These actions will destroy vital wildlife habitat, including wetlands, small streams, sloughs, and diverse instream habitats that also provide critical ecosystem services, including natural flood protection. None of these impacts have been assessed for Alternatives D and E.

According to the preliminary information in the DEIS, each CTO Alternative requires extensive dredging:

> The channel improvement footprint includes excavation of up to 1,016 acres. Of the total 1,016 acres, approximately 853 acres are located above the proposed weir, and approximately 163 acres are located below the proposed weir. The width of excavation would vary ranging from 500 to 2,600 feet (152-793 m) including the river width. The actual widths would be determined during the PED phase. The depth of excavation would vary between 0 -15 feet to meet the proposed bottom elevation of 250.0 feet NGVD. The quantity of material excavated from the floodplain and channel overbanks would range from 11.3 to 14.1 million cubic yards (8.6-10.7 million m^3) of material. The existing river channel would not be widened, instead excavation of the overbank areas would occur.[87]

Each CTO Alternative also requires the disposal of this highly significant amount of dredged spoil:

> Alternative CTO would upgrade the existing federal levees by placing excavated material on the protected side of the levees. Excavated fill material would also be placed in designated disposal areas in other locations within the flood plain. The disposal fill areas would impact approximately 485 acres (151 ha) (Figure 3-10).
>
> Clearing and grubbing of approximately 1501 acres would occur prior to placement of the excavated fill material from the channel lowering. The excavated fill material would be used to create land areas ranging from 6.5 to 88 acres (2.6 – 21 hectares) within the Jackson MSA. The newly created areas could allow for expanded riverfront access, natural areas, and commercial development, along with recreational opportunities. The Jackson MSA has significant historical and cultural site presence, final site locations would be adjusted during PED following completion of cultural resource surveys.
>
> Fill material placed behind levees would be graded to the same elevation or lower than existing levees, compacted for suitably for future land development. However, if any structures are built on top of any portion of the maintenance berm designed or used as a seepage control, the berms would need to be overbuilt and utilities or any other structure or penetrations would be limited to within the overbuilt section.
>
> Where water would be permanently ponded against the riverside slope, these areas will require a 40-foot-wide semi-compacted impervious riverside maintenance berm to limit seepage through the levee. The berm assumed to extend the entire length of any levee

[87] DEIS, Main Report at 123.

section where water is pooled. No removal of the riverside blanket near the existing levees is anticipated. A riverside blanket refers to a top layer of clay and/or silt soil with low permeability constructed on the riverside of a levee to reduce the movement of water underneath the levee.

If any structures are to be built on top of any portion of the maintenance berm designed or used a seepage control, the berms would be overbuilt and utilities or any other structure or penetrations would be limited to within the overbuilt section. Penetrations trough the berm could become seepage exit points, and this is specified to limit fracture through the main berm.[88]

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. CTO 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 the CTO Alternatives.

As the U.S. Department of the Interior has 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."[89] 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."[90]

- Impacts to the 124 species of fish[91] 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.

[88] DEIS, Main Report at 125.
[89] Id. at page 1.
[90] U.S. Department of the Interior, Fish and Wildlife Service letter to Michael E. Goff at page 9 (August 16, 2018) (providing official comments on the DEIS).
[91] DEIS, Main Report at 40.

- Impacts to the 220 bird species that breed, winter, or migrate through the Pearl River.[92] 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.[93] 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)[94], 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.[95] 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.[96] The Mississippi State Wildlife Action Plan 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.[97] Amphibians and reptiles are facing unprecedented risks of extinction. In the United States, the IUCN Red List of Threatened Species lists 56 amphibian

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[92] 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).

[93] Id.

[94] 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.

[95] 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).

[96] This species list can be accessed at https://www.mdwfp.com/media/3283/mississippi_herpetology_checklist_013012.pdf (visited August 31, 2018).

[97] 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.

species and 37 reptile species as known to be critically endangered, endangered, or vulnerable.[98] 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.[99] 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.[100] 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.

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 from the CTO Alternative is limited to three conclusory paragraphs (two paragraphs for Alternative E and one paragraph for Alternative D):

> **4.2.1.1.12.1 Alternative CTO without Weir (Alt E)**
> Direct and indirect impacts to fish and aquatic species from this alternative are anticipated to be moderate in intensity and potentially long-term in duration. Without the weir, riverine habitat would be conserved, except for during highwater events. Excavation associated with construction for channel improvements could cause temporary disturbances, such as increased turbidity, to fish and aquatic species but will likely provide additional open water habitat during highwater events that would benefit some aquatic species.
>
> Cumulative impacts, including both direct and indirect impacts of the alternative along with additional impacts from other, previous projects in the area are anticipated to be moderate in intensity and long-term in duration. Impacts to fish and aquatic species from Alternative CTO without weir would add to the impacts that have occurred over time and are expected to continue due to ongoing development and activities in and around the Project Area. With Alternative CTO, fisheries habitat within the Project Area would likely continue to decline as result of ongoing urbanization, changing river conditions, and continued maintenance associated with flood control.[101]
>
> **4.2.1.1.12.2 Alternative CTO with Weir (Alt D, Preliminary NED)**
> Direct, adverse impacts associated with construction and implementation of this alternative within the Project Area would be major in intensity and potentially long-term in duration. Construction associated with excavation would convert wetland and swamp habitat to open water habitat. Additionally, all the riverine habitat above the weir would be converted to open

[98] 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.)
[99] 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.
[100] 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.
[101] DEIS, Main Report at 151.

water habitat. The impacts to fish and aquatic species are similar to those from Alternative C but are less due to the smaller area of impact from the Alternative CTO with weir.[102]

Despite the significance of the Pearl River to wildlife, the DEIS "analysis" of the impacts to non-ESA listed species is from the CTO Alternative is limited to three conclusory paragraphs (two paragraphs for Alternative E and one paragraph for Alternative D):

> **4.2.1.1.16.1 Alternative CTO without Weir (Alt E)**
> Direct and indirect impacts to wildlife from this alternative are anticipated to be minor to moderate in intensity and potentially long-term in duration. 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. 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. Access to wildlife habitat within the Project Area would not be significantly impacted as most species are highly mobile and could migrate into the adjoining habitats not directly impacted by project implementation.
>
> 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. These impacts could be more severe where implementation of the alternative results in further urban development along the riverfront, reducing available habitat adjacent to the Project Area. Impacts to wildlife from Alternative CTO without a weir 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.[103]
>
> **4.2.1.1.16.2 Alternative CTO with Weir (Alt D, Preliminary NED Plan)**
>
> It is assumed that, like Alternative C, construction of the CTO with weir 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. 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, is being conducted to better understand the potential impact of the CTO on the riverine system. This data will be included in the final EIS.[104]

Notably, these conclusory paragraphs reach conclusions that are not supported by the preliminary Fish and Wildlife Coordination Act Report provided at Appendix J. The Service was not able to provide a final Fish and Wildlife Coordination Act Report on the Alternatives D and E because it does not have enough

[102] DEIS, Main Report at 151.
[103] DEIS, Main Report at 152-153.
[104] DEIS, Main Report at 153.

information on those plans.[105] Given that lack of information, the Service provided a preliminary Fish and Wildlife Coordination Act Report that was developed in response to the Corps' June 2023 Notice of Intent.[106]

3. CTO Tributary Impacts Are Not Assessed

The DEIS does not evaluate the impacts of Alternatives D and E on tributary flooding, despite acknowledging that Alternative C would increase flooding along the Pearl River tributaries that flow through Jackson. The DEIS should have assessed the impacts of Alternatives D and E on tributary flooding given the significant public safety implications and well-documented community concerns regarding tributary flooding.

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

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 C, D, and E 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.

The DEIS improperly rejects consideration of tributary flooding by pointing to a laundry list of disparate projects being studied or constructed by "various local government entities", the majority of which remain in in the planning or design stage."[107] 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

[105] DEIS, Appendix J, Fish and Wildlife Coordination Act letter dated August 23, 2023 ("The Service requests any updated data and information from the downstream analysis that was conducted by the Corps. We also request time to accurately analyze impacts from the project and carefully evaluate mitigation plans, the proposed mitigation sites, and proposed success criteria. Finally, we request information, plan details, and impact analysis regarding any alternatives that may be considered and have not yet been fully described (i.e., the "combination thereof" alternative). Assessing impacts to projects lacking full details and potential impacts is difficult. Our comments that were submitted in response to the Corps' Notice of Intent (June 2023) are included in this report.").

[106] Id. The comments submitted in response to the notice of intent included 26 major recommendations related to Alternative C.

[107] DEIS, Main Report at 14-18.

short of the systematic approach to flood risk management needed to develop effective solutions for Jackson's residents and fall short of the requirements established by NEPA and WRDA.

4. CTO 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. The CTO Alternatives, and particularly Alternative D (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 DEIS 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.[108] 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.[109]

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.[110] During low river flows, riparian and upland habitat become disconnected, and the river channel habitat narrows, reducing habitat complexity.[111]

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.[112] 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

[108] 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.
[109] 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.
[110] 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.
[111] 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.
[112] Palmer, M., and A. Ruhi. 2019. Linkages between flow regime, biota, and ecosystem processes: implications for river restoration. Science doi: 365:eaaw2087.

streams.[113] 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.[114]

Reducing freshwater flows below the new dam (referred to as a weir in the DEIS) 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 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.[115]

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 D 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 D 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.

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[113] 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.

[114] Palmer, M., and A. Ruhi. 2019. Linkages between flow regime, biota, and ecosystem processes: implications for river restoration. Science doi: 365:eaaw2087.

[115] DEIS, Main Report at 22.

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 TSP 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. CTO Water Quality Impacts Are Not Assessed

The Pearl River is plagued by poor water quality due[116] 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 into 6 of the tributaries that flow into the CTO project area.[117] In 2021, 64.5 million gallons of raw sewage were discharged into the project area.[118] Many facilities regularly discharge toxic pollutants into the One Lake project area.[119]

The large-scale dredging, major construction, large-scale destruction of wetlands that help filter pollutants, and CTO with weir 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 and the DEIS recognition that the CTO Alternatives could cause significant adverse impacts to water quality, the DEIS does not assess the water quality impacts of either CTO Alternative. Instead, the DEIS acknowledges that additional water quality analysis is required**—and that**

[116] 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.

[117] 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.

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

[119] 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.

this analysis is essential for determining whether either CTO Alternative is "viable."[120] The DEIS 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."[121]

In addition, the DEIS lacks other assessments that are critical for understanding the water quality impacts of either CTO alternative, 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. CTO Sedimentation, Velocity, and Geomorphic Impacts Are Not Assessed

The CTO Alternatives 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 for the CTO alternatives 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 the CTO Alternatives. The DEIS recognizes that sediment modeling is required but has not been carried out.[122]

For example, the CTO Alternatives could result in increased erosion, riverbed degradation, and additional fundamental changes to the river and its processes. 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 DEIS:

> 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.[123]

DEIS 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.[124] 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, restriction of flow, and destruction of the floodplain are both 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

[120] DEIS, Main Report at 178.
[121] DEIS, Main Report at 178.
[122] DEIS, Main Report at 236.
[123] DEIS, Main Report at 102.
[124] DEIS, Appendix E at 24, Figure E2-10 and Table E2-2.

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 D 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 DEIS 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 DEIS 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. CTO Toxic Exposure Impacts Are Not Assessed

The extensive dredging that is central to each CTO Alternative will re-suspend contaminated sediments as toxics are present in sites located in or near the Project Area, including: Benzene, barium, cadmium, cobalt, creosote residuals, lead, lindane, manganese, mercury, nickel, raw sewage, sodium pentachlorophenate, pentachlorophenol (PCP), phenyl mercuric acetate, polynuclear aromatic hydrocarbons (PAHs), and zinc.[125] The CTO Alternatives could also directly affect at least three highly contaminated sites—a former creosote wood treatment facility and two unpermitted landfills.[126] Another five highly contaminated sites could also be affected, including a remediated Superfund site.[127]

Despite the significant danger, the DEIS 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:[128]

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[125] 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).

[126] 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).

[127] 2018 Draft EIS Appendix C, Engineering, Environmental Analysis of HTRW Sites (Sonford Products Lumber Mill Superfund Site, Rival Manufacturing Company, and multiple automotive junkyards).

[128] DEIS, Main Report at 205. The DEIS does acknowledge that mitigation features may be required for Gulf States Creosote Company Site. "The Creosote Slough 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

4.2.1.1.65.1 Alternative CTO without Weir (Alt E)

A Phase I Environmental Site Assessment was not conducted for the CTO without Weir 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 uncertainty for portions of the CTO that was not evaluated within the NFI Phase I. If the CTO does not include the construction of the new weir, there is a potential that the impacts to the recognized environmental conditions, as stated within Alternative C, could be lower depending on the details of the CTO.

4.2.1.1.65.2 Alternative CTO with Weir (Alt D, Preliminary NED Plan)

A Phase I Environmental Site Assessment has not been conducted 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 CTO that was not evaluated within the NFI Phase I. If the CTO were to include the construction of the new weir, the impacts to HTRW could be similar to the impacts stated within alternative C. A partial site visit of the Lefleurs 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.[129]

8. CTO Plant Impacts Are Not Assessed

The DEIS does not provide any assessment of CTO Alternative impacts to the wide array of plant species that would be affected by the CTO plans, including impacts to wetland plant species.[130] The Corps must properly assess and consider these impacts and their implications for fish and wildlife before the Corps recommends Alternative D or E.

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to the initiation of excavation activities at this location." Also "Coordination with appropriate local, State, and Federal agencies would determine site actions to eliminate potential leaching of landfill waste to the groundwater and movement of groundwater into the proposed channel improvement." DEIS, Main Report at 133.

[129] See, e.g., DEIS at 188 ("The CTO includes the excavation of material near the Gulf States Creosoting Company contaminated slough HTRW site. During PED, avoidance measures will be further evaluated to avoid potential impacts to the contaminated area as is feasible. Comparatively, Alternative C proposes excavation and placement of material on two HTRW sites within the project footprint (i.e., the Gulf States Creosoting Company contaminated slough site and the unpermitted Gallatin Street Landfill). At the most basic level, the CTO's reduced excavation footprint would be anticipated to have less potential to affect any historic properties present within either HTRW location.")

[130] While the 2018 Draft EIS provides a break-down of direct wetland impacts by acres of main plant type (i.e., forested wetlands, cypress and tupelo gum slough wetlands, scrub shrub wetlands, cypress slough wetlands, emergent wetlands bottomland hardwood wetlands), it does not provide any other information on plant species that would be affected and does not provide information on the current ecological health of the plant species that would be affected.

The DEIS does not provide any information on plant species that will be affected by the CTO plans 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 hydrology can result in significant biotic changes"[131] and produce ecosystem-wide changes:

> "**When hydrologic conditions in wetlands change even slightly, the biota may respond with massive changes in species composition and richness and in ecosystem productivity.**"[132]

Understanding the impacts of the CTO plans 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[133], including many wetland species, as being critically imperiled, imperiled, rare or uncommon:

County	Scientific name	Common name	Conservation Status[134]
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
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

[131] *Id*. at 68.
[132] *Id*. at 68 (emphasis added).
[133] 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
[134] S1 = critically imperiled, S2 = Imperiled, S3 = Vulnerable.

9. CTO Water Supply Impacts Are Not Assessed

The City of Jackson draws 30% of its drinking water from the CTO 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.

The CTO alternatives could exacerbate the City's entrenched drinking water problems,[135] 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.[136] The CTO Alternatives, and particularly the CTO with weir, could adversely affect long-term operation of the J.H. Fewell plant and public health by further degrading water quality in the Pearl River, including by trapping billions of gallons of raw sewage, toxics, and other pollutants.[137]

Despite the critical importance of the Pearl River as a drinking water source for the City of Jackson, the DEIS does not analyze the impacts of either CTO Alternative on water supply:

> ***4.2.1.1.41.1*** **Alternative CTO without Weir (Alt E)**
> 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.
>
> **4.2.1.1.41.2 Alternative CTO with Weir (Alt D, Preliminary NED Plan)**
> This alternative could have similar impacts in the long-term compared to Alternative C if a new weir is constructed. Depending on the method and means of selected features additional study could be needed to determine the best methods of design and construction to limit the impact to potable water throughout the system in respect to contaminant retention due to pooling and sediment loading prior to treatment.[138]

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[135] 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.

[136] 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.

[137] As noted above, 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.

[138] DEIS, Main Report at 180.

10. CTO Cumulative Impacts Are Not Assessed

The DEIS does not provide any type of meaningful assessment of the cumulative impacts of the CTO Alternatives. Indeed, the cumulative impacts of Alternatives D and E are never actually described or explained in any way. Instead, without analysis or supporting information the DEIS variously describes some cumulative impacts as being unknown, some as being major, and some as being minor. A meaningful and accurate cumulative impacts analysis is critical to ensure that the Corps does not "treat the identified environmental concern in a vacuum."[139]

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."[140]

The DEIS 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. CTO Mitigation Is not Assessed

The DEIS 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 DEIS cannot properly satisfy any of these requirements for the CTO plans because the DEIS does not evaluate the impacts of those plans and, as a result, cannot assess mitigation needs.

The DEIS also fails to meet the NEPA mitigation requirements because the DEIS: 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.[141]

NEPA requires that the EIS discuss mitigation measures "in sufficient detail to ensure that environmental consequences have been fairly evaluated."[142] A "perfunctory description" of the mitigating measures is not sufficient.[143] 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 discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of

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[139] Grand Canyon Trust v. FAA, 290 F.3d 339, 346 (D.C. Cir. 2002).
[140] *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).
[141] Id.
[142] Id.
[143] Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1380 (9th Cir.1998).

> 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.[144]

The EIS 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.[145]

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."[146]

12. CTO Costs and Benefits Are Not Assessed

The DEIS does not provide any meaningful information to compare the costs and benefits of either CTO plan. As discussed in Section D.3 of these comments, the Corps does not have the data it needs to make these assessments.

It is well-established that NEPA requires an assessment of the "indirect, as well as direct, costs and consequences of the proposed action."[147] The failure to evaluate the costs and consequences of the CTO plans violates NEPA.

In addition, because the Corps must prepare a cost-benefit analysis for Alternatives D and E under WRDA (since both require Congressional authorization), the Corps must provide a properly developed cost-benefit analysis with the DEIS:

> If an agency is considering a cost benefit analysis for the proposed action relevant to the choice among alternatives with different environmental effects, the agency shall incorporate the cost-benefit analysis by reference or append it to the statement as an aid in evaluating the environmental consequences. In such cases, to assess the adequacy of compliance with section 102(2)(B) of NEPA (ensuring appropriate consideration of unquantified environmental amenities and values in decision making, along with economical and technical considerations), the statement shall discuss the relationship between that analysis and any analyses of unquantified environmental impacts, values, and amenities. For purposes of complying with the Act, agencies need not display the weighing of the merits and drawbacks of the various alternatives in a

[144] Id.
[145] South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 727 (9th Cir. 2009) (internal citations omitted).
[146] Wyoming Outdoor Council v. U.S. Army Corps of Eng'rs, 351 F. Supp. 2d 1232, 1252 (D. Wyo. 2005).
[147] 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)).

monetary cost-benefit analysis and should not do so when there are important qualitative considerations. However, an environmental impact statement should at least indicate those considerations, including factors not related to environmental quality, that are likely to be relevant and important to a decision.[148]

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

The DEIS does not include a detailed mitigation plan for either of the proposed CTO plans as required by law. The DEIS improperly defers development of that plan until PED:

> A project specific mitigation plan would be developed during pre-construction engineering and design (PED) and included in a subsequent NEPA document(s). The goal of this mitigation plan will be to fully compensate, in kind, for the unavoidable impacts to significant fish and wildlife habitat resources that would occur due to implementation of the PR FRM project. The Interagency Mitigation Team (IMT), which includes the US Fish and Wildlife Service (the Service), US Army Corps of Engineers MVK, NFI and MDWFP, will work closely to complete a detailed mitigation plan. This mitigation plan will include all of the components set forth in laws, guidance, policy, and regulations. It should be noted that the Average Annual Habitat Units (AAHUs) of riverine impacts have not been adequately determined at this time. Based on current information, only estimated impacted acres are included. During PED, HEP models would be conducted using appropriate obligate riverine species to determine the habitat units of riverine habitat impacted and required for mitigation.[149]

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." 33 U.S.C. § 2283(d)(1). 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 DEIS does not do this.

To ensure that mitigation happens, the DEIS must include a specific mitigation plan. This plan 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." 33 U.S.C. § 2283(d)(1). Mitigation plans "shall include, at a minimum:"

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

[148] 40 CFR § 1502.22.
[149] DEIS, Main Report at x.

monitored until the monitoring demonstrates that the ecological success criteria established in the mitigation plan have been met; and

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. 33 U.S.C. § 2283(d).

Corps mitigation plans must also comply with the "the mitigation standards and policies established pursuant to the regulatory programs" administered by the Corps. 33 U.S.C. § 2283(d).

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. 33 U.S.C. § 2283(d).

In addition, mitigation lands for Corps civil works projects must be purchased before any construction begins. 33 U.S.C. § 2283(a). 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." *Id*.

G. The DEIS Fails to Explain How the Corps Will Ensure Compliance with the ESA

The DEIS fails to meaningfully explain how the Corps will ensure compliance with the Endangered Species Act (ESA). The ESA imposes obligations on federal agencies proposing actions affecting listed species or their critical habitat. According to the DEIS and the previous (2019) BA and Biological Opinion, under most of the proposed alternatives, the project could adversely affect multiple species that fall under the aegis of the 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, the DEIS fails to discuss how the Corps can meet its substantive and procedural obligations under the ESA. Instead, the DEIS simply asserts that ESA Section 7 consultation will be reinitiated at some future stage, given the inapplicability of the previous consultation documents. The DEIS lacks any substantive information that would allow the public and decisionmakers to fully understand—and comment on—how the agency intends to ensure compliance with the ESA, and it is missing meaningful information on a newly listed species and considerations of the impacts of induced development on the local habitat.

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…"[150] The ESA vests primary responsibility for administering and enforcing the statute with the Secretaries of Commerce and Interior.[151] The Secretary of the Interior has delegated this responsibility to the Fish and Wildlife Service for freshwater and terrestrial

[150] 16 U.S.C. § 1531(b).
[151] 50 C.F.R. § 402.01(a).

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.[152]

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;
(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.[153]

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."[154]

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."[155] 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."[156]

The Corps openly acknowledges throughout Appendix D, its current Biological Assessment, that ESA consultation must be reinitiated.[157] Although the Corps also attempts to incorporate its previous Biological Assessment – and the FWS' Biological Opinion from 2019 – into this document[158], it cannot. The original opinion has lost its validity with the change in project design, the new species listing, and Corps' concession that reinitiation is required.

The DEIS further notes that the Corps lacks sufficient detail about the "yet to be defined" CTO Alternatives, which means that it cannot assess the impacts of the potential alternatives to species.[159] Thus, admittedly, the Corps has not assessed, let alone consulted with the Fish and Wildlife Service on, the CTO Alternatives. For example, it has not even conducted a velocity and sedimentation analysis for the weir, a shortfall highlighted by the Service. By structing the DEIS this way, avoiding meaningful

[152] 50 C.F.R. § 402.01(b).
[153] 50 C.F.R. § 402.16.
[154] *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)).
[155] 16 U.S.C. § 1536(d).
[156] *Defs. of Wildlife v. Bureau of Ocean Energy Mgmt., Regul., Enf't,* 871 F. Supp. 2d 1312, 1326 (S.D. Ala. 2012).
[157] *See, e.g.*, Appx D, p. 5 ("That being said, re-initiation of ESA consultation will be necessary during PED to accurately assess impacts to riverine species under consideration."); *id*. at p. 13 ("Re-initiation of formal consultation will be required as the designs of the proposed alternatives and associated mitigation plans are currently not finalized.").
[158] See DEIS, Appendix C at 6.
[159] See DEIS, Appendix C at 6 ("Currently the project is at approximately a 20% level of design such that many specifics for many of the components below have not yet been determined.").

consultation until later in the design and engineering process, the Corps is attempting to delay the requisite consultation with the Fish and Wildlife Service until after the Corps has committed to a course of action.

Significantly, the Fish and Wildlife Service recently listed the Pearl River map turtle as a threatened species, based in part on concerns about habitat degradation long the Pearl River:

> Between the late 1980s and early 2010s, notable population declines also have been observed in the stretch of the Pearl River downstream of the Ross Barnett Reservoir (north of Lakeland Drive), but the exact reason for the decline is unknown . . . . Up to 170 individual Pearl River map turtles could be impacted by the construction of the One Lake Project, one of several proposed impoundments.[160]

The Corps must provide baseline data on this species while also considering impacts to the population from all of the potential alternative project designs. The Biological Assessment attached to the DEIS does not address how the CTO Alternatives could impair the survival and recovery of this species.[161]

The Corps also unduly constrained the scope of the action area by limiting its analysis to 1.6 miles downstream of the proposed weir.[162] It then only considers impacts to species within this "project area," but not further downstream. The Fish and Wildlife Service has already objected to this narrow scope, and the new Pearl River map turtle listing highlights concerns with the ability of the turtle to thrive upstream and downstream of impoundments such as those proposed. Certainly, the potential inclusion of a fish ladder indicates that upstream and downstream effects are being considered at least in part for the gulf sturgeon but ignored for the multiple other species, particularly the turtle species, that also live upstream and downstream of the immediate project area.

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."[163] "The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area . . . ."[164] 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."[165] Impacts from any likely development

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[160] https://public-inspection.federalregister.gov/2024-15176.pdf. At the time of the biological assessment, the species status was 'Proposed Threatened." DEIS, Appendix D at 31.

[161] This is a significant issue for this species, as the FWS species listing itself noted that this project specifically posed a threat to the species' continued viability: "If this impoundment project moves forward, the species' viability will continue to decline in the foreseeable future as resiliency declines through loss of suitable habitat and further isolation of turtles above the reservoirs. The turtles in the Upper Pearl unit are subject to genetic isolation and potentially the effects of small population size as the species in this unit will not be connected to the rest of the contiguous habitat south of the reservoir."

[162] DEIS, Appendix D at 5-6.

[163] 50 C.F.R. §§ 402.02, 402.14(g)(3).

[164] 50 C.F.R. § 402.02.

[165] *Id*.

induced by the proposed project is an important element of that analysis.[166] The DEIS also ignores entirely the impact of induced development from the CTO alternatives, 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.

Despite the required to consider impacts from likely development induced by this project, the DEIS is silent as to the potential impacts on the listed species populations and habitats. Worse, the DEIS purports to incorporate the (moot) 2019 biological opinion, which relied heavily on a now-defunct plan to construct islands in the proposed lake to build up basking habitats for the turtle species.[167] Yet the Corps attempts to equate the previous project with the current one, ignoring this design change: "For this draft a conservative approach is being taken and therefore this alternative would have the same direct impacts as Alternative C if a weir is included."[168] There may be other significant alterations, but with the sparse description of the purported lake design in the DEIS, it is impossible to determine what other details have changed. With admittedly incomplete designs that are significantly different from each other and from the original "C" proposal reviewed by the FWS in 2019, the Corps has no reasonable basis on which to state that the species affected by the project will not be jeopardized.[169]

The Corps has already – and repeatedly – stated that reinitiation of the ESA consulting process will need to occur following additional design and engineering work for the alternatives. The alternatives have only been loosely sketched out for the DEIS, lacking the level of detail needed to support any evaluation of their consequences to habitat and species. The DEIS must include sufficient information for the public and for decisionmakers to meaningfully assess risks and comment on the proposal. Here, there are promises for future information to go the Fish and Wildlife Service, likely after the NEPA process has closed to further public input.

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[166] *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).

[167] The project would also include the creation of islands from approximately RM 289.5 to RM 292.0 to create and maintain habitat for wildlife species common to the area. In addition, to replace the approximately 31.4 acres of sandbars that would be lost, an equal or greater acreage would be recreated for turtle nesting habitat. *See* 2019 Army Corps Biological Opinion, p. 156.

[168] DEIS Appendix D at 18-19.

[169] The 2019 Biological Opinion also noted that an adaptive management plan and monitoring plan would be incorporated into the project design – and there is no reference in the current DEIS to adaptive management. 2019 Biological Opinion, p. 157.

Conclusion

For at least the reasons highlighted above, the National Wildlife Federation urges the Corps to reject Alternatives C, D, and E. 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