



September 5, 2018

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Major General Richard G. Kaiser
Commander, Mississippi Valley Division
U.S. Army Corps of Engineers
1400 Walnut Street
Vicksburg, MS 39180

Re: Integrated Draft Feasibility and Environmental Impact Statement; Pearl River Basin, MS, Federal Flood Risk Management Project Hinds and Rankins Counties, MS

Dear Commander Kaiser,

DIRECTORS

Barbara Barnes

Denis Bechac

Carl Britt

Benjamin Caplan

Frank Cole

Justin Gremillion

Greg Maurin

Marcia St. Martin

Zoila Osteicoechea

Randy Waesche

The Lake Pontchartrain Basin Foundation (LPBF) is a non-profit (501(c)3) located in New Orleans, LA. Established in 1989. LPBF's mission is to drive environmental sustainability and stewardship through scientific research, education, and advocacy. Our region of interest and influence is the Pontchartrain Basin, a 10,000 square mile watershed encompassing 16 Louisiana parishes. The Pearl River and its associated watershed is within our basin, which LPBF has been obligated to protect. Therefore, as stewards, we closely review any major projects affecting the region.

With the enclosed document, we present to you our comments on the above-mentioned document.

We welcome the opportunity to discuss these comments with you at any time.

Kristi Trail
Executive Director

Sincerely,

Kristi Trail, P.E.
Executive Director
kristi@saveourlake.org
504-836-2215

cc:

Rankin-Hinds Pearl River Flood & Drainage Control District
P.O. Box 320790
Flowood, MS 39232

Introduction

The Lake Pontchartrain Basin Foundation (LPBF) is a non-profit (501(c)3) located in New Orleans, LA. Established in 1989, LPBF's vision is an environmentally sustainable, prosperous, and resilient region with the mission to drive environmental sustainability and stewardship through scientific research, education, and advocacy. LPBF's region of interest and influence is the Pontchartrain Basin, a 10,000 square mile watershed encompassing 16 Louisiana parishes. The Pearl River and its associated watershed is within our basin, which LPBF has been directed to protect, and therefore, as stewards, we closely review any major projects affecting the region.

Because the devastation to the Greater New Orleans Region from Hurricane Katrina, LPBF recognizes the importance to protect the people, infrastructure and economy of the Jackson, MS area from flooding induced by rain events in the Pearl River watershed. We understand that the floods of 1979 and 1984 caused infrastructure and economic losses for the City of Jackson and minimizing future losses is desired. However, we encourage solutions to flooding that do not include new development and infrastructure in and around the floodplain, increasing the risk of future economic losses.

The lack of data analysis in the *"Integrated Draft Feasibility & Environmental Impact Statement for the Pearl River Basin, Mississippi Federal Flood Risk Management Project Hinds & Rankin Counties, MS"* ("EIS" hereafter) makes it difficult to assess the true benefits and impacts of the three proposed alternatives in controlling floodwater and economic losses to Jackson, MS. LPBF recommends further analysis that addresses the following comments, concerns, and data gaps, before any of the alternatives are allowed to proceed towards planning and design. LPBF's issues with the EIS fall into seven main categories listed below. Each of these topics will be expanded upon for the rest of these comments.

1. Alternatives analysis and choice of Tentatively Selected Plan
2. Lack of assessment of downstream impacts
3. Lack of impact analysis for the entire hydroperiod
4. Insufficient data to assess habitat impacts
5. Lack of consideration of Ross Barnett Reservoir operations to control or limit flooding
6. Species choice for Habitat Evaluation Plan
7. Mitigation plan is vague and inadequate

LPBF encourages the Rankin-Hinds Pearl River Flood and Drainage Control District to continue to consider alternatives that relocates levees and reconnects the as much of the Pearl River to its floodplain. This would re-establish the natural capacity to absorb flood water without dredging and destruction of the forested wetlands and marshes that provide other critical ecosystem services. Given the lack of important analysis to adequately assess the impacts and benefits of the Tentatively Selected Plan (TSP), the concerns outlined below, as well as the large direct impacts to jurisdictional wetlands (\approx 1,500 acres), LPBF recommends that this EIS be denied.

1. Alternative Analysis and Choice to the Tentatively Selected Plan

LPBF has concerns with the alternative analysis conducted in the EIS. These concerns fall into three main categories including; (a) The chosen non-structural alternative, (b) Effectiveness of the three alternatives in reducing flooding risk to the City of Jackson, (c) The large environmental impact of the TSP.

- (a) The non-structural alternative chosen (100% buy out of 3,100 structures) did not consider a combination of multiple techniques to reduce the cost of this alternative (the most expensive of the three alternatives analyzed). In choosing this alternative, flood proofing was not considered as a viable option because it is not recognized by the National Flood Insurance Program, and

therefore would not reduce flood insurance rates to the structures using flood proofing. LPBF does not consider this an adequate reason to discard this option. Flood proofing could prevent the need for buying out a number of these structures. Additionally, it was stated in the EIS that elevating structures was not a viable option because “of either engineering limitations of the structure or this measure being cost prohibitive.” LPBF would like an indication in the EIS of how many of the 3,100 structures, considered to be in harm’s way, could be raised preventing buy out. Therefore, LPBF would like to see an analysis detailing, of the 3,100, how many could be adequately saved in a flood event with just flood proofing, of the remaining structures, how many could reasonably be raised and, after these two options are considered, how many structures are left that need to be bought out. A combination of non-structural techniques, in addition to operation management of the Ross Barnett Reservoir (discussed later in these comments), could substantially reduce the flood risk to the City of Jackson, and therefore this should be analyzed and a benefit/cost analysis conducted.

- (b) The true effectiveness of the three alternatives for reducing flood risk to the City of Jackson is not outlined in the EIS. While there is an indication that hydrologic analysis of the chosen alternatives was conducted for a 1% exceedance event (100-year flood) and a 0.5% exceedance event (200 year flood, similar to flood of 1979), there are no results presented in the EIS that provides concrete numbers of flood risk reduction to the City of Jackson with the different alternatives in place. For the three alternatives (buy out, levee plan, lake plan) how many structures, of the 3,100 in jeopardy, would be “saved” during these rain events? The EIS needs to provide analysis of what percentage of these structures would not flood under each alternative. It is hard to assess the efficacy of this project without this critical information. The purpose of this project is to improve flood protection for the City of Jackson, but the data provided gives no indication to what degree the three alternatives will provide that protection.
- (c) The Tentatively Selected Plan (TSP), called “Alternative C” or the “Channel Improvements Alternative” has a large environmental impact to both terrestrial and aquatic environments. Under this alternative, 2,848 acres are impacted. Of this impact area, 1,498.59 acres are considered wetlands, of which 1,167.35 are forested wetlands. Louisiana and the broader scientific community has learned the intrinsic value of wetlands, for water quality, flood risk reduction, habitat, recreation, and aesthetics. Losses of forested wetlands are especially hard to compensate because of the time it takes to achieve a functioning closed canopy forest at mitigation sites. In addition to the wetland impacts listed above, an additional 463.5 acres of “other waters of the U.S.” will be impacted, including the Pearl River main channel and associated tributaries in the project area. The TSP would destroy 1,498.59 acres of jurisdictional wetlands and 463.5 acres of associated aquatic habitat. Given this large environmental impact, LPBF finds the TSP is an unacceptable choice.

Given the inadequate consideration of non-structural alternatives, the lack of data provided to assess how the different alternatives will result in flood risk reduction for the City of Jackson, and the large environmental impact of the TSP, LPBF recommends the denial of this EIS.

2. Lack of Assessment of Downstream Impacts

LPBF is very concerned in the lack of consideration of downstream impacts in this EIS. During scoping, in 2013, LPBF and numerous other entities suggested that downstream impacts of the project would be a large concern and should be considered in the analysis, but this request was ignored (LPBF’s 2013 scoping comments are attached as Appendix 1). The TSP has the potential to substantially change

downstream flows and therefore downstream habitats. Downstream impacts need to be considered because much of the jurisdictional wetlands, including bottomland hardwoods, swamps, and marsh habitats, rely heavily on Pearl River flows and flooding for health. By extension this includes numerous species that rely on these environments for food, shelter, and reproduction. In addition to these terrestrial habitats, there are also aquatic habitats that are dependent on Pearl River flows, including the Pearl River channel and tributaries, but also associated ox bow lakes, ephemeral ponds, etc. These habitats, important for many fish, reptile and amphibian species, would be impacted by this project. In addition to these downstream impacts, there are numerous threatened and endangered species (many of the same species found in the project area), that rely on downstream habitats. There needs to be an assessment of the how the project will affect these species downstream as they struggle to maintain adequate population levels. Lastly, it is important to consider downstream impacts of this project at the mouth of the Pearl River and into the Rigolets, Lake Borgne, Biloxi Marshes and Mississippi Sound. At certain times of the year, the Pearl River flows represent a substantial fresh water flow to this area, as documented by LPBF in our Hydrocoast Map Series from 2012 to the present (<https://saveourlake.org/lpbf-programs/coastal/hydrocoast-maps/>). The analysis in the EIS does not investigate the impacts of the TSP to areas important for the oyster industries in both Louisiana and Mississippi. Potential impact of the TSP to oyster production needs to be investigated.

Altering the flow of Pearl River will subsequently alter the determination of established Total Maximum Daily Load (TMDL) for the Pearl River. Mississippi's Section 303(d) List of Impaired Water Bodies identifies impaired water bodies and establishes a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of the water bodies. Various subsegments of the Pearl River have had TMDLs established for mercury, pathogens, and pH. Restricting flows in the watershed reduces the assimilative capacity of the river, and therefore reduces the available Waste Load Allocation (WLA) of point source dischargers. This can have a tremendous economic impact on sanitary wastewater treatment facilities and industrial dischargers alike, downstream.

Downstream impacts should also be evaluated in the scope of water use policy. As mentioned earlier in this section, the lower reaches of the Pearl River are home to several sensitive habitats and endangered species. Restriction of water flows as proposed by this project could potentially set off decades-long litigation, as it did with the "Tri-State Water Dispute", where Florida, Alabama, Georgia and the US Army Corps of Engineers have been locked in court litigation since 1990. The Lake Lanier project was authorized by Congress, and each of the three states are entitled to an equal portion of the water flow from the Chattahoochee River. Each state has different water laws governing state policy, that is Riparian and Statute policies, governing its use for water users. The water flows are regulated to support a variety of uses by states downriver, including preservation of marine life under the Endangered Species Act, and support for major seafood industries. However, the Lake Lanier project restricts flow to downriver states in support of potable water for the City of Atlanta. The EIS does little to address the water use or water quality of the proposed project for the entire length of the Pearl River Basin, nor address potential concerns between the differences in water use policy between neighboring states of Louisiana and Mississippi.

Without any assessment of how this project could potentially affect downstream habitats, species, and industries, this EIS should be denied.

3. Lack of Impact Analysis for the Entire Hydroperiod

LPBF is very disappointed in the lack of consideration of the entire hydroperiod in this EIS. During scoping, in 2013, LPBF suggested that alteration to the entire hydroperiod (not just low flows), especially to downstream habitats, would be a very important consideration, but this request was ignored (LPBF's 2013 scoping comments are attached as Appendix 1). Currently, the EIS only addresses minimum low

flows in, and immediately below, the project area. Maintaining minimum low flows is a concern, especially for TMDL considerations. However, the entire hydroperiod, including the timing of floods and low water; volume of water; depth, frequency, and duration of flooding; and connectivity to surrounding habitats, is of the utmost importance to the health of the forested wetlands in the Pearl River watershed. The entire hydroperiod needs to be considered both in the project area and downstream of the project to the mouth of the Pearl River. Both the Bogue Chitto National Wildlife Refuge and the Pearl River Wildlife Management Area fall in the Pearl River Basin and encompass thousands of acres of bottomland hardwood and swamp forest. Both of these wetland forest types require periodic flooding to maintain forest health. From 1995 to 2018, the Pearl River gauge at highway 59 (USGS 02492600) flooded its banks (over 16.5 feet) in fourteen of the 24 years and reached flood stage (14 feet) in all 24 years. The Pearl River flood cycle results in the flooding the higher elevation bottomland hardwood forests periodically and the lower elevation swamps and sloughs in most years. Part of the reason that the Pearl River Basin forests remain healthy and thriving, including swamp that is regenerating (unlike many other areas on the coast), is because it experiences a somewhat natural flooding regime. The potential for a substantial alteration to this flooding regime needs to be analyzed. Lastly, as mentioned above, in the downstream impacts section, alterations to the hydroperiod could also impact the important oyster industries in Louisiana and Mississippi. The timing and amount of freshwater flows from the Pearl River could be important to oyster productivity, and therefore should be analyzed.

The paucity of analysis of the impact of the TSP on the downstream hydroperiod and associated habitats makes it difficult to assess the true impact of this project. Therefore, the EIS should be denied.

4. Insufficient data to assess habitat impacts

There are numerous instances in the EIS where there is insufficient data presented or cited to reach the stated conclusions. For endangered and threatened species population statistics there is a lot of speculation about current populations (or lack thereof) in the project area. For multiple species, it is mentioned that there are “no known occurrences” but there is no indication of when the last time an effort was made to study the population in the area and whether or not there was an effort made to update these data. Where data did exist (ringed sawback turtle) it showed an important population in the project area. In general there was a lack of data cited for recent population numbers (ten years or newer), to justify the conclusion of a low TSP impact on these species.

In the hydraulic analysis, no citation of where the cross-section geometry used in the modeling came from or what year it was collected could be located. Additionally, a 14-year difference in aerial photography was used to assess changes in planform geometry (1996 – 2010, only used available Google Earth photography). During this time period, there was little change in the channel geometry. However, 14 years is a relatively short time period for hydrogeomorphic processes and older aerial photography should have been viewed. Secondly, the Ross Barnett Reservoir was constructed in 1960. One would assume that there was some impact to the planform channel geometry after it was installed, therefore, it is important that older photography (readily available from USGS, USDA or other sources) is analyzed. The changes observed downstream of the Ross Barnett Reservoir after its installation could inform the changes that may be observed downstream of the TSP project. Lastly, in the sediment transport analysis, it is stated that there will be sediment issues, but they do not seem unmanageable and will be addressed in a sediment management plan, developed during the engineering and design phase of this project. The potential sediment issues are not clearly stated or discussed. Additionally, any sediment management plan should be included in this EIS so that it can be subjected to public comment.

The water quality modeling is based on a wholly inadequate data set. According to the authors of this document, there was not sufficient water quality data available for the project area, and those data

that were available were sporadic. Therefore, an effort was made to collect water quality data in order to develop a model that would allow for comparison of current water quality conditions to those after construction of the TSP. Data was collected on two sampling trips in July of 2014. It is stated that sampling at this time of year represents the “worst case scenario” for water quality because the river is at low flow which increases the likelihood of high water temperatures and low dissolved oxygen. An entire model was developed from these data, and then used to compare current water quality conditions to conditions when the TSP is in place for July. By the authors’ own admission, “conditions were drier than normal during this study.” Therefore, the water quality modeling is based on one month of data collection during an abnormal year. Water quality modeling should be based on year-round data collection and should incorporate data from multiple years to ensure that modeling is not based on a year that is a climactic anomaly or outlier. Water quality should, at a minimum, also be sampled during rain events that cause runoff in the watershed, especially in an urbanized region (62.2% of the project area is urbanized). LPBF’s years of water quality sampling around Lake Pontchartrain indicates that it is during large rain events that water quality is temporarily compromised (<https://saveourlake.org/lpbf-programs/water-quality/weekly-data-report/>). Considering that the TSP is the creation of a lake that will receive rain induced runoff, urbanization around the lake is expected to increase, and the lake is meant to be a recreational area, assessing future water quality impacts year-round becomes critically important. The water quality data presented in the EIS, and the model developed, calibrated to this data, which is not a good fit in many cases, does nothing to inform water quality impacts of the TSP.

There are numerous cases where a survey or study is mentioned but no references provided for that data collection. In the EIS, if this data or survey is cited somewhere in an appendix, then the appendix should be cited. However, there are multiple occasion where data citations could not be located anywhere in the main document or any of the appendices. It is important that the public can verify that decisions are made using both the best available science and up to date literature. The public needs to be able to review data sources, and literature review sources, to ascertain if those data were cited properly and that the full body of literature was reviewed in regards to specific topics. Without this information, the public cannot know if data were properly applied and interpreted, and verify that acceptable and logical conclusions were reached. There are also occasions when new data could easily have been collected to supplement historic data and fill data gaps to ensure decision making based on the best available science, which was not done. For a project with magnitude of environmental impacts like the TSP, it is even more critical that proper habitat and imperiled organism population scientific data is up-to-date and applicable to current conditions. A list of some of the instances of lack of data or lack of data citation can be found in Appendix 2 at the end of these comments.

The lack of up-to-date imperiled species population statistics, inadequate water quality modeling, and missing important data citations makes it difficult to assess the true impact of the TSP, therefore, this EIS should be denied.

5. Lack of consideration of Ross Barnett Reservoir operations to control or limit flooding

In the EIS, there is no discussion regarding the use of the Ross Barnett Reservoir to aid in flood control, either under current conditions or with the TSP in place. In the EIS, it is stated that 95% (pg.139) or 98% (pg.168) of the watershed that drains into the project area, drains into the Ross Barnett Reservoir. Therefore, only 5% to 2 % of the non-point source runoff enters the project area below the reservoir. If the majority of the runoff from rain events ends up in the reservoir, then it would seem that the majority of the flood potential for the City of Jackson is from operation of the Ross Barnett Reservoir. Reservoir operations need to be considered under current conditions and if the TSP is in place, making communication with the operators imperative regardless of future outcomes. The EIS also

mentioned that flooding during the 1979 flood would have been worse had it not been for some effort by the reservoir operators to lower down stream flow, decreasing the flow from 160,000 cfs entering the reservoir to 128,000 cfs at Jackson, decreasing the flow by 32,000. LPBF would like an analysis of how operations of the Ross Barnett Reservoir could minimize or prevent flooding in Jackson, MS, under a variety of exceedance scenarios. This is important information needed to assess whether any of the alternatives are needed, or whether a majority of the flooding could be limited by effective reservoir operations. Minimal remaining at-risk structures could either be bought out or protected with a levee, greatly decreasing the costs of flood control to the City of Jackson.

The lack of analysis of how Ross Barnett Reservoir operations will impact the City of Jackson during a variety of rain event scenarios, considering that most of the regional run-off enters the reservoir, makes it difficult to ascertain if any of the alternatives are required. Until proper communication channels are developed with the reservoir operators and analysis performed to inform operations for flood control (whilst maintaining the water supply), this EIS should be denied.

6. Species choice for Habitat Evaluation Plan

The species chosen for the Habitat Evaluation Plan, especially the bird and fish species, seem to be generalists and not good indicators of the environmental impacts from 1,500 acres of wetland habitat loss and 463 acres of riverine or tributary habitat loss. The fish species chosen seem to be either generalists or, according to the life history descriptions in the EIS, species that prefer lake habitats. Data cited in the Habitat Evaluation Plan states that there was higher species richness below the Ross Barnett Reservoir in the riverine habitat versus above the reservoir in the lacustrine habitat, and that riverine species become rare or expatriated in the reservoir. Therefore, the TSP will result in another 10-mile stretch on the Pearl River that minimally supports riverine fish species. The bird species chosen for this analysis also tend to be generalists and therefore, the loss of substantial acreage of bottomland hardwood forests would not specifically influence these species or the HSIs used to determine impacts. Species that are habitat specialists to bottomland hardwood and are species of conservation concern that could be impacted by the TSP are the little blue heron (*Egretta caerulea*), swallow-tailed kite (*Elanoides forficatus*), red-headed woodpecker (*Melanerpes erythrocephalus*), wood thrush (*Hylocichla mustelina*), prothonotary warbler (*Protonotaria citrea*), Kentucky warbler (*Geothlypis formosa*), Swainson's warbler (*Limnothlypis swainsonii*), painted bunting (*Passerina ciris*) and the rusty blackbird (*Euphagus carolinus*). The impact to these species with the TSP in place should be investigated. In general, species should be evaluated for project impacts that rely heavily on the types of habitats with the largest impact, in this case, the bottomland hardwood forest. Additionally, there are no larger mammals included in this study. Large mammals often rely on larger, intact, tracts of forest for their habitat. The area that is slated to be destroyed in the TSP is a large tract of forest that abuts the Pearl River, which could provide some critical habitat for larger mammals. The impact of this project to large mammals (e.g. deer, Louisiana black bear) should be studied and considered. Currently, the largest terrestrial animal that was considered, that is not a bird species, was the swamp rabbit.

LPBF has concerns with the depth of investigation into rare, threatened, and endangered species in the project area, and impacts to these species downstream of the project. The EIS does go into some detail about federally threatened or endangered species in the project area. However, there was no consideration of impacts to these, or other threatened or endangered species, downstream of the project area. Additionally, there is no mention of rare, threatened or endangered plant species in the project area or downstream. If rare plant species were investigated and none were found in the project area, this should be mentioned. In addition to federally listed species, there are species of special concern as designated by the State of Mississippi in both Rankin and Hinds counties. These species of both plants and animals, listed as critically imperiled (S1) or imperiled (S2) by the Mississippi Natural

Heritage Program (<https://www.mdwfp.com/museum/seek-study/heritage-program/>), should be considered in the EIS, including a determination of whether these species occur in the project area, and if they do occur, a determination of the impact of the project to these species. Lastly, the same consideration should be given to downstream impacts to these rare species, including plant and animal species listed a critically imperiled (S1) and imperiled (S2) by the Louisiana Natural Heritage Program (<http://www.wlf.louisiana.gov/wildlife/louisiana-natural-heritage-program>).

7. Mitigation plan is vague and inadequate

The mitigation plan presented in the EIS is vague, lacks any detail, and does not allow the public to be confident that the substantial impacts to bottomland hardwood forest, riverine habitat, and other wetlands will be compensated. The EIS lists three mitigation alternatives of acquisition, restoration or regeneration. Compensation acreage (mitigation ratio) is provided for the three mitigation types but there is no description of how these acreage numbers were calculated, what formula or methodology was used to come with these numbers. Since the plan is so vague, no conclusions could be reached for the efficacy of the mitigation types proposed. For the acquisition alternative, which, according to the EIS requires 31,294 of acquisition to compensate for habitat losses, there is no discussion of whether or not there is the possibility of acquiring this acreage of bottomland hardwood forest in the Pearl River watershed. This is a substantial amount of bottomland hardwood acreage that would need to be located. The restoration and regeneration alternatives both proposed restoring agricultural land to bottomland hardwood forest. While EIS does go into some detail about planting of these lands (species, spacing, etc.) there is no mention of how hydrology will be restored to these agricultural lands to obtain the intermittent flooding hydroperiod that is required to sustain the bottomland hardwood forest habitat type. It can be quite difficult to achieve proper hydrology and these areas can often end up too wet or too dry to support the desired habitat. A proper plan of how to restore hydrology on these lands needs to be presented before this EIS can be approved.

LPBF would like to see an accounting of how the mitigation costs were calculated. Given the vagueness of the plan, and the uncertainty of what type of mitigation will be used, LPBF is skeptical that an accurate mitigation cost could be calculated at this time. An accurate cost of mitigation is critical to review in detail, as these costs were used in the calculation of the benefits/costs ratio for the different alternatives, and this ratio is used to justify the choosing of the TSP and rejection of other alternatives. If the mitigation costs are substantially higher than what is predicted in the EIS, the ratio could change substantially. Lastly, it seems that the mitigation plan really only addresses the loss of terrestrial habitat, not aquatic (riverine) habitat. In the EIS, there is a suggestion of four possibilities to mitigate for these losses (reconnecting secondary channels, managing backwater levels, protection/creation of gravel bars, and in lake weirs to increase velocity). However, these four alternatives are not mentioned as part of the mitigation plan. Therefore, it is unclear if the costs of these mitigation strategies were included in the cost of mitigation, used in calculating the benefits/costs ratio.

With the large environmental impact of the TSP and the lack of detail presented for proposed mitigation of substantial habitat losses, this EIS should be denied.

Conclusion

LPBF understands the important of flood control for the City of Jackson. As Louisianans, we have recently experienced devastating flooding from large rain events, in both March and August of 2016 and August of 2017. Losses of infrastructure and personal property is devastating to communities, and economically, a large burden. We also understand that the City of Jackson is the capital of Mississippi and that large flood event could have large consequences to necessary governmental operations. As

always, LPBF is here to provide our expertise and advice for a path forward with flood protection for the city of Jackson, whilst minimizing impacts to surrounding and downstream habitats and municipalities.

The draft EIS does not provide estimates of flood relief to the City of Jackson for the three chosen alternatives or the 13 alternatives that were discarded. The purpose of this project is flood control for the City of Jackson, and no estimates of the percentage of structures that would be saved under different rain event scenarios, under the different EIS alternatives are provided. Without this information it is impossible to make a determination about the effectiveness of the TSP in controlling flooding, and economic losses for the City of Jackson. While we find this to be the main flaw in the Draft EIS, we also feel that the analysis of impacts of the TSP was not based on the most up-to date or best available science, which is of critical importance to make the best policy decisions, especially for a project with large magnitude, and land-scape scale environmental impacts, like the TSP described in this EIS.

At this time, with the lack of information provided, LPBF cannot support this project and recommends the rejection of this EIS. LPBF encourages the Rankin-Hinds Pearl River Flood and Drainage Control District to continue to consider alternatives that relocates levees and reconnects as much of the floodplain back to Pearl River. This will restore the natural capacity of the watershed to absorb floodwaters without dredging and destruction of wetlands that provide other critical ecosystem services.

Sincerely,



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CC:

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Dr. John Lopez, Director, Coast and Community Program
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Appendix 1:
LPBF 2013 Scoping Comments



To: Rankin-Hinds Pearl River Flood and Drainage Control District

Via email: RankinHinds@gmail.com

P.O. Office Box 154

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RankinHinds@gmail.com

From: John Lopez and Theryn Henkel

Lake Pontchartrain Basin Foundation

2045 Lakeshore Drive

CERM Building Ste. 339

New Orleans, LA 70122

RE: **Comments Submitted on the Preliminary Feasibility Study and Draft Environmental Impact Statement for Pearl River Basin**

Date: **November 29, 2013**

The Lake Pontchartrain Basin Foundation's mission is to be the public's independent voice on environmental issues in the Pontchartrain Basin. Therefore parts, of the Pearl River Basin that fall in Louisiana fall under the purview of the Lake Pontchartrain Basin Foundation, including the natural areas of Bogue Chitto National Wildlife Refuge and the Pearl River Wildlife Management Area and any part of the Pearl River Basin that occurs in Louisiana but not in those preserves. Below we outline recommendations of items that we strongly believe should be included in the Draft Feasibility and Environmental Impact Study of the Pearl River Watershed. Recommendations are made on defining the study area for the EIS, on the proposed alternatives and on ecological analysis that should be included in the study.

Individuals from the Lake Pontchartrain Basin Foundation attended the public meetings offered in Picayune, Mississippi on October 29 and in St. Tammany Parish on November 20. At these meetings, in both the information presented and in the literature that was handed out, the study area was indicated as an oval encompassing the municipalities of Jackson, Pearl and Flowood. We feel that this definition of the study area is very vague and does encompass the extent that is needed to adequately comply with NEPA requirements. Under the CEQ NEPA regulations, Part 1502, Section 1502.15 – Affected Environment, NEPA regulations clearly state that “The environmental impact statement shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration.” Under NEPA regulation it is required to define the study area accurately and completely. In this study, the study area should be defined, at a minimum, as the Pearl River watershed boundaries from the Ross Barnett Reservoir to the Biloxi Marshes, although consideration further

upstream may be needed. The proposed project and alternatives do not affect just the river channel and flow dynamics but the health and ecology of the surrounding forest ecosystem, therefore entire watershed must be considered since there are important flooding dynamics downstream of the project (which will be discussed in more detail later in these comments). In addition, consideration past the mouth of the river must be made as the freshwater and nutrients that enter Mississippi Sound are important to the Biloxi Marshes as well as organisms and industries that use those marshes, such as oysters and shrimp.

The Lake Pontchartrain Basin foundation feels that the alternatives under consideration are inadequate, both in that some of the listed alternatives are incomplete and that there are some alternatives that should be included in the analysis that are currently not being considered. First, the only nonstructural options listed under that alternative are to buy out properties that are in flood prone areas and relocate the owners/residents of those properties. We believe that raising structures should also be considered under the nonstructural alternative. Raising structures so that the main living or business areas are high off the ground can help to avoid destruction by flood waters under many flooding scenarios. The raising of structures is a common nonstructural technique used to protect citizens inside and outside of the hurricane protection levees in Louisiana and is currently being considered as a valid alternative by the U.S Army Corps of Engineers for St. James Parish under the West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction Study. Raising structures must be considered as an important aspect of the nonstructural alternative as it can be economically more feasible than buying out residents and more acceptable to residents than forced migration.

An alternative that includes proper management of the Ross Barnett Reservoir should be included in the EIS and receive strong consideration. At the public meeting held in St. Tammany Parish on November 20, members of the Rankin-Hinds Pearl River Flood and Drainage Control District (RHPRFDCCD) indicated that the main source of flooding in Jackson and surrounding municipalities was from water release from the Ross Barnett Reservoir. The same members also indicated that politically, it was very difficult to work with The Pearl River Valley Water Supply District (PRVWSD) to manage the reservoir in a way that does not affect downstream communities and that they opened it "whenever they wanted." If the source of flooding to Jackson and surrounding municipalities is indeed the reservoir, then we believe that working with the PRVWSD to come up with a satisfactory management program should be a strong alternative. If the management of the reservoir could be improved, then this alternative would represent a very fiscally responsible alternative, as no structures would need to be built. We are also deeply concerned that if there is no current relationship with the managers of the reservoir and one cannot be established, then the management of the One Lake alternative will not be effective because management of the Ross Barnett Reservoir will be needed to adequately maintain lake water levels and proper flows downstream. A partnership between the RHPRFDCCD and PRVWSD is essential to the success of any of the proposed alternatives making this the highest priority and perhaps, the only alternative needed.

Lastly, an alternative that should be considered in conjunction with any other alternative is for the Jackson, Flowood and Pearl municipalities to devise an Urban Water Plan in which innovations in engineering, planning and design are used to manage water resources and convert them into assets. Under the Living With Water planning (<http://livingwithwater.com/>), storm water is managed by slowing the flow of water, storing the water in place, storing rainfall for future uses and using local ecology to manage water resources are all accomplished through innovative techniques in urban and whole system storm water and ground water management. While we understand that using these principles would not solve the entirety of the flooding problems in the Jackson area, we believe they should be considered as part of any of the alternatives considered, in order to reduce the potential and severity of flooding from large rain events and the Pearl River.

Both the Bogue Chitto National Wildlife Refuge and the Pearl River Wildlife Management Area fall in the Pearl River Basin and encompass hundreds of acres of bottomland hardwood and swamp forest. Both of these wetland forest types require periodic flooding to maintain forest health. From 1995 to 2012, the Pearl River at highway 59 flooded its banks (over 16.5 feet) in ten of the years and reached flood stage (14 feet) in all years, flooding the higher elevation bottomland hardwood forests periodically and the lower elevation swamps and sloughs in most years. Part of the reason that the Pearl River Basin forests remain healthy and thriving, including swamp that is regenerating (unlike many other areas on the coast), is because it experiences a somewhat natural flooding regime. Because the hydroperiod is very important to the health of the forests in the Pearl River Basin, The Lake Pontchartrain Basin Foundation is deeply concerned about the possible changes in hydroperiod (not just water quantity) with the construction of the proposed One Lake project, one of the alternatives being considered in Draft EIS. Therefore, we would like to see detailed analysis of the potential changes to the hydroperiod downstream of the proposed project area, including depth, duration and frequency of flooding into the two natural areas and surrounding forests. Also, the downstream effects need to be assessed not just immediately downstream of the project but all the way to the mouth of the Pearl River and into the Mississippi Sound.

Sediment transport and deposition during floods is also important for forest health. A detailed analysis of how sediment transport will be affected by the proposed One Lake Project in conjunction with the existence of the Ross Barnett Reservoir, which already limits downstream sediment transport, is required. Any significant further limitation of downstream sediment transport would be unacceptable. The effect of the One Lake Project slowing down currents, enhancing deposition as well as the installation of an additional weir/gate/dam should be investigated. The Pearl River Delta acts to buffer storm surge into the lower Pearl River Basin. Storm surge flooding here has affected communities in both Louisiana and Mississippi. Any deterioration of wetlands due to changes in hydroperiod, salinity or sediment depletion also reduces flood protection for these communities. The potential impact of the project to enhance hurricane surge flooding must be assessed.

In the Pearl River basin, on the Bogue Chitto and the Pearl Rivers, there are two sills that were installed in the 1950's to maintain water levels in the navigation canal built in 1935 to provide navigation from Bogalusa to the West Pearl River. These sills have prevented migration of important fish species. The navigation project is defunct and has been proposed for de-authorization by the Louisiana Department of Wildlife and Fisheries. We understand that the USACE supports and encourages the de-authorization of this project, making de-authorization a reality in the near future. LDWF has indicated that they are ready to remove the sills and alter the project to block the navigation canal. Since the sills alter the water level and therefore removal will alter water levels as well, we would like to see a detailed analysis of how sill removal in conjunction with the proposed alternatives would alter downstream flows and sediment transport in the Pearl River Basin.

In addition to the downstream effects mentioned above we would also like a close analysis on the effect of this project on threatened and endangered species that live in or use the area such as, the ringed-necked turtle, gopher tortoise, inflated heel splitter mussel and the Gulf sturgeon. These species could be affected by changes in hydroperiod as well as changes in water quality. It is obvious that if the One Lake project were to move forward, there would be significant development around the lake which increases the potential for altered water quality downstream. Downstream effects of the future development should be analyzed, not just the effect of creating a lake.

In conclusion, The Lake Pontchartrain Basin Foundation is concerned with the downstream effects of this project on the Pearl River Basin. The Draft EIS for this project must contain a clearly defined, adequate study area, including the entire Pearl River Basin south of the project area. The alternatives need to be clearly laid out and should include more alternatives than are currently proposed, most importantly, the development of a management relationship with the Pearl River Valley

Water Supply District. We are also deeply concerned about the alteration of hydroperiod downstream of the project and therefore no significant alteration to the depth, duration or frequency of flooding in the bottomland hardwood and swamp forests is acceptable.

Because the impact of this project could affect residents of Louisiana adversely, and because the project location is within Mississippi for the specific benefit of Mississippi residents, it is incumbent on the project developers to avoid being parochial in their analysis, and to strive for maximum amount of transparency and consideration to residents in both states, in spite of their narrow institutional mandate to protect two counties within Mississippi. This is not just a wise course of action, but the Federal requirement that they have assumed, and must follow by their election to conduct this study through their local authority.

We are very interested in the results of the Draft EIS and look forward to reading it upon its release. We strongly encourage you to include the items discussed above. Please feel free to contact us if you have any questions.

Sincerely,

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Appendix 2:
Examples of Lack of Data Citation

Below is a list of the numerous instances found where either data or data citations are lacking. This is not meant to be a comprehensive list and some instances of this neglect may not be mentioned in this appendix.

Issues with Data Citation in Main EIS

If these data are cited in an appendix, then the appendix should be cited.

- Page 73, "Planform Geometry"; Historical photography from what two periods?
- Page 73, "Cross Sectional Area": What time periods were used for these cross sectional areas, where were they taken, where is the data.
- Page 74, "Channel Erosion": Estimated erosion rate is given but no listing of data sources used to reach this conclusion. What aerial photography was used and compared, what years? What data was used to determine sands and clays?
- Pg 74, "Tributary Inputs": what did the "limited investigation of tributaries" entail? What were the methods?
- Pg 78, Section 2.5.5.1, 2nd paragraph: Reference studies and surveys but provide no citation to any study.
- Pg 82, 1st paragraph: Where and what time of year were these bald eagle data collected, where is the data?
- Pg 84, last paragraph: What recent survey, when was it conducted, where are the data?
- Pg 85, 1st Paragraph: When and how were the field surveys conducted, where is the data?
- Pg 86, Section 2.5.9.1: What study was conducted in 2006, no reference or citation?
- Pg 170, 3rd paragraph: Where is all this data from, where is the 33% number from, how was this number calculated, where are the sources?
- Pg 175, "Alternative C": What does reviewed mean, what data was collected, how was this conclusion reached? Cite the sources.
- Pg 177, "Alternative C": What assessment was done, what model was, used, how far downstream did were impacts assessed?

Issues with Citation in Appendix D:

- Pg 2, 2nd paragraph, "no known occurrences of active nests." No data cited for this documentation or indication of whether new data was collected.
- Pg2, 3rd Paragraph, Based on what data over the past 40 years is there no known occurrences?
- Pg 3, 1st paragraph, No source cited for Madtom surveys
- Pg 3, 2nd paragraph, No sources cited for assessments
- Pg 9-10, No sources cited in description of gulf sturgeon life history
- Pg 12, Most of the population dates cited is pre-2001. What has happened in the last 17 years with is population?
- Pg 13, 2nd paragraph, Mention more recent population surveys but do not cite source
- Pg 13, No data on the extent of migration above the sills, just that they can make it past them, moving up river, therefore unknown if they can make it into the project area.
- P 14, 1st paragraph – What surveys and literature were reviewed to determine there were no sturgeon since 1984, what recent surveys have look for them, and not found them, need to cite sources?

- Pg 16, 1st paragraph, What literature and records were reviewed to determine last sighting?
- Pg 16 2nd paragraph, upstream migration is occurring past sills but no data collected on how far up river.
- Pg 17, 3rd paragraph, Mention an “aquatic resource assessment” that was completed as part of this study that did not find sturgeon, but provide no reference or data for this study.
- Pg 18, 2nd paragraph, state that there is “believed to be minimal spawning habitat,” but no data or study cited.
- Pg 26, 2nd paragraph, What literature was reviewed and survey data needs to be cited.
- Pg 32, No known occurrences of wood stork in the study area based on what studies or surveys?
- Pg 38, Refer to most recent survey data for Pearl River Darter but do not cite data or year of
- Pg 40, State that a review of all relevant literature was complete. A list of relevant scientific literature used to reach conclusions should be listed somewhere in a table by species that is was used for, not just at the end, so that the public can see what publications were used to evaluate each species.