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Re: Comments on Behalf of Atchafalaya Basinkeeper, Gulf Restoration Network, the Louisiana Crawfish Producers Association-West and Sierra Club Delta Chapter regarding the Proposed Ecological Swamp Enhancement Project (East Grand Lake) in the Atchafalaya Basin (MVN 2016-01163-CM, WQC 180312-01)

Dear Mr. Gauthier and Ms. Hill,

This comment letter is submitted on behalf of Atchafalaya Basinkeeper, Gulf Restoration Network, the Louisiana Crawfish Producers Association-West and Sierra Club Delta Chapter to the Louisiana Department of Natural Resources' ("the Applicant" or "DNR") application to the U.S. Army Corps of Engineers ("the Corps") for a permit to discharge dredge and fill material under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for its Proposed Ecological Swamp Enhancement Project (East Grand Lake) in the Atchafalaya Basin, in Iberville Parish. 33 U.S.C. §§ 403, 1344. The permit application is identified as MVN 2016-01163-CM. This letter also provides comment on DNR's application before the Louisiana Department of Environmental Quality ("DEQ") for a Water Quality Certification ("WQC") pursuant to La. R.S. 30:2074(A)(3) and Section 401 of the Clean Water Act for the aforementioned project in the Basin. The WQC application is identified as WQC 180312-01. For the reasons discussed herein, the permit and certification for the EGL project should be denied.

Atchafalaya Basinkeeper is a non-profit organization comprised of over 1,1000 members dedicated to protecting and restoring the ecosystems within the Atchafalaya Basin for future generations. **Gulf Restoration Network** is a diverse coalition of individual citizens and local, regional, and national organizations committed to uniting and empowering people to protect and restore the natural resources of the Gulf of Mexico. **Louisiana Crawfish Producers Association-West** ("LCPA") is a nonprofit organization whose purpose is to educate the public and advocate for the right to access navigable waters. Its members are commercial and recreational fishermen, hunters and nature photographers who regularly use the Atchafalaya Basin and other public waters and lands in pursuit of these interests. The members of LCPA have economic, recreational, cultural, historic, spiritual and aesthetic interests in the Basin. **Sierra Club** is a national grassroots organization whose mission it is to explore, enjoy and protect the wild places of the Earth; to practice and promote the responsible use of the Earth's

ecosystems and resources; and to educate and enlist people to protect and restore the quality of the natural and human environment.

Atchafalaya Basinkeeper, Gulf Restoration Network, the Louisiana Crawfish Producers Association–West and Sierra Club Delta Chapter reserve the right to rely on all comments to this permit application submitted by any party.

The Louisiana Department of Natural Resources, c/o Sigma Consulting Group, Inc. seeks permits and certification from the above-referenced agencies for its proposed swamp enhancement project in the Bayou Sorrel area of the Atchafalaya Basin, hereinafter referred to as the “East Grand Lake” or “EGL” project. The character of work for which the applicant seeks permits from the Corps and DEQ, as described in the March 19, 2018 Joint Public Notice, is to clear, grade, excavate, dredge, and place fill within the Atchafalaya Basin, to include Bayou Sorrel, the Gulf Intracoastal Waterway and the Florida Pipeline Canal. The work will include shaving and dredging existing spoil banks, clearing, snagging, excavation, dredging and placement of spoil in designated areas. The Notice provides that 25,535 yards of native material will be excavated and re-deposited to complete the project, and that 2.4 acres of jurisdictional wetlands will be directly impacted by clearing and conversion to open water, that approximately 8.3 acres of jurisdictional forested wetlands will be cleared and excavated to become open water, and approximately 5.8 acres of jurisdictional forested wetlands will be cleared and filled. The Permit Application concedes that the project footprint will impact 16.51 acres of wetlands. *See ENG FORM 4345*, Application for Department of the Army Permit, MVN 2016-01163-CY, Feb. 19, 2018, at 2, para. 23 (hereinafter, “EGL application”) (attached hereto as Exhibit N).

The purported purpose of the project is “to improve the north to south hydrologic flow in Bayou Sorrel during moderate river stages to improve the circulation and ecological function through the back swamp of the East Grand Lake Area of the Atchafalaya Basin.” The Notice suggests that the area that stands to benefit from the proposed activity’s “hydrologic restoration” in EGL includes “approximately 5,560 acres of swamp habitat” and that the project will “enhance and improve existing forested wetlands.” *Joint Public Notice*, March 19, 2018, *available at* http://www.mvn.usace.army.mil/Portals/56/docs/regulatory/publicnotices/2016_01163_%20PNal1.pdf?ver=2018-03-16-091140-303 (hereinafter, “Joint Public Notice”).

In response to the proposed EGL project, we respectfully request that the Corps and DEQ deny DNR’s application for a §404/10 permit and a water quality certification or, at a minimum, prepare an environmental impact statement (“EIS”) to assess the totality of impacts and availability of alternatives to the project. The EGL project presents significant threats to the health and longevity of the surrounding wetlands and the entire Atchafalaya Basin. For the myriad of reasons discussed herein, we request that the Corps and DEQ deny to permit/certify the East Grand Lake project.

I. SUMMARY

The Atchafalaya Basin is “a national treasure, a part of Louisiana’s culture, and an educational, economic and recreational asset for the public.” *See Atchafalaya Basin Floodway System, Louisiana Project, State Master Plan, April 1998, at 6-1, available at*

http://www.dnr.louisiana.gov/assets/docs/Atchafalaya_Basin/StateMasterPlan.pdf (hereinafter, "State Master Plan"). The swamps of the Atchafalaya Basin are critical to protect coastal Louisiana from Mississippi River floods. The Basin's wetlands provide some of the most important habitat for neotropical migratory birds in the Western Hemisphere and for a vast array of fishes, mammals, amphibians and other wildlife. The Basin's productive wetlands provide fishing grounds for commercial and recreational fishermen, as well as serve important cultural significance to the surrounding communities.

Threats to the sustainability, longevity and health of the Basin and its ecosystems include hydrologic impairments due to non-compliance and paltry enforcement in the Basin. However, the greatest threat is excessive sedimentation and the uneven distribution of sediments in the Basin causing rapid filling of irreplaceable swamps, lakes and bayous. In 2001, the USGS estimated that since 1932, there has been a net accretion of nearly 2.5 billion cubic meters of sediment in the Basin, which has resulted in the conversion of open water and cypress-tupelo swamps into bottomland forests. *The Atchafalaya Basin – River of Trees*, USGS 2001, available at http://www.dnr.louisiana.gov/assets/OCM/ABP/River_of_Trees_USGS_2001.pdf. (hereinafter "USGS 2001") (emphasis added). More than 70% of the Basin's swamps, lakes and bayous have already been lost as a result of human intervention and development. According to the State Master Plan, "[o]ne of the major problems facing the Corps is the rapid sedimentation – the Atchafalaya Basin Floodway System carries more than 57,000,000 cubic yards of sediment annually. Sediment deposits in the basin affect the carrying capacity of the floodway, fish and wildlife habitat, and regeneration of forests and other vegetation." *State Master Plan*, at 3-2.

The sediment threats in the Basin also impact the state of our coast, which is deprived of sediments. According to DNR, "[a]pproximately 21 percent of the total suspended load and 50 percent of sands in the Atchafalaya River are sequestered within the Atchafalaya Basin and do not reach the coast where they are needed. Ongoing rapid and detrimental sedimentation in the Atchafalaya River Basin (ARB) fills swamps and waterways, impairs water quality, and degrades habitats. Conversely, areas of the Louisiana coast outside the Atchafalaya Basin protection levees are experiencing erosion and subsidence and are in need of sediment sources for restoration projects." *FY 2017 Annual Plan, Atchafalaya Basin Program*, at 5, available at http://www.dnr.louisiana.gov/assets/OCM/ABP/2017_plan/2_4_16LOWRes2017_ABP_Plan.pdf.

Atchafalaya Basinkeeper works to protect what remains of our Basin. Basinkeeper, the Louisiana Crawfish Producers Association-West, Gulf Restoration Network and Sierra Club Delta Chapter have been working tirelessly to protect and restore the Atchafalaya Basin since before 2004.

Background Information: the Atchafalaya Basin Program

In 1996, Governor Foster named the Department of Natural Resources, along with the Corps, to serve as the lead state agency in the development and protection of the Atchafalaya Basin. In 1998, the Louisiana Legislature created the Atchafalaya Basin Program, its advisory Research and Promotion Board, and unanimously approved The State Master Plan for the Atchafalaya Basin Floodway System. The Atchafalaya Basin Program ("ABP") acts on behalf of the State to implement and manage the State Master Plan for the Basin. From 1999 to 2004, the focus of the Louisiana Department of Natural Resources' Atchafalaya Basin Program was to improve

recreational facilities in the Basin, but in 2005 the program began to focus more on water management, quality and access issues across the Basin. In 2008, to advance the transition of the Program to water resource management and access, the Legislature adopted HB 1135 (Act 606) creating the ABP annual plan process and the Technical Advisory Group (TAG) to approve water management projects proposed by the ABP. With DNR serving as the lead agency for the development of the Annual Basin Plan, the ABP Research and Promotion Board, along with the Technical Advisory Group, work to identify and approve projects for the plan.

The mission of the Atchafalaya Basin State Master Plan is to “conserve, restore, and enhance (where possible) the natural habitat and give all people the opportunity to enjoy the Atchafalaya Experience.” *State Master Plan*, at 1-1, 2-2. It was created to promote effective management of the Atchafalaya Basin with a vision for the future, one that re-orientes anthropocentric institutions “toward a stewardship approach” to the region. *Id.* at i. The State Master Plan envisioned an interagency relationship based on coordination and communication between DNR and the Corps “to an extent not previously experienced” as the primary agencies overseeing the management of the Basin. *Id.* at ii. The primary objectives outlined in the Master Plan include public access, environmental concerns, water management and recreation. The Plan acknowledged that “(t)o save the Basin, problems with water quality and sedimentation must be solved by working with the Corps of Engineers, Department of Wildlife and Fisheries, Louisiana State University, and others to monitor the results of water management features planned by the Corps with assistance from the State and implemented by the Corps.” *Id.* at 1-2.

The plan recognizes the limitations of development in the Basin, particularly in light of concerns regarding varying water levels, navigation, public access and sedimentation. *State Master Plan*, at 3-7, 3-8. Recognizing that the floodway system in the Basin must be capable of carrying 1,500,000 cubic feet per minute of diverted flow through the MR&T project, the plan emphasizes that developments “must be limited to facilities which do not affect the carrying capacity.” *Id.* at 3-7. Likewise, the plan acknowledges that the “long-term use or enjoyment in many areas may be limited by build-up of sediments which may eliminate water access and which changes the character of trees and vegetation.” *Id.* at 3-8.

The 2010 Annual Basin Plan’s Project List included a project entitled “East Grand Lake/Flat Lake/Upper Belle River WMU Modifications,” describing the need to development a plan to address water quality and sedimentation in the East Grand Lake area through modification and sediment inputs. *Id.* at 16, 18. The need for the project initially came from recognizing the degradation of this area “due to water movement being blocked by sediment and spoil deposition, thereby causing low oxygen levels and loss of habitat.” *Id.* At this point, the Program sought to study the area and develop a plan “to realign water flow patterns and *strategically redirect sediment*” with the intent to “improve water quality and habitat and *reduce* sedimentation of waterways and lakes.” *Id.* (emphasis added). The upper region, which encompasses the area south of Bayou Sorrel to Old River and east of Grand Lake to the Gulf Intracoastal Waterway, an estimated 72,143 acres, was selected as the starting point for this project. *FY 2018 Annual Plan, Atchafalaya Basin Program*, at 4, available at http://www.dnr.louisiana.gov/assets/OCM/ABP/2018_Plan/FINAL2018planLoRes.pdf.

Although the Department of Natural Resources contracted with various partners to study the area, the information available through public records requests did not provide comprehensive results supportive of this project. The Louisiana State University Agricultural Center conducted research regarding inflows in the area, the ABP contracted with Paul C. Chadwick of Gulf Coast Environmental Solutions to monitor and provide reports on findings in the area as well as the U.S. Army Engineer Research & Development Center to “define and delineate aquatic habitat types and condition throughout the Atchafalaya Basin.” US Army Engineer Research and Development Center, *Expanding Geospatial Assessment Tools for the Atchafalaya Basin Program*, 2009 (attached as Exhibit A). However, early in the process stakeholders concerned with the long-term impacts of the project voiced their opposition to the EGL project, and this opposition has persisted throughout the development of this project.

The 2012 ABP Annual Plan nominated the project for construction, and despite unanimous comments voiced in opposition at a public meeting held in Henderson that year and opposition by all the main groups working in the Basin at the time, including Atchafalaya Basinkeeper, LCPA-West and Sierra Club, the plan was approved by the TAG, the Research and Promotion Board, CPRA and the House and Senate Natural Resources Committees. Meeting Minutes, Atchafalaya Basin Research and Promotion Board, Nov. 3, 2016, *available at* https://www.wcfprd.doe.louisiana.gov/boardsAndCommissions/MeetingMinutes/183_Minutes_3Nov2016_wSign-in.pdf. The project was approved and funded as part of the 2012 Annual Plan, but was discontinued soon thereafter.

The project was reinvigorated by the Nature Conservancy’s (“TNC”) purchase of a 5,359 acre tract from A. Wilbert’s Sons, LLC in 2015 in strategic locations for project implementation. DNR and TNC signed a Memorandum of Understanding to formalize its partnership in 2015, and entered into a Cooperative Endeavor Agreement in 2016, with a stated objective to build TNC’s Atchafalaya Conservation Center and Preserve, and to enhance and restore the East Grand Lake area. *See Cooperative Endeavor Agreement (CEA) between the Department of Natural Resources (DNR) and the Nature Conservancy (TNC)*, Sept. 2016 (attached as Exhibit H). *See also Memorandum of Understanding between the Louisiana Department of Natural Resources Atchafalaya Basin Program (ABP) and the Nature Conservancy of Louisiana (TNC)*, Dec. 2015 (hereinafter “MOU”) (attached as Exhibit D). In 2016, two public meetings were held in the Basin, one in Bayou Sorrel and one in Henderson. At both of these meetings, local fishermen and concerned citizens voiced their unanimous opposition to the project. In response, the ABP acknowledged the EGL proposals’ shortcomings, primarily the ultimate filling in of these wetlands for a short-lived burst of water flow into these swamps. After failing to present scientific support for the long-term integrity of the project proposal at the first meeting in Bayou Sorrel, TNC failed to even show at the second meeting in Henderson.

In addition to the myriad concerns addressed herein, the future uncertainty underlying the project’s management raises cause for additional alarm. Major changes are anticipated for the Atchafalaya Basin Program, including its ultimate discontinuance entirely. *See Executive Budget Supporting Document [FY 2018-2019], 11A – Department of Natural Resources, Department of Natural Resources Budget Summary*, at NATR-7, *available at* http://www.doe.la.gov/opb/pub/FY19/SupportingDocument/11A_Department_of_Natural_Resources.pdf. There are many questions that arise in light of the dissolution of the Atchafalaya Basin

Program, principally who and how will this project's implementation, monitoring and maintenance be overseen? It is inconceivable that the Corps could authorize a major project with such irreversible adverse impacts, particularly when the Program charged with overseeing the project will soon no longer exist.

II. DISCUSSION

The Corps must conduct a thorough environmental review of the proposed EGL project. The depth of the Corps' environmental review is considerable, particularly with respect to the role the Corps plays in sediment management, as indicated by the State Master Plan, and its responsibilities under the Clean Water Act. In addition to the Clean Water Act §§ 404 and 401 considerations, the Corps' environmental review must include evaluations made pursuant to the National Environmental Policy Act ("NEPA"), the Endangered Species Act, the National Historic Preservation Act, the Migratory Bird Treaty Act and the Coastal Zone Management Act, to name a few. Likewise, in light of the robust role the State of Louisiana has undertaken to restore, preserve and manage the Atchafalaya Basin and the coast, the Corps' review must also consider the State Master Plan, the Coastal Protection and Restoration Authority's Master Plan for a Sustainable Coast, coastal management consistency review and state-wide efforts to protect wetlands and the coast.

a. CLEAN WATER ACT COMPLIANCE

Congress enacted the Clean Water Act in 1972 with aims to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). In pursuit of this aim, the CWA prohibits the discharge of any pollutant, including dredged or other fill material, into the waters of the United States unless specifically authorized by a permit. *Id.* at § 1311(a). The Corps requires all discharges of dredged or fill material into waters of the U.S. to be authorized under a Section 404 permit, issued by the Corps, unless otherwise exempt by statute. *Id.* §§ 1344(a)-(e). The Corps issues individual section 404 permits after conducting an analysis and review of the proposed action, its impacts and public interest analysis, providing public notice and opportunity for hearing, and ultimately making a formal determination. 33 C.F.R. § 322.3; (see pts. 323, 325).

When issuing permits pursuant to § 404 of the CWA, the Corps must comply with the § 404(b)(1) Guidelines of the Clean Water Act at 40 C.F.R. Part 230. These legally binding guidelines establish requirements that must be met prior to issuing a permit authorizing the discharge of dredge and fill material into waters of the U.S. Additionally, the Corps has its own regulations it must follow to avoid unnecessary destruction or alternation of waters of the U.S., including wetlands. *See* 33 C.F.R. § 320.4. Between the 404(b)(1) Guidelines and the Corps' regulations for evaluating permit applications, the Corps must conduct a thorough environmental review of the proposed project. The Corps cannot permit the EGL project because it fails to meet the § 404(b)(1) Guidelines' requirements as well as the Corps' regulations for evaluating permits. *See* 40 C.F.R. § 230.10; 33 C.F.R. 320.4.

i. The proposed East Grand Lake Project fails to satisfy the requirements of the Clean Water Act Section 404(b)(1) Guidelines

The stated purpose of the Guidelines mirrors that of the Clean Water Act, “to restore and maintain the chemical, physical and biological integrity of waters of the United States through the control of discharges of dredged or fill material.” 40 C.F.R. § 230.1(a). The Guidelines prohibit the discharge of dredged or fill material absent a showing that the discharge “will not have an unacceptable adverse impact either individually or in combination with known and/or probably impacts of other activities affect the ecosystems of concern.” *Id.* at (c). In viewing the degradation or destruction of special aquatic sites to be among the most severe environmental impacts, the guiding principle behind these sections of the CWA is that “degradation and destruction of special sites may represent an irreversible loss of valuable aquatic resources.” *Id.* at (d). Special aquatic sites include wetlands and are defined as “geographic areas . . . possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values.” *Id.* at §§ 230.4(q-1); 230.41. This project will result in the discharge of tons of fill material into some of the most productive swamps in the world, an irreversible loss of the special characteristics of productivity, habitat, wildlife protection and other important and easily disrupted ecological values of those wetlands. *See Ivor van Heerden, Ph.D., Expert Report on the Proposed East Grand Lake Project (EGL)*, at 16, and throughout, April 2018 (attached as Exhibit O) (hereinafter, “van Heerden Report”).

Section 230.10 of the § 404(b)(1) Guidelines lists four requirements the Corps must find to issue a § 404 permit under the CWA. These requirements include (1) no practicable alternative, (2) no violation of other laws, (3) no significant degradation and (4) minimization of adverse impacts. 40 C.F.R. § 230.10. In conducting its environmental review of the proposed EGL project, the Corps must compare its factual determinations with the four discharge requirements listed above to make and document its Findings of Compliance before making a permit decision. 40 C.F.R. §§ 230.5(1); 230.10; 230.11; 230.12. The EGL project meets none of these requirements.

1. The Corps should deny the proposed EGL permit because there are practicable alternatives to the proposed discharge

In accordance with the Guidelines, in order to grant a permit, the Corps must determine that there is no “practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequence.” 40 C.F.R. § 230.10(a); *see also* 33 C.F.R. § 320.4. Under this requirement, “practicable alternatives” include, but are not limited to, activities that do not involve a discharge of dredged or fill material into U.S. waters or a discharge at other locations. *Id.* at (a)(1).

The Guidelines create a presumption that alternatives exist that are both practicable and less harmful to aquatic ecosystems and special aquatic sites. 40 C.F.R. § 230.10(a)(3). DNR must clearly demonstrate the unavailability of practicable alternatives that do not involve a discharge into a special aquatic to overcome this presumption. *Id.* However, DNR cannot meet this burden. There are practicable alternatives to the East Grand Lake project that do not involve making cuts and discharging dredged or fill material into a special aquatic site. One simple alternative includes a no action alternative, which is appropriate if and until sufficient funding and management is identified to carry out a scientifically-supported, long-term solution for this

area -- none of which has been identified or otherwise provided to support the "need" for this project. Additionally, there are many different projects DNR can pursue to better fulfill the goals of the State Master Plan that do not involve an underfunded attempt to channel sediment-laden river water into a swamp area that is already suffering from sediment distribution problems.

One easy solution for now would be to simply dredge the areas south of the Bayou Sorrel cuts suggested in the project and continue studying to ascertain whether and how spoil bank removal can be accomplished to better distribute fresh water by facilitating north-south flow in the area, and ensure that sediment distribution will not result in the filling of critical migratory bird habitat south of Bayou Sorrel and north of the Florida Gas Pipeline canal in Lake Zadrick. Deep-water habitat is rapidly disappearing throughout the entire East Grand Lake area. Restoring deep-water habitat by dredging Lake Zadrick, Lake Murphy and Cow Bayou would greatly improve water quality and restore much needed deep-water habitat in this specific area. The dredged material can also be deposited in a different location, away from the Basin at the coast where it is needed.

In 2015, DNR publicly discussed its active pursuit of a partnership between the ABP and CPRA to provide funding "to move basin sediments to the coast." Meeting Minutes, Atchafalaya Basin Technical Advisory Group Meeting, Sept. 2, 2015, *available at* https://www.wcfrpd.doe.louisiana.gov/boardsAndCommissions/MeetingMinutes/184_TAG_2Sept2015_wAttachments.pdf. This proposed partnership recognized the desperate need to address disproportionate sedimentation distributions in the Basin in an effective manner that is likewise symbiotic to the need for sediments at the coast. Apparently, "funding constraints" have prevented movement on this collaborative sediment coordination effort between CPRA and ABP. *See* FY 2017 Annual Plan, at 5. Reallocating the more than \$1.87 million in funds currently dedicated to the EGL proposed project to review options to ameliorate the current state in the EGL area and discuss opportunities for beneficial use of dredged sediments from this area (namely Lake Zadrick, Lake Murphy and/or Cow Bayou) at the coast presents a less harmful and more productive use of the state's resources. This collaborative concept presents a viable alternative to authorizing the discharge of additional dredged and fill materials into the Basin, particularly in light of the growing concern over coastal land loss. *Mighty Mississippi: Scientists use model in Louisiana land loss fight*, The Associated Press, April 17, 2018, *available at* http://www.nola.com/environment/index.ssf/2018/04/mighty_mississippi_scientists.html#incart_river_index. *See also* Mark Schleifstein, *State hopes new Army Corps program results in \$196 million in restoration projects*, NOLA.com, The Times Picayune, April 18, 2018, *available at* http://www.nola.com/environment/index.ssf/2018/04/state_hopes_new_army_corps_pro.html#incart_river_index (discussing Corps projects to use material dredged from navigation channels to build new wetland restoration projects to enhance coastal areas). There need to be more collaborative efforts between the agencies to ensure efficacious, results-oriented projects aimed at efficient use of funds and available resources such as excessive inland sediments being redirected or shipped to coastal areas in need. The proposed EGL project is completely counterintuitive to the protection and restoration of these delicate ecosystems.

Other alternatives identified by ABK include realigning Bayou Sorrel and constructing a weir to keep sediments in the main river channel toward the coast, closing Coon Trap and the School Board Canal, fully dredging Lake Murphy and Lake Zadrick and to make cuts to the south in the Sorrento/Wanda/now Bayou Bridge spoil bank. Before making more cuts, we have to stabilize

the sediment problem else we are left with short-term water quality inputs but long-term, irreversible destruction of critical swamps. Despite the many attempts by the undersigned organizations to engage in the processes of developing and researching water management projects across the Basin, and this area in particular, these efforts have largely fallen upon deaf ears. *See, e.g.*, Letter of Expression of Interest to be included in the MOU, Atchafalaya Basinkeeper to LDNR ABP, Jan. 13, 2016. Response Letter from LDNR ABP to Atchafalaya Basinkeeper, Mar. 23, 2016 (attached as Exhibit E).

As discussed in the Report on Senate Resolution 154, spoil banks are one of the three main threats to water quality in the Basin. *See* Final Report, Senate Resolution No. 154 of the 2017 Regular Session, Jan. 2018, available at <http://www.dnr.louisiana.gov/assets/OCM/ABP/SR154.Study.Final.pdf> (hereinafter “SCR 154 Report”) (discussing Dr. Kelso’s opinions regarding the three sources of water quality issues in the Basin, spoil banks, invasive species and flood pulse timing and management); *see also EGL application*, at 2, para. 19 (“Existing flow is restricted by spoil banks.”). Addressing spoil banks and their contribution should be of the highest priority. In fact, Dan Kroes commented at the 2017 public hearing before LDEQ and the Corps in regard to the then-proposed, now permitted, Bayou Bridge pipeline expressing his concern with the spoil banks associated with the pipeline. Court Reporter Transcript, Public Hearing and Request for Public Comment on a Water Quality Certification Application and Department of the Army (DA) Permit Application, Permit Number MVN-2015-02295-WII, at 178-79 (45), Jan. 12, 2017 (attached as Exhibit P). Mr. Kroes specifically stated that, “[f]rom studies we’ve done, and remote sensing, we’ve noticed that this pipeline is an obstruction [to] flow against the flood plain on the east side of the river and the Buffalo Cove Water Management Unit and the Beaux Bayou Water Management System ... if anybody would like to talk to me, or any of the other agencies, I’m sure we would be able to help in designing some kinds of plans, help with the stagnancy and water quality issues associated with the spoil come years from now.” *Id.* Evidently, the existing spoil presents a significant obstacle to water quality and north-south flow, presenting a reasonable alternative to addressing water quality and sediment deposition issues in the area.

The SCR 154 Study Group report recommended that the Louisiana Legislature immediately request and authorize the Atchafalaya Basin Program to lead the effort to develop and updated Master Plan for the Atchafalaya Basin Floodway. *SCR 154 Report*, at 16 (noting that the most recent Basin Master Plan was created in 1998 and has not been updated, and that many of the outlined projects were not pursued due to lack of funding or access). The USGS likewise acknowledged the need for more comprehensive management of the Basin’s entire area, for a better understanding of the relation between hydrology and diverse wetland habitats and evaluation of sediment accretion patterns to more effectively address the needs of the area. *USGS 2001*, at 2.

Throughout the minutes for the TAG and Research and Promotion Board meetings for the past several years is this notion that the East Grand Lake project is the only water quality project the ABP is able to move forward on, and as such it is its top priority. *See, e.g.*, Meeting Minutes, Atchafalaya Basin Research and Promotion Board, Oct. 12, 2017, available at https://wwwcfprd.doa.louisiana.gov/boardsAndCommissions/MeetingMinutes/183_RPB_12Oct2017%20w%20attachments.pdf. Rather than authorizing a project simply because it is the only

option available (which is not accurate considering the already permitted Grand Lake Restoration project which will restore depth to the area without introducing additional sediments), the Corps and DNR should seek more long-term, sustainable methods of preservation to protect the remaining aquatic habitats in the Basin.

As the SCR 154 Report and USGS have acknowledged, we are overdue for a more up-to-date assessment and Master Plan for the Basin to effectively oversee the preservation, and hopefully restoration, of the Atchafalaya Basin. Authorizing projects that offer short-term results to the detriment of long-term sustainability does not align with the overall goals of these agencies, the state and the public interest. There are a plethora of viable alternatives that should be carefully considered before authorizing this proposed project's dredge and fill activities in the East Grand Lake area. The agencies must acknowledge and address the existing problems before embarking on a fishing expedition of short-term fixes that do not adequately address the underlying sources of the problem.

2. The Corps should deny the proposed EGL permit because the project will jeopardize wildlife habitat

In accordance with the Guidelines, the Corps cannot permit a project if the project (1) "causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable state water quality standard," (2) "violates any applicable toxic effluent standard or prohibition," or (3) "jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act." 40 C.F.R. § 230.10(b)(1)-(3). The proposed project's potential impacts to state water quality standards and effluent limitations are discussed further herein under the water quality and Section 401 discussion.

The Corps must consider the project's impact on habitat for the pallid sturgeon (*Scaphirhynchus albus*), which is federally and state endangered, as well as the shovelnose sturgeon (*Scaphirhynchus platyrhynchus*), which is federally threatened and state protected, before authorizing this project. These two types of sturgeons have been found at the Older River Control Structure as well as other points downstream as far as Morgan City. The Corps must assess whether the proposed project's direct, *indirect and cumulative* impacts will jeopardize the continued existence of these listed sturgeons. See *LDWF Atchafalaya Basin Lake History and Management Issues*, attached to SCR 154 Study Group Report, Appendix R, at 163, available at <http://www.dnr.louisiana.gov/assets/OCM/ABP/SR154.ReportA.pdf>. Additionally, migratory bird species' habitat, particularly in the Lake Zadrick area and surrounding swamps, should be considered prior to permitting, as discussed more herein. Because the project will result in the filling in of valuable wetlands, impairing water quality, disrupting wildlife habitat and exacerbating hypoxia, the Corps must deny the permit. See *van Heerden Report*, at 2, 6, 11-13-21, 29-32.

3. The Corps should deny the proposed EGL permit because the project will cause significant degradation

In accordance with the Guidelines, the Corps cannot permit a project that will "cause or contribute to significant degradation of the waters of the United States" based upon "appropriate

factual determinations, evaluations, and tests.” 40 C.F.R. §§ 230.10(c); 230.11. Contributors to degradation considered individually or collectively, pursuant to these Guidelines, include: adverse effects on wildlife and special aquatic sites; adverse effects on aquatic ecosystem diversity, productivity and stability, including loss of fish and wildlife habitat; or adverse effects on recreational, aesthetic and economic values. *Id.* at 230.10(c)(1)-(4).

The impacts of this project will be detrimental to the long-term health of the surrounding wetlands. *See van Heerden Report*, at 6, 16 (discussing the permanence of the project’s adverse impacts). In his report, Dr. van Heerden explains the pattern of sediment deposition when moving from a confined to an unconfined area in that suspended sediment will deposit at the opening/spreading of the flow. *Id.* at 21. The ultimate result will be the filling in of these areas directly south of the cuts with sediment, filling in the interior swamps until no additional sediment-laden water can flow through. The impact of new sediment deposits in the areas south of the proposed cuts will be catastrophic to the surrounding fisheries and wetlands.

DNR has not supplied appropriate factual determinations, evaluations and tests to conclude that the EGL project will not contribute to significant degradation of the project area. The total impacts of this project have not been adequately disclosed. DNR is relying heavily on the conclusions derived from research and monitoring provided by the Nature Conservancy to justify a project that was created in 2009-2010. Projects should be based on scientific findings rather than procuring science to justify a project already envisioned. There is minimal, recent and relevant scientific information available to ascertain the total impacts of this project.

Atchafalaya Basinkeeper sent requests for records relating to this project to the Corps and DNR in November 2017, as well as TNC in December 2017, in hopes of obtaining helpful information to ascertain the scientific support and analysis behind the EGL project. Although both the Corps and DNR responded to the requests, recent and supportive scientific results from site-specific research were not included in response, and TNC claimed to not be subject to the Public Records Act. *See Request for Public Records regarding the Nature Conservancy’s Atchafalaya Basin Preserve and the Louisiana Department of Natural Resources, Atchafalaya Basin Program’s East Grand Lake Project (201006)*, from Atchafalaya Basinkeeper to the Nature Conservancy of Louisiana, Dec. 21, 2017. Response Letter from TNC, Jan. 4, 2018 (attached as Exhibit M). The concern is that DNR is placing in the hands of a private organization, financed by special interests and corporations, and who “places landowner vision at the forefront”, the fate of a state water quality project. *See Response Letter from LDNR ABP to ABK, Exhibit E; see also Louisiana: The Atchafalaya River Basin Initiative*, document taken from the Nature Conservancy’s website, accessed on Feb. 15, 2017. This document has since been removed from TNC’s website (attached as Exhibit J). The interest of landowners in privatizing and filling the basin are contrary to that of the majority of stakeholders, including recreationists, fishermen and Basin communities, and the survival of wetlands. ABP’s alignment with TNC’s objectives and agenda in the area is most disturbing, proclaiming that the vision TNC is “closely compatible with the ABP’s mission to conserve, restore, and enhance the natural habitat of the Atchafalaya Basin.” Letter from Senator Fred H. Mills, Jr. to Governor Edwards regarding the EGL project, Oct. 13, 2016. Response Letter from the Department of Natural Resources, Dec. 7, 2016 (attached as Exhibit I).

TNC has stated that, being “committed to a comprehensive, project-based monitoring program,” they are conducting monitoring activities and studying crawfish, nutrient cycles, geomorphology and forest health in the EGL area. *See* Meeting Minutes, Atchafalaya Basin TAG Meeting, Sept. 2, 2015; *see also* Atchafalaya Basin Research and Promotion Board, Feb. 1, 2017, *available at* https://wwwcfprd.doa.louisiana.gov/boardsAndCommissions/MeetingMinutes/183_Minutes_1Feb_wSign-in.pdf. In February 2017, TNC claimed that project locations had not yet been selected, although it noted its desire to work near Bayou Cannon and the East Guide Levee. *Id.* But, as of June 2017, the East Grand Lake project was still in the “concept phase” which was anticipated to take a year, “so there will be no dirt moving until 2018.” Meeting Minutes, Atchafalaya Basin Research and Promotion Board, June 29, 2017, *available at* https://wwwcfprd.doa.louisiana.gov/boardsAndCommissions/MeetingMinutes/183_RPBJune29_minutes_wSignIn.pdf. Moreover, the ecological situation surrounding the East Grand Lake project was described as “not ideal” with the biggest concern being the filling in of back swamps. Meeting Minutes, Atchafalaya Basin Tag Meeting, June 22, 2017, *available at* https://wwwcfprd.doa.louisiana.gov/boardsAndCommissions/MeetingMinutes/184_June22_minutes_wSignIn.pdf. The TAG at that time was thinking that “channelized inputs will self-maintain” and one member applauded TNC’s use of “science to support” the project. *Id.* Ultimately, the TAG acknowledged that “[t]here is a trade-off of water quality vs. sediment,” and that despite all the modeling that can be done, “until you actually do something, you won’t know.” *Id.* The scientific basis for a project with detrimental and irreversible impacts to a special aquatic site should not result from a “try and see” attitude from the scientific specialists charged with assessing the environmental and engineering objectives of water management projects. There are plenty of places to study the effects of river water introduction into wetlands and deep-water habitat in the Basin, with projects like Bayou Eugene, Buffalo Cove and Beau Bayou that can be used to research sedimentation rates when river water is introduced into swamps and deep water habitats.

By August 2017, the TAG was of the position that, in regards to the EGL project, “we’re pretty far away from design. We’ll ask for a formal approval of TNC’s monitoring plan at the next meeting.” Meeting Minutes, Atchafalaya Basin TAG Meeting, Aug. 15, 2017, *available at* https://wwwcfprd.doa.louisiana.gov/boardsAndCommissions/MeetingMinutes/184_TAG_15Aug2017_minutes_wAttachments.pdf. Yet, even at that time questions were raised regarding the efficacy of the project in relation to other ABP projects. *Id.* (noting the concerns regarding Murphy Lake and the TNC foot print being “a matter of moving as the water moves north to south” because “as we move south how do we keep that from filling in faster.” Therein, suggestions to move the Murphy Lake project up higher on the priority list since the shoal there “could result in reduced drainage to the lake, which could have a backwater effect on projects north of there.”).

Furthermore, the Memorandum of Understanding entered into between the ABP and TNC obligates TNC, as “appropriate and subject to its internal policy regarding confidential information,” to “contribute pertinent scientific and conservation planning information and documents to ABP for its activities affecting the Atchafalaya Basin for distribution to the public.” *MOU*, at 2. The *MOU* obligates TNC to “(a)ssist ABP with *dissemination of information to the public* by supporting public outreach and collaborating on stakeholder involvement and engagement efforts with regard to its programs in the Atchafalaya Basin.” *Id.*

(emphasis added). Despite our attempts to gather information from both DNR and TNC regarding the scientific basis for this project, we have been unable to obtain the monitoring information or scientific analysis from TNC, despite the language contained in the MOU and their commitment to collaborate on stakeholder involvement. Beyond one monitoring report from TNC with very little scientific support for the project proposal, record requests revealed only a few outdated documents of relevance. *See* The Nature Conservancy, *Atchafalaya River Basin Monitoring Program for East Grand Lake Restoration Activities*, Annual Report, Dec. 2017 (attached as Exhibit L). Yet none of these offer the degree of comprehensive, scientific supported promised and needed to justify this project.

The U.S. Army Engineer Research and Development Center entered into a contract with DNR in 2009 to develop tools to measure and track the delivery and distribution of water and sediment in the Atchafalaya Basin Floodway System. *See* U.S. Army Eng'r Research and Development, Exhibit A (noting that "[n]atural and accelerated sedimentation processes have converted formerly large areas of open water to land" and that an understanding of "the rates and patterns of historical change can inform not only current project management strategies within the basin, but can also assist in understanding the potential for land change in the rest of coastal Louisiana as more freshwater diversion projects come online."). Goals and deliverables were identified, including providing accurate elevation data and studying the Grand Lake geomorphological changes to uncover information regarding future sediment trends and system resiliency, but the ultimate results of this contracted study are unknown to the commenters.

DNR also contracted with the LSU Agricultural Center to collect and enhance existing data regarding water quality issues in the Grand Lake water management unit, and the Gulf Coast Environmental Solutions, LLC to develop the East Grand Lake project planning and design efforts. *See* LSU Agricultural Center, *Characterization of temporal and stage-related changes in water quality in major inflows into the Greater East Grand Lake area of the Atchafalaya River Basin* (attached as Exhibit C). These contracts from roughly 2010-2011, produced some helpful background information but do not offer supportive, recent science for this project. In fact, Paul Chadwick of Gulf Coast Environmental Solutions, LLC noted in an Overview and Planning report submitted to DNR that the EGL project, guided by the State Master Plan for the Atchafalaya Basin Floodway System, would be "an adaptive management process that uses continually updated scientific evaluation of conditions in the area to tailor a series of projects to the most recent knowledge of the area." Paul Chadwick, *Overview and Planning Process of the East Grand Lake Water Quality Improvement and Sediment Management Plan*, Contract ABFP-10-03, at 1 (attached as Exhibit B). However, the issue of inclusion of the public and availability of factual information used in support of this project persists. We are troubled by DNR's hiring a private company whose overview and planning report appears to advocate for a change of focus in regard to restoration in the Basin, moving away from restoration and preservation towards justifying management preferences for the interests of the few who stand to benefit from projects that redirect sediments and fill wetlands. There is no law that authorizes an agency to fill wetlands to benefit a handful of stakeholders. The undersigned groups represent a large population of stakeholders in the Basin, and our interests should not be stymied by a few, powerful voices.

Absent a showing that the anticipated impacts described in detail in the report of Dr. Ivor van Heerden are inaccurate, it is evident that this project will have significant adverse impacts on the project area and the surrounding wetlands, and as such, should not be permitted.

4. The Corps should deny the proposed EGL permit because there are additional steps that should be taken to consider and minimize all adverse impacts

Finally, in accordance with the Guidelines, the Corps must require “appropriate and practicable steps to minimize adverse impacts of the discharge on the aquatic ecosystem.” 40 C.F.R. § 230.10(d). In order to evaluate whether DNR has taken “appropriate and practicable steps” to reduce adverse impacts to the EGL area, it must fully consider all impacts of the project. This includes the short and long-term impacts as well as the direct, indirect and cumulative impacts.

The 404(b)(1) Guidelines provide examples of actions that can be employed to minimize adverse effects of discharges of dredged and fill material. 40 C.F.R. § 230.70-77. These actions may include managing the method of dispersion, using technology to employ appropriate maintenance on site, avoiding sites with unique habitat or other value, using planning and construction practices to restore and develop habitat or perform regular maintenance in areas that support fish and wildlife recreation and human use. *Id.* at § 230.73-76. Other water management projects have included projections of the need for regularly scheduled maintenance and monitoring, anticipating annual inspections, period maintenance of sediment traps, clearing of debris from cuts and maintaining elevations based upon the post-construction results of the project. *See* Buffalo Cove Environmental Assessment, at 16, 24-25, attached to SCR 154 Study Group Report Appendices, Appendix Q, *available at* <http://www.dnr.louisiana.gov/assets/OCM/ABP/SR154.ReportA.pdf>. (hereinafter, “Buffalo Cove EA”) (The Buffalo Cove project implemented a minimum three-year post-construction monitoring plan to record effects and allow for agency response, however, as discussed further herein, the current status of the Buffalo Cove project area provides insight into the future impacts of the EGL project). In fact, the Buffalo Cove Environmental Assessment expressly discounts the more traditional water management alternatives in favor of the pilot approach which would allow for modifications and additions based on “continual monitoring of conditions prior to, during, and following project construction.” *Id.* at 27. At a minimum, long-term maintenance must be provided.

However, it is unclear from the permit application whether DNR has the capacity, funding or intent to undertake this long-term maintenance. Ultimately, if the permitted activity will result in a significant ecological change to the aquatic environment as is anticipated by this project, “the permitting authority should consider the ecosystem that will be lost as well as the environmental benefits of the new system.” 40 C.F.R. § 230.77(d). Therefore, regardless of the management plans for the project, because the ultimate result will degrade beyond repair the irreplaceable wetlands in the area, the Corps cannot permit this project.

In sum, the Corps cannot guarantee satisfaction of this requirement without looking into the lasting impact this project would have on the surrounding ecosystems. As discussed in Dr. Ivor van Heerden’s Report and throughout this comment letter, the ultimate impact of this project will

be contrary to its stated purpose, to the State Master Plan and the objectives of the Atchafalaya Basin Program. Although the stated objective is to improve north-south flow, the inevitable outcome is exacerbated sedimentation in an area that is critical to wildlife habitat and in desperate need of a long-term solution rather than a short-term fix. *van Heerden Report*, at 2, 3, 5, 6, 11-13, 16, 17-21. We have suggested alternatives and want to work with the agency to develop more long-term solutions for the Basin. The EGL project cannot meet the minimization of adverse impacts requirement when the lasting result will leave the area in worse condition than before the project was implemented.

a. The Corps must consider all impacts of the proposed EGL project

The CWA Guidelines require the Corps to determine the potential short and long-term effects of the proposed activity to make a finding of compliance or non-compliance with the articulated "restrictions on discharge." 40 C.F.R. § 230.11. The National Environmental Policy Act also requires consideration of cumulative, secondary and indirect impacts in considering mitigation options. 40 C.F.R. § 1508.25; *see also O'Reilly v. U.S. Army Corps of Eng'rs*, 447 F.3d 225, 235 (5th Cir. 2007).

Given the information available in public documents, it does not appear that the Corps, LDEQ or DNR have fully weighed the costs and benefits relevant to the Project. Direct, indirect, secondary, and cumulative impacts of the proposed wetland fill and clearing remain overlooked. The Applicant must answer these "IT questions."

i. Direct Impacts

The East Grand lake project construction will directly impact 16.5 acres of jurisdictional forested wetlands, clearing and converting 2.4 acres to open water, clearing and excavating 8.3 acres to become open water and clearing and filling 5.8 acres. This construction will create new pathways for sediments to move into back swamps and deep-water habitats, like lakes and bayous, threatening thousands of acres of wetlands which will eventually be filled in a converted to bottomland hardwood forests. *van Heerden Report*, at 11-13, 16, 17-21. This seemingly minimal direct impact of 16.5 acres will have gargantuan impacts to the surrounding area.

The public notice fails to contain any discussion on proposed mitigation to offset these anticipated direct impacts. Absent compensatory mitigation measures employed to offset unavoidable impacts, the project fails to comply with the Guidelines and Corps regulations as it will result in direct losses and degradation to special aquatic areas and productive wetlands in the Atchafalaya Basin without the ability to replace aquatic functions lost.

ii. Indirect Impacts

The Corps must also consider the secondary effects associated with the proposed activity. 40 C.F.R. § 230.11(h)(1). Secondary effects include "effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual

placement of the dredged or fill material.” *Id.* The Code of Federal Regulations recognizes the significance of secondary impacts from wetland destruction by emphasizing that “minor loss of wetland acreage may result in major losses through secondary impacts.” 40 C.F.R. §230.41.

Sediment is directed into the East Grand Lake area from the Atchafalaya River/Whiskey Bay Pilot Channel. This includes Bayou Sorrel Down to the Gulf Intracoastal Waterway. Based on the design of the project as provided in the public notice, elements 1, 2, 4, 12 and 13 will introduce river water from the Gulf Intracoastal Waterway (a significant sediment source) into back swamps, creating deltas and filling in those wetlands with silt and sand. *van Heerden Report*, at 2, 6, 11-13, 16-21. Additionally, elements 5, 6, 7, 8, 9, 10 and 11 will introduce river water from Bayou Sorrel down Salt Mine along the Florida Gas pipeline into back swamps north and south of the Florida Gas Pipeline, created deltas and rapidly filling in these wetlands with silt and sand. LIDAR data shows the delta formations already created by sediment entering the area through cuts on the elevated spoil banks along the Florida Gas pipeline. *Id.* at 7-11, *see Figures 3(a) to (d)*. Note also that the movement of sediment-laden water from a confined channel to an unconfined situation (i.e., an open swamp area), will result in deposition of the suspended sediment near the opening of the channel. *Id.*, at 21. Therefore, this presumably “minor” loss of 16.5 acres of wetlands will result in major, irreversible losses throughout the EGL area.

iii. Cumulative Impacts

The CWA Guidelines also require the Corps to “predict[] to the extent reasonable and practical,” collect and solicit information, and consider during the decision-making process the cumulative effects attributable to the discharge activity. 40 C.F.R. § 230.11(g)(2).¹ The Corps must analyze and address the cumulative impacts of this project. 40 C.F.R. § 1508.25(c)(3). This includes addressing impacts of past, present and reasonably foreseeable future actions, also such impacts that may be the result of minor but “collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7.

DNR acknowledges that the changes in hydrology in the Basin are significant and warrant consideration in determining how best to manage, preserve and restore the Basin’s ecosystems. The long-term effect of this project will result in exacerbated sedimentation in the project area and eventual filling in of the interior swamps. *van Heerden Report*, at 2, 6, 11-13, 16-21. The cuts proposed by this project will introduce sediments into the area, year after year, for the foreseeable future. The enhancement of sedimentation into the EGL area will make it more difficult for cypress to regenerate, promoting the growth of highly competitive species such as Water Elm, Swamp Privet and vines (Ladies Eardrop and *Brunnichia Ovata*). Ivor van Heerden, Ph.D., *Initial Comments on the Nature Conservancy Project in East Grand Lake, Atchafalaya Floodway*, Aug. 2017 (attached as Exhibit K). Similar projects like the Buffalo Cove and Beau Bayou Projects are already filling wetlands, the cumulative impacts of these combined projects to the Basin’s wetlands are significant and must be considered.

Part of this cumulative and secondary impacts analysis must include an assessment of the unpermitted fill and conversion of wetlands resulting from existing pipeline infrastructure in the

¹ Cumulative impacts are defined as “the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material.” 40 C.F.R. § 230.11(g)(1).

area. The project's application acknowledges that existing flow is restricted by spoil banks. *EGL application*, at 2. The Florida Gas Transmission pipeline has impacted sediment distribution patterns in the East Grand Lake area. In addition, the School Board canal likewise impacts sediment distribution in the area, resulting in unpermitted wetland conversions as parts of the area are accreting at alarming rates. The accretion in this area threatens the fish habitat and migratory bird rookeries in and around Lake Murphy and Lake Zadrick.² Lake Zadrick is filling in rapidly, at a rate of roughly half an acre per year. These impacts are ongoing, are not restricted to the past. Any meaningful preservation of this area must consider and adequately address these sources of harm to the area. These current accretion trends must be assessed and addressed before the Corps permits another project, to allow more cuts which will move more sediments into the area. Otherwise, the Corps will not be able to determine which impacts result from the EGL project activities or from the existing Florida Gas pipeline spoil banks or the School Board canal.

It is incumbent upon the Corps to assess the entire Grand Lake water management unit in assessing cumulative impacts related to this project, including the spoil banks and sediment plumes present in the Sorrento/Wanda and recently permitted Bayou Bridge Pipeline rights-of-way to the south of the Florida Gas pipeline. The Corps' permitting of the Bayou Bridge pipeline is the subject of ongoing federal litigation, and the impacts of this project should be carefully considered prior to authorizing any additional projects that will contribute to the degradation of cypress-tupelo swamp habitat and special aquatic wetlands. District Court Judge Dick's February 2018 preliminary injunction ruling, although challenged and currently before the appellate court, identifies salient points the Corps should consider with regard to cumulative impacts of existing and proposed projects in the Atchafalaya Basin that exacerbate the already growing threats of sedimentation and wetland/habitat loss. The magnitude of the cumulative impacts existing development and the EGL project will have on this fragile ecosystem necessitates the Corps' denial of the EGL application.

ii. The Corps should deny the EGL permit for failure to comply with the Corps Regulations

The Corps' Regulations also provide general policies the Corps must apply in its review of all permit applications. 33 C.F.R. § 320. These regulations include mitigating for unavoidable harms and weighing public interest factors prior to authorizing the activity. If the Corps adequately considers these factors in accordance with its regulations, it cannot authorize the dredge and fill activities proposed in the East Grand Lake project.

1. The lack of mitigation for the EGL project fails to account for the anticipated wetland losses

The Guidelines require minimization of potential adverse impacts, but not mitigation explicitly. *See* 40 C.F.R. §230.10(d). However, Corps regulations require the agency to include "appropriate and practicable" compensatory mitigation conditions in Section 404 permits for unavoidable impacts as a result of the permitted activity. *See* 40 C.F.R. § 230.91; *see also* 33

² Lake Zadrick provides habitat for thousands of neotropical migratory birds. These populations depend on healthy, productive forested-swamp habitat, the health and longevity of which is directly threatened by the EGL project.

C.F.R. §§ 320.4(r), 332.1 (mitigation is required to ensure compliance with the 404(b)(1) Guidelines).

Here, it appears that no mitigation has been proposed despite the significant direct, indirect and cumulative adverse impacts of this project on irreplaceable swamps. The Public Notice merely notes that the project was designed “to avoid and minimize direct and secondary adverse impacts to the maximum extent practicable” and that the anticipated benefits will offset the unavoidable losses associated with project construction. *Joint Public Notice*, at 2.

Compensatory mitigation is defined as “the restoration (re-establishment or rehabilitate), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.” 33 C.F.R. § 332.2. Compensatory mitigation is intended to compensate for the aquatic resources that will be lost due to the permitted activity. *Id.* at § 332.3(a)(1). Although the permit applicant is responsible for proposing appropriate compensatory mitigation for the proposed activity, the mitigation requirements must be commensurate with the amount and type of impact associated with the permit. *Id.* Generally, the method of restoration should be considered first due to the “potential gains in terms of aquatic resource functions” when compared to enhancement and preservation. *Id.* at 332.3(a)(2). With these parameters in mind, the Corps must consider the anticipated conversion of wetlands in the EGL area to determine the availability, or lack thereof, of restoration mitigation measures to compensate for the loss.

The Corps must review the proposed project for compliance with the § 404(b)(1) Guidelines to determine whether it can issue a permit where appropriate and practicable compensatory mitigation is unavailable. Considering the totality of impacts that will result from the EGL project, the failure to require any mitigation to compensate for the anticipated environmental harms of the project is justification alone to deny the permit under NEPA and the CWA. Moreover, the unavailability of mitigation bank credits to replace lost cypress-tupelo forested wetlands in the Atchafalaya Basin (or elsewhere, as compared to bottomland hardwood forests), combined with the substantive and procedural deficiencies of the Corps’ method of calculating mitigation credits through LRAM (which has yet to be finalized), means that any mitigation proposed using these methods will be insufficient to compensate for the loss. The Corps must, at a minimum, require some degree of compensatory mitigation to offset the unavoidable conversion of wetlands that will result yet it is unclear whether that is possible given the project’s impacts on cypress-tupelo forested wetlands. In light of the project’s significant adverse impacts and the lack of proposed or available mitigation to compensate for the lost aquatic functions, the Corps must deny the permit.

2. The public interest is best served by not authorizing the EGL project under the CWA § 404

Pursuant its own regulations, and in compliance with § 404(B)(1) Guidelines and § 10 of the Rivers and Harbors Act, the Corps must conduct a public interest review weighing the adverse impacts against the potential benefits of the proposed project. 33 C.F.R. 320.4(a). This review considers the specific facts of the potential permit and the individual and cumulative impacts of

the proposed action. *Id.* If this balancing indicates that the project is not in the public interest the Corps cannot issue the permit. *Id.*; 33 C.F.R. § 320.4(b)(4). Additionally, the Corps' public interest review is informed by the evaluation of the proposed project under the aforementioned Section 404(b)(1) Guidelines. 33 C.F.R. § 320.4(a)(1) ("For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such a permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines.").

Based on the information provided in the Joint Public Notice and the application for permit, DNR fails to overcome the burden created by the § 404(b)(1) Guidelines, which requires a clear showing that there are no practicable alternatives with less adverse impacts to wetlands. 33 C.F.R. § 230.10. Additionally, the project will ultimately result in significant degradation of the surrounding wetlands and wildlife habitat. Because the proposed permitted activity does not comply with the Guidelines' requirements it must likewise be denied under the Corps' public interest review. 33 C.F.R. § 320.4(a)(1); *see also* 33 C.F.R. § 320.4(b)(4) ("In evaluating whether a particular discharge activity should be permitted, the district engineer shall apply the Section 404(b)(1) guidelines (40 C.F.R. § 230.10(a)(1),(2),(3)).").

In addition to the 404(b)(1) Guidelines and other applicable criteria, the Corps must deny a permit if the district engineer determines that it would be contrary to the public interest. *Id.* The Corps must consider all factors which may be relevant to the proposed project, including the cumulative effects thereof. 33 C.F.R. § 320.4(a)(1). These factors include, but are not limited to, conservation, economics, aesthetics, general environmental concerns, wetlands, fish and wildlife values, flood hazards, floodplain values, navigation, accretion, recreation, water quality and safety. *Id.*

For the reasons outlined below, and in addition to other applicable public interest factors, the proposed East Grand Lake project is contrary to the public interest and the Corps should deny the permit.

a. The EGL project will negatively impact valuable wetlands

The Corps' regulations describe the significant, productive and valuable public resource wetlands provide. 33 C.F.R. 320.4(b)(1). In addition to the critical biological and habitat functions wetlands provide, the regulations acknowledge the impact that alterations to wetlands can have on natural drainage and sedimentation patterns. *Id.* at (b)(2)(ii), (iii). The authorizations made pursuant to the EGL project will have detrimental effects on the surrounding wetlands and sedimentation distribution patterns in particular. Not only are the wetlands of the Atchafalaya Basin unique, scarce and nationally renowned, they protect millions of people from river floods, provide habitat for a myriad of wildlife and aquatic birds, support commercial fishing of cultural importance to the unique Cajun fishing communities in the area and protect from severe weather events. *See id.* at (2)(i)-(viii). It is indisputable that the wetlands of the Atchafalaya Basin are of particular public interest, importance and significance. Alterations to this invaluable ecosystem, even in the name of "preservation", must be scrutinized thoroughly.

Congress, the Corps and EPA have clearly identified the detriments of dredge and fill projects of the type proposed in this permit application. By devoting an entire permitting program under the Clean Water Act to the disposition of dredge and fill material, Congress signaled its clear recognition that dredge and fill activities may be harmful to the environment and should be conducted with caution. *See* 33 U.S.C. § 1344. Moreover, including this permitting program in the Clean Water Act, the stated goal for which is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters,” shows that Congress considered the disposed dredge and fill material to be an impairment to our waters. 33 U.S.C. § 1251. This is especially important when the waters at issue includes wetlands. As the Corps’ 404 permitting regulations explain, “[since] most wetlands constitute a productive and valuable public resource, the unnecessary alterations or destruction of which should be discouraged as *contrary to the public interest*.” 33 C.F.R. §320.4(b)(1) (emphasis added). The Corps’ regulations further state that wetlands provide important “biological functions” including general habitat for wildlife, as well as nesting and spawning grounds. *Id.* The applicability of these functions to the Atchafalaya Basin cannot be controverted. *See, e.g.,* 16 U.S.C. §§1451-53 (declaring a national policy to “to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation’s coastal zone for this and succeeding generations” and defining coastal zone to include coastal wetlands).

EPA regulations describe many values that could be lost as a result of the discharge of dredged or fill material in wetlands, including a likelihood “to damage or destroy habitat and adversely affect the biological productivity of wetland ecosystems.” 40 C.F.R. § 230.41(b); *see also* 40 C.F.R. § 230.41(b) (“Discharges can also change the wetland habitat value for fish and wildlife.”). But while Congress, the Corps and EPA have clearly identified the public interest in preserving wetlands and forbidding the destructive effect of discharged dredge and fill material, DNR has not clearly identified all potential benefits and detriments to the public interest in undertaking this proposed project. A short-term increase in crawfish production does not justify the permanent destruction of wetlands, robbing future generations of these irreplaceable resources.

The Corps’ regulations provide that, despite the relatively minor change that may result from a particular alternation of a wetland, the Corps must evaluate the cumulative effect numerous minor changes can have on a complete and interrelated wetland area. 33 C.F.R. § 320.4(b)(3). The Corps is authorized to consult with DNR, the appropriate state agency, to assess the cumulative impact of activities in the EGL area. *See id.* As previously noted, the cumulative impact of this project on the surrounding wetlands is significant and irreversible. *van Heerden Report*, at 6, 16. With respect to its adverse effect on the Basin’s wetlands, the East Grand Lake project is clearly contrary to the public interest.

b. The EGL project will impair the Basin’s capacity to contain floodwaters

The value of floodplains in mitigating flood damage and protecting from storm surges requires close consideration of adverse impacts and a heightened scrutiny for permitting that could impact the functionality of the floodplain. 33 C.F.R. § 320.4(l). With this project more so than any other project proposed for permitting before the Corps, it is imperative that the Corps consider the

cumulative effects this and other activities in the area will have on the values and functions of the floodplain, and the increased potential for harm to upstream and downstream activities. *Id.* at (1)(2).

Development in a floodplain must comply with Executive Order 11988, Floodplain Management. 33 C.F.R. § 320.4(1)(3). The EO requires agencies to consider alternatives “to avoid adverse effects and incompatible development in the floodplains.” EO 11988, Sec. (2)(a)(2).

The Atchafalaya River is the largest tributary of the Mississippi River. Flood protection improvements, constructed primarily under the Mississippi River and Tributaries (MR&T) project, are critically important to the lower Mississippi River area. *State Master Plan*, at 3-4. The MR&T project distributes half of the 3,000,000 cubic feet per second of design project flood at Old River down the Mississippi River and the other half into the Atchafalaya Basin Floodway. *Id.* The levee system along the banks of the Mississippi River protect densely populated areas from New Orleans to less populated communities below the Morganza Floodway. *Id.* Meanwhile, the flood protection in the Basin, including levees, control structures, locks and floodwalls, protects surrounding communities, farms and industries that have developed in areas adjacent to the floodway. *Id.*

In 2016, nearly every Parish in the state was flooded by enormous rains from an overheated Gulf of Mexico. In the aftermath of the Gulf Flood of August of 2016, twenty parishes were declared disaster areas, thirteen people perished, and 122,000 people filed for assistance with FEMA. Julia O'Donoghue, *Louisiana Flood: 8 things you need to know about the aftermath*, NOLA.com, The Times Picayune, Aug. 25, 2016, available at http://www.nola.com/politics/index.ssf/2016/08/louisiana_flood_public_safety.html. Reducing flood storage throughout Acadiana by filling valuable wetlands impairs the capacity of the basin spillway to contain floodwaters and protect surrounding communities. These wetlands and waters will only become more valuable for flood attenuation as climate change accelerates, and large rains become more frequent and intense. Van der Wiel, et al. *Rapid attribution of the August 2016 flood-inducing extreme precipitation in south Louisiana to climate change*, Hydrol. Earth Syst. Sci. Discuss., 2016, available at <https://www.hydrol-earth-syst-sci.net/21/897/2017/hess-2016-448.pdf>.

The Atchafalaya Basin is critically important for flood control. Between 1932 and 2001, there has been a net accretion of nearly 2.5 billion cubic meters of sediment in the Basin floodway, converting a substantial amount of open water and cypress swamps to bottomland hardwood forests. *See* USGS 2001. The ability of the Atchafalaya Basin to move flood waters is severely diminished due to this trend of accelerated accretion. *See van Heerden Report*, at 2, 22, 24. During the 2016 flood, Grand River at Bayou Sorrel crested at 10.39' on August 17, 2016, while across the levee inside the floodway it crested at only 7.1' on August 14, 2016 (levels are fluctuating as the Mississippi River rises). The Atchafalaya Spillway is critical to protect countless cities and communities along the Mississippi River Delta, including the cities of Baton Rouge, New Orleans, Lafayette, Morgan City and the entire industrial corridor along the Mississippi River. As the Basin fills with sediments, it loses its capacity to protect these communities from Mississippi River floods.

Projects like the East Grand Lake project with long-term impacts that accelerate the accretionary process contribute significantly to the impairment of the Basin's spillway functionality. The impact of the EGL project on the Basin's capacity to manage floodwaters is contrary to EO 11988 and the public interest. In the interests of public safety and floodplain management, the Corps should deny the permit for the East Grand Lake project.

c. The EGL project will impair water quality in the long-term

The Corps' regulations require evaluation of the proposed activity's compliance with applicable effluent limitations and water quality standards during and after construction of the proposed activity. 33 C.F.R. § 320.4(d). Similarly, the EPA Guidelines prohibit dredging or discharging fill material if that dredging or discharging should violate "any applicable State water quality standard." 40 C.F.R. § 230.10(b)(1).

Section 401 of the Clean Water Act requires DNR to obtain certification from the Louisiana Department of Environmental Quality for the proposed project which will result in a discharge of dredge and fill material into waters of the U.S. 33 U.S.C. § 1341.

Article IX, Section 1 of the Louisiana Constitution provides that "the natural resources of the state, including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people." When issuing permits, LDEQ must satisfy its constitutional mandate as a "public trustee" pursuant to Article IX, Section 1. *See Save Ourselves v. La. Envtl. Control Comm'n*, 452 So. 2d 1152, 1157 (La. 1984). Prior to issuing a final permit, state agencies must determine "that adverse environmental impacts have been minimized or avoided as much as possible consistently with the public welfare." *Id.* LDEQ must conduct an individualized consideration of the proposed project, balancing environmental factors in good faith before reaching a permitting decision. LDEQ must review the application and all comments and determine that the EGL project will not violate State Water Quality Standards prior to issuing a water quality certification to DNR for this project. *See* LAC 33:IX.1507.F.3.

i. Louisiana Water Quality Standards

The Surface Water Quality Standards are intended to serve the objectives of the CWA and to preserve and protect Louisiana's aquatic ecosystems. LAC 33:IX.1101.A. The Antidegradation Policy requires the maintenance of waters that support "an unusual abundance and diversity of fish and wildlife resources" to be maintained at their existing high quality. *Id.* at § 1109.A.1. It ensures that new discharges will not exceed specified standards and that designated uses will not be adversely impacted. *Id.* at 1119.C. Additionally, the waters of the state must be "protected for recreational uses and for the preservation and propagation of desirable species of aquatic biota and indigenous species of wildlife." *Id.* at § 1109.B.1. Wetlands are held to a particular degree of importance and are seen as a valuable resource to the state, including commercial, recreational and cultural uses. *Id.* at § 1109.J.1. Louisiana wetlands serve many important functions, including "biological and physiochemical functions that include . . . buffering against hurricanes and storms, holding excess floodwaters during high rainfall or high tides, . . . and improving

water quality by filtering pollutants and taking up nutrients.” *Id.* The general, numerical and biological criteria applicable to wetlands can be found at LAC 33:IX.1113.B, C.

Applicants seeking a state water quality certification are required to submit an application to LDEQ’s Department of Environmental Quality. LAC 33:IX.1507.A. The information contained in the application must include, among other things, “the nature of the activity to be conducted by the applicant, including estimates of volume of excavation for dredge and fill activities;” “the location of the discharge;” “the nature of the receiving water, including type (creek, river, swamp, canal, lake or pond), nature (fresh, brackish or salt), and direction or flow;” “the type of discharge;” “and the location of discharges into receiving waters.” *Id.* at (A)(1)(a)-(n). Upon completion of the review process by LDEQ, the Applicant shall publish the public notice “in each parish in which the activity is to be conducted” allowing for a 10-day comment period. *Id.* at (D). The notice shall include, among other details, the activity proposed in the application along with the nature and location of the activity. *Id.* at (D)(1)(c). LDEQ cannot certify the proposed project without first identifying applicable water quality standards and water use designations of the various streams and open waters and assessing how the project will impact those standards.

The proposed project’s impact on applicable criteria includes impacts on sedimentation rates and distribution patterns, which can affect the floating, suspended or settleable solids contained in the waters (1113.B.3), turbidity (1113.B.9) and the biological and aquatic community integrity of the waters (1113.B.12). *See generally, van Heerden Report.* The numerical criteria of concern in relation to the proposed EGL project include, but are not limited to, dissolved oxygen values (1113.C.3.). Most concerning is the impact to the designated uses of the area, which include primary contact recreation, secondary contact recreation, fish and wildlife propagation and drinking water supply. LAC 33:IX.1123.D. With respect to the anticipated accretion as a result of this project, these uses cannot possibly be maintained or preserved. The fragile state of the cypress swamps in the EGL area cannot be maintained with the nutrient loading hypoxia that will result or the potential for contaminated sediment to be introduced from years of industrial development and extraction/transportation in the area. *See van Heerden Report*, at 13-16. While LDEQ must ensure the affected water bodies maintain their recreational uses and support the preservation and propagation of desirable species of aquatic biota and indigenous species of wildlife, the project’s application and public notice fail to address these functions or the impacts this project will have thereon. LAC 33:IX.1109.B.

As the Basin’s wetlands fill with sediments and become uplands, their ability to absorb river nutrients and pollutants is forever lost and, in the long term, impacting the state’s ability to manage the dead zone in the Gulf. Considering the long-term effects of completely transforming the hydrology of the impacted area by exacerbated and accelerated sedimentation creating uplands, LDEQ cannot find that the EGL project will comply with applicable water quality standards and effluent limitations. The EGL project is incompatible with sustainable water quality improvements and is contrary to the interests of the commercial fishing communities that rely on the fisheries, and the public at large. In light of the significant opposition presented to this proposed EGL project since its inception, the important economic and environmental issues involved, and the material matters at issue in the certification of this project, including but not

limited to the cumulative impacts on water quality posed by the project, we request that LDEQ deny to issue a water quality certification for the East Grand Lake project.

d. Fisheries and Wildlife Habitat

Part of the public interest analysis includes coordination with agencies responsible for fish and wildlife resources, with a focus on conservation by prevention of direct and indirect loss and damage to wildlife resources as a result of the proposed activity. 33 C.F.R. § 320.4(c); *see also id.* at § 320.3(e), the Fish and Wildlife Coordination Act. Similarly, the Clean Water Act Guidelines consider the impacts and potential loss of value in recreational and commercial fisheries due to the discharge of dredged and fill materials. 40 C.F.R. § 230.51. Furthermore, the State Master Plan states that the “preservation of pockets of old growth is a goal of this Master Plan.” *State Master Plan*, at 3-2. The Master Plan recognizes the public interest in protecting the remaining old growth cypress trees that were spared from the massive harvesting operations that dominated the early 20th century.

This project proposes to directly dredge and clear 16.5 acres of forested wetlands in the East Grand Lake area, and stands to indirectly and cumulatively impact many more acres of wetlands over the long-term. These areas constitute critical wildlife habitat, from the fisheries to the migratory bird rookery at Lake Zadrick. If this project proceeds and these areas are filled in, they will be forever lost. The Corps will disserve the interests of the public, the state and the entire nation if these invaluable wetlands are filled in. The public interest favors protection of these fisheries and wildlife habitat for generations to come, the Corps should deny this permit.

3. The harms that will result from the implementation of the EGL project significantly outweigh its purported benefits

In addition to the aforementioned factors the Corps must consider in making a public interest determination regarding the proposed EGL project, the regulations also provide general criteria that must be considered in every application evaluation. 33 C.F.R. § 320.4(a)(2)(i) – (iii). These general criteria include public and private *need* for the project, the practicability of using reasonable alternative methods or locations to accomplish the project’s objective and the extent and permanence of the beneficial and/or detrimental impacts the project will have on the area. *Id.*

The 5,359 acre tract of land purchased by TNC in 2015 was previously owned by A. Wilbert’s Sons, who used the land for timber harvesting, oil and gas exploration and hunting leases. Nick Janzen, *The Nature Conservancy Begins Long-Term Restoration Effort in Atchafalaya Basin*, Jul. 21, 2015, wrkf.org, available at <http://wrkf.org/post/nature-conservancy-begins-long-term-restoration-effort-atchafalaya-basin>. TNC has expressed its hope and positive outlook in working with Wilbert’s. *Id.* Yet, Wilbert’s land manager Vic Blanchard’s opines that the need for the project is a result of *too much water* in the area: “It’s just inundated for too long, too frequent. Many of your timber stands are actually dead or dying at this time, because of the amount of water inside the Basin.” *Id.* This account of the “need” for the project is distinguishable from DNR’s expression in its application materials, which seek to increase north-south flow restricted by spoil banks, benefiting the ecological habitats in the back swamp. *See EGL application*, at 2. TNC’s Brian Piazza contends that “the Atchafalaya Basin’s plumbing is broken,” and that flood

waters get trapped in the woods which harms cypress-tupelo forests. *Id.* With the articulated goal of “[m]oving the water across these floodplain forests . . . the way it was naturally before the construction of a lot of these canals and pipeline right of ways” the efficacy, purported need and overall goals of this proposed EGL project become blurred. Add to this conflicting messages from the agency itself, stating that the project will “offset the naturally occurring subsidence that has been documented in this part of south Louisiana.” *See Response Letter from DNR to Senator Mills*, Exhibit I.

This area, as show in Dr. van Heerden’s report and the LIDAR images included therein, is not suffering from subsidence, but rather quite the opposite, it is filling in at an alarming rate with sediment. The cypress and tupelo trees are not dying from over-inundation with water, rather the increased sediment deposits threaten the cypress-tupelo swamps as Swamp Privot, American Help and aggressive vines thrive in the uplands created from exacerbated accretion. The long-term effect of filling in these areas with sediments and converting cypress swamps to bottomland hardwoods is directly contrary to the purported purpose of the project (i.e., improved water quality and ecological function of the swamp). *van Heerden Report*, at 3, 11-13, 16-21. The permanence of the project’s footprint must be considered; the long-term impacts will be irreversible. *See id.* at 6, 16.

The project’s application and Joint Public Notice also fails to provide basic information upon which the public interest balancing inquiry can be performed as required by 33 C.F.R. § 320.4(a)(1). There is no inclusion of the scientific basis used to support the project. Despite the large sum of funds expended on research and monitoring, there is a void of scientific support offered to justify the project, assessing the long and short-term effects. Absent support for the project, the public and the permitting agency is ill-equipped to account for the myriad of impacts that will result from the proposed activities in East Grand Lake.

In addition to the deficient information and incongruent need/purpose/impacts of the EGL project, there are a number of similar projects that have failed to improve the project areas and in turn have actually resulted in accelerated degradation. *See Letter from the Law Office of R. David Brown*, on behalf of Atchafalaya Basinkeeper, to the Atchafalaya Basin Program regarding the ABP-TNC MOU and EGL project. June 7, 2016 (attached as Exhibit F) (“we have witnessed first-hand demonstrably more mismanagement than beneficial management of the Basin ecosystem”). For example, the Buffalo Cove Management Unit project had the same objectives as that of EGL, namely to introduce river water from the north, improve internal circulation, remove barriers to southerly flow and to reduce or redirect sediment disposition in the area. *Buffalo Cove EA*, at 29. As a result of project implementation, the Buffalo Cove Management Unit has introduced huge amounts of sediments into the area, many of the cuts filled with sand within one year and have willow trees growing on the sandbars today.

Additionally, the Beau Bayou Project (finished in 2017) is also introducing huge amounts of sediments into the project area with deltas already forming. In around 2000, an oil access canal was dug 0.9 miles from the Bayou Sorrel Locks that brought sandbars over four (4) feet high into the area. Around the same time, the Corps dug a ditch along the northern end of the Bayou Sorrel Locks dredge disposal site into Cow Bayou that filled much of Cow Bayou and a significant amount of surrounding swamps.

In light of past failed projects, and the undersigned organizations' decades of on-the-ground experience and observations in the Basin and the EGL area in particular, there has been robust public opposition to the proposed project since its concept inception. *See, e.g.*, Letter from Senator Fred H. Mills, Jr. to Governor Edwards regarding the EGL project, Oct. 13, 2016. Response Letter from the Department of Natural Resources, Dec. 7, 2016 (attached as Exhibit I). The undersigned organizations even appealed to the Governor requesting that he assign an independent ombudsman to investigate this project more closely and, in particular, the use of public funds for a project that will exacerbate sedimentation in the area. Letter from the Law Office of R. David Brown, on behalf of Atchafalaya Basinkeeper, to Governor Edwards regarding the EGL project, July 22, 2016, (attached as Exhibit G). In 2016, DNR held three public hearings on the EGL project, to which the Atchafalaya Basin Research and Promotion Board acknowledged that "[t]he majority of comments were in opposition to the East Grand lake project Mr. Haydel said that the ABP still recommends that the plan moves forward." Meeting Minutes, *Atchafalaya Basin Research and Promotion Board*, Nov. 3, 2016. In fact, although no one attended the public hearing in Morgan City, both meetings in Bayou Sorrel and Henderson were full with 100% of commercial fishermen present in opposition to the project because of the long-term impacts on accretion in the area. Despite the unanimous voice of opposition present at these two hearings, including those of commercial fishermen, Atchafalaya Basinkeeper, LCPA-West and Sierra Club, and its recognition and acknowledgment of the concerns voiced regarding long-term impacts, DNR indicated its intent to move forward with the project nonetheless.

Furthermore, comments were made in opposition to the EGL project at the November 3, 2016 Research and Promotion Board meeting, including comments made by Mr. Chris Tauzin, then council member for District 5 in St. Martin Parish, who stated that the money should be used "to remove spoil banks instead" arguing that "every time you open a cut, you get silt," and he finished by asking the program to concentrate on removing spoil banks. *Id.* Alternatives and concerns have been adequately expressed and proposed throughout the development and approval processes of this project. Yet, the scientific support in favor of this project, if any, has remained closely guarded.

Not only have the commenters expressed their opposition at every opportunity, but we have made attempts to join the conversation and development of this project to propose viable alternatives. On January 13, 2016, Atchafalaya Basinkeeper sent an expression of interest letter to DNR requesting to be a part of the Memorandum of Understanding between TNC and DNR and to participate on the development of the East Grand Lake project. *See* Letter of Expression of Interest to be included in the MOU, Atchafalaya Basinkeeper to LDNR ABP, Jan. 13, 2016. Response Letter from LDNR ABP to Atchafalaya Basinkeeper, Mar. 23, 2016 (attached as Exhibit E). But DNR denied our request, stating its intent to place the vision of the landowners at the forefront in designing the future Atchafalaya. *Id.* The diverse group of stakeholders are the public, the persons who use, fish, photograph, live in, recreate and make a living in the Basin and the persons that have been working tirelessly for many years to protect it. Yet, the only stakeholders that appear to have a voice in relation to this project are the landowners, including TNC, who stand to benefit. With respect to this entire process, the interests and voices of the public at large have been consistently voiced, albeit largely disregarded.

Additionally, as previously noted, there remain pertinent questions surrounding the long-term management and maintenance of the EGL project. These uncertainties impact the public interest, weighing heavily against authorizing a project for which there is no clear managerial oversight to ensure compliance and efficacy.

The Coastal Protection and Restoration Authority of Louisiana contends that “a sustainable landscape is a prerequisite for both storm protection and ecological restoration.” Coastal Protection and Restoration Authority of Louisiana, *Executive Summary*, Louisiana’s Comprehensive Master Plan for a Sustainable Coast, at 3 (2007). Furthermore, the cost of destroying Louisiana’s wetlands can be measured in billions of dollars per year. *See* Coastal Protection and Restoration Authority of Louisiana, Louisiana’s Comprehensive Master Plan for a Sustainable Coast, at 74 (2017). We cannot afford to continue to degrade our wetlands at such a high cost to the economic interests of the state and to public health and safety. Public funds should not be used to fill in irreplaceable swamp habitat while the coast is starved for sediments. *See* Letter to the Governor, Exhibit G.

In accordance with the regulations, the Corps cannot permit conduct impacting valuable wetlands in the Atchafalaya Basin without expressly finding that benefits of the project outweigh the damage to the wetlands resource. 33 C.F.R. § 320.4(b)(4). The purported benefits of short-term water quality improvement do not outweigh the significant detriments that will result from the EGL project. The Corps cannot grant this permit and comply with its own regulations, the 404(b)(1) Guidelines, the goals of the ABP, the Coastal Master Plan and the State Master Plan for the Atchafalaya Basin Floodway System.

b. THE NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (“NEPA”) provides “our basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a). It assures that environmental protection is considered in every federal agency action. 42 U.S.C. § 4332(1). NEPA requires agencies to disclose all potentially adverse environmental impacts of its decisions prior to determining whether to proceed. 42 U.S.C. § 4332(C). NEPA also mandates that agencies utilize high quality, accurate scientific information and requires scientific integrity of the analysis. 40 C.F.R. §§ 1500.1(b), 1502.24. Here, the Corps must conduct an “independent evaluation” of the information submitted by DNR, to ensure its accuracy and reliability. 40 C.F.R. § 1506.5.

NEPA requires the Corps to consider the direct, indirect and cumulative effects of the proposed activity, in conjunction with the Guidelines required consideration of the secondary effects on waters of the U.S. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8; 230.11(h). NEPA also requires the Corps to consider all reasonable alternatives to the proposed action. 40 C.F.R. § 1508.9. As discussed *infra*, the overlap of these requirements under NEPA and the CWA and the corresponding responsibility of the Corps in considering the effects of the proposed activity is important to the Corps’ overall environmental review of the project.

i. The Corps should, at a minimum, prepare an EIS to ascertain the totality of impacts and availability of alternatives to the EGL project

If, after careful evaluation and assessment of the impacts of the project, the Corps determines that the adverse effects will be significant, it *must* prepare a full environmental impact statement (“EIS”) to analyze the effects. 40 C.F.R. § 1501.4 (emphasis added). In determining whether the environmental impacts of an activity are significant, the Corps will consider both the context and intensity of the proposed action. 40 C.F.R. § 1508.27. In terms of context, the Corps must consider an array of contexts including the region affected by the conduct. *Id.* With regard to intensity, there are several factors the Corps must consider, including impact of the proposed activity on public health and safety, unique ecologically critical areas, unknown risks and cumulatively significant impacts. *Id.*

Here, because the direct, indirect and cumulative environmental effects will be significant, the Corps must prepare a full EIS for the East Grand Lake project. As noted, the long-term impacts of this project are staggering and crippling to the overall health and longevity of the area.

ii. There is insufficient information available to the public and the permit should be denied

The procedures under NEPA require “that environmental information is available to public officials and citizens before decisions are made and before actions are taken.” 40 C.F.R. § 1500.1(b). The Act provides further that “(a)ccurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.” *Id.* Pursuant to Act’s policy statement, NEPA requires federal agencies to encourage and facilitate public involvement in decisions affecting the human environment, identify and assess reasonable alternatives, and to work to restore and enhance the quality of the human environment. *Id.* at § 1500.2.

Despite our noted attempts to obtain additional information to better understand and account for the scientific support for the EGL project, DNR and the Corps provided insufficient information regarding the project parameters, anticipated impacts, results of monitoring and study in the area and the future management of the project to allow for adequate public notice and comment. We want to be involved, to identify and assess reasonable alternatives and work with the regulatory agencies to restore the quality of the environment in this area, but without the supporting scientific bases for the project and an invitation for our voices to be truly heard and accounted for, we are ill-equipped to do so. There has been a paucity of information offered for public review in support of this proposed project. Although the agencies have responded to records requests, these responses were largely devoid of recent scientific analysis and monitoring data conducted presumably by TNC to assess the project’s efficacy.

In sum, the requirements under NEPA necessitate that the Corps take a hard look at the proposed East Grand Lake project and conduct its own independent evaluation of the information offered in support of this project. Because of the significant impact this project will have on the thousands of acres of swamps, lakes, rivers and bayous in the East Grand Lake area, the permit should be denied. At a minimum, the Corps must prepare an EIS to adequately assess the totality of impacts and review all reasonable alternatives.

c. CONSISTENCY WITH STATE AND FEDERAL LAW AND POLICY

The Corps' regulations require the agency to ensure consistency with other applicable laws. 33 C.F.R. 320.3. According to the State Master Plan, "[t]he State's principal interest is to restore, where possible, and to preserve, where feasible, the natural habitat that has made the Atchafalaya Basin a national treasure." *State Master Plan*, at 6-1. Moreover, the Master Plan states that "the goal of the management units is to prolong the expected life of some habitats that may become scarce through time (primarily aquatic and cypress/tupelo habitats) by managing sediments, while at the same time achieving a healthy water circulation pattern that will maintain or restore water quality. Sediment laden water would be directed to areas that would naturally be undergoing accretion (e.g. natural levees, overbank areas) or to maintained areas designed to trap sediments, thus prolonging the existence of swamp and aquatic habitats." *State Master Plan*, at 6-1 (note that in regard to the EGL project, the areas in which sediment-laden river water will be introduced are not areas in which "natural accretion" is occurring). Ultimately, the State Master Plan envisioned the employment of "careful coordination" between the state and federal agencies "to achieve optimum results in the public interest." *Id.* It is evident from the stated purpose of the Plan and the articulated interest in restoring the Atchafalaya Basin, that this mission must underscore the Corps' evaluation and consideration of the East Grand Lake project with respect to its own regulations as well as other applicable laws.

The anticipated effects on the surrounding wetlands will have impacts felt at the coast as the deposition of sediments in the EGL area will deprive the coast of needed sediments. The Coastal Zone Management Act, whose goal is to preserve, protect, develop and restore the resources of our coastal zone, requires federal agencies whose activities will affect a state's coastal zone to comply with the state-approved coastal zone management program. 16 U.S.C. §§ 1456(c), 1451. DNR's Office of Coastal Management implements the Louisiana Coastal Resources Program (LCRP). La. R.S. 49:214.21 *et seq.* Federal permitting activities within or outside the coastal zone that have reasonably foreseeable effects on any coastal use (land or water) or natural resource of the coastal zone must be fully consistent with the state's coastal management program. 16 U.S.C. §1456(a)(1)(A). Prior to permitting, the EGL project must be subject to a consistency determination to ensure that the proposed project is consistent with the state coastal plan. This includes the state approved program, the Coastal Restoration and Protection Authority's Master Plan for a Sustainable Coast, applicable Parish guidelines and other applicable coastal protection authority. In light of the anticipated impacts, this project cannot meet consistency standards and should not be permitted.

The Corps must also ensure that the proposed EGL project is consistent with The Fish and Wildlife Act of 1956 (16 U.S.C. 742a, *et seq.*), the Migratory Marine Game-Fish Act (16 U.S.C. 760c-760g) and the Fish and Wildlife Coordinate Act (16 U.S.C. 661-666c) which express Congressional intent "to protect the quality of the aquatic environment as it affects the conservation, improvement and enjoyment of fish and wildlife resources." 33 C.F.R. 320.3(e). As previously noted, this project could have grave consequences on the sustainability and longevity of fish, bird and other wildlife habitat.

Of notable importance is the Lake Zadrick rookery for migratory birds, just south of the proposed Bayou Sorrel cuts. The Migratory Bird Treaty Act of 1918 protects migratory bird

populations from takings. *See* 16 U.S.C. §§ 703-712. Several migratory bird species protected under the Act migrate annually through the Atchafalaya Basin, with thousands of birds nesting in the Lake Zadrick rookery in the EGL project area during summer months. These species include, but are not limited to: Roseate Spoonbill, White Ibis, Anhinga, Snowy Egret, Great Egret, Wood Stork and Cormorant. *See* 50 C.F.R. 10.13 (list of protected species). In the local area of the EGL project there are also hundreds of nests for Yellow and Black-crowned Night-Herons and important habitat for Little Blue Herons as well. One of the greatest threats to birds is the loss and degradation of habitat from development or disturbance. *See Threats to Birds*, U.S. Fish & Wildlife Service, updated Mar. 12, 2018, *available at* <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>. Bird habitat restoration and protection can mitigate against the accelerated decline in bird populations. *Id.* However, we are skeptical of the nature of the US Fish & Wildlife Service's relationship with landowners in favor of the project and suggest careful, transparent consideration of the health and longevity of the rookeries in accordance with the Act.

Following a necessarily comprehensive environmental review of the project, assessing its inconsistencies with applicable laws, the Corps must ultimately find that this project is not only inconsistent with state and federal law and policy, but also that it is detrimental to the restoration efforts underlying the ABP and the State Master Plan.

III. CONCLUSION

The Louisiana Department of Natural Resources' application before the Corps for a Section 404 permit to discharge dredge and fill material into waters of the United States and for certification under Section 401 contradicts the goals of the Clean Water Act and the State Master Plan. The Joint Public Notice and permit application is devoid of information necessary to adequately consider the totality of impacts that will result from the proposed activity in the East Grand Lake area of the Atchafalaya Basin. In addition to failing to meet EPA's 404(b)(1) Guideline requirements under the Clean Water Act, the proposed activity does not satisfy the Corps' regulations for permitting dredge and fill activities. In consideration of the significance of proposed project and its adverse impacts to wetlands, the Corps cannot authorize the EGL project; but at a minimum, pursuant to NEPA, the Corps must prepare an environmental impact statement to adequately assess alternatives and the totality of project's impacts. The EGL project is contrary to the public interests of protecting wetlands, floodplain functionality, water quality and wildlife and fishery habitat.

Despite the articulated goals, purpose and need for the East Grand Lake Project, this proposal presents a significant threat to the health of the ecosystems, habitats, fisheries, communities and wildlife of the Atchafalaya Basin. For the many reasons discussed herein, in the interest of the public and in accordance with applicable federal and state law, Atchafalaya Basinkeeper, Gulf Restoration Network, Sierra Club Delta Chapter and the Louisiana Crawfish Producers Association-West respectfully request that the Corps and LDEQ deny the Department of Natural Resources' permit and certification applications for the proposed East Grand Lake Project.

Thank you for your time and consideration of our comments.

Respectfully submitted by,



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Dave Stets, Chair
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CC: Raul Gutierrez, USEPA Region 6

LIST OF EXHIBITS

EXHIBIT A: US Army Engineer Research and Development Center, *Expanding Geospatial Assessment Tools for the Atchafalaya Basin Program*, 2009.

EXHIBIT B: Paul Chadwick, *Overview and Planning Process of the East Grand Lake Water Quality Improvement and Sediment Management Plan*, Contract ABFP-10-03.

EXHIBIT C: LSU Agricultural Center, *Characterization of temporal and stage-related changes in water quality in major inflows into the Greater East Grand Lake area of the Atchafalaya River Basin*.

EXHIBIT D: *Memorandum of Understanding between the Louisiana Department of Natural Resources Atchafalaya Basin Program (ABP) and the Nature Conservancy of Louisiana (TNC)*, Dec. 2015.

EXHIBIT E: Letter of Expression of Interest to be included in the MOU, Atchafalaya Basinkeeper to LDNR ABP, Jan. 13, 2016. Response Letter from LDNR ABP to Atchafalaya Basinkeeper, Mar. 23, 2016.

EXHIBIT F: Letter from the Law Office of R. David Brown, on behalf of Atchafalaya Basinkeeper, to the Atchafalaya Basin Program regarding the ABP-TNC MOU and EGL project. June 7, 2016.

EXHIBIT G: Letter from the Law Office of R. David Brown, on behalf of Atchafalaya Basinkeeper, to Governor Edwards regarding the EGL project, July 22, 2016.

EXHIBIT H: *Cooperative Endeavor Agreement (CEA) between the Department of Natural Resources (DNR) and the Nature Conservancy (TNC)*, Sept. 2016.

EXHIBIT I: Letter from Senator Fred H. Mills, Jr. to Governor Edwards regarding the EGL project, Oct. 13, 2016. Response Letter from the Department of Natural Resources, Dec. 7, 2016.

EXHIBIT J: *Louisiana: The Atchafalaya River Basin Initiative*, document taken from the Nature Conservancy's website, accessed on Feb. 15, 2017. This document has since been removed from TNC's website.

EXHIBIT K: Ivor van Heerden, Ph.D., *Initial Comments on the Nature Conservancy Project in East Grand Lake, Atchafalaya Floodway*, presented to the TAG, Aug. 2017.

EXHIBIT L: The Nature Conservancy, *Atchafalaya River Basin Monitoring Program for East Grand Lake Restoration Activities*, Annual Report, Dec. 2017.

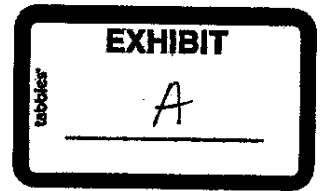
EXHIBIT M: *Request for Public Records regarding the Nature Conservancy's Atchafalaya Basin Preserve and the Louisiana Department of Natural Resources, Atchafalaya Basin Program's East Grand Lake Project (201006)*, from Atchafalaya Basinkeeper to the Nature Conservancy of Louisiana, Dec. 21, 2017. Response Letter from TNC, Jan. 4, 2018.

EXHIBIT N: *ENG FORM 4345*, Application for Department of the Army Permit, MVN 2016-01163-CY, Feb. 19, 2018.

EXHIBIT O: Ivor van Heerden, Ph.D., *Expert Report on the Proposed East Grand Lake Project (EGL)*, April 2018.



EXHIBIT P: Court Reporter Transcript, Public Hearing and Request for Public Comment on a Water Quality Certification Application and Department of the Army (DA) Permit Application, Permit Number MVN-2015-02295-WII, at 178-79 (45), Jan. 12, 2017.

BOBBY JINDAL
GOVERNOR



State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF THE SECRETARY

MEMORANDUM

TO: Louis E. Buatt, Assistant Secretary OCM 
THROUGH: Karen Y. Lewis
Contracts & Grants Administrator
FROM: Stephen Chustz 
Atchafalaya Basin Program
DATE: September 30, 2009
PROJECT TITLE: "Expanding Geospatial Assessment Tools for the Atchafalaya Basin Program"

1. The Purpose of this project is to use existing spatial data layers to begin to define and delineate aquatic habitat types and condition throughout the Atchafalaya Basin. This definition will begin a process of establishing a spatially explicit basin wide resource inventory.
2. This agreement is a Sole Source Contract between US Army Engineer Research and Development Center and the Louisiana Department of Natural Resources.
3. This project has been approved by the Technical Agency Group (TAG), and the ABP Research and Promotion Board for inclusion in the 2010 Annual Plan.
4. This Cooperative Agreement will be funded through the CPR Fund, using \$177,909 of the \$1,500,000 approved during the 2009 Legislative Session for Water Management Projects nominated and selected for inclusion in ABP 2010 Annual Plan.

ATCHAFALAYA BASIN PROGRAM
Post Office Box 94396 • Baton Rouge, Louisiana 70804-9396
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Expanding Geospatial Assessment Tools for the Atchafalaya Basin Floodway System

The ABFS is not a static system. Natural and engineered forces continually challenge the character, distribution and quality of terrestrial and aquatic habitats. Seasonal variation in temperature and water levels, annual variability in flood and drought cycles, economic activities and engineered solutions have all caused short and long-term habitat conversion. Natural and engineered forces in one area also have the potential to affect other adjacent and remote habitats in the basin.

There has been a long history of research and management activities within the basin, yet few of these efforts have had the information resources to develop a strategy that incorporates a comprehensive understanding of existing condition and long term processes. More often than not, a project will focus only on immediate observations at a single location. Clearly, such an approach has an increased potential for encountering unanticipated consequences that reduce or eliminate the desired effectiveness of the project.

Over the past two years, we have started assembling basinwide geospatial data layers that can greatly assist in objectively establishing historical and current conditions throughout the basin. Our work has focused on developing tools to measure and track some of the most important drivers in the ABFS: delivery and distribution of water and sediment. We have used remote sensing imagery to explicitly define the spatial extent of inundation and turbidity with different river levels. These layers have already been used to:

- Identify specific locations having persistently potentially poor water quality throughout the basin
- Track land change patterns in areas receiving high sediment loads.
- Assess the accuracy of elevation data collected using lidar
- Track the effectiveness of management projects.
- Define the optimal temporal data collection window for a new lidar acquisition.
- Define potential habitat for Louisiana Black Bears
- Track hydrology after hurricane Gustav.

In addition, we have begun to apply the tools and techniques developed here to coastal concerns. In the ABFS, for example, the definition of land and water extent depends largely on river levels. Measuring land change under variable water conditions is also a challenge the Wax Lake Outlet sub-delta. We have therefore used the experience and tools gained in the ABFS to also assess land-building rates in the Wax Lake Outlet sub-delta while explicitly accounting for water levels. Comparison of these coastal land-building rates with land building rates inside the levees in the ABFS may also help identify locations that can receive the greatest benefit from sediment diversion projects.

We have built abundant horizontal spatial resources for the ABFS from 1983-present. In this project, we propose more fully develop the data tools into the vertical and temporal

dimensions. We also plan to continue expand the applications of the existing horizontal (XY) data layers.

Vertical:

Water depth is a critical factor affecting habitat availability, quality and access. In this part of the work, we propose to create a series of estimated water depth layers for the ABFS at a range of river levels. We propose to accomplish this task using existing information by:

- 1) Describing the spatial extent of inundation at any given river level. The deliverables from this step will be a series of predicted inundation layers throughout the basin at a range of river levels.
- 2) Evaluating the accuracy of elevation data at the time of lidar data acquisition using known inundation patterns. The deliverable from this step will be a more accurate elevation layer. Areas that were likely inundated at the time of data acquisition will be masked out.
- 3) Using the information gathered from 1 and 2 above to calculate an estimated water depth (or alternatively, depth above “good lidar”) at a given river level. The deliverables from this step will be a series of estimated water depth layers at a range of river levels.

The quality of existing lidar information will limit the extent and detail of depth layers that may be accurately estimated. We will, however, be able to use these same tools to create more comprehensive water depth layers as new lidar data (another project) become available.

Temporal:

Landforms have changed dramatically in the ABFS since the first township surveys were conducted in the early 1800s. Natural and accelerated sedimentation processes have converted formerly large areas of open water to land. Accretion along natural levees has created segmented landscapes with limited inflow and outflow. Understanding the rates and patterns of historical change can inform not only current project management strategies within the basin, but can also assist in understanding the potential for land change in the rest of coastal Louisiana as more freshwater diversion projects come online.

The infilling of Grand Lake is one of the most significant ongoing geomorphological changes occurring within the basin. Previous studies have described this trend but none have provided detailed spatially-linked rates of conversion to land. The pattern and rate of infilling can provide a wealth of information about current land cover types, historical flow patterns, future sedimentation trends, and system resiliency. Historical topographic and township survey maps for the ABFS exist back to 1803 and depict the extent of Grand Lake before the onset of significant engineering in the basin. Few of these invaluable resources have been converted to digital formats and fewer still have been georeferenced so that they may be compared to current geospatial resources.

In this part of the project we plan to:

- 1) locate, scan, and georeference existing historical maps from 1803, 1917, 1935, 1950, 1962, and 1980
- 2) digitize and quantify the area of open water over a consistent extent for all maps
- 3) quantify annual rates of infilling across all available time periods
- 4) compare annual rates of infilling to loss rates in coastal Louisiana and accretion rates in coastal Louisiana.
- 5) establish a sequence of land change, including the location and time period in which these areas converted to land (or water), as well as identifying areas that have not changed during this time period.

The results from this analysis may be made available on a web portal (separate contract) so information is freely available and may be referenced in project design, assessment and evaluation.

Deliverables from this portion of the project include:

- 1) GIS ready maps from each of the time periods listed above
- 2) areal extent estimates of open water over a consistent extent for each time period.
- 3) estimates of change in land area between each time interval.
- 4) Comparison of ABFS land change rates with land loss/gain rates from selected coastal areas
- 5) GIS ready polygon layers of habitat stability in former extent of Grand Lake and adjacent areas in the ABFS.

Horizontal – applying and refining existing resources:

In the future, we plan to extend the application, nature, and utility of currently available basinwide assessment layers. Abundant horizontal spatial resources are now available for the time period of Landsat imagery (1983-present) describing frequency of: inundation, turbidity, and aquatic vegetation. These data provide objective, basinwide snapshots of water and sediment patterns in that have previously been unavailable to researchers and managers.

Using these frequency data, we plan to work with existing and planned water quality and sediment monitoring programs to realign sampling locations. The monitoring results from this strategic and collaborative effort should provide ground truth data that may be more easily extrapolated to basinwide processes and habitats.

In collaboration with other team members we will also explore the use of existing spatial data layers to begin to define and delineate aquatic habitat types and condition throughout the basin. This definition will begin a process of establishing a spatially explicit basinwide resource inventory.

**Atchafalaya Basin Program
REQUEST FOR CONTRACT**

REQUESTING OFC/DIV: Atchafalaya Basin Program TYPE OF CONTRACT: Contract Date: September 30, 2009
DIVISION ADMIN: Dept. of Natural Resources XX Cooperative Agmt
ASST. SECRETARY: [Signature] Amendment Interagency Agmt
ACCOUNTING REVIEW - Source & Availability of Funds: _____

APPROVED BY: ☐ This agreement is part of the 2010 Annual Plan East Grand Lake/Flat Lake Planning Project

1. Contracting Party: US Army Engineer Research & Development Center Contact Person: Yvonne Allen
Address: 3909 Halls Ferry Road Telephone No.: (225) 937-0246
Vicksburg, MS 39180-6199 Federal Tax ID#: 62-1642142

2. a) Amount: \$177,909 b) Funding Source: CPR 177,909
Capital Outlay Priority 1
c) Cost Center No.: 2502 Capital Outlay Priority 2
Capital Outlay Priority 5
Total: \$177,909.00

A copy of DNR insurance requirements was provided to this proposed contractor.

3. Project Manager: _____
4. Contract Term: 10/1/2009 - 11/10/2010 Justify if more than 12 months: _____

5. Project Title: "Expanding Geospatial Assessment Tools for the Atchafalaya Basin Program"
Objective: To use existing spatial data layers to begin to define and delineate aquatic habitat types and condition throughout the Atchafalaya Basin. This definition will begin a process of establishing a spatially explicit basinwide resource inventory.

6. Payment: Actual Costs Incurred; Fee Schedule; Hourly xx Other (Explain, (other) Task based per attached budget.

7. Documentation
A. Scope of Services must include Deliverables, Budget and Reports (type, frequency and no. of copies)
B. Resumes (1 copy)
C. Contract Certification Form (DNR-CD)
D. Contract Justification Form (DNR-CJ)
E. Civil Service Justification Form (DNR-CS)
F. Request for Sole Source Selection Form (DNR-RS)
G. Cost Benefit Analysis Documentation Form (DNR-CB)

Amendments - Complete items 1, 4, 5, 8 (as applicable) and 9

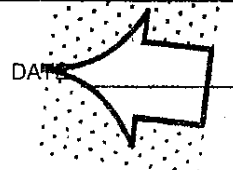
8. Original Amt.: _____ Amount of Revision: _____ Total: _____
Funding Source: _____ Grant No.: _____
Contract No.: _____

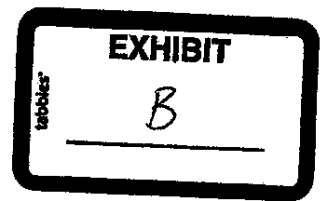
9. Type of Amendment: Time Extension Date Extended: _____
Budget Revision
Move Non-Cash to Cash
Scope of Services

Reasons for Amendment: _____

FOR CONTRACTS & GRANTS USE ONLY

SECRETARY APPROVAL: _____





Overview and Planning Process of the East Grand Lake Water Quality Improvement and Sediment Management Plan

Project Approved in Atchafalaya Basin 2009 Annual Plan

Submitted to the Atchafalaya Basin Program, Louisiana Department of Natural Resources for Development of Water and Sediment Management Projects in the East Grad Lake Project Area

Prepared by Paul Chadwick
Contract ABFP-10-03

Introduction

Planning environmental management of the East Grand Lake Project area will be guided by the State Master Plan for the Atchafalaya Basin Floodway System. It will be an adaptive management process that uses continually updated scientific evaluation of conditions in the area to tailor a series of projects to the most recent knowledge of the area. The adaptive management approach will develop new projects that build on changes brought about by previous projects, and require a pre-conceived concept of the desired condition of the entire study area in the future. Under this scenario, projects developed early in the process will be designed to provide improvements that will be advantageous to projects that will be developed later in the process. This overview gives an account of how that process will work, describes general conditions regarding water movement and sedimentation in the study area as defined by the latest available science, outlines the concept of how the management team envisions guiding changes in the project area, proposes a platform for integrating stakeholder desires with management recommendations, proposes a method for identifying management options to accomplish the common objectives of stakeholders and managers, and sets a preliminary timeline for developing projects.

East Grand Lake Project

The East Grand Lake Project area covers both the Flat Lake and Upper Belle River Water Management Units as designated by the United States Army Corps of Engineers (USACOE). The area is approximately 202,424 acres, stretching approximately 31 mi long by 13 mi wide. The area is an important component of the local economy that supports commercial and recreational fishing and hunting activities, oil and gas development, commercial transportation of goods and services, and timber harvest. Much of this area is privately owned and managed for silviculture, hunting leases, campsites, and other land uses. The remainder is state owned and managed as public lands (Fig. 1). The Louisiana Department of Wildlife and Fisheries (LDWF) has estimated over 8.7 million pounds of crawfish with a dockside value of more than \$7.5 million were harvested from the Basin from January to May, 2009. Additionally, the LDWF estimates the commercial and recreational fishing industry in the Basin has a combined value of \$142.7 million (ABP 2011).

Although it is still one of the most productive floodplain ecosystems in the country, water quality, aquatic productivity, and forest health have declined as past alterations to the landscape have limited water movement, caused sediment to be distributed in an unnatural manner, and cause low oxygen conditions during spring and summer months. Low oxygen conditions are not unexpected in floodplain swamps like the Atchafalaya Basin, but low oxygen conditions now occur more frequently throughout the project area and cover a much larger area than in the past. Poor water quality limits available habitat for fish to spawn and feed, and survival of fish species important to commercial and recreational fishermen is threatened when

oxygen deficient water drains from swamps into areas that fish must use to seek refuge in low water periods. Some aquatic species like crawfish are able to survive in water where oxygen is low by using vegetation to access more oxygenated water near the surface and can tolerate short periods out of water. However the condition has severe economic consequences for commercial crawfishermen as crawfish are confined to traps in oxygen depleted waters near the bottom and rapidly consume the limited supply of available oxygen and die before making it to market. Forest health declines in areas where sediment buildup results in poor drainage and causes ponding which prevents annual dry periods that species like bald cypress and tupelo trees require for regeneration and optimal growth.

Many causes of change to the landscape have been identified and are now regulated in a more environmentally beneficial manner, but challenges remain for managers of both private and public lands. While oil and gas exploration and production continue in the area with greater consideration for environmental impacts, research has documented that the existing production infrastructure and access canals has altered water flow and sediment distribution patterns and continue to cause problems for water movement. In addition, the Atchafalaya River Basin is managed as a floodway and the USACOE has limited the exchange of water into the project areas to increase the capacity of the main Atchafalaya River channel to carry flood waters to the gulf and to facilitate navigation. Much of the lower part of the project area is also subject to land subsidence which was historically countered by uniform distribution of sediment, but now continues to decrease in elevation as sediment is funneled and deposited along the main waterways that carry most of the sediment past areas where it would have historically deposited. Sediment continues to be deposited in areas that block water movement and fill open-water habitat. Only about 13 percent of the Atchafalaya Basin remains as persistent water during low-water periods and over the past 5 decades much of the open-water has been converted to forested habitat because of excessive and misdirected sediment. As sediment accretion continues in this manner, aquatic habitat necessary for aquatic organisms to survive the low-water periods continues to be reduced (fig2). As sediment continues to divide the project area into smaller segments and limits water movement between those segments, the ecological function of the system deteriorates and causes problems over an ever-increasing portion of the project area.

In response to stakeholder desires to improve environmental conditions, the Atchafalaya Basin Program initiated the EGL planning effort in the 2009 Atchafalaya Basin Annual Plan. The Technical Advisory Group (TAG) agreed that the project area needs better management of water flow and sediment distribution patterns and that the current trend in sediment accretion will continue to divide the area into smaller and smaller isolated and unmanageable segments.

East Grand Lake Project Area Management Approach

Restoration vs Preservation: Change is always a challenge. But the landscape in the Basin is changing daily and the livelihood, economic investment, recreational opportunity, and even daily life for the Basin community and stakeholders change with it. So it is important that we consider all of these factors before final decisions are made on plans to alter the way that the

landscape changes. There are a few concepts that will guide the EGL management plan and these concepts are highlighted so that there is some understanding of how the objectives of the EGL project are being accomplished. One of those concepts is to acknowledge that the goal of management is not to “restore” habitats to a previous state simply because those conditions existed in the past, but to forecast the best available options for managing the landscape as it exists today. Forests have developed where lakes once existed but there is not necessarily a benefit in removing the forest simply because it was once a lake. It can be difficult to set aside ideas for restoration that have been formulated by many people over decades of observation in the Atchafalaya Basin, but changes occur rapidly in the Basin and many ideas that may have been proposed in the past are simply no longer the best choice in the present. Many factors must be evaluated when considering which options are appropriate for each area of the basin, but this concept can be simply described as taking areas for what they are today and making them work or “function” better. The difficulty in managing this way is that some areas of the Basin will have to undergo changes that are not always popular and have not always been viewed as improvements in the past.

Tailored Project Design: The EGL project area is very large and gets water from relatively few sources today compared to many sources that existed when it was formed. One difference in how it functions today is that areas near those sources of water function quite differently than areas further away from those sources. Accordingly, the designs to improve circulation and water quality will not be the same for all areas. Because water movement is not limited by the same factors in all areas, different strategies will be required to address the specific needs of different areas. Areas in the north and west suffer from restricted input of water where the river once supplied water along much of the western boundary. Areas in the south have almost no drainage relative to past conditions, and central areas are sandwiched between opposing flows and have little in the way of input or drainage. Past efforts to correct the problems associated with these changes to water flow have emphasized water management projects to introduce additional water into the Project areas to change water-flow patterns as a primary means of improving water quality. But those projects have been developed on a small scale and without full consideration for changes over such a large area. Small scale projects, like the ones submitted for construction in the 2010 Annual Plan will continue to be part of the EGL Project and serve an important role in management of isolated areas where limited options exist for improving poor environmental conditions. But additional emphasis needs to be placed on long-term transformation of the entire system that considers improvements over a larger area to make sure that smaller projects fit logically into plans that address the specific needs of different areas. The long-term planning of the EGL Project area is being implemented to provide a vision for reasonable management of the entire area well into the future as well as to guard against developing short term projects that may limit management options and that may not work together in the larger system.

Many parts of the EGL project area require more than just water quality improvement and are well suited for management projects that simultaneously improve water quality and forest

→ health by purposely directing sediment to places where forests no longer receive the sediment that they require to remain healthy. This type of purposeful redirection of sediment has

received limited evaluation in the past, but is an example of how identifying specific needs for different areas can be beneficial. It is important that benefits to aquatic habitats that support crawfish and fish species remain a primary focus of the EGL project, but planning for the beneficial use of sediment must be part of the process. There are only a few tools available to improve water quality conditions in the Basin, and redirecting water flow by removing flow barriers is the primary mechanism to accomplish that objective. But redirecting water flow means redistributing sediment and the strategic redistribution of sediment should be a significant consideration in planning because of its impact on forest health, unwanted filling of open-water refuge areas for fish, and the longevity and connectivity of water management projects.

Stakeholder Input: The Atchafalaya Basin Master Plan outlines human use of the Basin as a significant reason for making improvements to the Basin. As projects are developed to better manage water and sediment, there must be simultaneous consideration given to the reasons that stakeholders want to improve wildlife, fisheries, and forest conditions beyond purely ecological change. Recreational users have voiced a desire to have these projects maintain or improve access to the waterways, water bottoms, and state-owned lands that provide recreational opportunities. Commercial fishermen seek improved harvest and access to lands that provide fishing opportunities. Landowners have property rights that must be honored as well as land management objectives that must be considered. Oil and gas activities are ongoing and continue to seek permits for exploration and production that will alter the project area. These and other user groups represent independent planning efforts that have different expectations and plans for the same area into the future. Some are short-term expectations like improvements for fish or crawfish harvest and oil and gas production. Others are long-term expectations like timber production and preservation of cypress tupelo forests.

Given that some stakeholders have different expectations for the same area, it is expected that some of these expectations will be incompatible. There are also limited sediment and water resources that can be used to meet the goals of individual stakeholder groups in all areas where they seek change. This planning effort does not propose to develop priorities of one stakeholder group over another, but rather to understand the expectations of many stakeholders to seek solutions that combine objectives where possible and to provide alternatives where common solutions are not possible. Many stakeholder expectations are not necessarily focused on the kinds of traditional improvements that come from planning environmental management and planning environmental projects frequently overlooks the reality that stakeholder interests must be included in the planning process.

Outlining Flow Patterns: Realigning sediment and water distribution in EGL Project area requires the identification of existing flow patterns. One way to distinguish how water moves through the system is to use turbidity patterns derived from satellite images. Turbidity measurements from the imagery provide an estimate of the amount of particles that are suspended in the water. The extent of turbid water in different areas of the Basin is an indication of movement of fresh water through the system. Satellite images captured at a variety of river levels can therefore be used to outline water movement patterns indicated by

turbidity because particles remain suspended in the water column where water moves and turbidity is high (Fig. 3). However, it is also important to have actual discharge and water quality measurements to provide quantifiable evidence of water movement that can not be determined from satellite information. These data are being collected by USGS and LSU and are being used to complement assessments derived from turbidity patterns. A more complete evaluation of how the water moves through the area will be possible after their data collection efforts are complete in late 2011, but preliminary evaluations using a combination of all these data have already identified areas of persistently good and bad water quality within the unit.

Dividing the Project Area: Forecasting change associated with multiple management projects that simultaneously set out to alter a large area like the EGL Project area is difficult, if not impossible. It's especially difficult for areas that are farther away from the actual location of individual projects. So a project development dilemma exists in deciding where to initiate projects and how far to anticipate the benefits of those projects. Our initial assessment of water flow, elevation, and sediment distribution revealed 3 distinct regions that provide a good planning platform; a northern region, a western region, and a lower region (Fig. 4). These Regional divisions are still sufficiently large that individual projects within each of these boundaries may not effect significant changes in adjacent regions, but are sufficiently restricted so that a series of projects within each Region could be expected to provide a reasonable positive benefit within the Region. It's also difficult to plan across regions in the initial planning stage because there will be numerous projects in the future that rely on improved water and sediment conditions from the initial projects. Expanding the reach of improvements into and each Region by adding additional projects will be a sequential process where new projects may be dependent on the success of the initial projects. The Regional divisions will set the stage for initiating project design.

Upper Region: The Upper Region covers the area south of Bayou Sorrel to Old River and east of Grand Lake to the GIWW. Turbidity patterns suggest a fairly homogenous distribution of good water throughout much of the region relative to other parts of the Project area (Fig. 4). USGS is collecting discharge and suspended sediment measurements around the perimeter of the region, and preliminary evaluation of these data indicates that most of the water that enters that Project area comes through this region. The Upper Region also has fewer restrictions to flow than other areas of the EGL Project area which allows for good water to enter and circulate throughout a large portion of the upper region. However, the highly channelized delivery of water through the Coon Trap, an Unnamed oilfield canal off of Bayou Sorrel, Indigo Bayou, Cannon Bayou, and Williams Canal, and Bayou Pigeon has developed a sediment delivery network that carries sediment deep into the Project area which promotes further restriction of flow and isolation of small areas. This network of channelized water input will be the initial target for realignment. The ability to forecast expected benefits in the Upper Region is better simply because the target goal is to redirect the delivery of sediment to areas that have been bypassed by the current network of waterways and are left without the sediment resources to continue development into healthy forested areas. The strategy will also begin the realignment of water input through the Upper Region so that water is still supplied to areas in

the central part of the Upper Region after it has been filtered of sediment to reduce the rate of sediment buildup along the channelized delivery network.

Western Region: This region occupies a large portion of the former extent of Chicot and Grand Lakes which has been isolated from the direct overflow of the Atchafalaya River to the west by natural sediment accretion and channel training works constructed by the Corps of Engineers in the 1970's. Sediment now enters the system through channelized waterways at the Coon Trap and Dog Leg inlets and funnels sediment into numerous isolated lakes and waterways, especially Grand Lake which is one of the few remaining natural areas that can provide fairly consistent and suitable water quality conditions for fish to take refuge when water quality problems occur in much of the EGL Project area. Turbidity patterns and preliminary USGS discharge data suggest that good water quality in the rest of the Project area is essentially confined to the main waterways traversing the region. The data also suggest that numerous natural barriers prevent water circulation to impounded areas except during extreme high water events. Restoring flow to large areas of this region will therefore require numerous water realignment projects that will require further analysis regarding how drainage from the area will be achieved and its impact to Grand Lake. More bathymetry will be required to conduct these analyses, especially in Grand Lake, and those data will be collected in the coming year.

Lower Region: Turbidity patterns in the lower EGL region, south of Old River to Flat Lake, and east of the western region to the GIWW, suggest that poor water quality persists throughout the central portion of the region where an extensive network of oilfield and pipeline canal spoil banks impede water circulation except during all but extreme high water events. Water movement through the project area has been increasingly restricted, especially after most of the natural connections to the Atchafalaya River that provided a place for water to move in and out of the area were closed off in the 1970's by the USACE's channel training efforts. All of the water that enters the project area from the north must now drain through the lower region and exit through American Pass, Little Bayou Sorrel, and the Flat Lake area (Fig. 5). However, because American Pass and Blue Point Chute flow into the project area for much of the year, the force of water entering through those channels restrict drainage from the Northern and Lower Regions and causes stagnation and poor water quality. Additional discharge measurements collected by USGS will help address this issue and updated accurate elevation data will help quantify the extent to which spoil banks prevent flow to critical areas of the lower region. Much like the western region of EGL, restoring flow to large areas of the lower region will require numerous water realignment projects and the information necessary to plan effective projects, especially accurate elevation and bathymetry, is currently lacking.

Future Development of Assessment Units within each Region: Many segments exist within each Region that can be outlined into smaller and more manageable parts using the same type of evaluations used to define the regions. We anticipate dividing Regions into smaller isolated segments called Assessment Units (AU) so that more detailed assessments of these segments can be performed as projects are developed. While it may seem a rather complex set of boundaries, dealing with small areas will provide a more precise characterization of Regional

conditions and also provides a way to add new and specific information to the decision process that have been difficult to integrate include accurately in the past. One significant contribution will be stakeholder input. Many stakeholders have vital information regarding the use and expectations for the area that has not been available to managers while plans are developed. Not that the information did not exist, but there was previously no mechanism to capture that information for specific parts of the EGL Project area. The Natural Resource Inventory and Assessment System provides that mechanism because it is a GIS based approach that can store and deliver information for specific geographic locations.

Natural Resource Inventory and Assessment System (NRIAS):

A more detailed account of how the NRIAS will handle various kinds of information is being developed, but the data that it will use are already being used by managers in the EGL Project area. Assessments of how land has been converted to water have been derived from historic photographs, satellite imagery, and lidar elevation and have been combined with flow and turbidity patterns to outline the Regional divisions and to develop preliminary options for projects. Flow analysis will feed the GIS structure to provide information specific to management needs, and the system will build on those evaluations to prioritize areas of importance, such as identifying water bodies that are at relative risk of being filled by sediment or healthy cypress tupelo forests that are located in areas where management has a good change of preserving those forests into the future. As projects are developed, the NRIAS will also be used to forecast changes to land development, forests, water movement, and water quality.

Realignment Strategy

Both natural and human-induced changes to the landscape present a formidable challenge in reestablishing functional water flow patterns, but the elevation of land from Bayou Sorrel to Flat Lake remains lower than any other area of the Atchafalaya Basin (Fig 6). The low elevation provides favorable opportunities to redirect water flow and sediment in a beneficial manner that may not be as easily achieved in areas of higher elevation. The process will begin in the Upper Region where options to realignment of water and sediment into the Region will be proposed through a process of developing ideas through planning teams. Options will include water and sediment diversions, canals improvements, canal closures, bank shaving, and other potential management techniques that are consistent with the concepts in this overview. Each project will outline specific objectives and target goals and will include an anticipated area of influence. As new options are proposed, documentation will be developed to outline the thought process associated with the project and its potential strengths or weaknesses in contributing to overall EGL Project area improvements. The documentation will also include an account of how stakeholder input is considered and integrated into the various options prior to the development of final proposals.

The Upper Region was chosen as the initial point of developing the overall strategy for the EGL Project area because there is a reasonable confidence in the projected benefits for realignment of flow and sediment. The Western and Lower Regions present greater uncertainty in realignment and will require additional information before projects can be designed. However, general ideas are being considered for realignment in the Lower Region and the development of proposals in the Upper Region are being formulated with some expectation of the needs in the Lower Region.

The TAG has approved to date 5 small scale projects important to fisherman, mainly dredging to improve access, but these are much smaller scale projects designed to address localized issues that would not interfere with the system-wide water realignment plans required to manage EGL. In order to effectively manage flow at the broader EGL unit-scale, stakeholders believe the best approach is a north to south sequential realignment strategy. There has also been strong support among stakeholders that multiple small scale projects like bank shaving can be very effective, making the system more porous and connecting areas that are now isolated and independent.

As additional information is being collected to address planning needs in the Lower and Western Regions, the initial set of proposals for the Upper Region will be forwarded to the TAG for the 2012 Annual Plan. These proposals will come with options for development and recommendations for prioritizing project selection. We anticipate much discussion and the need to compromise among options so acceptance of the entire suite of proposed projects may not be final in time for the 2012 Annual Plan, but if there is agreement for the basic concept of realignment then there are some interim measures that will be proposed for that cycle. The proposed list of projects will be delivered to the Atchafalaya Basin Program by 31 August 2010.

East Grand Lake Project Area

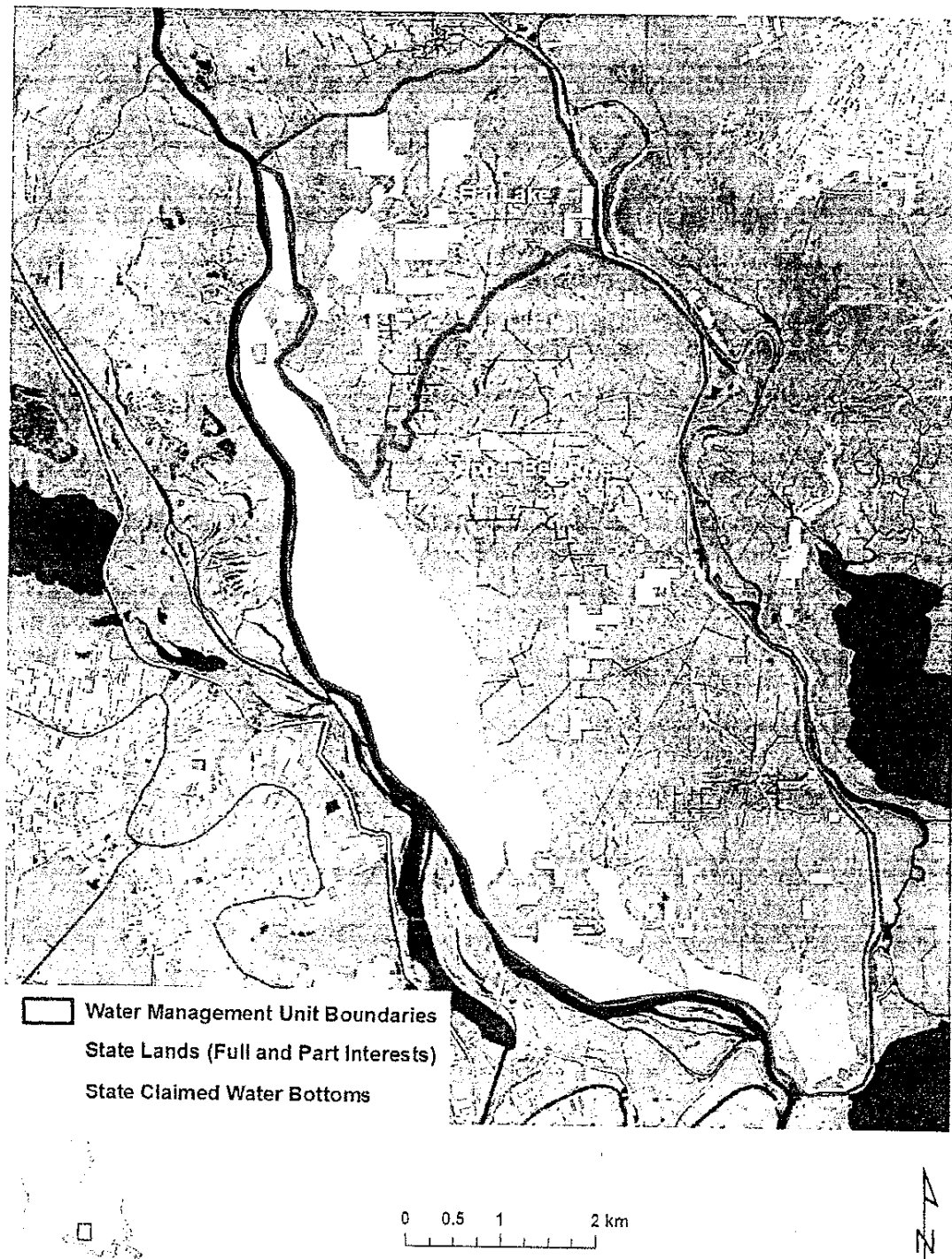


Figure 1. Louisiana state lands (full and part interest) and state claimed water bottoms within the East Grand Lake Project area.