

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF ILLINOIS

NATIONAL WILDLIFE FEDERATION, et al.,)	Civ. No. 3:20-cv-00443-GCS
)	
Plaintiffs,)	
)	
v.)	
)	
UNITED STATES ARMY CORPS OF ENGINEERS, et al.,)	Judge: David W. Dugan
)	
Defendants.)	

**PLAINTIFFS' MEMORANDUM IN SUPPORT OF MOTION FOR SUMMARY
JUDGMENT**

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INTRODUCTION AND SUMMARY OF ARGUMENT

This is a landmark case with profound implications for public safety and the environment. Plaintiffs National Wildlife Federation, American Rivers, Prairie Rivers Network, Missouri Coalition for the Environment, and Great Rivers Habitat Alliance (“Plaintiffs”) bring this action to compel Defendants United States Army Corps of Engineers, et al. (the “Corps”) to conduct urgently needed environmental reviews and perform critical statutory duties to address the severe adverse impacts of their long-term Regulating Works Project (“Project”) on the 195-mile Middle Mississippi River (“MMR”) between the Mississippi River’s confluence with the Missouri River just north of St. Louis, and its confluence with the Ohio River at the southern tip of Illinois. Administrative Record (“AR”) 930-931, 985. Plaintiffs seek this Court’s review of the Corps’ Record of Decision (“ROD”) approving its 2017 Regulating Works Project and Final Supplemental Environmental Impact Statement (“FSEIS”) on the Project’s massive river training structures including dikes, weirs, chevrons, and bank hardening revetments (“regulating works”) and related “operations and maintenance” (“O&M”) activities intended to scour a navigation channel at least nine feet deep and 300 feet wide in the MMR. Both regulating works and O&M activities are carried out by the Corps’ St. Louis, Rock Island, and St. Paul Districts, ostensibly pursuant to the Corps’ authority under the Rivers and Harbors Act (“R&H Act”) of 1927 (ch. 47, 44 Stat. 1010), the Fish and Wildlife Coordination Act (“FWCA”), 16 U.S.C. § 661 et seq., and the Water Resources Development Act (“WRDA”), 33 U.S.C. §§ 2283 and 2343, and subject to the detailed environmental review requirements of the National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4321 et seq.

The MMR is a vital national resource for people and wildlife. However, it is in a state of steep ecological decline due in large measure to the Project. Fish and wildlife populations are collapsing because of the growing degradation and loss of their habitat. Yet the Corps has decided to proceed with more construction of the Project’s enormously impactful river training structures without first having analyzed in an adequate SEIS the MMR’s grave state of

environmental deterioration due to the Project, and the adverse impacts of continued long-term construction of river training structures and revetments on the environment and public safety.

In reaching this decision, the Corps failed to consider alternative approaches that would achieve the Project's navigation purposes at less environmental cost, including a reduction in (or halt to) the construction of additional river training structures and revetments coupled with reliance on the historically effective and efficient use of dredging to maintain the navigation channel. The Corps insisted it had to use the obsolete techniques for carrying out the Project that Congress originally approved *110 years ago based on a Corps plan developed 139 years ago*. AR 931, 945 (“In the [R & H] Act of 1910, Congress authorized obtaining and maintaining the MMR to be carried out in accordance with the plan in 1881”), 964, 973, 2297-2329. The Corps' refusal to examine any alternatives it claims to be outside its existing authorization, or different from those identified by Congress more than 100 years ago, renders the FSEIS inadequate as a matter of law.

The Corps also ignored clear restrictions on its activities established by law. The R&H Act of 1927 forbids construction of river regulating (or “training”) structures that narrow the river to less than 2000 feet, because doing so destroys the river's natural meanders and side-channel habitat diversity, and decreases the channel's capacity to handle high flows, resulting in more frequent and severe flooding. Contrary to this restriction, the Project narrows the river to 1500 feet or less. FWCA requires the Corps to consult with the U.S. Fish and Wildlife Service (“FWS”) before approving and implementing water resources projects such as the Project, and requires the Corps to secure detailed reports from FWS analyzing the Project's impacts on fish and wildlife. Contrary to FWCA, the Corps failed to consult with FWS regarding the Project's impacts on fish and wildlife. WRDA requires the Corps to mitigate the Project's adverse impacts to ecological resources including fish and wildlife. Contrary to WRDA, the Corps failed to adequately mitigate the Project's adverse environmental impacts.

Even worse, the FSEIS fails to admit that continued construction of river training

structures narrows the river's channel and thereby increases the frequency and severity of flooding. AR 11801-11802, 12047-12048, 12051. Both Professor Nicholas Pinter, Shlemon Chair in Applied Geology at the University of California at Davis, and Professor Robert E. Criss of the Department of Earth and Planetary Sciences at Washington University in Saint Louis, have published comprehensive studies, submitted by Plaintiffs to the Corps, confirming that by narrowing the river channel, river training structures demonstrably -- as shown by decades of river height records -- raise the river's height, both where the channel is narrowed, and for miles upstream where flow is backed up. AR 1517-1521, 1554-1558, 1561-1568. Common sense tells us the same thing: when you narrow the width of a flow of water, you necessarily increase its height to accommodate the same volume of inflow.

But contrary to NEPA, the Corps failed to meaningfully respond to, and instead essentially disregarded, both common sense and the expert conclusions of the leading scholars on this point. AR 2073-2074. The FSEIS's failure to acknowledge and account for the significant increases in flood heights and the fundamental changes to the way the MMR responds to floods caused by river training structures renders the FSEIS deeply, and dangerously, flawed.

Plaintiffs seek (1) a judgment declaring that the Corps' approval of new river training structures, revetment, and O&M activities without completing an adequate SEIS is not in accordance with law; (2) an injunction ordering the Corps to prepare an adequate SEIS that analyzes the Project as a whole, including both regulating works and O&M activities, their cumulative effects, and all reasonable alternatives that would reduce or avoid those effects; and (3) an injunction enjoining the Corps from approving new river training structures until an adequate SEIS is approved and compliance with all applicable environmental laws including WRDA's mitigation requirements, FWCA's consultation requirements, and the R&H Act of 1927's minimum channel width requirements, is achieved; (4) their reasonable attorneys' fees and costs under the Equal Access to Justice Act, 28 U.S.C. § 2412; and (5) such other relief as the Court deems just and proper.

JURISDICTION AND VENUE

The Court has jurisdiction under 28 U.S.C. §§ 1331 (federal question), 1337 (commerce), 1346 (federal defendant), 1361 (mandamus), 2201 (declaratory judgment), and 2202 (injunctive relief), and under the Administrative Procedure Act (“APA”), 5 U.S.C. §§ 701-706 (unlawful agency action) because (1) the action arises under NEPA, WRDA, FWCA, the R&H Act of 1927 and their implementing regulations; (2) the Defendants are a federal agency and its officers; and (3) the action seeks declaratory, injunctive and mandamus relief.

Venue is proper in this judicial district under 28 U.S.C. § 1391(e)(1)(A) - (C) because the Corps and Prairie Rivers Network (and other Plaintiffs) reside, and “a substantial part of the events or omissions giving rise to the claim occurred,” in this district.

Although not required to provide notice, Plaintiffs have (1) repeatedly reached out to the Corp to discuss the impacts of the Corps’ regulating works and O&M activities, (2) submitted detailed comments on the Corps’ DSEIS and FSEIS, (3) requested preparation of an SEIS that addresses both regulating works and O&M activities, and (4) requested a stay of new river training structures until that analysis is completed, to no avail. *See, e.g.*, AR 171-231, 662, 1836-1923, 188819-18833. Hence this action presents an actual, justiciable controversy in which Plaintiffs are entitled to the relief requested.

Plaintiffs have standing, exhausted all available remedies, and timely filed this action.

STANDARD OF REVIEW

Under the APA, this Court “shall . . . hold unlawful and set aside agency action . . . found to be – (a) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; . . . (C) in excess of statutory jurisdiction, authority, or limitations . . . ; [or] (D) without observance of procedure required by law” 5 U.S.C. § 706. The APA gives this Court jurisdiction over the Corps’ compliance with NEPA, FWCA, WRDA, and the R&H Act of 1927’s authorized project purposes and limits. *Public Citizen v. United States Trade Representative*, 5 F.3d 549, 551 (D.C. Cir. 1993); *Sierra Club v. Penfold*, 857 F.2d 1307, 1315

(9th Cir. 1988); *Environmental Defense Fund v. TVA*, 468 F.2d 1164, 1171 (6th Cir. 1972).

Under Fed.R.Civ.Pro. 56(a) “[t]he court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact, and the movant is entitled to judgment as a matter of law.

STANDING

Plaintiffs have standing to bring this action because (1) they will suffer an injury-in-fact that (2) is fairly traceable to the challenged actions and (3) is likely to be redressed by a favorable court decision. *Summers v. Earth Island Institute*, 555 U.S. 488, 493 (2009). The Declarations of Clark W. Bullard, Ph.D., Richard C. Holton, Sr., Olivia Mae Dorothy and David Irwin Lobbig filed concurrently herewith demonstrate these three factors for each of the five Plaintiffs.

THE MISSISSIPPI RIVER IS A VITAL NATIONAL RESOURCE

The Mississippi River watershed drains 1,245,000 square miles – approximately one-third of the continental United States – including all or parts of thirty-two states and two Canadian provinces. The Upper Mississippi River System (“UMRS”), which includes the MMR and the river upstream of the Missouri River and portions of the Illinois, Kaskaskia, Minnesota, St. Croix, and Black Rivers, is a vital national resource of immense significance for recreation and wildlife. It supports vast tracts of bottomland forest, wetlands, and aquatic habitats, and “more than 300 species of birds, 57 species of mammals, 45 species of amphibians and reptiles, 150 species of fish, and nearly 50 species of mussels.” AR 27950. The Mississippi River Valley is a major bird migration corridor; nearly half of North America’s migratory waterfowl and shorebirds depend upon it for seasonal or year-round habitat. AR 27950. Recreational opportunities in and around the rivers draw millions of visitors each year. AR 12251. The rivers supply water to nearby cities and farms, and support waterborne commerce. AR 27950.

HISTORY OF THE PROJECT AND ITS INCOMPLETE NEPA REVIEWS

The R&H Act of 1927 authorized the Project, based on the 1926 Chief’s Report at paragraphs 55-57, 80, 84 (AR 46967-46968, 46974-46975), which impose explicit limits on

narrowing the Mississippi River's width. Congress thus established very specific limits on the Project: once the river was contracted (i.e., constricted) to a width of 2,000 to 2,500 feet (depending on location), the Corps was to maintain the navigation channel only through dredging as needed. *Id.* Congress also expressly rejected more aggressive contraction plans, as explained on pages 48-49, *infra*. The Corps' unauthorized approval of the 2017 FSEIS with its 1,500 foot contraction (AR 1-6, 2309) threatens environmental harm and flood stage increases forbidden under the plan authorized by Congress through at least 2034. As discussed on pages 28-32, *infra*, the Corps' unauthorized deviation from these restrictions has caused great environmental harm and flooding. AR 208-222, 997, 1009, 11805, 16226.

The R&H Act of 1930 (ch. 847, Stats. 1930; P.L. 71-520) also directed the Corps to continue to conduct the Project by authorizing the Corps to maintain a navigation channel nine feet deep and 400 feet wide. However, it does not modify the 1927 R&H Act's requirement to maintain the river's (as distinct from the navigation channel's) overall width of at least 2000 feet. *Id.* Nor does it disturb that Act's mandate that once the Corps narrowed the river to the 2000-foot minimum width, it was required to maintain the navigation channel solely by dredging. *Id.*

The Corps issued four EISs on parts of the Project between 1974 and 1976, prepared by its St. Louis, Rock Island, and St. Paul districts, but each addressed only that district's portion. AR 1840-1841, *see also* AR 44460; Supplemental Administrative Record ("SAR") 57. However, the Corps never reviewed the entire Project in a single EIS. In 1997, the St. Paul District issued another EIS, but it only addressed that district's maintenance activities, and none of its operations or regulating works activities. AR 37593-38065. The vast majority of the river training structures, and more than half of the Mississippi River locks and dams, are located in the Rock Island and St. Louis districts. The 1997 EIS admitted that it did not analyze how the Corps' activities in the St. Paul District interacted with those in the other districts: "The major *unresolved* issue is the *cumulative* impacts of the continued operations and maintenance of the 9-foot navigation channel project." AR 37614 (emphasis added).

Since preparation of the four EIS in the 1970s and the fifth in 1997, the Corps has invented and begun installing several new types of river training structures – bendway weirs, chevrons, and rootless weirs, for example – but it has never examined their impacts in an EIS, nor has it examined in an EIS the cumulative impacts of both regulating works and O&M activities. AR 2316. Although the Corps prepared two additional EISs subsequent to 1997, neither addresses the Project’s O&M activities, their impacts, and alternatives or mitigations that would avoid or reduce them. AR 27947-28651, 928-2329. Instead, the 2004 EIS for the Navigation and Ecosystem Sustainability Project on the UMRS presented a four-paragraph “general overview of maintenance dredging activities and their respective role as ecological stressors,” a single table showing net arithmetic changes in acreage or lineal feet of certain river features between 1930 and 1973 (or some other years), and one paragraph stating that “newer structures such as bendway weirs [and] chevron dikes . . . are being studied to assess their effectiveness . . . and . . . habitat value” AR 28355, 28375, 28350, 28445-28563.

The 2017 SEIS challenged here likewise fails to comply with NEPA, as shown below.

CONGRESS’ RESPONSE TO THE PROJECT’S GROWING ADVERSE IMPACTS

As the Corps continued to build more training structures, Congress recognized their growing environmental impacts. It adopted provisions in a number of Water Resources Development Acts (“WRDAs”) aimed at *reversing* this harm. The 1986 WRDA (P.L. 99-662) authorized the Corps’ Environmental Management Program to restore and improve the UMRS’s ecological conditions. The 1990 WRDA (P.L. 101-640) directed the Corps to prioritize environmental protection in its water resources projects. The 2007 WRDA (P.L. 110-114) authorized the Corps to carry out additional restoration projects in the UMRS. However, to date no restoration projects have been carried out under the 2007 WRDA. AR 2314-2315.

THE PROJECT’S LATEST APPROVAL IGNORES ITS WORSENING EFFECTS

On August 31, 2017, the Corps issued a Record of Decision (“ROD”) approving the FSEIS’ Preferred Alternative (the Project) to continue constructing river training structures

through at least 2034. AR 1-6, 931-932, 936. However, the ROD and FSEIS violate key environmental statutes and fail to address indisputable data showing that by narrowing the river, river training structures cause flooding and dewater side- and back-channel habitat needed by fish and wildlife. The FSEIS ignores this harm, like the Corps' five previous EISs on Project segments in the mid-1970s and 1997. AR 44391-44992. It fails to adequately address the impacts of the new training structures, excludes all O&M activities, including dredging, ignores the cumulative impacts of other navigation controls, such as water level and flow control by upstream locks and dams, on these O&M activities, and considers only the binary choice between more of the same project or no project, rather than examining a reasonable range of alternatives as NEPA requires. AR 971-984, 1141-1173, 2077, 2096. The Corps' FSEIS only examines "regulating works" activities – including construction of river training structures and other projects, and not its O&M activities, nor its construction of revetment and other bank stabilization actions, which it assumes will occur under *either* Alternative. AR 928, 980.

CURRENT PROJECT ACTIVITIES

The Project's construction, operations, and maintenance activities are vastly changed from thirty or even fifteen years ago, with different types – and far more – structures that have different impacts on river flow, water levels, shoreline erosion and fish and wildlife habitat. Bendway weirs, commenced in 1989, are placed under water on the outside of a river bend, angled upstream. AR 999-1001. They direct water toward the inside of the bend, which prevents the navigation channel from migrating outward. *Id.* Chevrons, begun in 2001, are arch-shaped dikes positioned away from the river banks, with the curve of the arch pointed upstream. *Id.* They split the river's flow, scouring the main channel and providing a secondary channel near the riverbank. *Id.* "Rootless" dikes, not attached to the streambank, are also being built. *Id.* By 2010, the Corps built at least 380 of these new river training structures in the MMR. AR 1709, 19037-19038. The Corps continues to dredge, place revetment, and dispose of dredged spoils. AR 932, 1140. As shown in Section I below, the Corps has not prepared an adequate SEIS for

the Project.

Although the Corps prepared Environmental Assessments (“EAs”) for some recent installations of the new training structures, they cannot substitute for the up-to-date SEIS that NEPA requires, for two reasons. First, the level of analysis in an EA is far less than the detailed examination required in an EIS, as the CEQ Guidelines provide no minimum requirements. 40 C.F.R. § 1501.3. Second, the training structure EAs tiered to the obsolete 1976 EIS. AR 13685-13686, 13971-13972, 14189-14190. As the Corps concedes, that obsolete EIS requires an adequate SEIS – which has never been prepared – due to “significant new circumstances and information on the potential impacts of the Regulating Works Project on the resources, ecosystem, and human environment [that] warrant the preparation of” an SEIS. AR 13685, 13971, 14189. Tiering is improper when there has been “a material change in circumstances or a departure from the policy covered in the overall EIS.” *Minnesota PIRG v. Butz* (“*Minnesota PIRG*”), 498 F.2d 1314, 1323 n. 29 (8th Cir. 1974) (emphasis added); *Association of Public Agency Customers, Inc. v. Bonneville Power Administration*, 126 F.3d 1158, 1184 (9th Cir. 1997) (“significant circumstantial change . . . requir[es] a new or supplemental EIS” instead of merely tiering to a prior “programmatic EIS”); *Salmon River Concerned Citizens v. Robertson*, 32 F.3d 1346, 1356 (9th Cir. 1994) (a site- or project-specific EIS is needed for “new and significant environmental impacts” not previously considered).

Thus, to date, the Corps has not prepared the required adequate SEIS for the Project.

**CURRENT ECOLOGICAL CONDITIONS, SCIENTIFIC ADVANCES,
AND KNOWLEDGE ABOUT THE PROJECT’S EFFECTS**

The MMR’s ecological conditions, and scientific knowledge of the Project’s effects on them, have changed markedly since the original 1970s EISs. Since 1986, the Corps, along with FWS, U.S. Geological Survey (USGS”), U.S. Environmental Protection Agency (“EPA”), and five states of the UMRS region, have been monitoring the rivers’ ecological health through the Long Term Resource Monitoring Program (“LTRMP”), developing “one of the most extensive and comprehensive data sets on any large river system in the world.” AR 23285 (LTRMP 2008

Report). The LTRMP's data have been examined in at least 324 technical reports, 65 peer-reviewed publications, and publicly available management tools and models. AR 23293. The 2008 Report states that the Project's activities are a "stressor" and "heavily influence" the condition of the UMRS, which is ecologically impaired in "all parts of the system." AR 23279, 23285, 23290, 23295, 23319. The LTRMP's 1999 Report identifies the Project as a major and sometimes "chief" reason that all six ecological health indicators are in an "impacted" or "degraded" state. AR 35657, 35661, 35663, 35665-35666.

In a 1997 report to Congress, the Corps admitted that "conditions at even the most healthy sites within the [UMRS] are at least partially artificial, non-sustainable, and in a recognized state of degradation." SAR 414. In 2016, the Corps advised Congress that "habitat within the Upper Mississippi River is degrading at a rate of one to three percent annually. At these rates, the ecosystem is declining one to four times faster than currently [sic] restoration efforts." SAR 73.

The Corps' 1999 Report reveals that newly available scientific information shows how different river training structures and O&M activities interact with each other and with the river's hydrological processes. AR 35661 (data "now beginning to reveal" how much habitat fish species need), 35665 ("a growing body of ecological information indicates how important . . . annual flood zone inundation is"); 35667 ("[t]his report marks the first time broad ecological criteria have been used to assess the reaches of the [UMRS]").

The 2008 Report concludes that "[t]he current condition of the [UMRS] is heavily influenced by its agriculture-dominated basin and by the dams, *channel training structures, dredging, and levees that regulate flow distribution.*" AR 23279 (emphasis added). While since the 1960s improvements in waste treatment and land use have helped, the UMRS remains in a highly degraded state and faces substantial challenges including: (1) high sedimentation rates in some backwaters and side channels; (2) an altered hydrologic regime due to modifications of river channels, the flood plain, and land use within the basin, and from dams and their operation;

(3) loss of connection between the flood plain and the river, particularly in the southern reaches of the UMRS; (4) non-native species (*e.g.*, Asian carp, zebra mussels); (5) high levels of nutrients and suspended sediments; and (6) degradation of flood plain forest. AR 23279.

The 2008 Report explains that since the original EISs, scientific understanding of the effects of locks and dams has evolved from the initial, erroneous view that they had beneficial effects to the realization that they were a major cause of the severe ecological decline of the UMRS. AR 23291, 23294, 23359. Largely due to the Project,

“[i]n all reaches, sedimentation has filled-in many backwaters, channels, and deep holes. In the lower reaches, sediments have completely filled the area between many wing dikes producing a narrower channel and new terrestrial habitat. Erosion has eliminated many islands, especially in impounded zones.”

AR 23282. Since the original EISs, hundreds of studies have shown that sedimentation poses one of the river’s most critical ecological problems. AR 37254-37343 (1998 USGS) (identifying 250+ studies addressing large river sediment transport and deposition since 1976); AR 27410-27480 (2005 report to UNESCO) (referencing 100+ studies between 1979 and 2005).

The scientific community now recognizes that river training structures increase flood heights (“stages”), and thus the frequency and severity of flooding, an impact ignored in the original EISs. Between 1986 and 2013, at least 48 studies attributed increasing flood heights to the construction of instream structures, and at least 17 discussed this effect on the Mississippi River specifically. *E.g.* AR 1731-1734. Science shows that river training structures, constructed by the Corps to reduce dredging costs, have significantly increased flood levels by up to 15 feet in some locations and 6 to 10 feet over broad stretches where these structures are prevalent. AR 12051, 22143-22168, 22569-22582. Because the science on this point is now irrefutable, the Netherlands is now modifying river training structures on the Rhine River to reduce this impact. AR 19069. But instead of reducing flooding by *removing* these structures, the Corps has decided to worsen flooding by continuing to build *more and more* of these channel-narrowing structures.

The Corps claimed to commission “independent technical reviews” that question the increased flood risk of river training structures, but these studies were not independent and their

findings are flawed and challenged by experts. AR 248-256. The Corps never prepared an EIS on the Project's flooding impacts that includes "[a]ccurate scientific analysis" and "expert agency comments." 40 C.F.R. § 1500.1(b) (2017). Yet the St. Louis District recognized in 1976 that the Project's cumulative impacts were not "adequately assessed" and "not yet fully understood," and that reassessment was needed within five years. AR 19051. The 2014 EAs for the New Projects describe "significant new circumstances and information on the potential impacts of the Regulating Works Project" that necessitated an SEIS. AR 14189-14190 (citing newly listed endangered species, and new information "on the impacts of river training structures and dredging on fish and macroinvertebrates" and "on the effects of navigation on fish and wildlife resources"); 13685-13686, 13971-13972. Despite this previous warning, the SEIS fails to analyze the cumulative effects of regulating works and O&M activities.

The Project is harming the UMRS's fish and wildlife. Between 1976 and 1991, at least five of its species were listed as threatened or endangered under the Endangered Species Act ("ESA"), 16 U.S.C. section 1531 et seq. In May 2000, a FWS Biological Opinion concluded that the Project would jeopardize the continued existence of the Higgins eye pearly mussel and the pallid sturgeon, result in the incidental take of the least tern and the winged mapleleaf mussel, and likely adversely affect the bald eagle. *E.g.*, AR 34642-34643, 34745-34747, 34605-34606, 34666-34667, 34689-34690. In 2012, four mussel species that may inhabit the UMRS were listed. 77 Fed.Reg 8631 (Feb. 14, 2012); 77 Fed.Reg 14913 (March 13, 2012); AR 1051. Mussels are an important food for mammals and fish, and filter the water, removing bacteria and fungi. *Id.* They attach to the river bottom and stabilize the river bed. *Id.* Algae and insect larvae inhabit mussel shells, and attract fish who feed on them. *Id.* Dredging and disposal of spoils kill mussels, as do clearing riverbeds and banks, and building channel structures. *Id.*

Many other UMRS species are listed under individual states' endangered species acts, including recent additions reflecting the declining ecological conditions due to the Corps' expanded use of training structures. AR 72-73, 1035, 22017-22018, 37665-37666 (Wisconsin's

list includes at least 16 fish species, along with mussels and turtles; Minnesota's list includes at least 10 fish species, four turtles, and many mussels). FWS' 2000 Biological Opinion found the Project would "take" the least tern because river training and flow control drastically decreased its nesting and foraging habitat, diminished nutrient cycling, reduced populations of small fish, and rendered least tern nesting sites more vulnerable to land-based predators. AR 34583-34590.

Many bird species depend upon the UMRS and its wet mud flats and shallow waters for foraging. AR 44534, 12209, 12222, 16245-16246, 21430. The Project has reduced these areas and nearly eliminated seasonal inundation of the flood plain, depriving birds of these essential habitats. *E.g.* AR 1086, 34590. The Project has reduced sandbars and beaches needed for nesting. AR 16245-16246. The Project's dredging and channelization destroy habitat needed by many migratory and resident shorebirds. AR 28262, 34712.

At the same time the Corps has expanded construction of training structures, the USGS has documented significant changes in rainfall, streamflow, and weather in the UMRS due to climate change. SAR 353-354. In 2009, the U.S. Global Climate Change Research Program reported that the Midwest experienced a 31% increase in very heavy precipitation events since 1958. SAR 192. That trend will continue:

Climate models project continued increases in the heaviest downpours during this century, while the lightest precipitation is projected to decrease. Heavy downpours that are now 1-in-20-year occurrences are projected to occur about every 4 to 15 years by the end of this century, depending on location, and the intensity of heavy downpours is also expected to increase. The 1-in-20-year heavy downpour is expected to be between 10 and 25 percent heavier by the end of the century than it is now. . . . Changes in these kinds of extreme weather and climate events are among the most serious challenges to our nation in coping with a changing climate.

SAR 191. Conversely, droughts may also increase in their frequency and severity. SAR 187.

Since the original Project EISs, federal laws protecting wetlands and floodplains have been strengthened substantially. In 1977, President Carter issued Executive Order 11990, which directs federal agencies to minimize the destruction, loss, or degradation, and to preserve and enhance the beneficial values, of wetlands, and Executive Order 11988, which directs federal

agencies to “reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by flood plains.” In 1986, Congress enacted specific mitigation requirements for the Corps’ civil works projects. WRDA of 1986 (P.L. 99-662) § 906, 33 U.S.C. § 2283. It authorized the Corps to modify existing water resources projects and operations to improve the environment, and also established the UMRS Environmental Management Program to replace and enhance habitat and provide resource monitoring. *Id.* §§ 1103, 1135, 33 U.S.C. §§ 652, 2309a.

The WRDA of 1990 (P.L. 101-640) established “environmental protection as one of the primary missions of the Corps of Engineers in planning, designing, constructing, operating, and maintaining water resources projects.” 33 U.S.C. § 2316(a) (emphasis added). The Act further establishes “an interim goal of no overall net loss of the Nation’s remaining wetlands base, as defined by acreage and function, and a long-term goal to increase the quality and quantity of the Nation’s wetlands, as defined by acreage and function.” 33 U.S.C. § 2317(a)(1).

In 2007, Congress enacted strict mitigation requirements for Corps civil works projects applicable to all proposals submitted to Congress or re-evaluated under NEPA. WRDA of 2007 (P.L. 110-114), § 2036, 33 U.S.C. § 2283(d). These include enhanced mitigation requirements established for the Clean Water Act’s section 404 regulatory program, which were substantially modified in 2008 (33 C.F.R. Parts 325 and 332, 40 C.F.R. Part 230). Congress also established a new federal water policy requiring all Corps projects to protect and restore the environment and avoid harming floodplains. WRDA of 2007 § 2031, 42 U.S.C. § 1962-3.

Recognizing that significant efforts were needed to repair the Project’s ecological damage, in 2007 Congress authorized \$1.7 billion to “ensure the environmental sustainability of the existing Upper Mississippi River and Illinois Waterway System” and directed the Corps to modify “operation of the Upper Mississippi River and Illinois Waterway System to address the cumulative environmental impacts of operation of the system and improve the ecological integrity of the Upper Mississippi River.” WRDA of 2007 § 8004, 33 U.S.C. § 652 note.

ARGUMENT

I. THE CORPS VIOLATED THE NATIONAL ENVIRONMENTAL POLICY ACT

A. LEGAL BACKGROUND

NEPA is this country’s “basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a).¹ Recognizing the profound impact of human activity on the natural environment, 42 U.S.C. § 4331(a), NEPA requires federal agencies to not only avoid, minimize or mitigate harm, but also to use “all practicable means . . . to restore and enhance” the environment. 40 C.F.R. § 1500.1(f). Section 102(2) of the Act contains “action-forcing” provisions to make sure that federal agencies act according to the letter and spirit of the Act.” *Id.* § 1500.1(a). Under NEPA, agencies are required to prepare a detailed environmental impact statement (“EIS”) for any major federal action significantly affecting the quality of the human environment. 42 U.S.C. § 4332(2)(C).

“The primary purpose of an environmental impact statement is to serve as an action-forcing device to insure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government.” 40 C.F.R. § 1502.1. The EIS “shall provide full and fair discussion of significant environmental impacts and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.” *Id.* §§ 1502.1, 1500.1(b). The EIS must “be supported by evidence that the agency has made the necessary environmental analyses.” *Id.* It must be “analytic rather than encyclopedic.” *Id.* § 1502.2(a).

These requirements are designed to ensure that NEPA’s environmental protection policies are integrated into decision-making and provide a means by which decision-makers and the public can evaluate the environmental impacts of government proposals. *Id.* §§ 1501.1(a), 1502.1. NEPA also requires federal agencies to take a “hard look” at the potential direct, indirect

¹ NEPA regulations were revised in 2020. Plaintiffs cite the regulations and guidance that were in place at the time of the Corps’ action, 2017. 40 C.F.R. § 1506.13 (2020).

and cumulative impacts of its proposed actions. *Pub. Emps. for Env'tl. Resp. v. Hopper*, 827 F.3d 1077, 1083 (D.C. Cir. 2016). “The hallmarks of a ‘hard look’ are thorough investigation into environmental impacts and forthright acknowledgment of potential environmental harms.” *Nat’l Audubon Soc’y v. U.S. Dep’t of Navy*, 422 F.3d 174, 187 (4th Cir. 2005) (citing *Robertson v. Methow Valley Citizens Council*, 490 U.S.332, 350 (1989)); *Nat. Res. Def. Council, Inc. v. Hodel*, 865 F.2d 288, 296 (D.C. Cir. 1988). To meet this standard, the agency must have reasonably and specifically defined the different levels of impact. “An unbounded term cannot suffice to support an agency’s decision because it provides no objective standard for determining what kind of differential makes one impact more or less significant than another[.]” *Sierra Club v. Mainella*, 459 F.Supp.2d 76, 101 (D.D.C. 2006) (citing *Tripoli Rocketry Ass’n, Inc. v. Bureau of Alcohol, Tobacco, Firearms, & Explosives*, 437 F.3d 75, 81 (D.C. Cir. 2006)).

The Corps’ FEIS fails to meet these standards, as shown below. The FSEIS, and the ROD approving the updated Project that relies on it, must therefore be set aside.

B. THE FSEIS IGNORES THE IMPACTS OF O&M ACTIVITIES

The 2017 FSEIS ignores the Project’s O&M activities, including revetments, dredging and spoils disposal, asserting instead that those activities will happen under either alternative and thus do not need to be evaluated. AR 980. That premise evades the pivotal issue whether, and if so to what extent, all of these activities will take place, and critically, evaluation of their effect on the environment. Piecemeal analyses of just the river training structures violate the Corps’ duty to prepare a comprehensive SEIS for the entire Project. The SEIS should analyze the Project’s O&M activities, including dredging and revetment construction and their cumulative effects, and discuss alternatives to them. It is settled law that annual maintenance dredging of the Mississippi River is a major federal action requiring an EIS. *Wisconsin v. Callaway*, 371 F.Supp. 807 (W.D. Wis. 1974); *Mississippi v. Marsh*, 710 F.Supp. 1488 (S.D. Miss. 1989).

The FSEIS also dismisses significantly changed circumstances since the Corps prepared its original EISs in the 1970s. *Eg.* AR 1042-1043 (assuming no change in terrestrial community

impacts since 1976 and declining to conduct further study). The FSEIS should discuss the significant changes in the river's ecological conditions, the many changes in environmental laws and policies mandating greater environmental protections, and scientific advances in understanding the Project's impacts, as summarized above.

C. THE FSEIS' PURPOSE AND NEED STATEMENT IS TOO NARROW.

The Purpose and Need Statement is drawn so narrowly that only the Project as proposed can qualify for approval, and other, reasonable alternatives are eliminated. AR 947, 963, 972.

1. The Purpose and Need Statement Improperly Limits Alternatives.

A Purpose and Need Statement "delimit[s] the universe of the action's reasonable alternatives." *Citizens Against Burlington v. Busey* ("Burlington"), 938 F.2d 190, 195 (D.C. Cir. 1991); *Wyoming v. U.S. Dep't of Agric.*, 661 F.3d 1209, 1244 (10th Cir. 2011) ("how the agency defines the purpose of the proposed action sets the contours for its exploration of available alternatives."); *Sierra Club v. U.S. Dep't of Transp.*, 310 F.Supp.2d 1168, 1192 (D. Nev. 2004) (citing *City of Carmel-By-The-Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997)) ("only alternatives that accomplish the purposes of the proposed action are considered reasonable, and only reasonable alternatives require detailed study. . . ."); *Webster v. U.S. Department of Agriculture*, 685 F.3d 411, 422 (4th Cir. 2012); *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 815-16 (9th Cir. 1987). Because the FSEIS' Purpose and Need Statement assumes that only regulating works can achieve the Project's purposes, the FSEIS only considered two options: the Project, and no Project. AR 931-932, 947, 972. Consequently, the FSEIS dismissed other reasonable alternatives and preordained approval of the Project. AR 972-973. This violates NEPA:

"One obvious way for an agency to slip past the strictures of NEPA is to contrive a purpose so slender as to define competing "reasonable alternatives" out of consideration (and even out of existence). . . . If the agency constricts the definition of the project's purpose and thereby excludes what truly are reasonable alternatives, the EIS cannot fulfill its role."

Simmons v. United States Army Corps of Eng'rs, 120 F.3d 664, 666 (7th Cir. 1997). *Accord*,

City of New York v. United States Dep't of Transp., 715 F.2d 732, 743 (2d Cir. 1983), *cert. den.* 456 U.S. 1005 (1984) (“an agency may not narrow the objective of its action artificially and thereby circumvent the requirement that relevant alternatives be considered”); *Burlington*, 938 F.2d at 196; *Fuel Safe Washington v. Fed. Energy Regulatory Comm'n*, 389 F.3d 1313, 1324 (10th Cir. 2004); *Friends of Southeast's Future v. Morrison*, 153 F.3d 1059, 1066 (9th Cir. 1998); *City of Bridgeton v. FAA*, 212 F.3d 448, 458 (8th Cir. 2000); *National Parks and Conservation Assn. v. Bureau of Land Management (“National Parks”)*, 606 F.3d 1058, 1070 (9th Cir. 2010).

The FSEIS' Purpose and Need Statement effectively mandates continuation of river training structure and revetment construction to reduce dredging costs, regardless of flood risks and ecological impacts, and disregards other less impactful alternatives. AR 947.

2. The Purpose and Need Statement Ignores Environmental Laws and the Project's Own Authorizing Legislation.

The FSEIS' Purpose and Need Statement asserts that “[t]he long-term goal of the Project, as authorized by Congress, is to obtain and maintain a navigation channel and reduce federal expenditures by alleviating the amount of annual maintenance dredging *through the construction of regulating works.*” AR 930 (FSEIS at ES-1) (emphasis added), AR 947. As shown on pages 49-50, *infra*, this statement conflicts with the Corp's “statutory authorization to act,” which clearly states that once the river's minimum width is reached, the Project is to be maintained by dredging rather than by installing more training structures that further narrow the river in violation of the minimum widths Congress established. *Burlington*, 938 F.2d at 196 (in preparing an EIS, “an agency should always consider the views of Congress expressed . . . in the agency's statutory authorization to act”). It also ignores “other Congressional directives,” such as the WRDA of 2007, which established a new policy directing that “all water resources projects” should “protect[] and restor[e] the functions of natural systems and mitigat[e] any unavoidable damage to natural systems.” *Id.*; 42 U.S.C. § 1962-3(a)(3). This law expands upon NEPA's command that the “Federal Government use all practicable means” to, among other

things: (i) “fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;” (ii) ensure “safe, healthful, productive” surroundings for all Americans; and (iii) “attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.” 42 U.S.C. § 4331(b).

These imperatives are repeated in (1) the Corps’ longstanding civil works mitigation requirements (33 U.S.C. § 2283(d)), (2) the WRDA of 1990 (33 U.S.C. § 2316) that changed the Corps’ mission to “include environmental protection as one of the primary missions of the Corps of Engineers in planning, designing, constructing, operating, and maintaining water resources projects,” and (3) the FWCA, which directs that “wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development,” and that such development prevent harm to, and improve the health of, fish and wildlife. 16 U.S.C. §§ 661, 662. Corps regulations likewise command:

“Enhancement of the environment is an objective of Federal water resource programs to be considered in the planning, design, construction, and *operation and maintenance of projects*. Opportunities for enhancement of the environment are sought through each of the above phases of project development. Specific considerations may include, but are not limited to: *actions to preserve or enhance critical habitat for fish and wildlife, maintain or enhance water quality [and] improve streamflow; preservation and restoration of certain cultural resources; and the preservation or creation of wetlands.*”

33 C.F.R. § 236.4 (2017) (emphasis added). The FSEIS fails to incorporate these critically important Congressional directives, and longstanding Corps’ policy objectives, into the Project’s purpose as required by law. AR 943-947, 9640965; *Burlington*, 938 F.2d at 196; *National Parks*, 606 F.3d at 1070-1072.

3. The Purpose and Need Statement Fails to Demonstrate Project Need

The Purpose and “Need” Statement must by definition, demonstrate a public “need” for new river training structures and additional revetment, as opposed to other channel-maintenance options, since the current dredging regime *already* maintains the channel. *National Parks*, 606 F.3d at 1071; AR 962-965. The FSEIS fails to do so. Rather, the Corps admits that its actual purpose is, *instead*, to reduce dredging costs. AR 947. But Congress has not identified reduced

dredging costs as an objective of the Project. Moreover, even if this were a Congressionally-recognized purpose of the Project, the Corps provides no comparative- or benefit-cost assessment showing construction of these structures is less expensive than dredging, taking into the costs of the flooding and other ecological harms the structures cause. AR 931-932, 995-960, 1261-1273. Nor does the FSEIS examine the future costs with, and without, new training structures, nor clearly identify those areas needing continued dredging even with new training structures. AR 995-960. The FSEIS also fails to provide critical information on sediment loads and sediment transport in the MMR, precluding the public from assessing the need for more training structures. These omissions violate NEPA. *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (NEPA requires an “informed and meaningful” consideration of alternatives).

D. THE FSEIS IGNORES REASONABLE ALTERNATIVES

An EIS must rigorously explore all reasonable alternatives that may achieve the primary objective and are not remote or speculative; thus, a viable but unexamined alternative renders an EIS inadequate. *Muckleshoot Indian Tribe v. U.S. Forest Service* (“*Muckleshoot*”), 177 F.3d 800, 810, 814 (9th Cir. 1999); *Natural Resources Defense Council, Inc. v. Morton* (“*NRDC*”), 458 F.2d 827, 836 (D.C. Cir. 1972). An alternative may not be disregarded merely because it does not offer a complete solution to the problem, nor because it would require Congressional action. To the contrary, the EIS must “[i]nclude reasonable alternatives not within the jurisdiction of the lead agency.”² Failure to examine an appropriate range of alternatives renders an alternatives analysis inadequate. *Resources Ltd., Inc. v. Robertson* (“*Resources Ltd.*”), 35 F.3d 1300, 1307 (9th Cir. 1993). The greater the impacts and scope of the proposed action, the

² 40 C.F.R. § 1502.14(c) (2017); *NRDC*, 458 F.2d at 834-836 (alternative energy sources had to be discussed, despite legislation finding urgent need for offshore leasing and mandating import quotas; agency had to consider reasonable alternatives to offshore oil lease which might reduce need for offshore exploration, even though that would require new legislation); *Environmental Defense Fund v. Froehlke*, 473 F.2d 346, 351 (8th Cir. 1974) (acquisition of land to mitigate loss of land from river channel project must be considered even though it would require legislation).

greater the range of alternatives that must be considered.³ The range is not sufficient if each alternative has a similar end result. *State of California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982) (range of alternatives inadequate where all eight alternatives developed a substantial portion of wilderness).

The FSEIS fails to “[r]igorously explore and objectively evaluate all reasonable alternatives,” 40 C.F.R. § 1502.14 (2017), and provide a “thorough consideration of all appropriate methods of accomplishing the aim of the action” and an “intense consideration of other more ecologically sound courses of action.” *Environmental Defense Fund v. Corps of Engineers*, 492 F.2d 1123, 1135 (5th Cir. 1974). Rigorous and objective evaluation of all reasonable alternatives is the “heart of the environmental impact statement,” and “must be undertaken in good faith” rather than “to justify a decision already reached.” 40 C.F.R. § 1502.14 (2017); *Citizens Against Toxic Sprays v. Berghund*, 428 F.Supp. 908, 933 (D.Or. 1977).

The FSEIS’ alternatives analysis is inadequate in five principal respects: (1) it limits alternatives to just one binary choice between two options: the Project as proposed, and no Project (AR 931-932); (2) it refuses to consider alternatives requiring additional Congressional authorization (AR 972-973); (3) it fails to consider alternatives that would address significant Project impacts by reducing flood risks and restoring ecological health; (4) it fails to provide an informed and meaningful consideration of alternatives; and (5) it fails to identify the environmentally preferable alternative.

1. The FSEIS Allows Only a Binary Choice Between the Project and No Project.

The FSEIS examines only two alternatives, the Continue Construction Alternative and the No New Construction alternative. AR 972-984. This violates NEPA’s mandate to evaluate an appropriate range of alternatives for several reasons. First, as shown below there are other clearly reasonable alternatives that should be examined because they achieve the Project’s

³ *Alaska Wilderness Recreation and Tourism v. Morrison* (“*Alaska Wilderness*”), 67 F.3d 723, 729 (9th Cir. 1995); see *Sierra Club v. Espy*, 38 F.3d 792, 803 (5th Cir. 1994).

purpose while also reducing the Project's significant impacts. Second, the scope and impacts of the Project mandate evaluation of a much broader range of alternatives than those that existed when Congress authorized the Project in 1927 based on a plan adopted in 1881 and updated in 1910. AR 976-977, 1082-1174; *Resources Ltd.*, 35 F.3d at 1307. As noted, the greater the impacts and scope of the proposed action, the greater the range of alternatives that must be considered.⁴ Both the scope and the impacts of the Project are far-reaching. The Project's new structures would install "4.4 million tons of rock" and its dredging would remove 2.4 million cubic yards per year. AR 984. The Project is causing profound, direct, indirect, and cumulative impacts to 195 miles of the Mississippi River and its flood plain, and the hundreds of species that rely on that vital riverine and riparian habitat. AR 34528. The FSEIS admits the Project will destroy 1,100 acres of vital main channel border habitat, among other ecological harms. AR 977. A 2016 study shows the narrowing caused by the Project's training structures and levees has fundamentally changed how the MMR responds to flood events. AR 6956. The Project's broad scope, duration and impacts dictate evaluation of a far greater range of alternatives than the binary choice in the FSEIS. *Save Our Cumberland Mountains v. Kempthorne* ("Cumberland"), 453 F.3d 334, 345 (6th Cir. 2006).

2. The FSEIS Ignores Alternatives Requiring Congressional Authorization

An EIS must "[i]nclude reasonable alternatives not within the jurisdiction of the lead agency."⁵ This means an alternative may not be disregarded merely because it would require additional Congressional authorization. *Id.* Nor may an alternative be disregarded because it does not offer a complete solution to the problem. *NRDC*, 458 F.2d at 836. A viable but

⁴ *Alaska Wilderness*, 67 F.3d at 729; *Sierra Club v. Espy*, 38 F.3d at 803.

⁵ 40 C.F.R. § 1502.14(c) (2017); *NRDC*, 458 F.2d at 837 ("NEPA was intended to provide a basis for consideration and choice by the decision-makers in the legislative as well as the executive branch."); *Environmental Defense Fund v. Froehlke*, 473 F.2d at 351 (acquisition of land to mitigate loss of land from river channel project must be considered even though it would require legislative action).

unexamined alternative renders an EIS inadequate. *Muckleshoot*, 177 F.3d at 810, 814. Contrary to this settled law, the FSEIS declined to consider alternatives that would potentially require additional Congressional action, including: (1) an alternative that removes or modifies existing river training structures in the Project area to restore backwater, side channel, and braided river habitat; and reduce flood risks; the FSEIS admits that this alternative need not adversely affect navigation (AR 1133-1134); (2) an alternative that maintains the authorized navigation channel by other means, including alternative upstream water level management regimes, alternative dredging and dredged spoil disposal activities, and the development of new, innovative techniques; and (3) an alternative that proposes ecological restoration and fish and wildlife conservation as authorized Project Purposes, and evaluates restoration activities that would improve the ecological health of the Mississippi River, its flood plain, and the fish and wildlife they support. AR 972-977, 1363-1367, 1501-1502, 2062-2063.

Despite NEPA's mandate requiring a reasonable range of alternatives, and the compelling need to identify and evaluate less environmentally harmful alternatives, the FSEIS declines to consider any alternatives that the Corps currently deems outside its existing authorization, or that involves methods not specifically identified by Congress over a century ago. AR 931, 964, 972.

Limiting the public's choice to either more of the same, or nothing, violates NEPA. NEPA "prevents federal agencies from effectively reducing the discussion of environmentally sound alternatives to a binary choice between granting and denying an application."⁶

3. The FSEIS Fails to Evaluate a Reasonable Range of Effective Alternatives.

The FSEIS fails to evaluate clearly reasonable alternatives that achieve the project

⁶ *Cumberland*, 453 F.3d at 345, citing *Davis v. Mineta*, 302 F.3d 1104, 1122 (10th Cir. 2002) ("[O]nly two alternatives were studied in detail: the no build alternative, and the preferred alternative. [The agency] acted arbitrarily and capriciously in approving an [environmental assessment] that does not provide an adequate discussion of [p]roject alternatives."); *Colorado Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999) (NEPA forbids "agencies from defining the objectives of their actions in terms so unreasonably narrow they can be accomplished by only one alternative.").

purpose while also reducing the Project's significant impacts, including:⁷ (1) a No New Construction Alternative that does not assume the Project requires new training structures, and provides a comprehensive assessment of potential impacts; (2) an alternative that removes or modifies existing river training structures in the Project area to restore backwater, side channel, and braided river habitat; and reduce flood risks, which the FSEIS admitted need not harm navigation (AR 1132-1134); (3) an alternative that minimizes the use of new river training structures, including by placing restrictions on the number and/or types of structures that can be utilized in a given reach based on a robust scientific assessment of the cumulative impacts of the different types of river training structures; (4) an alternative that maintains the authorized navigation channel through other approaches, including alternative upstream water level management regimes, alternative dredging and dredged spoil disposal activities, and the development of new, innovative techniques; and (5) an alternative that evaluates restoration activities that would improve the MMR's ecological health and its flood plain and fish and wildlife species that rely on these resources. AR 972-977, 1363-1367, 1501-1502, 2062-2063. Plaintiffs requested consideration of each of these alternatives, to no avail. AR 1498-1505.

As noted, the FSEIS refused to consider these alternatives, claiming they were outside existing Congressional authorization. AR 1364-1367, 2068-2070. The Corps insisted it had to use the obsolete techniques for carrying out the Project that Congress originally approved *110 years ago based on a Corps plan developed 139 years ago*. AR 931, 945 ("In the [R & H] Act of 1910, Congress authorized obtaining and maintaining the MMR to be carried out in accordance with the plan in 1881"), 964, 973, 2297-2329. The Corps' refusal to examine any alternatives it claims to be outside its existing authorization, or different from those identified by Congress more than 100 years ago, renders the FSEIS inadequate as a matter of law. Common sense and modern science also clearly dictate a fundamentally different approach to evaluating alternatives.

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⁷ Plaintiffs requested these alternatives, and a National Academy of Sciences study, in their 2014 DSEIS Scoping Comments (AR 1836-1923) and 2017 DSEIS Comments (AR 171-338).

4. The FSEIS Fails to Provide Informed Consideration of Alternatives.

NEPA requires an “informed and meaningful” consideration of alternatives:

“NEPA’s requirement that alternatives be studied, developed, and described both guides the substance of environmental decisionmaking and provides evidence that the mandated decisionmaking process has actually taken place. [Citation.] Informed and meaningful consideration of alternatives – including the no action alternative – is thus an integral part of the statutory scheme.”

Bob Marshall Alliance v Hodel, 852 F.2d at 1228.

The FSEIS fails to satisfy the “informed and meaningful” review requirement for the two alternatives that it does evaluate because it fails to provide meaningful information on the actions that will be carried out under those alternatives. AR 977-983. Neither alternative provides criteria for the triggering of future dredging, revetment, or river training structure construction. AR 972-979. Neither alternative provides information concerning the likely locations of these future actions. *Id.* Neither alternative adequately discloses and assesses the economic costs or environmental impacts of the likely future actions. *Id.* The Continue Construction Alternative does not provide any information on the types of river training structures that will be used, nor disclose and describe the linear extent of river training structures that will be constructed. AR 976-978. Yet the total linear feet of river training structures has a significant impact on flood heights, as discussed on pages 29-30 and 35-40, *infra*.

Even the so-called Independent External Peer Review (“IEPR”) Panel for the Project – whose three members all have lengthy Corps employment, aggregating 63 years (AR 6986-6989), and which was provided only the Corps’ one-sided views on river training structures and flood stage, and not the opposing studies of Professors Pinter and Criss (AR 1208-1229, 1257) – highlighted a number of these failings. It concluded, among other findings, that:

- “1. It is not clear why impacts of future river training structure construction and the associated compensatory mitigation requirements were not evaluated in more detail with respect to specific locations in the MMR.
2. The project description for the proposed action does not describe the decision-making process that will be employed for identifying new river training structure construction sites.
3. The SEIS does not clearly describe the project construction features within the main report such that a link between the project and the level of impacts can be easily

compared.”

AR 6956. Because the Corps has been implementing the Project since 1910, it should have information on the timing and location of future dredging and spoil disposal sites, training structure construction, and new revetments. AR 931. Without this information it is not possible to meaningfully evaluate their impacts, and compare them with those of alternatives.

Critically, the FSEIS fails to meaningfully consider alternatives because it ignores the direct, indirect, and cumulative environmental impacts of the flow regimes that the different alternatives would create, the conservation potential of those alternatives, and the means to mitigate their adverse environmental impacts. AR 1002-1008, 1083-1084, 1122-1125, 1132, 1208-1229, 1364-1367, 1484-1651, 2068-2071, 2073-2074; 40 C.F.R. § 1502.16 (2017).

The FSEIS also fails to provide “informed and meaningful” review of the two alternatives it does evaluate because that analysis was conducted with an improperly narrow project purpose. Indeed, this improperly narrow project purpose of reducing the costs of dredging by building more river training structures appears to be the determining factor in the FSEIS’ selection of the Continue Construction Alternative even though that alternative will, according to the FSEIS, cause more environmental harm than the No New Construction Alternative. *Compare* AR 981 (The No New Construction Alternative “[d]oes not achieve Congressionally authorized project objective of reducing federal expenditures by reducing dredging to a minimum”) *with* AR 983 (“Based on the Project’s Congressional authority and the continued benefit of the remaining construction, the Continue Construction Alternative with the described potential compensatory mitigation is the Preferred Alternative.”).

5. The FSEIS Fails to Identify the Environmentally Preferable Alternative

The Corps’ ROD for the Project must identify the “environmentally preferable” alternative and agencies are encouraged to identify the environmentally preferable alternative in the Final EIS. 40 C.F.R. §§ 1505.1 (e), 1505.2 (2017). The environmentally preferable alternative is

“the alternative that will promote the national environmental policy as expressed in NEPA’s Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.”⁸

Identification of the environmentally preferable alternative is critical so that the public and decision makers can fully assess the appropriateness of the preferred alternative:

“Through the identification of the environmentally preferable alternative, the decisionmaker is clearly faced with a choice between that alternative and others, and must consider whether the decision accords with the Congressionally declared policies of the [National Environmental Policy] Act.” [*Id.*]

On the basis of the FSEIS, the No New Construction alternative appears to be the environmentally preferable alternative since the Corps contends that it would not cause a significant loss of channel border habitat and would not otherwise require compensatory mitigation. AR 980-983. However, the Corps did not identify the environmentally preferable alternative in the FSEIS, preventing the public from commenting on the Corps’ views regarding this critical issue until *after* the Corps had made its final decision in its ROD. AR 984.

E. THE FSEIS FAILS TO ADEQUATELY ANALYZE PROJECT IMPACTS

An EIS must analyze all “reasonably foreseeable” environmental impacts of major federal action including direct, indirect and cumulative effects. 40 C.F.R. §§ 1508.7-1508.8 (2017). “If it is reasonably possible to analyze the environmental consequences . . . the agency is required to perform that analysis.” *Kern v. U.S. Bur. Land Mgmt.*, 284 F.3d 1062, 1072 (9th Cir. 2002).

1. The FSEIS Ignores Irrefutable Science and Data Showing Project Impacts

An EIS must present “quantified or detailed information.”⁹ “General discussion of an environmental problem over a large area,”¹⁰ and conclusory statements unsupported by data and

⁸ CEQ, Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed.Reg. 18026 (March 23, 1981), as amended, Question 6.

⁹ *Neighbors of Cuddy Mountain v. U. S. Forest Service* (“*Cuddy Mountain*”), 137 F.3d 1372, 1379 (9th Cir. 1998); *Ecology Center v. Castaneda*, 574 F.3d 652, 666 (9th Cir. 2009); *Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 87 (2d Cir. 1975).

¹⁰ *South Fork Band Council v. U.S. Dept. of Interior* (“*South Fork*”) 588 F.3d 718 (9th Cir. 2009); *Cuddy Mountain*, 137 F.3d at 1379-80.

analysis, do not suffice.¹¹ An EIS must utilize “high quality” science and “insure professional integrity, including scientific integrity, of the discussions and analysis in environmental impact statements.” 40 C.F.R. § 1502.24 (2017); *Earth Island Inst. v. U.S. Forest Service*, 442 F.3d 1147, 1159-60 (9th Cir. 2006). If information essential to a reasoned choice among alternatives is not available, the Corps must obtain that information unless the cost of doing so would be “exorbitant.” 40 C.F.R. § 1502.22 (2017). “Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.” 40 C.F.R. § 1500.1(b) (2017). An EIS may not rely “on conclusory statements unsupported by data, authorities, or explanatory information.” *Id.*

The Corps may not bury the statements of independent experts in an appendix, as those comments must be included, and responded to, in the impacts section of the FSEIS:

“‘Where scientists disagree about possible adverse environmental effect, the EIS must inform decision-makers of the full range of responsible opinion on the environmental effects.’ Where the agency fails to acknowledge the opinions held by well respected scientists concerning the hazards of the proposed action, the EIS is fatally deficient.”

Friends of the Earth v. Hall (“*Hall*”), 693 F. Supp. 904, 934 (W.D.Wash 1988); *Moseley*, 798 F.Supp. at 1482. Contrary to NEPA, the FSEIS fails to evaluate critical data and opposing scientific opinion as follows:

(a) Flood Heights and Flood Response

The FSEIS’ claim that river training structures do not increase flood heights ignores overwhelming science and data showing a direct and irrefutable causal relationship between

¹¹ *Seattle Audubon Society v. Moseley* (“*Moseley*”), 798 F.Supp. 1473, 1479 (W.D. Wash. 1992), *aff’d* 998 F.2d (9th Cir. 1993); *Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995-996 (9th Cir. 2004) (“generalized or conclusory statements” in cumulative effects analyses violate NEPA); *Friends of the Earth v. Army Corps of Engineers*, 109 F.Supp.2d 30, 38 (D.D.C. 2000) (Corps must “provide further analysis” because it did not provide “the basis for any” of its claims of insignificant impact and that impacted fish would simply move away); *Sierra Club v. Norton*, 207 F.Supp.2d 1310, 1335 (S.D. Ala. 2002) (“Defendant’s argument . . . 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’”).

narrowing the river's channel due to Project training structures and raising the river's height by up to six feet both adjacent to and upstream of the structures. AR 1083-1084, 1208-1229. Plaintiffs provided the Corps with a list of scientific references that included approximately 500 pages of scientific research linking river training structures to elevated flood risk along with copies of many of those studies, buttressed by two authoritative affidavits by a leading scholar on this topic, Professor Nicholas Pinter, currently the Shlemon Chair in Applied Geology at the University of California, Davis. AR 1517-1521. Both Professor Pinter and Professor Robert E. Criss of the Department of Earth and Planetary Sciences at Washington University in Saint Louis have published comprehensive studies, submitted by Plaintiffs to the Corps, confirming that by narrowing the river channel, river training structures demonstrably -- as shown by decades of river height records -- raise the river's height, both where the channel is narrowed, and for miles upstream where flow is backed up. AR 1517-1521, 1554-1558, 1561-1568. Common sense tells us the same thing: when you narrow the width of a flow of water, you necessarily increase its height to accommodate the same inflow. But contrary to NEPA, the Corps failed to include in the FSEIS the specific, empirically-based expert conclusions of Professors Pinter, Criss and Luo on this point, and to provide a detailed response to each of their cogent findings. AR 2073-2074.

(b) Sediment Loading, Sediment Transport, Hydrology and Hydraulics

The FSEIS lacks essential information on sediment loading, sediment transport, hydrology and hydraulics in the MMR. AR 1002-1008. Yet understanding these factors is critical to achieving the Project's objective of maintaining navigation through dredging and river training. AR 955.

This omission was confirmed by the IEPR Panel, which concluded it could not "judge whether structures and dredging designs are based on robust science, data and engineering" because the DSEIS did not provide meaningful information on sediment load and transport. AR 6968. The IEPR Panel recommended that the Draft SEIS be revised to include:

Annual percentages and load from Missouri River and Upper Mississippi River, . . .
Sediment properties for both bed load and suspended load – particle size, settling

velocity, specific gravity, and fraction distribution within each particle size, . . . Annual volumes entering the MMR, temporarily and permanently deposited in the MMR, and exiting the MMR as compared to annual dredging load, . . . Relationship between channel conveyance, flood hydrographs (i.e., rising leg and falling leg), bed load, suspended sediment load, and sediment transportation, [and] Percentage of total bed load and suspended sediment load that is dredged.

AR 6968. Despite these requests, the Corps refused to rectify these omissions. AR 1002-1008.

Scientific understanding of large river sediment transport and deposition has made great progress—documented in hundreds of published articles—since the 1976 EIS was finalized. AR 37254-37343 (identifying more than 250 scientific studies addressing large river sediment transport and deposition published since 1976), 27419-27480 (referencing more than 100 studies published between 1979 and 2005). Plaintiffs and others asked the Corps to evaluate this extensive body of science in the FSEIS. AR 1509-1510, 1656-1657. As the IEPR Panel noted, a “[s]trong working knowledge of sediment characteristics is necessary to design and construct effective regulating structures and conduct annual dredging programs.” AR 6968. The Corps refused to address this body of science in the FSEIS. AR 1002-1008, 1364-1367, 2068-2071.

The IEPR Report also concluded that “the SEIS has little information on the hydraulic and hydrologic engineering data for the MMR.” AR 6964. While the 1976 EIS contained data available then – over 45 years ago – that information is obsolete because both the hydraulics and the hydrology of the Middle Mississippi River have changed significantly since 1976:

“Generally there has been an increase in cross sectional area, hydraulic depth, conveyance and volume throughout the period of record (Little et al. 2016). The Regulating Works Project has contributed to these changes, although it is uncertain to what extent.”

AR 997-998. In sum, the FSEIS does not reflect up-to-date science because it omits essential data and analysis on current sediment loading, sediment transport, hydrology, and hydraulics.

(c) Main Channel Border Habitat Model

The FSEIS’s assessment of main channel border habitat is based on an incomplete border habitat model. The FSEIS states: “Actual acreages affected would not be known until the main channel border habitat model is completed and is subsequently used to determine impacts on an

ongoing site-by-site basis.” AR 1132 at n. 23.

This failing is particularly critical since the FSEIS recognizes that the Preferred Alternative will cause significant adverse impacts to main channel border habitat, adding to the already extremely significant loss of 34.85% of this habitat in the MMR. AR 1132 (from 1976 to 2014, the unstructured main channel border habitat in the MMR decreased from 19,800 to 12,900 acres; river training construction affected about 6,900 acres of main channel border habitat).

This model should have been completed and certified before it was used to assess impacts in the DSEIS because it is essential to a reasoned choice among alternatives. The Corps was required to provide this information because its cost was not “exorbitant,” and its provision was not “infeasible.” 40 C.F.R. § 1502.22 (2017); *Sierra Club, Illinois Chapter v. U.S. Dept. of Transp.*, 962 F. Supp. 1037, 1043 (N.D. Ill. 1997). By relying upon an incomplete study without sufficient justification the Corps failed to take the hard look that NEPA requires. *Id.*

(d) Nineteen Mile Modeled Reach

The Nineteen-Mile Reach of the MMR was modeled by the Corps to provide a basis for its analysis of the Project’s impacts. However, the FSEIS lacks critical information on the model used, and on the physical and biological characteristics of this reach. AR1122-1124. This omission invalidates the FSEIS because this model is the basis for the Corps’ entire impacts analysis.

Although Plaintiffs requested the following information essential to assessment of the adequacy and accuracy of the model (AR 1511-1512), the Corps failed to provide any of it for this modeled reach: (1) the number and types of river training structures; (2) the total length of training structures; (3) the height and widths of the training structures; (4) the information in (1) - (3) for each different type of training structure (e.g., wing dike, bendway weir, chevron, other); (5) the linear feet and acreage of natural main channel border habitat; (6) the linear feet and acreage of wetlands both in the main channel border habitat and in the adjacent flood plain; (7) the baseline depth data; (8) the baseline flow patterns; (9) the locations and areal extent of areas

that require repetitive dredging; (10) the length and width of revetment; and (11) sufficient details concerning the model used to allow an independent reviewer to assess its adequacy. AR 1122-1125, 2071.

By failing to include this information, the FSEIS failed to satisfy the “twin functions of an EIS—requiring agencies to take a ‘hard look’ at the consequences of the proposed action and providing important information to other groups and individuals.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 356. Indeed, by failing to “disclos[e] the data’s underlying assumptions . . . the [Corps] failed to take the required ‘hard look’ at environmental consequences.” *North Carolina Wildlife Federation v. North Carolina Dept. of Transp.*, 677 F.3d 596, 605 (4th Cir. 2012) (internal quotation omitted); 40 C.F.R. § 1502.22 (2017).

(e) Independent External Peer Review Panel Comments

The FSEIS fails to address the IEPR Panel’s objections; indeed, the DSEIS did not even mention the Panel. AR 6477-6903. It is not sufficient to include the Panel’s statements in a separate report or Appendix, as opposing expert views must be included and responded to in the EIS itself. *Hall*, 693 F. Supp. at 934 (citations omitted). The Corps’ failure to address the Panel’s concerns renders the FSEIS “fatally deficient.” *Id.*

The IEPR Panel made the following findings, each of which demonstrates that the FSEIS lacks essential information needed to assess Project impacts:

1. It is not clear why impacts of future river training structure construction and the associated compensatory mitigation requirements were not evaluated in more detail with respect to specific locations in the MMR.
2. The project description for the proposed action does not describe the decision-making process that will be employed for identifying new river training structure construction sites.”
3. The SEIS does not clearly describe the project construction features within the main report such that a link between the project and the level of impacts can be easily compared.”
4. A lack of detailed information on the sediment load entering the MMR limits the understanding of the overall effort needed to achieve the project’s stated purpose of providing an economical, regulated, and dredged navigation channel.

AR 6957. But contrary to NEPA, the Corps never addressed these recommendations. AR 1002-1008, 1083-1084, 1122-1125, 1132, 1208-1229, 1364-1367, 1511-1512, 2068-2071, 2073-2074.

The Corps' omission also violates WRDA, 33 U.S.C. § 2343, as discussed on page 45, *infra*.

2. The FSEIS Fails to Accurately Establish Baseline Conditions

The FSEIS fails to accurately establish and consider baseline conditions as NEPA requires:

“Without establishing the baseline conditions . . . there is simply no way to determine what effect the [action] will have on the environment, and consequently, no way to comply with NEPA.”¹²

Properly establishing baseline conditions requires accurate and comprehensive data. Without baseline data, “an agency cannot carefully consider information about significant environment impacts. Thus, the agency fails to consider an important aspect of the problem, resulting in an arbitrary and capricious decision.”¹³ If information that is essential for making a reasoned choice among alternatives is not available, the Corps must obtain that information unless the costs of doing so would be “exorbitant,”¹⁴ a circumstance never claimed nor shown.

Establishing baseline conditions also requires a clear description of “how conditions have changed over time and how they are likely to change in the future without the proposed action” to determine whether additional stresses will push this system over the edge. CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997) (“*CEQ Cumulative Effects*”) at 41. This is important because, as with the MMR, “when a large proportion of a resource is lost, the system nears collapse as the surviving portion is pressed into

¹² *Half Moon Bay Fishermen's Mktg. Ass'n. v. Carlucci* (“*Carlucci*”), 857 F.2d 505, 510 (9th Cir.1988); *Friends of Back Bay v. U.S. Army Corps of Engineers*, 681 F.3d 581, 588 (4th Cir. 2012) (an EIS fails to comply with NEPA if it relies on a “material misapprehension of the baseline conditions.”)

¹³ *Northern Plains Res. Council, Inc. v. Surface Transp. Bd.* (“*Northern Plains*”), 668 F.3d 1067, 1083, 1085 (9th Cir. 2011) (the EIS did “not provide baseline data for many of the species” of concern and thus “did not take a sufficiently ‘hard look’” to satisfy NEPA).

¹⁴ 40 C.F.R. § 1502.22 (2017); *Carlucci*, 857 F.2d at 510; *Northern Plains*, 668 F.3d at 1083; *Gifford Pinchot Task Force v. Perez*, No. 03:13-CV-00810-HZ, 2014 WL 3019165, at *27-29 (D. Or. July 3, 2014); *Idaho Conservation League v. U.S. Forest Serv.*, No. 1:11-CV-00341 -EJL, 2012 WL 3758161, at *16 (D.Idaho Aug. 29, 2012) (a baseline study and actual investigation of groundwater were required to evaluate the impacts of a mining project on groundwater).

service to perform more functions.” *Id.*

The FSEIS violates these NEPA mandates for at least seven reasons. First, it lacks baseline data on flood heights. Notably, the FSEIS dismisses extensive and highly credible information on flood level increases and on fundamental changes to the way the MMR responds to flood events. AR 992-994. The Corps’ refusal to acknowledge the validity of this information, and account for these changes—and the role of river training structures in creating these dangerous conditions—taints the entire FSEIS. Second, it lacks baseline data on sedimentation rates in the Project area. AR 1002-1008. Third, it lacks baseline data on fish and wildlife species, including migratory species, and their critical habitat needs, in the Project area. AR 1032-1051, 1516. Fourth, it lacks baseline data on plant species, including wetland species, in the Project area. AR 1042-1043. Fifth, it lacks baseline data on vitally important habitat types, including main channel border habitat, braided river habitat, wetland habitat, and floodplain habitat, in the Project area. AR 1032-1051.

Sixth, it lacks baseline data on the potential impacts of channel cutoffs caused by the Project’s river training structures. For example, the Project poses the potential for a channel cut off at Dogtooth Bend. For this location, the DSEIS stated only that

[a]nother site that has shown the potential of a channel cutoff is at Dogtooth Bend at river mile 33. A cutoff at Dogtooth Bend would reduce the length of the MMR by approximately 16 – 18 miles. The consequences of a channel cutoff at Dogtooth Bend would be similar to those at Thompson Bend.

AR 6504. Plaintiffs responded that the impacts of such a change are significant and should be analyzed in far more depth, based on a 2016 study by Olson and Morton, which Plaintiffs attached. AR 1516-1517, 1546-1552. Despite Plaintiffs’ request, the Corps provided no further analysis. AR 2072.

Seventh, its discussion of baseline conditions fails to discuss and account for the significant decline in the ecological health of the Mississippi River and the role of the Project in that decline. AR 1035-1051. Rather than providing this analysis, the FSEIS merely references past studies documenting this decline. AR 1141-1142. The cause of the decline is never

analyzed.

Due to these omissions, the FSEIS fails to take the “hard look” NEPA requires.

3. The FSEIS Fails to Adequately Evaluate Flooding Impacts

The FSEIS fails to adequately evaluate the impacts of the Project and its river training structures on flood heights. Instead, it rejects the extensive body of scientific evidence demonstrating that such structures increase flood heights and have fundamentally altered and exacerbated the way the MMR responds to high water events. AR1083-1134, 2073-2074.

The Corps’ claim that training structures do not affect flood heights has been conclusively disproved by research led by Professor Pinter. In a series of exchanges published in the *Journal of Hydraulic Engineering* and elsewhere, Dr. Pinter has specifically rebutted both the methodology and the conclusions in the Watson studies, which the Corps cited in reaching its faulty conclusion. AR 1561-1569. Dr. Pinter’s research shows that river training structures increase flooding. AR 11801-11802, 12047-12048, 12051. These impacts are cumulative—as more structures are placed in the river, the flood stages increase:

On the Upper Mississippi River, for example, stages increased more than four inches for each 3,281 feet of wing dike built within 20 RM (river miles) downstream. . . . Our study demonstrated that the presence of river training structures can cause large increases in flood stage. For example, at Dubuque, Iowa, roughly 8.7 linear miles of downstream wing dikes were constructed between 1892 and 1928, and were associated with a nearly five-foot increase in stage. In the area affected by the 2008 Upper Mississippi flood, more than six feet of the flood crest is linked to navigational and flood-control engineering.”

AR 11801-11802, 12047-12048, 12051.

Plaintiffs’ DSEIS comments urged the Corps to discuss the overwhelming scientific consensus that river training structures increase flood heights, directly refuting the Corps’ assertions that river training structures do not affect flood levels. AR 1517-1521. There currently is intense public opposition to constructing new river training structures, due to their flood risks. AR 1483-2054.

Science shows that river training structures, constructed by the Corps to reduce dredging costs, have significantly increased flood levels by up to 15 feet in some locations and 6 to 10 feet

over broad stretches where these structures are prevalent. AR 12051, 22143-22168, 22569-22582. Independent scientists have determined that the more than 40,000 feet of “wing dikes” and “bendway weirs” constructed by the Corps in the Mississippi River during the three years prior to the great flood of 1993 contributed to record crests in 1993, 1995, 2008, and again in 2011. *Id.* Even studies commissioned by the St. Louis District and cited in the FSEIS (Watson *et al.*, 2013a cited at AR 992, 1210-1212) find statistically significant increases in flood stages at these locations.

Plaintiffs provided extensive documentation of the correlation between river training structures and increased stage height and flooding to the Corps before it published the DSEIS, but this documentation was ignored. For example, Professor Criss warned the Corps that:

“The consequences of current management strategy on floodwater levels are clearly shown by data from multiple gauging stations on the Middle Mississippi River (Figures). The Chester and Thebes stations were selected as they are the closest stations to the project area that have long, readily available historical records (USGS, 2016). *These figures conclusively document that floodwater levels have been greatly magnified along the Middle Mississippi River, in the timeframe when most of the in-channel navigational structures were constructed. If these structures are not the cause, then we are left with no explanation for this profound, predictable effect.*

AR 8395. Dr. Criss pointed out further that measurements on the Mississippi River at St. Louis and on the Missouri River at Herman “document similar damaging and incontestable trends for other river reaches managed in the same manner.” AR 8395.

A 2016 *Journal of Earth Science* study co-authored by Dr. Criss (“Criss and Luo 2016”) concludes that the Corps’ structures cause the MMR to flood more frequently and severely:

“Ehlmann and Criss (2006) proved that the lower Missouri and middle Mississippi Rivers are becoming more chaotic and unpredictable in their time of flooding, height of flooding, and magnitude of their daily changes in stage. This chaotic behavior is primarily the result of extreme channelization of the river, and its isolation from its floodplain by levees (e.g., Criss and Shock, 2001; GAO, 1995; Belt, 1975). *The channels of the lower Missouri and middle Mississippi Rivers are only half as wide as they were historically, along a combined reach exceeding 1,500 km, as clearly shown by comparison of modern and historical maps (e.g., Funk and Robinson, 1974).*

The aftermath of storm Goliath [which led to the December 2015 floods] provides another example in an accelerating succession of record floods, whose tragic effects have been greatly magnified by man. . . . [Although] only a few percent of the watershed above St. Louis received truly heavy rainfall during this event; *the river rose sharply because the water simply had nowhere else to go. . . . Forthcoming calls for more river management, including higher levees and other structures, must be rejected. Additional “remediations” to this overbuilt system will only aggravate flooding in the middle Mississippi Valley (see Walker, 2016).”*

AR 9851. Appendix A to the FSEIS purports to critique Criss and Luo 2016, but it does not address its content, and instead focuses on a single locality (Chester) scarcely mentioned in the study. AR 1225-1226. The discussion of this single locality inappropriately compares the assessed winter flood with prior, warm weather floods, and rising limb data with falling limb data. *Id.*

The FSEIS’s failure to acknowledge and account for the significant increases in flood heights and the fundamental changes to the way the MMR responds to floods caused by river training structures renders the FSEIS deeply, and dangerously, flawed.

Despite recognizing that the Preferred Alternative will cause the loss of at least “1,100 acres (8%) of the remaining unstructured main channel border habitat” (AR 977), the FSEIS fails to address the cumulative ecological implications of this loss in light of the already highly significant losses of main channel border habitat from river training structures to date.¹⁵ AR 132.

The FSEIS fails to provide an accurate assessment of the areal extent and locations of adverse impacts to main channel border habitat for at least four reasons: First, the FSEIS assessment that 1,100 (8%) of the remaining unstructured main channel border habitat will be lost is based on an incomplete border habitat model. AR 1132, n. 23 (“Actual acreages affected would not be known until the main channel border habitat model is completed and is subsequently used to determine impacts on an ongoing site-by-site basis.”). This model should have been completed, certified, and used to assess impacts before the DSEIS was circulated.

¹⁵ The 1,100 acre loss would constitute 8.53% of the 12,900 acres of main channel border habitat remaining. But this loss must be added to the previous loss of 6,900 acres of such habitat due to river training structures from 1976 to 2014—an additional 34.85% loss. AR 1132.

Second, the incomplete main channel border habitat model appears to have been inappropriately applied to the 19 Mile Modeled Reach. AR 1122-1125. Third, contrary to the FSEIS' claim that such impacts total 1100 acres (AR 1253), Appendix C to the FSEIS shows "the impact of all construction necessary to achieve the maximum dredging reduction. . .was 1774 acres of main channel border." AR 1264. Fourth, the FSEIS fails to disclose and evaluate the specific locations and lineal extent of shoreline of such losses, which is needed to determine whether significant losses will occur in areas of critical importance to key species or where natural main channel border habitat has already been significantly compromised.

The FSEIS fails to evaluate the ecological harm from these losses of habitat. AR 1104-1136. That border habitat is critical to many species, including fish, amphibians, crustaceans, waterfowl, shorebirds and mammals. Yet, the FSEIS does not reveal the Project's impacts on these species. *Id.*

First, the FSEIS fails to describe even the most basic ecological characteristics of this habitat, stating only that it is "defined as areas shallower than LWRP -10 without river training structures." AR 1132. But this habitat has important ecological characteristics:

"On the MR there are 87,833 acres of main channel border habitat. . . . The main channel border is a primary habitat for freshwater mussels, and the basis for the commercial mussel industry. Furbearers use this area as they do side channels and backwaters for feeding, and the banks occasionally serve as den sites. Shore and wading birds use the shallow waters within the main channel border for feeding. Some waterfowl use can also be noted, mainly by wood ducks and mallards. . . ."

AR 41229. Loss of this habitat would have ecological impacts far beyond the benthic organisms and fisheries mentioned in the FSEIS. AR 1038, 1041. The FSEIS failed to evaluate the important habitat types within the main channel border, and assess the Project's adverse impacts to the fish and wildlife species that utilize those habitats.

Second, the FSEIS also does not identify the vast number of fish and wildlife species that utilize the main channel border, and instead provides only a short list of the "most commonly encountered" native and non-native species. Consequently, the FSEIS does not provide a

meaningful assessment of the direct, indirect, and cumulative adverse impacts to the full array of fish and wildlife resources from the significant additional losses to main channel border habitat. AR 1038, 1041.

Third, the FSEIS instead focuses its analysis on changes in fish densities surrounding river training structures and impacts of entrainment during dredging. It fails to discuss or reference an important 2004 study which shows that in the MMR, main channel border habitat is a preferred habitat for the federally endangered Pallid sturgeon. AR 29725-29735. Plaintiffs provided a copy of this study to the Corps in their comments on the Draft SEIS.

Fourth, the FSEIS fails to discuss impacts to reptiles that occupy main channel border habitat, even though a 2016 study shows that “[s]hallow, low-velocity habitat seems most important to turtles” in the MMR and that “smooth softshell turtles used open side channels and unstructured main-channel borders most often.” AR 8980-8987, 8981 (quote). The FSEIS fails to account for the cumulative impacts of the loss of an additional 8.53% of main channel border habitat on top of the already extremely significant loss of 34.85% of main channel border habitat in the MMR. AR 1132. As a result, the FSEIS does not satisfy NEPA’s requirement to “determine the magnitude and significance of the environmental consequences” of the preferred alternative in the context of the cumulative effects of other past, present, and future actions. *CEQ Cumulative Effects*, at 41 (emphasis added).

Even the minimal information provided in the FSEIS demonstrates that the Project-induced losses constitute a “significant adverse effect.” According to the FSEIS:

“Although these unstructured main channel border habitats are part of a river system that is highly modified compared to its original state, they likely more closely resemble some of the habitats of the historic MMR. The continued conversion to structured habitat is expected to result in the continued functional change of the river from the unconfined, shifting, meandering river that was the historic condition, toward a river dominated by the deep, high velocity habitat of the main channel surrounded by structured main channel border habitat. This analysis also provides insight into the magnitude of the potential adverse effect to fish movement described above. *Areas of unstructured main channel border habitat are more likely to provide the necessary movement and migration pathways required by the MMR fish community. Overall, the continued conversion to structured main channel border habitat is expected to have a*

significant adverse effect on the MMR fish community and the District has concluded that this would warrant compensatory mitigation.”

AR 1132-1133 (emphasis added). As the FSEIS concedes, this level of impact to main channel border habitat is “significant on technical, institutional, and public merits.” AR 978. The full suite of adverse impacts from this significant loss of main channel border habitat must be assessed under NEPA, but the FSEIS failed to do so. AR 1104-1137.

4. The FSEIS Fails to Evaluate Side- and Back-Channel Impacts

Despite its recognition of the importance of side channel habitat in the MMR, and the threat posed by greater isolation from the main channel caused by low to moderate river discharges (AR 1146-1147), the FSEIS fails to assess the threat of such disconnection caused by the Project’s river training structures, which cause lower water levels (due to increased river velocity) during low flow conditions. AR 1083-1084.

The FSEIS also fails to evaluate the impacts of climate change in conjunction with the Project on the MMR’s side channels at both low and high flow conditions despite the overwhelming science confirming that climate change is having an extremely significant impact on the MMR and its vital side channels. AR 1092-1103.

The FSEIS fails to assess the Project’s impacts on braided channels, cross-over habitat, mid-channel bars, and backwater habitat. AR 1083-1136. These diverse habitats are essential to many imperiled fish and wildlife species. For example, the Corps stated in its Environmental Assessment for the Eliza Point/Greenfield Bend Regulating Works Project (2013) that Pallid sturgeon are adapted to “braided channels, irregular flow patterns, flooding of terrestrial habitat, extensive microhabitat diversity, and turbid waters.” AR 14046. And, it conceded that “channel training structures have also altered the natural hydrograph of the MMR . . . [and] as a result, previously aquatic habitats are now dry at low discharges . . .” reducing available habitat. *Id.* Indeed, FWS’ 2000 Biological Opinion found the continued “homogenization of the MMR” will make it “unsuitable to pallid sturgeon.” AR 34731. Yet the FSEIS fails to address the Project’s impacts on these specialized habitats. AR 1104-1136.

5. The FSEIS Fails to Meaningfully Evaluate Mitigation

The FSEIS fails to meaningfully evaluate mitigation, and to comply with federal mitigation requirements. The FSEIS's claim that mitigation for the Project is "discretionary" (AR 1252) is incorrect because the WRDA of 2007 requires the Corps to implement mitigation, and comply with mitigation planning requirements, for any project for which the Corps "select[s] a project alternative in any report." 33 U.S.C. § 2283(d). And, NEPA requires that the FSEIS discuss mitigation measures with "sufficient detail to ensure that environmental consequences have been fairly evaluated." *Robertson*, 490 U.S. at 352. A "perfunctory description" of the mitigating measures is not sufficient. *Cuddy Mountain*, 137 F.3d at 1380.

"An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective." *South Fork*, 588 F.3d at 727. A bald assertion that mitigation will be successful is not sufficient. The effectiveness must instead be supported by "substantial evidence in the record." *Wyoming Outdoor Council v. U.S. Army Corps of Eng'rs*, 351 F. Supp. 2d 1232, 1252 (D. Wyo. 2005).

The FSEIS violates these mitigation requirements. First, it erroneously claims that the mandatory mitigation requirements of 33 U.S.C. section 2283(d)(1) are not applicable to the FSEIS because "it is not a report being prepared for authorization by Congress." AR 2065. This interpretation is incorrect because section 2283(d) requires the inclusion of a specific mitigation plan in "any report" that selects a project alternative, including the FSEIS. Second, the FSEIS fails to discuss mitigation measures with "sufficient detail to ensure that environmental consequences have been fairly evaluated," and does not demonstrate that the proposed mitigation will be ecologically successful. *Robertson*, 490 U.S. at 352. To the contrary, it erroneously claims that "no appropriate habitat model(s) currently exists to capture the unique aspects of Middle Mississippi main channel border aquatic habitat" and that the "Corps is attempting to develop a new main channel border habitat model." AR 1256. Third, the FSEIS does not propose mitigation for all fish and wildlife impacts that are more than negligible, as required by

law. Instead, it erroneously claims that impacts must be “significant” before they require mitigation. AR 1256. Fourth, the FSEIS does not propose any mitigation for the impacts caused by revetment, dredging, and dredged spoil disposal. AR 1252-1260. Fifth, the FSEIS cannot determine the actual amount of mitigation needed because it has not assessed the full extent of the harm to fish and wildlife as a result of the direct, indirect, and cumulative impacts of the Project. AR 1104-1136.

II. THE CORPS VIOLATED THE WATER RESOURCES DEVELOPMENT ACT

The Corps violated WRDA in two respects. First, WRDA requires the Corps to prepare a detailed mitigation plan to reduce the adverse impacts to ecological resources including fish and wildlife of any water resources project authorized by the Secretary of the Army and for which construction commenced after November 17, 1986, unless the Secretary determines that the project “will have negligible adverse impact on ecological resources and fish and wildlife without the implementation of mitigation measures.” 33 U.S.C. §§ 2283(a)(1), 2283(d)(1). After November 17, 1986, the Corps “shall not select a project alternative in any report, unless such report contains (A) a recommendation with a specific plan to mitigate for damages to ecological resources, including terrestrial and aquatic resources, and fish and wildlife losses created by such project, or (B) a determination by the Secretary [of the Army] that such project will have negligible adverse impact on ecological resources and fish and wildlife without the implementation of mitigation measures.” 33 U.S.C. § 2283(d)(1).

Because the Corps has issued a “report” — the Draft and Final SEISs – on the Project, and the Secretary of the Army has not found that the Project will have only “negligible adverse impact on ecological resources and fish and wildlife without the implementation of mitigation measures,” the Corps is required to mitigate the Project’s adverse impacts on those “ecological resources and fish and wildlife.” *Id.*

The Corps is required to provide a detailed mitigation plan that ensures 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). The Corps “shall select and design mitigation projects using a watershed approach to reflect contemporary understanding of the science of mitigating the adverse environmental impacts of water resources projects.” 33 U.S.C. § 2283(d)(2). Mitigation plans “shall include, at a minimum:”

- (i) “a plan for monitoring the implementation and ecological success of each mitigation measure;”
- (ii) “the criteria for ecological success by which the mitigation will be evaluated and determined to be successful based on replacement of lost functions and values of the habitat, including hydrologic and vegetative characteristics;”
- (iii) “for projects where mitigation will be carried out by the Secretary . . . a description of the land and interest in land to be acquired for the mitigation plan; [and] the basis for a determination that the land and interests are available for acquisition . . . ;”
- (iv) “for projects where mitigation will be carried out through a third party mitigation arrangement . . . a description of the third party mitigation instrument to be used; and [] the basis for a determination that the mitigation instrument can meet the mitigation requirements for the project;”
- (v) “a description of . . . the types and amount of restoration activities to be conducted; [] the physical action to be undertaken to achieve the mitigation objectives within the watershed in which such losses occur . . . ; and [] the functions and values that will result from the mitigation plan; and
- (vi) “a contingency plan for taking corrective actions in cases in which monitoring demonstrates that mitigation measures are not achieving ecological success in accordance with the criteria under clause (ii).” [33 U.S.C. § 2283(d)(3)(B)].

The Corps’ mitigation plans must also comply with “the mitigation standards and policies established pursuant to the regulatory programs administered” by the Corps. 33 U.S.C. § 2283(d)(3)(A). These standards likewise impose additional requirements for the mandatory detailed mitigation plan. The detailed mitigation plan helps ensure mitigation implementation and the ecological success of mitigation efforts. Indeed, the Corps is also required to consult yearly on each water resources project with the appropriate Federal agencies and the states on the status of the mitigation efforts. 33 U.S.C. § 2283(d)(4)(B). 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. *Id.*

In addition, mitigation lands for Corps civil works projects must be purchased before any construction begins. 33 U.S.C. § 2283(a)(1). 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.*

Because, as noted, the Corps has issued a “report” on the Project – the Draft and Final SEISs – WRDA requires the Corps to mitigate the adverse impacts of the Project,¹⁶ including all losses to fish and wildlife, 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 ensure this happens, the Corps is prohibited from selecting a “project alternative in any report” unless that report includes a “specific plan to mitigate fish and wildlife losses.” *Id.* Accordingly, the FSEIS must include a specific mitigation plan.

Contrary to WRDA, the FSEIS does not provide a specific plan to mitigate the adverse impacts of the Project that satisfies the requirements discussed above, including the requirement to monitor mitigation efforts until it can be demonstrated that the mitigation has been ecologically successful. Instead it simply provides a list of possible mitigation activities that “may include, but are not limited to, the following: wing dike notching, dike removal, wing dike creation using alternative designs (*e.g.*, rootless dikes), use of rock piles, dredging or material placement of sand, and other possible activities. . . . The ability to design for such habitat, including the associated costs, may need to be carefully considered within the context of the impacts. Impacts will be mitigated to the extent practicable.” AR 1256.

The FSEIS asserts, incorrectly, that the Corps need not carry out the foregoing required mitigation of the Project’s impacts on ecological resources including fish and wildlife if funds are not available through the Project. AR 1259. Not so. As discussed, mitigation is required as a matter of law for the Project. Additionally, mitigation is already required as a matter of law for

¹⁶ As noted above, WRDA requires the Corps to implement mitigation, and comply with mitigation planning requirements, for any project for which the Corps “select[s] a project alternative in any report.” 33 U.S.C. § 2283(d). Thus, a mitigation plan was required for the Project as a matter of law upon issuance of the Draft SEIS, and mitigation is required as a matter of law for components of the Regulating Works Project that are proceeding under environmental assessments, which are likewise “reports” triggering this mitigation requirement.

any elements of the Project being carried out pursuant to “any report” where a project alternative was selected. 33 U.S.C. § 2283(d). The Corps must mitigate the adverse impacts of the Project, and the cost of carrying out that mitigation is a Project cost. 33 U.S.C. § 2283(c); Corps’ Planning Guidance Notebook, Corps’ Engineer Regulation (“ER”) 1105-2-100 (22 Apr 2000) at 2-5. Mitigation costs are a project cost and allocated to the appropriate project purpose (the purpose requiring the mitigation) and cost-shared accordingly. Cost-shared mitigation costs include the costs of lands, easements, rights-of-way, and relocations needed to implement the mitigation. *Id.*

Second, the Corps violated WRDA’s mandate that “[t]he Chief of Engineers *shall* consider any recommendations contained in the [IEPR] report and *prepare a written response* for any recommendations adopted or not adopted.” 33 U.S.C. § 2343(f)(1) (emphasis added). As noted on page 33, *supra*, the Corps failed to make the required “written response.” AR 1002-1008, 1083-1084, 1122-1125, 1132, 1208-1229, 1364-1367, 1511-1512, 2068-2071, 2073-2074.

Because the Corps violated these WRDA mandates, its approval must be set aside.

III. THE CORPS VIOLATED THE FISH AND WILDLIFE COORDINATION ACT.

The Fish and Wildlife Coordination Act (“FWCA”), 16 U.S.C. section 661 et seq., applies to all water resources projects and requires the Corps to consult with FWS before approving and implementing such projects. FWCA directs in pertinent part that:

- (1) “[W]ildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs . . .” [16 U.S.C. § 661.]
- (2) Consultation shall be carried out for “the purpose of determining the possible damage to wildlife resources and for the purpose of determining means and measures that should be adopted to prevent the loss of or damage to such wildlife resources, as well as to provide concurrently for the development and improvement of such resources.” [16 U.S.C. § 662(b).]
- (3) Recommendations arising from consultation “shall be made an integral part of any report prepared or submitted by any agency of the Federal Government.” [16 U.S.C. § 662(b).]

The Corps contends that the Project is exempt from this formal consultation requirement under the following provision of section 662 exempting

any project or unit thereof authorized before the date of enactment of the Fish and

Wildlife Coordination Act [in 1958] if the construction of the particular project or unit thereof has been substantially completed. A project or unit thereof shall be considered to be substantially completed when sixty percent or more of the estimated construction cost has been obligated for expenditure.

16 U.S.C. §662(g).

The Corps' 2017 FSEIS claims that this exemption applies to the Project on the grounds that 60 percent or more of the Project's cost was obligated as of 1958. AR 1177. However, (1) the FWCA, (2) the Corps' own engineer regulations, and (3) FWS's FWCA Handbook all make clear that the section 662(g) exemption does not apply when significant changes are made to the project *after* 1958, as here.

First, the FWCA states that the formal FWCA consultation report:

“shall be made an integral part of any report prepared or submitted by any agency of the Federal Government responsible for engineering surveys and construction of such projects when such reports are presented to the Congress or to any agency or person having the authority or the power, by administrative action or otherwise, (1) to authorize the construction of water-resource development projects or (2) to approve a report on the *modification or supplementation of plans for previously authorized projects, to which sections 661 to 666c of this title apply.*” [16 U.S.C. 662(b) (emphasis added).]

Second, the Corps' engineer regulations likewise require formal FWCA consultation for post-authorization activities that modify or supplement a previously authorized plan:

- (1) “FWCA Applicability. *The FWCA applies to post-authorization activities if the activity meets the threshold test outlined in Section 2(a) of the FWCA, i.e., the authorized plan is modified or supplemented, and these changes relate to Federal construction which would divert, modify, impound, or otherwise control a waterway.*
- (2) Section 2(b) Report and Section 2(e) Funding. Sections 2(b) and (e) of the FWCA normally apply during post-authorization activities for Federal projects where the Section 2(a) threshold test has been met.
 - (a) Mandatory Compliance. Section 2(b) of the FWCA is mandatory when changes to the authorized plan meet the Section 2(a) threshold test and the proposed changes to the authorized plan or project require a report to Congress, or the approval of the Chief of Engineers, or both.”

ER 1105-2-100 (April 22, 2000) at C-22 (emphasis added).¹⁷ The “Discretionary Compliance

¹⁷ The “Section 2(a) threshold test” referred to in these regulations would appear to refer to 16 U.S.C. § 662(a), which states in pertinent part that formal consultation is required: “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or

Determination Criteria” established in the Corps’ Engineer Regulation also clearly apply to the Regulating Works Project FSEIS such that formal FWCA consultation is required. *See* ER 1105-2-100 at C-22 to C-23.

Third, FWS’s FWCA Handbook applies the same test:

“The only class of projects exempted from the provisions of Section 2 of the FWCA, then, are those on which project construction was 60 percent or more completed (based on obligation of estimated construction costs) on August 12, 1958. *Projects that are later modified or supplemented thus fall under the provisions of Section 2 of the FWCA, even if the original project modified or supplemented was more than 60 percent constructed at the time of enactment of the FWCA.*”¹⁸

The Project authorized in 1927 was substantially modified in 1934, 1965, and 1974. AR 2303-2309. For purposes of the FWCA, the relevant changes are those after 1958:

- (1) In 1965, the Corps determined it was required to maintain the navigation channel year round. Prior to 1965, the Corps had not been required to maintain navigation from mid-December to mid-February, when the lowest flows typically occurred.
- (2) In 1974, the Corps adopted a plan to contract the channel width between the riverside toe of a river training structure and the opposite bank or opposite riverside toe of a river training structure to 1500 feet upon the recommendation of the District Engineer. At the same time, “because of the shift from pile dikes to stone dikes as well as the increase in linear feet of dike and revetment work . . . during the 1960’s and early 1970’s, . . . *the estimated percentage completion of the Regulating Works Project was reduced below 60% to 48% in the 1973 Chief of Engineers Annual Report.*” [AR 2307-2311 (emphasis added)]

Thus, the FWCA, the Corps’ own engineer regulations, and the FWS’ FWCA Handbook all interpret the law in the same way: the FWCA consultation requirement applies to any water resources project such as the subject Regulating Works Project if significant changes are made to the project after 1958, as is clearly the case here. Indeed, as explained above, the “estimated percentage completion of the Regulating Works Project was reduced *below 60% to 48% in the 1973 Chief of Engineers Annual Report.*” AR 2307-2311 (emphasis added).

agency of the United States” 16 U.S.C. § 662(a).

¹⁸ U.S. Fish and Wildlife Service, Water Resources Development Under the Fish and Wildlife Coordination Act (November 2004) at I-38 (<https://www.fws.gov/ecological-services/es-library/pdfs/fwca.pdf>, visited Feb. 5, 2021 (emphasis added)).

In contrast to the FWCA's plain language and the consistent and authoritative agency interpretations of the FWCA consultation requirement, the FSEIS fails to provide any information or supporting evidence that the FWCA's 60 percent spending threshold for exemption from the required consultation has been met. In fact, the FSEIS does not provide any information on either historic or anticipated spending for the Project, or on the original authorized total Project cost or the currently projected total Project cost. Moreover, since the Corps appears to interpret the Project as a perpetual authority, it would be impossible under its interpretation to ever determine a final spending amount and therefore impossible to determine when 60 percent of that amount has been spent.

The FSEIS' claim that this cost exemption is to be determined as of a later, moving target such as 2016, conflicts with previous Corps decisions. In 1984, the Corps' Chief of Engineers stated that for an ongoing project, the FWCA cost exemption must be measured as of FWCA's enactment in 1958: "The [FWCA] of 1958 is applicable to any project where less than 60 percent of the estimated construction cost had been obligated as of 12 August 1958, the date of enactment." AR 41606.

The Corps reached the same conclusion in 1980: "The 1912 project, as amended, has been determined to have been less than 60 percent complete as of 12 August 1958 and is eligible under the Coordination Act." SAR 542.

In 2011, the Government Accountability Office likewise stated that the FWCA applies:

"The Corps' authority to use river training structures in the Mississippi River comes from several Rivers and Harbors Acts, which collectively require the Corps to maintain a 9-foot navigation channel in the river, and several Water Resources Development Acts, which also authorize projects in the Corps' civil works program. In using these structures, the Corps must comply with federal environmental laws such as the National Environmental Policy Act (NEPA), the Clean Water Act (CWA), and the Fish and Wildlife Coordination Act, as well as applicable state requirements." [AR 19026, 19044, 19048]

The Corps did not object to, and thus waived any disagreement with, this finding. Hence the exemption does not apply.

The scope of the Project, its significant impacts, and the importance of the Mississippi

River to fish and wildlife conservation, all clearly warrant preparation of a FWCA report.

Because the Corps failed to obtain the required FWCA report from the FWS before approving the Project, the Corps' approval of the Project violates the Act.

1V. THE CORPS VIOLATED THE SCOPE OF THE PROJECT'S AUTHORIZATION BY THE 1927 RIVERS AND HARBORS ACT

The Corps' authority to construct and operate a project is limited by its authorizing legislation, which typically adopts the recommendations (and any limitations) set forth in the project's Chief of Engineers Report. The Project was authorized by the R&H Act of 1927 (ch. 47, 44 Stats. 1010), which stated: "The existing project is hereby modified in accordance with the recommendations submitted by the Chief of Engineers . . . dated December 17, 1926. . . ."

The 1926 Chief of Engineers Report established the following explicit limitations on the Project:

- (1) Constriction of the channel through regulating works and revetment is limited to a conservative width of 2,500 to 2,000 feet at low water, as follows: 2,250 foot contraction at low water from River des Peres to Grays Point; 2,500 foot contraction at low water from Commerce to Commercial Point, and 2,000 foot contraction at low water from Commercial Point to Ohio River (AR 46968) (1926 Chief of Engineers Report – December 17, 1926 (69th Congress, 2d Session, Doc. No. 9) ("1926 Chief's Report") at paragraph 57); and
- (2) That after completion of regulating works, dredging be continued, as needed, to maintain a channel 9 feet deep and 300 feet wide with requisite increased width at bends: *Provided*, That dredging of channels deeper than 8 feet and wider than 200 feet be authorized only when the needs of navigation then existing are not adequately met by such 8-foot channel.

AR 46967-46968, 46974-46975 (R&H Act of 1927; 1926 Chief's Report at ¶¶ 55-57, 80, 84).

The 1926 Chief's Report explicitly rejected even narrower contractions of the river:

"The contraction to be brought about by the regulating work proposed is a conservative one. The practical result of these works will be merely narrowing the abnormally wide sections of the river to the present mean widths. The project of 1881 contemplated contraction to a width of about 2,500 feet. Through St. Louis Harbor a contraction to a low-water width of 1,500 feet to 1,800 feet has been carried out. The contraction proposed causes much less change in the original condition of the river than either the project of 1881 or the work in St. Louis Harbor. *Calling for very little change from the original condition of the river, the equilibrium of natural forces in the river will be but slightly disturbed.*" [*Id.*]

As a result, Congress established very specific limits on the Project – once the river was

contracted to a width of 2,000 to 2,500 feet (depending on location), the Corps was to maintain the navigation channel only through dredging as needed. Congress also expressly rejected more aggressive contraction plans. The Corps' unauthorized approval of the 2017 FSEIS with its 1,500 foot contraction (AR 1-6, 2309) threatens environmental harm and flood stage increases forbidden under the plan authorized by Congress at least through 2034.

The Project vastly exceeds the explicit limits of the 1927 authorization by: (1) utilizing a 1,500 contraction plan; (2) building river training structures to achieve the unauthorized 1,500 foot contraction plan; and (3) building river training structures to reduce dredging costs associated with maintaining the navigation channel even where both the authorized (2,000 to 2,500 foot) and unauthorized (1,500 foot) contraction widths have been achieved.

The FSEIS established an improper project purpose that could be met only through continued construction of training structures regardless of the degree of contraction of the river:

The long-term goal of the Project, as authorized by Congress, is to obtain and maintain a navigation channel and *reduce federal expenditures by alleviating the amount of annual maintenance dredging through the construction of regulating works.* [AR 930, 6479 (emphasis added)]

Because the Project exceeds the explicit limits of its authorization by Congress in the 1927 Rivers and Harbors Act, the Corps' approval of the Project violates the Act.

CONCLUSION

For these reasons, in approving the 2017 FSEIS and ROD, the Corps violated NEPA, WRDA, FWCA, and the R&H Act of 1927, and thus failed to proceed in the manner required by law as required by the APA. Therefore the Court should grant summary judgment to Plaintiffs.

Dated: February 15, 2021 Respectfully submitted,

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