



January 19, 2017

Resolution of the December 6, 2016 Department of Interior referral to the Council on Environmental Quality of the Environmental Impact Statement for the Army Corps of Engineers' St. Johns New Madrid Floodway Project.

On December 6, 2016, the Department of Interior (DOI) referred to the Council on Environmental Quality (CEQ) its disagreements concerning the Department of the Army Corps of Engineers' (Corps) Tentatively Selected Plan (TSP) for the St. Johns New Madrid Floodway Project, as described in a November 2014 working draft of the Corps Final Environmental Impact Statement (draft FEIS) for the project. Part 1504 of the CEQ regulations implementing the procedural provisions of the National Environmental Policy Act, 42 U.S.C. §§ 4321 *et seq.* (NEPA), provides procedures for referring to CEQ interagency disagreements concerning proposed major Federal actions that may cause unsatisfactory environmental effects. 40 CFR 1504.1. Congress authorized the project in 1954 to reduce flooding in portions of the Mississippi River floodplain of southeast Missouri. In the 2013 draft EIS, the Corps evaluates a \$161 million TSP to construct a 1,500 foot long levee, closing an opening between existing levees, install two pumping stations in the New Madrid Floodway and modify drainage ditches in the St. Johns Bayou Basin.

DOI supports the St. Johns Bayou Basin portion of the project as one that is environmentally acceptable. However, DOI has been consistently opposed to the levee construction and closure in the New Madrid Floodway because of its unacceptable levels of impacts to fish and wildlife resources and functional wetlands. Specifically, DOI asserts that the project would reduce 70,000 acres of floodplain habitat and as much as 53,566 acres of functional wetlands that provide breeding and migration habitat for 193 species of birds. DOI also asserts the project would eliminate fish access for spawning and rearing during flood events, retaining only narrow and difficult to access pathways available to fish through gated culverts, and that it is not possible to mitigate for the loss of this floodplain connection and associated spawning and nursery habitat.

The Army Corps response notes that the EIS process is not completed and that it is seeking further improvements in the project design to mitigate effects on wetland habitat for fish and wildlife resources. The Army Corps response commits to work with commenting agencies and the non-federal sponsor to ensure, before a record of decision is approved, that all impacts to

wetlands and fish and wildlife would be fully mitigated with specific measures to compensate with functionally equivalent habitat in accordance with governing laws and Federal principles for mitigation, including those of additionality, durability, and performance measurement.

The well-developed record before CEQ amply demonstrates why it has been so difficult to arrive at a plan to proceed with levee construction and installation of pumps at the south end of the New Madrid Floodway. Over the development of seven EIS documents since 1975, the Corps has worked diligently and professionally to develop alternatives and mitigation that would address the project's effects on fish, wildlife, wetlands and nearby communities. However, as demonstrated in studies, peer review, and EISs for the project, it is clear to CEQ that the effects of the proposed TSP on fish, wildlife, and wetland resources are environmentally unacceptable and cannot be adequately mitigated.

Therefore, this referral is concluded with mutual commitments by DOI and the Army Corps that if this project moves forward, they will work together, in coordination with the local project sponsor and other agencies that have participated in the EIS process, to produce a project design that is focused on providing improved flood protection of East Prairie and other communities in the project area. The agencies agree that any future work to benefit agricultural lands and provide other benefits in the New Madrid Floodway portion of the project must not cause any unacceptable and unmitigatable impacts to natural resources including the wetland functions of and Mississippi River floodplain connection to the New Madrid Floodway, must avoid and minimize remaining impacts to the maximum extent practicable, and that all remaining impacts to wetlands, floodplain connectivity, and fish and wildlife would be fully mitigated with specific measures to compensate with functionally equivalent habitat that meets established Federal standards for mitigation, including additionality, durability, and performance measurement. If the project moves forward, the Army Corps will work with commenting agencies and the non-Federal sponsor to ensure, before a record of decision is approved, that all impacts to wetland values and functions, floodplain connectivity, fish, and wildlife have been fully mitigated in accordance with the Mitigation section of this resolution, applicable law, and Federal principles for mitigation including standards of additionality, durability, and performance measurement.

I. Background

Prior to settlement, the project area included river chutes and side channels of the Mississippi River, bottomland lakes, and riverfront and bottomland hardwood forest. However, flood control and drainage projects beginning in the late 1800s and early 1900s allowed conversion of the project area from 93 percent forested to over 80 percent agricultural fields. The New Madrid Floodway is the last sizeable section of the lower Mississippi River floodplain that remains connected to the river, providing invaluable habitat for fish and wildlife. *Env'tl. Def. v. U.S. Army Corps of Eng'rs.*, 515 F. Supp.2d 69, 75 (D. D.C. 2007).

The New Madrid Floodway is an area of 130,000 acres of mostly private farmland in Missouri on which the Army Corps purchased easements in the 1930s (“perpetual flowage easements”) allowing the Corps to flood the land during emergencies. Emergency flooding of this area allows the Corps to lower the flood level in the main Mississippi River channel, is critical to flood management and levee protection plans throughout this region and to lower flood risks to nearby communities like the cities of Cairo and Metropolis, Illinois. The current configuration of levees includes a 1,500-foot opening at the lower end of the floodway that allows the river to naturally connect to its floodplain, maintain thousands of acres of wetlands and fish habitat, and provides egress for floodwaters moving south when the Floodway is activated through a designed levee breach at its northern end.

St. Johns Bayou and New Madrid Floodway work was authorized through separate actions by Congress. The project to increase flooding protection for the New Madrid Floodway was first authorized in 1954. The 1986 Water and Resources Development Act created a new authorization for the Floodway and authorized the St. Johns Bayou Basin project. The 1986 Act included the widening and straightening of approximately 144 miles of three separate channels to speed the evacuation of water within the St. John’s Bayou basin and the lower portion of the New Madrid floodway. The Act also authorized the construction of a 1,000-cubic foot per second (cfs) pumping station for the St. John’s Bayou area and a 1,500 cfs pumping station for the New Madrid floodway area to evacuate impounded floodwaters during periods of high stages on the Mississippi River. The total project cost was estimated in 2013 to be approximately \$165 million, but that has risen to \$349 million under the draft FEIS. The State of Missouri’s Department of Conservation indicated that the St. Johns Bayou and New Madrid portions of the project can be operated independently and should be evaluated independently. The 2013 draft EIS indicates that the St. Johns’s Bayou portion of the project and its environmental impacts are largely separate from those of the New Madrid portion of the project. The St. Johns Bayou portion of the project involves improvements to drainage along 23 miles of drainage channels and a new 1,000-cfs pump station at the southern end of St. Johns Bayou Basin near the Mississippi River.

Regarding the New Madrid Floodway, the proposed project would affect approximately 130,000 acres of farmlands and reduce flooding in part of this area and is expected to degrade or eliminate between 13,000 and 50,000 acres of wetlands. The project involves construction of a 1,500 ft. levee, pump stations, and associated channel modifications, effectively closing the last remaining gap in the Lower Mississippi River levee system. Four proposed gated box culverts at the southern end of the New Madrid Floodway would allow drainage through the new levee closure when the river is below floodway level. The pump would be operated to provide some seasonal inundation of wetlands and waterfowl habitat during four annual periods. With or without a project, it is expected that the majority of the area will continue as agricultural lands.

A total of seven draft and final EISs have been written for the project since 1975. With regard to the New Madrid Floodway portion of the project, all alternatives for construction involve

tradeoffs between reducing flood damages from annual or less frequent flooding to farmland in Missouri versus impacting one of the last remaining backwater wetland floodplain areas in Missouri and perceived increased flooding risk to lower income communities or those with significant minority populations in Illinois and Kentucky.

Each past Corps Chief of Engineer's study and EIS has recommended closure of the 1,500 foot opening that provides connection to the Mississippi River's floodplain and installation of pumps – none of these past proposals have moved forward. In 2007, the U.S. District Court for the District of Columbia held that several of the Corps' fish mitigation determinations "were unsupported by record evidence, and did not consistently comply with NEPA's requirement that the agency ensure the accuracy and scientific integrity of the analyses contained in its environmental impact statements." *Env'tl. Def. v. U.S. Army Corps of Eng'rs.*, 515 F. Supp.2d at 78. The court set aside the Corps' 2002 final EIS, 2006 final EIS, and 2006 Record of Decision, enjoined the Corps from proceeding with the project, and ordered the Corps to deconstruct that portion of the levee which it had already built. In response to the court's action the Corps has worked in collaboration with the agencies and interested stakeholders to develop an updated plan.

As part of the referral process, CEQ reviewed public comments submitted on the 2013 draft EIS and also received comments from the public and their elected representatives in response to the DOI referral. The comments on the 2013 draft EIS included letters from the Mayors of Cairo and Metropolis, Illinois who oppose the project because it may intensify risks of future flooding to their communities associated with any delay in activating the New Madrid Floodway. Missouri's Department of Conservation stated that "the New Madrid Floodway portion of the project should not be constructed."

II. Issues Evaluated During the Referral Process

A. Impacts to Fish and Wildlife Resources

Effects to fish and wildlife resources and to seasonally inundated wetlands are at the center of the referral from the Department of the Interior. DOI believes the environmental impacts have not been adequately characterized and would cause irretrievable losses to nationally significant fish and wildlife resources. The draft FEIS recognizes the importance of periodic overbank flooding resulting from seasonal flood events that would be adversely affected by the New Madrid Floodway portion of the project. The flood pulse is the principle driving force responsible for the existence, productivity, and interactions of the major biota in river-floodplain ecosystems. The cumulative loss of connected floodplain within the lower Mississippi River Valley places increased importance on the remaining resources that are critically important to maintaining complete and functioning bottomland hardwood, riparian, and riverine ecosystems in the lower Mississippi River Valley.

DOI states that the levee and pump operations in the New Madrid floodway would eliminate 71 percent of spring shorebird and 97 percent of fall shorebird habitat and significantly reduce spring forested wetland habitat for waterfowl. DOI believes the Habitat Evaluation Procedures, as reported by the Corps in the 2013 draft EIS underestimate fisheries' habitat value because the model excludes from consideration all habitat created by floods larger than those of a 5-year interval. DOI indicates that fish rearing habitat would be reduced by 66 percent, indicates that the proposed mitigation habitat cannot replace the types of fisheries habitat being lost, and questions analysis by the Corps that fish would be able to swim between the Mississippi River and flooded wetlands through the gravity gates and the potentially high flows going through them.

The National Wetland Inventory shows 53,556 acres of functional wetlands in the St. Johns Bayou and New Madrid Floodway basins. EPA's analysis and comments stated that there are approximately 13,376 acres of wetlands that the project would impact and that if the project is implemented it "will cause the greatest loss of wetlands in EPA Region 7's history." The Corps' analysis indicates that approximately 20,000 acres of the St. Johns Bayou Basin are flooded, on average, once every 5 years. DOI believes that the impacts of the project cannot be adequately offset and that it would result in an unprecedented loss of nationally significant fish and wildlife resources. There is no Federal policy that limits mitigation requirements for Corps-funded projects to only those areas that meet the regulatory definition of wetlands.

While Federal agencies are not in full agreement on the amount of wetlands in the New Madrid Floodway or wetland values affected by the project, CEQ was not made aware of any dispute over the area of fisheries habitat that would be affected by the project. Based upon the Corps' 2013 analysis a 10-year flood event would inundate approximately 70,749 acres just in the New Madrid Floodway, a 5-year flood event would inundate 58,990 acres, and a 2-year event would flood 33,391 acres. The draft FEIS analyzed fisheries habitat at the level of 5-year flood events, but not effects on 10-year or higher flooding levels. The portion of these flooded areas that are accessible to fish support spawning and rearing for at least 46 species of fish, but up to 86 species based on recent State of Missouri studies. Lower frequency major floods create fish rearing habitat that results in higher juvenile fish abundance and growth and Floodway fish density and fish size was much higher in a number of species after the 2011 flooding, compared to the main channel of the Mississippi River. Collectively, the habitat is important to different species during spring, fall, and winter. Portions of the habitat are important because they can provide slow-moving, nutrient rich, warm water, in contrast to flooded habitat along the main stem of the Mississippi River. Preservation of habitat within a river channel is not sufficient to ensure survival of fish that spawn in floodplains – both the floodplain and the flood cycle must be maintained.

The State of Missouri Department of Conservation has commented that the "loss of Mississippi River connectivity to the New Madrid Floodplain will result in significant impacts that cannot be addressed through mitigation" and describe this as the single most significant project feature.

Missouri indicated that the project would result in the loss of 30 percent of all the floodplains on both sides of this 125-mile stretch of the Mississippi River and the loss of 100 percent of the floodplain connected to the Mississippi River in the State of Missouri.

EPA concluded that the draft EIS does not fully account for the extent of environmental impacts resulting from the proposed project. In particular, the draft EIS fails to adequately assess the extent to which the proposed project would affect stream and wetland resources; the extent of the proposed projects secondary and cumulative impacts; potential land use changes that could result from the proposed project; and impacts associated with the loss of river connectivity. EPA gave the draft EIS a EU-2 environmentally unsatisfactory – insufficient information, in accordance with EPA’s national ratings system. The EU-2 rating “is based primarily on the EPA’s view that the proposed project may significantly degrade unique, rare, and valuable wetland resources in one of the last remaining areas of the Mississippi river floodplain where connectivity regularly occurs.”

B. Clean Water Act compliance

EPA’s comments on the draft EIS indicate that the EIS does not demonstrate how it will comply with at least two of the criteria established by Clean Water Act section 404(b)(1) guidelines. Those guidelines prohibit the discharge of dredge or fill material that will cause or contribute to significant degradation of waters, including discharges that lead to the loss of fish and wildlife habitat. EPA has advised the Corps that the project’s impacts to wetlands, fish, and wildlife would constitute significant degradation unless they can be adequately mitigated. The guidelines also prohibit the discharge of dredge or fill material where a less damaging practicable alternative is available. Both EPA and DOI have indicated that they believe there is a more practicable alternative focused on actions that reduce flooding impacts on East Prairie and focused on flood risk mitigation in the St. Johns Bayou portion of the project.

EPA has also determined that the draft EIS does not provide adequate information to demonstrate compliance with several aspects of the guidelines and that “the level of detail of the alternatives analysis and assessment of impacts is insufficient for purposes of informing a determination of compliance with these regulations given the complexity of issues, scale of the project, and the potential severity and magnitude of impacts to the aquatic ecosystems.”

C. Floodplain Management

Executive Order 11988 requires Federal agencies to recognize the significant values of floodplains and to consider the public benefits that would be realized from restoring and preserving floodplains. The Executive Order has an objective of avoidance, to the extent possible, of long and short-term adverse impacts associated with the occupancy and modification of the base floodplain and the avoidance of direct and indirect support of development in the

base floodplain wherever there is a practicable alternative. Associated guidelines direct agencies to ensure that their actions “should not endanger existing development, encourage development which would result in harm to or within the floodplain, or itself be unacceptably vulnerable to flood damage.

The draft EIS indicates that the New Madrid Floodway portion of the project would intensify agricultural development, including increasing the value of crops and farm infrastructure that would be damaged whenever the Floodway is activated. The draft EIS indicates that the number of residents living in the Floodway has likely dropped below 303 people since the 2011 floods occurred, but that over time and associated with the infrequency of flooding, more residents would return. The Army Corps has indicated that residents of the Village of Pinhook have largely abandoned that residential area and asked for their property to be purchased at Federal expense. Comments from Mayor William McDaniel of Metropolis, Illinois (approximate population of 6,400) indicate that they believe the New Madrid portion of the project would increase the risk of future flood damages to their residential and business developments and similar comments were received from the City of Cairo and a number of other communities along the Mississippi River during the Corps’ public comment period on the 2013 draft EIS. Effects of litigation on New Madrid Floodway operation, or long-term planned adjustments in the flood height at which the Floodway is operated, are beyond the scope of the Corps’ analysis on the project, but some stakeholders are concerned there could be a risk that an increase in development in the Floodway portion of the Mississippi River’s floodplain could have the effect of changing operations in some future analysis and plan and create greater risk or perception of risk for already flood-prone communities nearby. Related to the Executive Order’s objectives, the project would have both direct and indirect impacts on the occupancy of and development in the base floodplain that CEQ believes are in conflict with the purposes of and direction in Executive Order 11988. Further, CEQ believes that if certain changes to the statutes and manuals governing operations were made in response to the New Madrid Floodway portion of the project, they could have disproportionate impacts on communities like Cairo and Metropolis, Illinois, and Hickman, Kentucky that have large minority or low-income populations.

D. Economic justification

The economic analysis in the draft EIS provides the breakdown of the economic benefits and costs of the project. The principle economic benefits for the project are associated with more intensive agricultural production made possible by reduced flooding and the Corps has provided separate estimates for St. Johns and New Madrid portions of the project for the agricultural benefits associated with the project. The total project cost associated with the draft FEIS is \$349 million, up from \$165 million in the 2013 draft EIS. The independent expert peer review panel (IEPR) established for this project reviewed the 2013 draft EIS and stated that the adequacy and acceptability of the economic analysis and projections could not be determined because of a lack

of information regarding agricultural and economic modelling. The IEPR panel described problems with the economic model used, the inputs to that model, lack of information on the underlying assumptions, and a failure to provide information needed to analyze the Corps' conclusions. These include concerns around assumptions the Corps built into models that crop prices and especially yields would rise dramatically over the next 50 years while input and production costs would rise very little. CEQ has flagged concerns about the absence of analysis of increased Federal costs for crop insurance on the higher value crops proposed for planting in the Floodway. The Corps has worked to address many of the recommendations from the IEPR in the revised draft EIS, as well as reduce unacceptable impacts of the project and fully mitigate remaining unavoidable impacts. As a result the total project cost associated with the draft FEIS under referral has risen to \$349 million and the Benefit Cost Ratio (BCR) for the project has dropped to 1.4 from 2.1 in the 2013 draft EIS. Both BCR scores are well below the threshold that would typically be required for projects to clear OMB's minimum thresholds and to compete for funding with other important work pursued by the Army Corps across the nation.

E. Mitigation

Associated with the portion of the project in the New Madrid Floodway, DOI indicates that resource impacts to fisheries, wetland values and the floodplain are so significant that they cannot be adequately mitigated. In particular, because this is the last floodplain connected to the Mississippi River in Missouri and makes up approximately 30 percent of all floodplains that remain accessible in all states in this 125-mile stretch of the River, there would be a significant cumulative impact of closure of this floodplain to the River that is not possible to mitigate without opening a similar area of floodplain to access by the River elsewhere.

DOI also raised questions about the extent of mitigation and whether impacts to fish, wildlife and wetlands are fully mitigated with functionally equivalent habitat. The use of 'batture' lands between levees and the Mississippi River are one example. Batture lands provide different habitat – fast-moving, cold water – than that provided by fisheries habitat in the Floodway and it is unclear whether impacts to any resource could be mitigated with the Corps' proposed actions in batture areas. The State of Missouri objected to the use of state lands that have been held in protection for many years as mitigation and was concerned about the lack of any functional increase in habitat value associated with activities there.

The Corps has indicated that if the project moves forward, the Corps will work with DOI and other commenting agencies as well as the project sponsor to ensure, before a record of decision is approved, that all impacts to wetlands, fish and wildlife will be fully mitigated with specific measures to compensate with functionally equivalent habitat in accordance with governing laws and Federal principles for mitigation, including those of additionality, durability, and performance measurement. While the Corps has provided a comparison table of mitigation in a more recent draft FEIS, it is clear that the Corps has not found a way to fully mitigate the

wetland values and functions that would be lost, or fish and wildlife impacts of constructing any levee or water control structure in the 1,500-foot gap that further limits the natural connection of the Mississippi River to the New Madrid Floodway. These significant impacts would not be mitigated by conservation of batture lands near the Mississippi River, which provide dissimilar habitat and are occupied by a different community of fishes than is found in the Floodway. Similarly, impacts would not be mitigated by creation of habitat in excavated “borrow” areas unless flooding patterns and isolation from flooding are considered similarly both for the borrow areas and the functionally equivalent permanent water bodies for which they are the only appropriate compensation. Engineered conveyance of water and fish to hydrologically disconnected areas of the floodplain cannot replace natural connections between the River and its floodplain. In general, such measures fail to replace the unimpeded access to extensive, shallow, low energy floodplain habitats that the large river fish community has evolved to depend upon for spawning and recruitment. In addition, CEQ finds the project as designed cannot avoid constraints on the use of the New Madrid Floodway and the perpetual flowage easements acquired by the United States for their intended purpose – as assets of the United States that provide flood storage and preserve remnants of the Mississippi River floodplain and its ecosystem services.

Full mitigation would require maintaining a natural hydrologic connection to Big Oak Tree State Park (an elevation of more than 290 feet) sufficient to allow that bottomland hardwood forest community to be self-sustaining over time. Full mitigation would avoid any impacts to fish access to the New Madrid Floodway by allowing flood events of a minimum 10-year flood standard to continue so that fish can use floodplain habitat for spawning and rearing. Full mitigation would also require the advance restoration of access to a comparable area of floodplain in the vicinity of the project area to provide fish with unrestricted access to a similar quality and quantity of Mississippi River floodplain habitat for spawning and rearing of juvenile fish during all types of flood event intervals and the seasonal use of wetlands flooded by natural events for use by migratory waterfowl and shorebirds. The U.S. Fish and Wildlife Service has recommended in the Final Fish and Wildlife Coordination Act Report that a feasible option for mitigation is to remove a levee elsewhere in this section of the Mississippi River that could provide such replacement habitat for lost floodplain connectivity and associated wetlands, waterfowl and shorebird habitat, and fish spawning and nursing habitat. The Corps is not aware of any location where a levee segment could be removed and floodplains allowed to seasonably flood as a reasonable alternative for consideration in this EIS.

III. Conclusion

For the reasons stated above, unresolved issues remain concerning the environmental impacts, including environmental justice impacts and economic benefits of the proposed project, despite the development of seven EIS documents and dozens of project alternatives since 1975. The

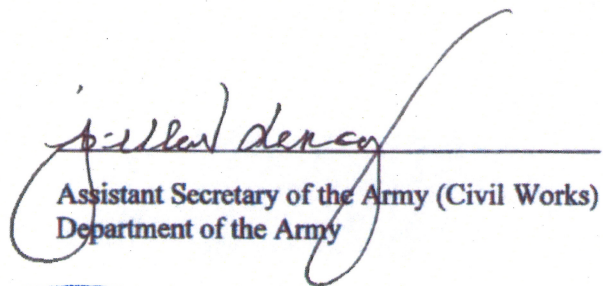
TSP includes unacceptable adverse impacts on fish spawning and nursery areas, wetlands, and migratory waterfowl and shorebirds, and the loss of irreplaceable floodplain that is nationally important and important to the State of Missouri. CEQ finds that the project has the potential to increase flooding risks in communities in Illinois and Kentucky on the east side of the Mississippi River, and the record is unable to justify the cost of the project. Continued work on this project has failed to develop acceptable alternatives that avoid the unacceptable and unmitigatable impacts to resources described above or to fully mitigate for impacts. CEQ finds that further analysis is unlikely to resolve these issues and does not warrant further public expenditures on the current design.

Based on concerns raised during a long process of reviews, and after further consultation with the agencies based on currently available information, the agencies have agreed that the New Madrid Floodway portion of the TSP described in the draft FEIS does not meet the required standard to fully mitigate for impacts. The agencies agree that if this project moves forward, they will work together, in coordination with the local project sponsor and other agencies that have participated in the EIS process, to produce a project design that is focused on providing improved flood protection from interior drainage problems that affect the town of East Prairie, Missouri and other communities in the St. Johns Bayou Basin.

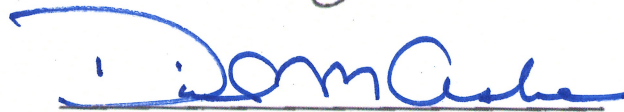
The agencies agree that any future work on flood management in the New Madrid Floodway portion of the project must not cause any unacceptable and unmitigatable impacts to natural resources, must avoid and minimize remaining impacts to the maximum extent practicable, and that all remaining impacts to wetlands, floodplain connectivity, and fish and wildlife would be fully mitigated with specific measures to compensate with functionally equivalent habitat that meets established Federal standards for mitigation, including additionality, durability, and performance measurement. If the project moves forward, the Army Corps will work with commenting agencies and the non-Federal sponsor to ensure, before a record of decision is approved, that all impacts to wetland values and functions, floodplain connectivity, fish, and wildlife have been fully mitigated in accordance with the Mitigation section of this resolution, applicable law, and Federal principles for mitigation including standards of additionality, durability, and performance measurement.



Christina J. Deane
Managing Director
Council on Environmental Quality



J. Robert Deane
Assistant Secretary of the Army (Civil Works)
Department of the Army



Don McAsh
Director, U.S. Fish and Wildlife Service
Department of the Interior