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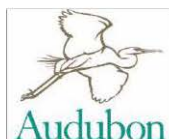
U.S. Army Corps of Engineers, New Orleans District
Colonel Stephen F. Murphy, District Commander
7400 Leake Avenue
New Orleans, Louisiana 70118
Attn: CEMVN-ODR-E, MVN-2021-2806-EOO
Via Email: CEMVN-Midbarataria@usace.army.mil

RE: Draft Environmental Impact Statement for the Mid-Barataria Sediment Diversion Project, USACE Project MVN-2021-2806-EOO and Draft Phase II Restoration Plan#3.2: Mid-Barataria Sediment Diversion, Deepwater Horizon Natural Resource Damage Assessment Louisiana Trustee Implementation Group (LA TIG)

Dear Colonel Murphy,

The members of the Restore the Mississippi River Delta appreciate this opportunity to share our collective comments and recommendations on the *Mid-Barataria Sediment Diversion Draft Restoration Plan 3.2 and Draft Environmental Impact Statement (hereon referred to as the Draft Restoration Plan and DEIS, respectively)*. We write in strong support of the Preferred Alternative, **Alternative 1, Variable Flow up to 75,000 CFS**. We submit these comments on behalf of our coalition which comprises conservation, policy, science and outreach experts from Environmental Defense Fund, National Audubon Society, the National Wildlife Federation, Coalition to Restore Coastal Louisiana and Pontchartrain Conservancy, and several other local partnering organizations. Our organizations represent thousands of Louisiana-based members and supporters, as well as many more nationally that care about the future of Louisiana's unique and nationally significant coast.

Restore the Mississippi River Delta (MRD) works to protect people, wildlife, and jobs by rebuilding coastal Louisiana's nationally significant landscape. As our region faces an ongoing and severe land loss crisis, we offer science-based solutions through a comprehensive approach to restoration. As organizations with long-standing interest in coastal projects, we commend Louisiana's Coastal Protection and Restoration Authority (CPRA), the U.S. Army Corps of Engineers (USACE) and the Louisiana NRDA Trustee Implementation Group (LA TIG), for working tirelessly on this keystone project for Louisiana's future and producing one of the most extensive scientific analysis and robust public engagement efforts we are aware of for any NEPA document.



Having worked for over a decade toward the restoration of Louisiana's critical coastal ecosystems, and having participated and contributed to the scientific, socio-economic and policy analysis that led to the identification of this project as a critical component of Louisiana's coastal restoration efforts, our organizations proffer our very strong support for the preferred alternative of a 75,000 cfs sediment diversion.

The Mid-Barataria Sediment Diversion (MBSD) will reconnect the river to its shrinking delta; end our misguided reliance on only gray infrastructure; work with nature, rather than against it in a losing battle; provide a sustainable solution to our on-going land loss crisis; and help restore habitat and ecosystem services in the Barataria Basin that were injured by the Deepwater Horizon (DWH) Oil Spill.

However, based on the DEIS analysis of impacts in Alternative 5, the optimal diversion volume balancing land building against water level impacts, likely falls between 75,000 and 150,000 cfs. We, therefore, encourage the TIG to build as much capacity into the structure as possible, given cost limitations, to build and sustain land in the future, as part of a robust adaptive management strategy. Future operations beyond 75,000 cfs would of course be subject to additional NEPA analysis.

The DEIS analyzes the decades of study on the Mid-Barataria Sediment Diversion (also known as the Myrtle Grove Diversion) that has already occurred and the clear scientific support that demonstrates that reconnecting the Mississippi River's sediment, water and nutrients is the only sustainable, long-term solution to reverse the cycle of marine transgression and to build new deltaic wetlands, while sustaining existing wetlands otherwise doomed by relative sea level rise.

The MBSD is also the optimal way to restore sustainable functionality to the ecosystem injured by DWH, including providing benefits to the northern Gulf of Mexico ecosystem injured by the spill. We strongly agree with the Louisiana TIG that the proposed MBSD project is "critical to achieving the overall goals of the Wetlands, Coastal, and Nearshore Habitats Restoration Type in the Final PDARP/PEIS, which include providing benefits across the interconnected northern Gulf of Mexico ecosystem, and placing particular emphasis on coastal and nearshore habitat restoration in the historical Mississippi River delta plain in Louisiana" (Draft Phase 3.2 Restoration Plan, pg 1-9).

Below we provide more detailed comments regarding our perspective on the importance of the MBSD, and various components of the DEIS and Draft Restoration Plan. There are also two appendices attached to this comment letter: Appendix A contains more detailed recommendations related to the draft Monitoring and Adaptive Management Plan; Appendix B contains a series of recent op-eds and other statements of support for the project from various stakeholders. We request that the materials in Appendix B be considered as part of the Army Corps' public interest review and by the LA TIG as evidencing consistency with the OPA criteria.

ADDITIONAL COMMENTS AND RECOMMENDATIONS:

PROJECT CONTEXT

Three hundred years ago Europeans arrived and began the settlement of the delta and set out upon a disastrous program of modification that guaranteed the eventual physical and ecological collapse of the system. We have known for nearly fifty years (if not much longer) the magnitude of their, and our, mistakes and the consequences of short-sighted philosophy and action, and yet today we are only just embarking on adopting a solution. We cannot undo the past, but because of the dynamic nature of a delta, where change is constant and, in a geological sense, instantaneous, we can take relatively straightforward action now that allows us to substantially change the future trajectory of the system.

Our predecessors made structural changes to the Mississippi River and its distributaries, which inevitably allowed marine processes to dominate as a consequence. The Gulf of Mexico has reclaimed over 2,000 square miles of Louisiana's coastal wetlands. Just as significantly, salt has fundamentally changed the very nature of most of the system from the barrier islands to our dying interior swamps. This is especially true in the Barataria Basin. Just over a century ago crops were harvested and sent to market from Grand Isle on land where saltmarsh or saline scrub grows today; there was an intact sandy barrier rim with small brackish bays confined by surrounding marsh and narrow shallow passes to the Gulf; forests grew on the natural levees of Bayou Lafourche, Bayou Barataria, Grand River and a half dozen other abandoned distributaries all the way to edge of the bays or the Gulf.

We visited vast injuries upon that system with canals, oil spills, subsurface fluid withdrawal, navigation channels, jetties, and much more, all of which contributed significantly to the loss of wetlands. But we took away its lifeblood when we cut it off from the river, its ability to heal and revive itself. We have been watching it die for a century. What is left is literally on its last legs—a system about to let go and give itself up to the Gulf of Mexico. The red maps that we have become accustomed to through Louisiana's Coastal Master Plan tell the grim story: on our current trajectory the future is virtually all loss.

Building river diversions is the only answer fit to the scale of the problem, the only means by which the system can heal and recover on its own. If we want to remain here, we can't abandon the levees and the river to its own devices, to go where it will. Instead, if we want to reap the benefit of the river and the lifeblood it carries, we need to build large diversions that we can carefully control. While we will continue to depend upon the engineering and gray infrastructure that got us into our current predicament, we cannot rely upon it alone. We need it to augment it with sustainable natural infrastructure.

But the beauty of the diversion is that once opened into the basin, the water, sediment and nutrients that the river carries will behave much like they would in a natural avulsion, and begin to rebuild, transform and sustain the system just as if there was no gray infrastructure there. For human communities that means protective natural infrastructure between them and the Gulf of Mexico. For the natural community it means ecological release, and the rich profusion of life that is a river-fed deltaic estuary. That is why building the Mid-Barataria Sediment Diversion is absolutely necessary.

To help readers understand this overall context, we feel that both the DEIS and the Draft Restoration Plan would benefit from additional reflections on the natural and human history of the project geography, including the points we raised above, that resulted in such fundamental changes to the landscape and set us on the course of the land loss crisis that Louisiana faces today.

PROJECT PURPOSE AND NEED

The Proposed MBSD project-specific statement of purpose and need is: “Consistent with the LA TIG’s Strategic Restoration Plan and Environment Assessment #3 (SRP/EA #3) and the Louisiana Coastal Master Plan. The purpose is to restore for injuries caused by the DWH oil spill by implementing a large-scale sediment diversion in the Barataria Basin that will reconnect and re-establish sustainable deltaic processes between the Mississippi River and the Barataria Basin through the delivery of sediment, freshwater, and nutrients to support the long-term viability of existing and planned coastal restoration efforts. The proposed project is needed to help restore habitat and ecosystem services injured in the northern Gulf of Mexico as a result of the DWH oil spill.” (DEIS 1-9).

The DEIS recognizes the long history of studies that have explored reintroducing sediment-laden river water into the Barataria Basin for ecosystem restoration and the plans that have identified the Mid-Barataria Sediment Diversion as a needed land-building restoration tool. In the LA TIG’s SRP/EA #3, the Mid-Barataria Sediment Diversion was identified as part of a suite of restoration projects that would provide the greatest benefit to injured wetlands and the living resources that depend on them. In that plan the TIG acknowledged that sediment diversions “are the only technique capable of producing the full suite of ecological benefits to the Gulf of Mexico ecosystem provided by the reestablishment of deltaic processes” and “have the potential to reduce impacts from relative sea level rise in the Barataria Basin, by providing a sustainable source of sediment to replenish land as it is inundated, thus contributing to long-term resiliency” (SRP/EA #3, pg xvi). **Based on this, we fully support the Purpose and Need Statement upon which the alternatives analysis is built. The statement appropriately captures the need to restore for injuries from the DWH oil spill through the reestablishment of sustainable deltaic processes between the Mississippi River and the Barataria Basin and serves as a solid foundation against which to evaluate alternatives.**

ALTERNATIVES ANALYSIS

The range of alternatives evaluated in the DEIS is reasonable, and we support the applicant’s preferred alternative of a 75,000 cfs sediment diversion. This alternative would meet the purpose and need of the project by reconnecting and re-establishing sustainable deltaic processes between the Mississippi River and the Barataria Basin and help restore habitat and ecosystem services injured as a result of the Deepwater Horizon Oil Spill.

The DEIS considered a robust list of functional alternatives, including marsh creation, structural barriers, freshwater diversions, and barrier islands, but found that only alternatives that involved using a large-scale river diversion would meet the purpose and need of this project, which includes the need to “reconnect and re-establish sustainable deltaic processes between the Mississippi River and the Barataria Basin through the delivery of sediment, freshwater, and nutrients to support the long-term

viability of existing and planned coastal restoration efforts” (DEIS, 1-9). While other restoration project types, such as marsh creation, have been suggested in lieu of large-scale diversions, these project types would fail to build and sustain significant amounts of land in the Barataria Basin over the 50-year project lifespan due to subsidence, sea level rise, and erosion. Additionally, the acreage of marsh creation that is possible in that area is restricted due the limited number of nearby borrow areas in the Mississippi River along with the refill rate for those sites. Furthermore, dredging projects depend upon utilizing the sand fraction of the river’s sediment load, meaning they cannot get access to the approximately 75-80% of the total sediment load of the river which is carried in suspension (Allison et al. 2012). Overall, all other available restoration techniques are inadequate in the face of accelerating sea level rise, and none provide the level of ecosystem services that a naturally forming sub-delta lobe can provide.

Furthermore, as recognized in the LA TIG’s SRP/EA #3, coupling a marsh creation project with a large-scale sediment diversion can increase the lifespan of the marsh creation project. The LA TIG’s Large-Scale Barataria Marsh Creation: Upper Barataria Component project is currently headed to bid and will work in tandem with and benefit from the Mid-Barataria Sediment Diversion to build and sustain land in the Barataria Basin.

The applicant’s preferred alternative, a 75,000 cfs diversion, would build and maintain more than 13,000 acres of wetland over the next 50 years under the modeled conditions. The smaller 50,000 cfs alternative that was evaluated resulted in similar changes to salinity distribution and increased water levels in the basin, but also provided far less wetland acreage over the project’s lifespan. In contrast, the 150,000 cfs alternative would also result in similar changes in salinity distribution but would result in an additional 15,000 acres more land than the preferred alternative. However, this amount of flow would also result (in the near term) in a significant increase in water levels for some nearby coastal communities. While we understand why the 150,000 cfs alternative was not selected to move forward at this time, we do urge the TIG to take this opportunity to build in as much capacity into the structure as possible to build and sustain land in the future as part of a robust adaptive management strategy.

PUBLIC INVOLVEMENT

We recognize the immense effort CPRA has committed to public engagement around Mid-Barataria Sediment Diversion. For decades, the USACE and the state of Louisiana have led public discussions around this project concept. We commend the USACE and LA TIG for their efforts to ensure robust awareness and input into this process. Such engagement is critical to a successful restoration effort, and we recognize the difficulty of designing an engagement process around a project of this scale and scope.

The more than 200 public outreach and engagement events referenced in the DEIS and NRDA plan demonstrate a notable effort made by CPRA. It is essential that CPRA continue to maintain strong levels of engagement and transparent communication with affected stakeholders as this process progresses.

We recognize that meaningful public engagement under the conditions imposed by the COVID-19 pandemic required a new approach to the public comment period and community engagement. The

USACE and LA TIG handled the circumstances well, attending dozens of online meetings and following safety protocols for in-person meetings to ensure the public was aware of the comment period and project details, while also protecting public health. Extension of the comment period and the combination of the DEIS & Restoration Plan comment portal aided in the public's ability to participate in the comment period.

CPRA attempted to reach out to low-income and minority communities that would potentially be impacted by the project. However, these communities are historically difficult to reach, a problem compounded by COVID-19 for individuals in areas where internet access is unequally distributed. CPRA should continue to seek alternative outreach tools to reach typically hard-to-reach audiences including low-income and minority communities. In addition, the results of those meetings should be reported in the FEIS.

As noted above, public engagement should not end after this comment period, or even after the Final EIS is issued. CPRA should remain committed to engagement and open communication around the mitigation and stewardship actions that will need to be taken. A concerted effort to inform and engage in a productive dialogue with the public and impacted constituents should continue through construction, adaptive management, and operations of the sediment diversion.

As part of a long-term strategy for public engagement and involvement, we encourage the LA TIG and **CPRA to include a recreation and education area near the diversion with a viewing platform, trails, bike paths, along with a boat launch into the diversion outfall area.** This would provide amenities for the communities near the structure, provide eco-tourism opportunities, and provide an opportunity for our local communities as well as travelers to learn about coastal restoration and watch the growth of a delta over time. This area could also include educational materials such as signage, and perhaps even real-time monitoring data from the basin, to explain what the diversion is, how it operates, and what it is doing.

In summary, we commend CPRA engagement efforts around this project to date, and recommend that CPRA make a commitment to continue regular outreach, to explore tools for co-creation of mitigation and stewardship actions for the project, as well as continue to improve engagement of low-income and minority communities. The Final EIS should include a summary of comments and responses and should uphold and further elaborate upon the commitment stated in the DEIS (Appendix R2, section 2) for regular stakeholder engagement through the adaptive management program.

ENVIRONMENTAL JUSTICE

A challenge for any project in discussing the past, present, and foreseeable considerations contributing to heightened EJ conditions/risks, is the history of forced migration, segregationist policies, or other systemic inequities entrenched at the governmental level. Elements of this history have varying degrees of responsibility for some of the existing barriers to adaptation that residents must now grapple with (i.e. economic hardships, educational background, language barriers, etc.). For example, before 1980, despite being only two miles from a pipeline carrying drinking water, the roughly 200 residents of the

African-American town of Ironton, located just south of the project, obtained their drinking water by filling containers from a truck that delivered twice a week. According to local news accounts, Plaquemines Parish afforded itself a helicopter and a golf course during that period but couldn't provide access to safe drinking water to a black community (Sneath, 2017). The analysis for this project, and virtually every other project, would be improved by such a discussion around historical context and its meanings for today.

Having said that, we do believe that this document meets the minimum requirements of EO No. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, by identifying disproportionately high and adverse human health or environmental impacts of the proposed Mid-Barataria Sediment Diversion on minority, low-income, and Tribal populations in the relevant project area.

CPRA held in-person meetings in the low-income and minority communities that potentially could be impacted by the project. **We recommend a discussion about what was learned at those meetings or CPRA's proposed response be included in the FEIS.**

We would like to make a couple of broader points relative to environmental justice, as well. A project such as this one, which seeks to restore a functional and sustainable ecosystem to an area degraded and challenged by historical management decisions, as well as climate driven impacts such as rising sea levels, will provide significant ecosystem benefits over time. Among other beneficiaries, these benefits will accrue to:

- all who use the area for recreation or commercial fishing pursuits as estuarine balance to the ecosystem is restored over time; and
- all those who need essential protection from storms and sea level rise, as existing land is sustained, and new land built. The DEIS analyzes only the effect of this project on a small suite of storms, and only at 1 in 25 and 1 in 100 frequency. It concludes there will be some small near-term adverse effects for communities downriver from the diversion canal. However, the MBSD is actually part of the larger suite of projects outlined in the Coastal Master Plan. In concert, these projects will provide very significant long-term storm surge and sustainability benefits for communities in Plaquemines and Jefferson parishes, whether within or without structural storm risk reduction systems.

Each of these benefits will be particularly helpful over time to:

- those who depend on subsistence fishing - a grouping which is made up of disproportionately poor members of minority groups; and
- those who live in particularly flood prone areas that, because of historic discriminatory settlement patterns, is a grouping which is also disproportionately poor and of color.

A healthier and more protective system -- the purpose of this project -- will have positive environmental justice outcomes, as the project goes forward, over time.

The local beneficial economic impacts associated with design or construction job opportunities from the project, while substantial, will depend, from a direct employment perspective, on focused efforts on the part of Louisiana state and local economic development authorities, through communication, recruitment and training activities, in order to be significantly translated into jobs for local residents, including minority residents. Historically, 75% of workers across all industries in Plaquemines Parish have commuted from other areas. It will take work to change that, and to make sure that minority communities are directly targeted, encouraged and supported in this effort. In addition, the same type of focused workforce development effort is likely necessary in order for these local jobs to translate into longer term economic benefits for affected communities.

Though outside of the direct scope of this project, we would strongly encourage the broader Louisiana economic development efforts to focus and organize around the enormous and direct employment opportunities being generated by this project (thousands of jobs over multiple years), as well as recognizing and organizing around the long-term economic benefits of the coastal restoration program across south Louisiana (tens of thousands of jobs over decades) (Scott, 2019). This longer-term picture creates the direct opportunity for local jobs to translate into career opportunities, if managed for those outcomes.

We recommend the following for the Final EIS:

- Describe historic, systemic inequities affecting EJ communities in the project outfall area to provide authentic and more complete context for the discussions.
- Encourage targeted economic incentive plans for contractors associated with project design or construction to prioritize economic opportunities for all interested residents in the project footprint/outfall area wherever relevant.
- Specifically include the proposed *Plaquemines Liquids Terminal* project for analysis on impacts on the preferred alternative (discussed further below).
- Consider air, water, and noise quality mitigation for people living near the construction zone, and in-community dialog during the construction process, to mitigate adverse impacts to surrounding communities and environments.

BEST AVAILABLE SCIENCE

The DEIS lays out the massive scientific and research effort that has been conducted to understand the benefits and the impacts of the Mid-Barataria Sediment Diversion. The DEIS and previous investigations used a combination of state-of-the-art modeling tools, increased monitoring, and extensive expertise to predict likely outcomes. The DEIS also clearly acknowledges the uncertainties in these predictions, both due to unknown future environmental conditions and also due to inherent uncertainties in the modeling.

The DEIS outlines uncertainties in the modeling that tend to underestimate salinity by 1ppt, water level by 0.1 m, and temperature by 1.5°C and the level of uncertainty varies spatially through the basin. The model limitations section in Appendix E mentions that the dilution factor is uncertain as well as the effect of the barrier islands over time on the tidal exchange. There is also uncertainty around other

restoration efforts. For instance, the modeling assumes that the barrier islands are drowned with relative sea level rise, however the State has been committed to maintaining these important features, and that commitment is likely to continue, therefore reducing salinity increases. The passes, however, are likely to deepen and enlarge and increase salinity influences. Taken all together, these factors may underestimate salinity enough that the biological impacts forecasted may be a worst-case scenario for saltwater species, such as oysters and dolphins. The complexity of these uncertainties has been well handled in the DEIS and demonstrates the importance of the adaptive management program to reduce uncertainties over time.

The Final EIS should make a continued commitment to using best available science and input from extensive external expertise to inform the decision-making process around construction, operations, and outfall management.

SOCIO-ECONOMIC ANALYSIS

We are encouraged to see the significant job creation projections, averaging 2,200 jobs annually, and both direct and indirect impacts of nearly \$300 million. A total economic impact of \$1.5 billion output over the five-year construction, on top of a \$1.4 billion construction price tag, is potentially an economic game changer for this region. We also conclude that the trades and skills the workforce will acquire will be transferable to a growing regional and state economy in the future. Additionally, with an average of 1,600 workers in the region during the construction period, other service industries will need to prepare for this influx, including retail, gas stations, restaurants, health care, housing, etc. CPRA should prepare materials on the skills needed to obtain these construction jobs, as well as the average annual salaries. It will take time to create the labor line to get workers trained, and the State should be working with our trade schools, community colleges and universities early and often to prepare a local workforce.

The DEIS cites Oxfam America’s Social Vulnerability Index from 2009, but the Water Institute of the Gulf and the Louisiana Coastal Protection and Restoration Authority have developed some work in this area through their 2017 Coastal Master Plan process. We would like to see how this more current application could be useful in analyzing this project. **In addition, we strongly suggest integrating more current data and information before the release of the Final EIS, including and especially the 2020 census data.** We believe this will show important population shifts to communities in Jefferson, Lafourche and Plaquemines Parish, as well as the major metropolitan area of Greater New Orleans.

CUMULATIVE IMPACTS: REASONABLY FORESEEABLE PROJECT BEARING ON MBSD –PLAQUEMINES LIQUIDS TERMINAL

We were surprised to see minimal inclusion of the proposed Plaquemines Liquids Terminal (PLT) project as a part of the Cumulative Impacts Analysis, given its proximity to the project -- literally upriver and adjacent to the project. We are aware that permitting for PLT is not the subject of this analysis, or decision making here. But with the possible storage of 20 million barrels on the site, and the transfer of that oil through pipelines regularly connected and disconnected from large, river-borne vessels, there is

serious concern about regular oil spillage into the diversion, as well as potentially catastrophic impacts resulting from accidents, or hurricanes. Any of those could have serious impacts on the operation of the diversion. In addition, we also strongly suggest inclusion in the FEIS of data from AECOM/ARCADIS indicating that the *Tallgrass Plaquemines Liquids Terminal* project (PLT), could potentially reduce MBSD land-building significantly - possibly greater than 17%. A previous 2012 study conducted by the Water Institute of the Gulf for a proposed coal terminal on the same site also indicated a docking facility in the river upstream of the MBSD is very likely to result in decreased effectiveness of sediment capture by the diversion, and therefore decreased land-building.¹ The docking structure for the PLT proposal is larger than that which had been proposed for the RAM terminal.

Our overall judgement is that this project (PLT) is entirely inconsistent with MBSD, and therefore with Louisiana's Coastal Master Plan. The remedy for this situation is direct -- Executive Order 2016-09 -- which "directs all state agencies "to administer regulatory practices, programs, contracts, grants and all other functions vested in them in a manner consistent with the Louisiana Master Plan for a Sustainable Coast and the public interest to the maximum extent possible."² It is the responsibility of the Governor, through his executive assistant for coastal affairs, to exercise this authority.

IMPACTED RESOURCES

Habitat and Wildlife

The Mid-Barataria Sediment Diversion is critical to support future bird and wildlife populations in the region. The freshwater habitat components of Louisiana's estuaries are under tremendous threat from erosion, saltwater intrusion, and sea level rise, and are at risk of completely disappearing given physical limitations preventing inland marsh migration (Glick et al., 2013). Although the saltwater component of the estuaries also support conservation priority species, such as Brown Pelican, Sandwich Tern, Piping Plover, and others, Delft modeling indicates these habitats will continue to exist in some form under both a No Action and the 75,000 cfs alternative scenario (Appendix E; Figures VC 7 and VC 28). As such, the Mid-Barataria Sediment Diversion will ensure a sustainable future for freshwater wetland habitats and create biologically productive areas where salinities mix, critical to sustaining birds and other wildlife.

The importance of the Barataria Basin to wildlife is well documented, and much of it is covered in the DEIS (Chapter 3). The DEIS likely underestimates the value of the diversion to wildlife, and the ecological release that will likely take place in a moribund system following riverine re-introduction. This has already been seen at the sites of several new planned and accidental riverine avulsions, such as West Bay, Mardi Gras Pass, Fort St. Philip, Delta-wide Crevasses in the Birdfoot, Davis Pond, Caernarvon and Wax Lake. Biophysically, the introduction of carbon, nitrogen and phosphorus into declining marshes will automatically trigger concomitant increases in net primary productivity, with

¹ Lawsuits were filed to challenge issuance of RAM Coal Oil Export Terminal air and coastal use permits. Also see https://www.nola.com/news/environment/article_dfb99ea7-26a4-5ac8-b923-b27bfeb4cc93.html

² Executive Order 2016 – 09, which directs all state agencies "to administer regulatory practices, programs, contracts, grants and all other functions vested in them in a manner consistent with the Louisiana Master Plan for a Sustainable Coast and the public interest to the maximum extent possible."

beneficial effects amplified up the trophic pyramid (Day et. al., 2021; Tupitza and Glaspie, 2020; Wissel and Fry, 2005).

The freshening of systems allows the revival and recolonization of freshwater and brackish species. This is dramatically true in the case of trees and shrubs, few of which tolerate higher salinities. In the outfall areas of existing recent diversions, early successional willows are growing in profusion (for example, see CRMS3169), and succession to longer lived species like bald cypress will very likely follow. Meanwhile, on higher ground, stressed and dying natural levee and chenier vegetation like live oak may be revived, and recruitment of new woody vegetation can begin again.

Birds

As just one example, Louisiana's coastal wetlands were recently shown (Remsen et al. 2019) to support some of the most important and largest bird populations of any state in the Gulf of Mexico and Eastern United States. Yet because of the collapsing coastal ecosystem, the future of these birds is in question. The DEIS and the alternatives scenario analysis demonstrated the importance of the Mid-Barataria Sediment Diversion to birds that depend on the freshwater end of the estuary -- notably Mottled Duck and Green-winged Teal, which are representative of other important waterfowl species. Wintering waterfowl, of course, are important to hunters and birders, and therefore to the economy that supports waterfowl hunting and ecotourism (Southwick Associates, Inc., 2006).

In addition, the project will almost certainly benefit other conservation priority marsh species including King Rail, Little Blue Heron, and Bald Eagle. At present, these species are the beneficiaries of a collapsing ecosystem--organic plant biomass is being converted to animal biomass as marsh loss occurs, serving as a prey base. But there is a fixed quantity of stored organic biomass. Once it is gone, it is gone. Therefore, it is clear that a No Action scenario would have dire consequences overall for coastal bird and wildlife populations and the habitats on which they depend, because the system's energy is on a path to zero.

Only by restoring deltaic and estuarine processes through riverine diversions can a new equilibrium be achieved in the Barataria Basin -- a balance between riverine inputs coming in from the continent and marine influences pushing in from the sea. If we manage to arrest climate change and stabilize sea level over the coming decades, the river might once again be able to win the battle. But even if we remain in a losing battle, the river can buy people and wildlife several decades of continued viability and productivity.

Marine Mammals

The Mid-Barataria Sediment Diversion project has an important relationship to marine mammals and marine mammal habitat. Available information indicates that while the long-term impacts of the project to dolphin populations will be beneficial, there could be significant adverse impacts on BBES dolphins in the near term. The DEIS and associated studies (Garrison et al. 2020) and other cited literature recognize this impact and fully discuss the potential consequences on the stock. In doing so, the DEIS and administrative record for the project set the stage for important efforts to monitor and minimize

those impacts and develop the measures necessary to provide the stock with the best prospects for survival and eventual recovery. Because the goal of the project is to restore natural systems and a healthy coastal and marine ecosystem, its approval and successful establishment will eventually lead to long-term benefits for marine mammals and dolphin populations. In doing so, the project advances the primary goal of the Marine Mammal Protection Act (MMPA) to bring about the health and stability of the marine environment. Consistent with the purpose and need for the project, the principal objective for project construction and operation, with regards to the resident stock, should be to take those steps that are available minimize the short-term impacts of lower salinity levels on dolphins and to assist with the sustainability of the BB stock while the long-term benefits of the estuary restoration efforts come to be realized for all marine species, including dolphins.

In considering the impacts of the project on dolphins, the record should recognize that there is a general lack of definitive information on the impacts of exposure to low salinity on dolphins in coastal ecosystems. The recent technical report by Garrison et al. 2020 simulated one scenario for the project's effects on Barataria Basin resident bottlenose dolphin stock due to changes in salinity based on the operational flow outlined in the DEIS and concluded that substantial declines in bottlenose dolphin survival rates are likely under the simplified modelled diversion operation scenario. From the results of that work, the population's survival rate is projected to decline by 15.3% to 62.7% (mean reduction in survivorship=34%) with wide uncertainty stemming from modeling salinity predictions, future conditions, and the expected relationship between salinity exposure and survival, developed through expert elicitation due to knowledge gaps about the timing and degree of low salinity effects on health.

The wide range of uncertainty in the modelling stemming from a lack of detailed information is a common issue for marine mammals, where under the MMPA Congress and the courts have recognized that little is known about the biology of many marine mammals and the effect of human activities on them (Baur et al. 2015). This general lack of knowledge calls for a cautious and conservative approach for actions that have effects on marine mammals, but also means that predictions about future effects may be inaccurate.

While Congress found the project to be consistent with the purposes of the MMPA, and has waived the MMPA take prohibition as it applies to this project and impacts on BBES dolphins, the project itself can still proceed carefully and with full attention to the ways in which impacts can be lessened. The DEIS sets the foundation for doing so by taking into account the best available science and information and supporting a rigorous pre and post construction monitoring program that can reduce key uncertainties about the population and measure project effects. The MMPA itself recognizes the importance of gathering additional scientific information, setting forth the policy declaration that "there is inadequate knowledge of the ecology and population dynamics of such marine mammals and the factors which bear upon their ability to reproduce themselves successfully." 16 U.S.C. 1361(3). With this lack of scientific information available, Congress directed that marine mammals should be protected and managed to the greatest extent feasible commensurate with sound policies of resource management and that the primary objective of their management should be to maintain the health and stability of the marine ecosystem." Id. 1361(6). Congress defined "management" to include the "entire scope of activities that constitute a modern scientific research program, including but not limited to, research, census, law enforcement and habitat acquisition and improvement." Id. 1362(2). The research program that will be undertaken as part of the project will be consistent with these MMPA policies by

calling for rigorous monitoring and follow-up research, long-term habitat improvement, and actions that are essential to the health and stability of the Gulf ecosystem.

With this information and ongoing monitoring and review of new data, project operations can be guided under an adaptive management approach to undertake actions to further reduce adverse short-term impacts, consistent with the project purpose and long-term ecosystem restoration goals and directives. **In this regard, we believe that the FEIS and supporting record should include additional information on possible operational minimization measures that may be considered through the adaptive management process, based on monitoring and new information.** For example, evaluation of constructing landscape features that might provide higher salinity refuge areas within the basin might be an option. The alternatives analysis in the DEIS, including the consideration of alternatives rejected for further review, is adequate for purpose of the FEIS and a Record of Decision, but more information on minimization measures that may be considered to address the emerging information about impacts on BBES dolphins is needed to provide a full and complete picture of how the long-term benefits of the project for the marine ecosystem can be achieved without causing avoidable and mitigatable short-term impacts.

We support the inclusion of all three additional Stewardship Measures for BB dolphins and other coastal populations throughout Louisiana, including 20 years of funding for the Statewide Stranding Program which has suffered over time from inconsistent and insufficient support. **However, we recommend that CPRA provide additional details in the FEIS regarding human interaction/anthropogenic stressor reduction stewardship measures, including details on how and by whom it might be administered and implemented, and on what timeframe.**

Harvestable Aquatic Resources

As is the case with the terrestrial ecosystem, the DEIS describes but may underestimate likely increases in net primary productivity for aquatic estuarine organisms. Increases in net primary productivity will translate into more biomass, and the effect will be felt not only in Barataria Bay and the waters of the basin, but in the northern Gulf of Mexico as well. By shifting the zone of interaction between Mississippi River water, sediment and nutrients from the open Gulf of Mexico to the middle estuary, part of the Gulf's productivity will shift inland with it, perhaps ameliorating some of the imbalances which often lead to hypoxic conditions in the open Gulf. The shift will certainly lead to increases in many estuarine organisms, as the DEIS documents.

Nevertheless, as the DEIS analysis indicates, some estuarine organisms important to fishers may decline, at least in the near term, though the difference between *future with* and *future without* will decrease as sea level rises.

Brown Shrimp

This near-term decline is especially true of organisms like brown shrimp which have a life cycle that will be disrupted by seasonal salinity changes. If a limiting factor on Barataria's harvestable brown shrimp populations is availability of marsh and shallow water at appropriate salinities in spring, then brown shrimp will decline. On the other hand, if other factors such as survival are the limiting factor

rather than habitat, the declines may not be as pronounced. Despite this uncertainty, the DEIS appropriately and conservatively predicts a significant decline in the brown shrimp population within the project area.

Already, many businesses in Louisiana's seafood supply chains are experiencing low to negative profit margins, a problem that is particularly true for the shrimp industry. Finding a strategy for mitigation that takes into account all of the issues facing the industry, and all of the resources that might be available beyond the mitigation funding identified by the TIG for this project available from other agencies and initiatives will be critically important for the future growth and survival of the inshore brown shrimp fishery. **We recommend a targeted mitigation effort for inshore shrimpers which includes educational training, grants to acquire necessary gear, and other mitigation identified in consultation between shrimpers and the state that could strengthen the resilience of the industry, not only to deal with the changes coming with the MBSD, but all of the other forces that will affect the ecosystem and the shrimping economy.**

Oysters

For sessile oysters the area of suitable habitat conditions may actually increase as the mixing zone where ideal salinities might be found expands into the lower basin and a more reliable source of fresh water is provided by the diversion. The issue then is not habitat changes, but changes in location and loss of currently productive leases on state and private water bottoms. While oyster lease locations can eventually be moved as appropriate, the impracticality of and cost to harvesters involved with travelling longer distances from home ports becomes the issue.

Oysters in the mid-basin areas will be most adversely affected from the operation of the diversion. Appropriately, the proposed mitigation efforts for the commercial oyster industry laid out in Appendix R section 6.3.3 of the DEIS along with the initiatives in the oyster management and strategic plan provide significant resources that can help the commercial oyster industry adapt to the changes brought on by the proposed sediment diversion.

In keeping with our environmental justice recommendations above, we suggest that specialized mitigation efforts should be targeted to economically vulnerable oyster fishers with leases that have a high probability of becoming unproductive as a result of the sediment diversion. In this context, economically vulnerable oyster fishers are those with lower incomes that are at a higher risk of becoming unprofitable. The state should also consider giving oyster fishers who heavily rely on leases in this area alternate leases in an area that will likely be productive with the diversion.

For all impacted fisheries -- and we recognize that some of this is beyond the scope of the DEIS -- we recommend that the CPRA, working with LDWF and other appropriate state agencies:

- Continue to work with impacted fishers to identify appropriate mitigation and stewardship measures for the Final EIS, including strategies identified in Louisiana Fisheries Forward Report.³
- Adopt policies and projects that benefit the most at-risk communities in the region, including African American and Native American communities.
- Advance education and technical assistance and targeted mitigation efforts for inshore shrimpers and oyster fishermen. This could include providing educational training, grants, low interest loans and technical assistance to acquire necessary gear, so the fishers could become more resilient to the sediment diversion and other events that affect the ecosystem.
- Examine laws, policies and regulatory barriers that are not flexible enough for changing times or serve to discourage innovation and business diversification.
- Connect coastal priorities with other regional economic development and workforce initiatives, including those connected to climate, and develop pathways into the restoration economy. That way, CPRA can leverage its participation in partnerships and fund efforts strategically using existing and new resources for restoration and adaptation initiatives.

MONITORING AND ADAPTIVE MANAGEMENT PROGRAM: SUMMARY RECOMMENDATIONS

A project of the size and complexity of the MBSD will require a robust monitoring program and nimble adaptive management. It is essential that the approved plan and permits allow for the full benefits of effective Monitoring and Adaptive Management Plan (MAMP). The DEIS for the Mid-Barataria Sediment Diversion Project (Appendix R2) **includes several steps and elements that would be considered appropriate for adaptive management** (as per Murray et al. 2015), such as:

- A definition that includes many essential aspects of adaptive management (see lines 272-282 from page 2 in Section 1.1.1).
- An articulation of the project's restoration objectives (see lines 354-361 from pages 3-4 in Section 1.2).
- A representation of the system and relevant pathways of effect with a conceptual ecological model (see page 6 in Figure 1.3-1 in Section 1.3).
- A description of the sources and different types of critical uncertainties of relevance to the project (see pages 9-11 in Section 1.4).
- A summary of the parameters for monitoring and evaluating performance as related to the project's restoration objectives (see pages 28-68 in Section 3.7).
- Approaches for benchmarking (see lines 2754-2778 on pages 69-70 and Table 4.2-1 in Section 4) and evaluating the data around monitoring parameters to understand project performance (see pages 70-80 in Section 4) within a broader process and schedule for annual and multi-year science synthesis and decision making (see pages 81-84 in Section 5).

³<https://www.lafisheriesforward.org/louisianas-seafood-future-releases-2019-findings-report-on-fishing-industry-and-coastal-change/>

- A multi-agency governance structure and elements to oversee and guide implementation of decisions, synthesis, and evaluation of science, and adjust decisions based on the emerging science that will provide an understanding of project performance (see pages 15-20 in Section 2).

We commend CPRA for committing to a “basin-wide operations and basin monitoring data repository.” **CPRA should make this data available in a user-friendly way to the public and stakeholders, to foster a clear understanding of the project operations and measured impacts to the basin.** Development of an “information dashboard” or “clearinghouse” model for a project-specific repository, where the basin-wide data can be kept and accessed, would be useful to the public as well as diversion operators, state agencies, researchers, and other stakeholders. It could also serve as a model for similar restoration projects along the Mississippi River, or in other locations worldwide. Some of the data could even be integrated into a public facing education and recreation center on-site with the project, as has been done in other nationally significant projects around the country.

The importance of the Monitoring and Adaptive Management (MAM) Plan for this project cannot be overstated. The Barataria Basin must be continually monitored due to the complexity of the natural ecosystem, so that the impacts from this project are fully understood. This provides an opportunity for CPRA to modify project operations, if needed, to maximize restoration benefits and minimize negative impacts to fish and wildlife or communities. **Governance and decision-making should be a science-based, inclusive, and transparent process with genuine engagement and input from external experts and community stakeholders.**

Once operational, the most dramatic change resulting from MBSD will be a decrease in average salinities during operation. That change could be ameliorated by gradually decreasing average basin salinities before MBSD operation begins, and a ready tool for accomplishing that is available in the Davis Pond Freshwater Diversion. Davis Pond could be available for such an adaptive management use because of the Modification of Davis Pond feasibility study authorized in 2007 in the Water Resources Development Act (WRDA), Section 7006(e)(1)(D). A Feasibility Study was conducted, but not completed because the local sponsor (CPRA) and Corps could not agree on a preferred alternative. At the time the possibility of using Davis Pond to gradually freshen the basin was explored, and Alternative 18 which allowed this was CPRA’s Preferred Alternative. The Corps however concluded that freshening the basin in anticipation of future as-yet un-permitted diversions would be “pre-decisional”, and therefore violate NEPA. That objection will no longer apply if a favorable Record of Decision is reached for the Preferred Alternative. Using Davis Pond during the final design and construction phases of the MBSD would allow both a more gradual transition, and opportunities to study anticipated diversion effects on estuarine organisms.

In Appendix A we outline in greater detail our recommendations for a MAMP.

CONCLUSION

In conclusion, as previously articulated, we strongly support the preferred alternative of a 75,000 cfs sediment diversion, and of advancing the Mid-Barataria Sediment Diversion for funding through the LA TIG. We are grateful to USACE, the LA TIG, and the State of Louisiana for their work to advance this critical project. The future of our coast depends upon its implementation.

A delta cannot survive without the river that built it and sustains it. That lesson has been brought home to the people of coastal Louisiana by tragedy, by the near destruction of communities by storm surge, and by ongoing deterioration of the habitats and ecosystem that sustain and define our culture. The MBSD is an important beginning to what will be an ongoing effort to re-integrate the river into the delta while preserving our precarious foothold here. Time is not on our side, and forces that we cannot control make our position more and more perilous every day. We can't continue fighting against nature--we will ultimately lose. But we can learn to better live with nature, to take advantage of what it has to offer. That road to that begins in earnest for Louisiana with the MBSD.
Thank you for your consideration of our comments.

Sincerely,



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National Audubon Society



Natalie Snider,
Senior Director, Coastal Resilience
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David Muth
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Coalition to Restore Coastal Louisiana



Kristi Trail
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Restore the MRD



References

- Allison, M., C.R. Demas, B. A. Ebersole, B.A. Kleiss, C.D. Little, E.A. Meselhe, N.J. Powell, T.C. Pratt, B.M. Vosburg, A water and sediment budget for the lower Mississippi–Atchafalaya River in flood years 2008–2010: Implications for sediment discharge to the oceans and coastal restoration in Louisiana, *Journal of Hydrology*, Volumes 432–433, 2012, Pages 84-97, ISSN 0022-1694, <https://doi.org/10.1016/j.jhydrol.2012.02.020>.
- Baur, Donald C., Tim Eichenberg, Georgia Hancock Snusz, and G. Michael Sutton. 2015. *Ocean and coastal law and policy*.
- Day, John W.; Conner, William H.; DeLaune, Ronald D.; Hopkinson, Charles S.; Hunter, Rachael G.; Shaffer, Gary P.; Kandalepas, Demetra; Keim, Richard F.; Kemp, G. P.; Lane, Robert R.; Rivera-Monroy, Victor H.; Sasser, Charles E.; R. White, John; Vargas-Lopez, Ivan A. 2021. "A Review of 50 Years of Study of Hydrology, Wetland Dynamics, Aquatic Metabolism, Water Quality and Trophic Status, and Nutrient Biogeochemistry in the Barataria Basin, Mississippi Delta—System Functioning, Human Impacts and Restoration Approaches" *Water* 13, no. 5: 642.
- Garrison, L.P, Litz, J. and Sinclair, C. 2020. Predicting the effects of low salinity associated with the MBSD project on resident common bottlenose dolphins (*Tursiops truncatus*) in Barataria Bay, LA. NOAA Technical Memorandum NOAA NMFS-SEFSC-748: 97 p.
- Glick, P., J. Clough, A. Polaczyk, B. Couvillion, and B. Nunley 2013. Potential Effects of Sea-Level Rise on Coastal Wetlands in Southeastern Louisiana," *Journal of Coastal Research* 63(sp1), 211-233. <https://doi.org/10.2112/SI63-0017>.
- Remsen, J.V., B.P. Wallace, M.A. Seymour, D.A. O'Malley, and E.I. Johnson. 2019. The regional, national, and international importance of Louisiana's coastal avifauna. *Wilson Journal of Ornithology* 131: 221-242. DOI:10.1676/18-111.
- Scott, L. and Associates. 2019. The Economic Impact of Constructing the Mid-Barataria and Mid-Breton Sediment Diversion Projects.
- Sneath, S. September 17, 2017. This Louisiana coastal community fought to get running water; now it might drown. *The Times-Picayune*. https://www.nola.com/news/environment/article_82ae3bc0-bf57-519f-9121-b9ac0a44c4bf.html
- Southwick Associates, Inc. 2006. The Economic Benefits of Fisheries, Wildlife and Boat Resources in the State of Louisiana – 2006. https://www.wlf.louisiana.gov/assets/Resources/Publications/Economics/The_Economic_Benefits_of_Fisheries_Wildlife_and_Boating_in_Louisiana_-_2006.pdf
- Strategic Restoration Plan and Environmental Assessment #3 (SRP/EA #3): Restoration of Wetlands, Coastal, and Nearshore Habitats in the Barataria Basin, Louisiana. LA TIG. 2018. Available: https://www.gulfspillrestoration.noaa.gov/sites/default/files/2018_03_LA_TIG_Final_SRP_EA_508-Compliant.pdf
- Tupitza JC, Glaspie CN. 2020. Restored freshwater flow and estuarine benthic communities in the northern Gulf of Mexico: research trends and future needs. *PeerJ* 8:e8587 <https://doi.org/10.7717/peerj.8587>
- Wissel, B., Fry, B. Tracing Mississippi River influences in estuarine food webs of coastal Louisiana. *Oecologia* 144, 659–672 (2005). <https://doi.org/10.1007/s00442-005-0119-z>

