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UNITED FOR A HEALTHY GULF

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CPRA Annual Plan
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RE: Gulf Restoration Network Comments on the Draft FY 2015 Annual Plan

I am writing on behalf of the Gulf Restoration Network (GRN)[1].

We welcome The Louisiana Coastal Protection and Restoration Authority's (CPRA's) commitment to a science-based plan for restoring the coast of Louisiana. Loss of our coastal wetlands is an issue of national scale and national priority, for which the state has taken a leadership role through the establishment of the CPRA and the State Master Plan (SMP) process.

The State Master Plan is a critical and Gulfwide precedent-setting effort toward integrating protection and restoration projects, predicting outcomes for our coast from the existing science, and evaluating different funding and policy scenarios. Although the actual SMP is updated every five years, we understand that planning process for 2017 is being refined now, and that this is our opportunity to comment on that plan.

The Annual Plan is the actuality of that general State Master Plan for a given fiscal year and a three year projection. The following comments build from our previous SMP comment and refer to the specifics of the Annual Plan FY 2015.

Confusion with the early NRDA comment period
Although the CPRA holds monthly meetings where the public is invited to comment, engagement around the Annual Plan FY 2015 has left much to be desired. Holding the Annual Plan hearings concurrent with the early NRDA PEIS and Phase III ERP was an exercise in confusion.

Specifically, at the hearing in Belle Chasse and Thibodaux, comments were delivered to the CPRA that were more appropriate for the NRDA trustees, and vice versa. Although we are excited that there are many public projects underway, CPRA should take more time to present such an array of complex information on processes and projects to the public, who are then only given a very limited amount of time to digest and then comment on that information.

Annual Plan hearings should be separate from other restoration hearings.

[1] A diverse coalition of individual citizens and local, regional, and national organizations committed to uniting and empowering people to protect and restore the resources of the Gulf of Mexico.

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THE ANNUAL PLAN MUST BALANCE PROTECTION AND RESTORATION

Floodproofing is an urgent need and needs an implementation plan in FY 2015 -2017.
We were hopeful to see more non-structural implementation than exists in the Annual Plan FY 2015. A single line item for floodproofing and relocation funding study is not nearly sufficient to match the promise of the SMP 2012, when hurricane season comes every year.

In the SMP, half of the protection funding is spent on so –called "non-structural" floodproofing and prevention[2]. Although some communities will move out, others can adapt by moving up and flood-proofing. This is a crucial step toward living with the water that surrounds and sustains us.

The SMP currently favors a 50 / 50 split between funding protection and restoring wetlands[3]. The key lesson of the multiple lines of defense paradigm is that wetlands have always been Louisiana's flood protection, and levees have a more limited, short term role to play. Hurricane and tidal protection levees have not performed to their design against large storms. So we are glad to see the SMP acknowledging the high probabilities[4] that "100-year" levee protection will fail to protect homeowners. This information is critical to homeowners and coastal residents when they are making their own plans.

From the original draft SMP 2012 estimates, we have identified 5 priority regions of repeat flooding[5]. **To give a sense of scale, BFE+1 floodproofing cost $2.67 Billion for these areas, while BFE+4 floodproofing cost just over $5 Billion.**

While we do not know where the next storm will strike, we know well which areas are vulnerable, and which populations are already migrating away from the coast. A percentage of RESTORE dollars must be dedicated to implementing a non-structural program that allows communities to relocate together and plan together before the storm comes. Waiting for FEMA to pay for relocation, elevation, and floodproofing is not an implementation plan.

CPRA should dedicate a percentage of RESTORE funding to non-structural protection to match the spirit of the SMP.

Unreasonable levee plans borrow funds away from restoration and floodproofing.
The construction of levees in open water and / or across interdistributary basins is an unreasonable additional expense. Ring levees, constructed inside of the protection of exterior wetlands, would provide more protection for similar cost, allow more wetland restoration, and

[2] SMP p. 30
[3] *Id.*
[4] SMP p. 67
[5] TER.050.2, HOU.100.2, LAF.050.2, STB.050.2, PLA.050.2, LFT.100.2

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thus ultimately sustain the levees themselves.Ring levees built near natural ridges allows the levee to be built where local borrow material, as well as underlying material, is of sufficient quality. The USACE will not be able to incorporate locally-built levees if they are not built to meet the updated standards released after Katrina. **The CPRA should explicitly state that the levee projects must meet the Post-Katrina soil standards.**

Contrary to assertions about the outmoded designs of the Morganza to the Gulf alignment and the West Shore Lake Pontchartrain alternative D, levees around wetlands do not protect wetlands. Hurricanes and other storms are often sediment redistribution sources[6]. In the 50 – year term, disconnecting wetlands from tidal storms is akin to disconnecting them from the river.

For St James and St John parish, any proposed alignment along I-10 or highway 61 is unreasonable. Not only would this levee spend precious protection money unwisely, but this levee would impair a river restoration project, and impound, weaken, and ultimately sink many square miles of irreplaceable coastal forest and marsh.

The CPRA should reconsider levees that cross interdistributary basins, and instead pursue a lines of defense strategy for St James and St John parish.

CPRA HAS A DUTY TO OUTLINE THE OIL AND GAS INDUSTRY'S LIABILITY FOR COASTAL RESTORATION

The oil and gas industry owes a large debt to Louisiana. This debt is measured in hundreds of thousands of acres of interior marshland[7], and loss of the functions of those marshes for decades. Every year that debt is unpaid, and those former marsh areas remain in disrepair and billions of dollars in ecosystem services are lost[8]. As the industry has moved out of the marshes and into deepwater, the coastal crisis has decelerated[9,10] while increasing.

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[6] Poff, N.L., M.M. Brinson, and J.W. Day, Jr. 2002. Aquatic ecosystems and global climate change: potential impacts on inland freshwater and coastal wetland ecosystems in the United States. Pew Center on Global Climate Change, Arlington, VA

[7] 249,152-397,818 acres, or 389.3 – 621.6 square miles of the Delta plain, 1932-1990. Penland et al, 2000. Process Classification of Land Loss in the Mississippi Delta Plan. USGS open file report 00-418.

[8] Batker, David, et al. Gaining Ground. Wetlands, Hurricanes and the Economy: The Value of Restoring the Mississippi River Delta Earth Economics.

[9] Morton, R.A., G. Tiling, and N.F. Ferina. 2003. Causes of hot-spot wetland loss in the Mississippi delta plain. Environmental Geosciences 10:71-8

[10] Couvillion, B.R., Barras, J.A., Steyer, G.D., Sleavin, William, Fischer, Michelle, Beck, Holly, Trahan, Nadine, Griffin, Brad, and Heckman, David, 2011, Land area change in coastal Louisiana from 1932 to 2010: U.S. Geological Survey Scientific Investigations Map 3164, scale 1:265,000, 12 p. pamphlet.

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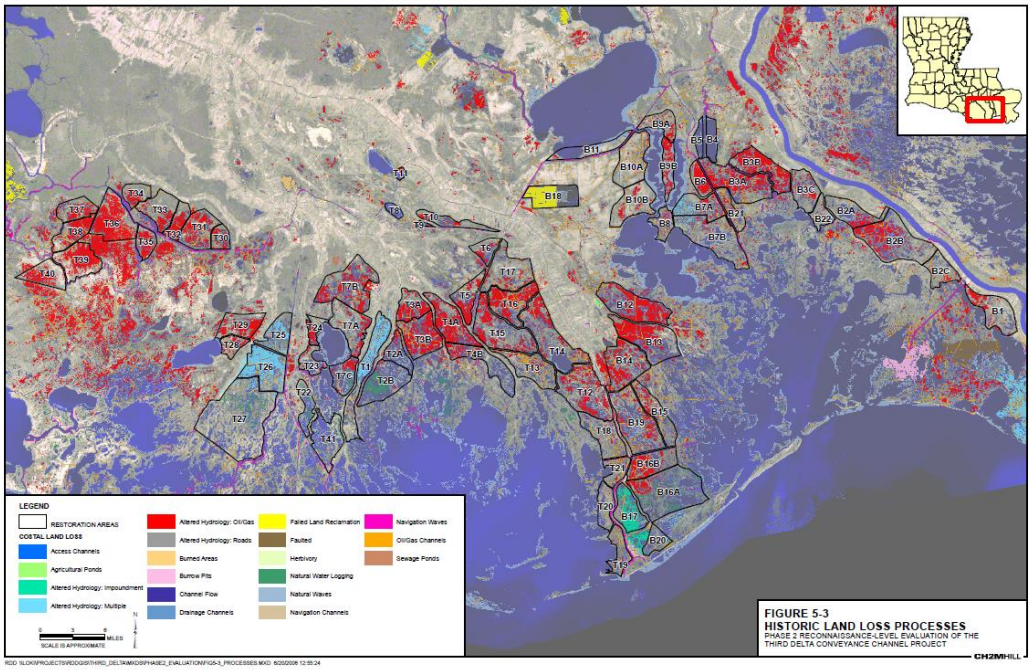
The oil and gas industry has had a hand in the majority (389.3 – 621.6 square miles) of wetlands loss of the state from 1932-1990, through different mechanisms. The extraction of oil and gas has sunk, smothered, or drowned the interior coastal marshes[11,12,13] increasing the volume of tidal water eroding our exterior marshes and barrier islands.



Third Delta Phase II Reconnaissance Study, 2006, prepared for LA DNR. adapted from Penland et al, 2000. Oil and Gas damage to marshes are marked in red. Areas affected by oil and gas as well as other factors are in baby blue. Oil and Gas access channels are in orange.

The SMP prioritizes projects that protect oil and gas assets[14]. Among the "Strategic Assets[15]" considered, about half (minimum 88 of 179) are oil and gas facilities. The oil and gas industry has the capability to adapt solely on its own resources, unlike many communities and industries that are without those resources. These communities and industries have been unjustly injured by the damages of extraction, and they are unjustly impacted by the chronic threat of the coastal crisis.

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[11] Morton, R.A., G. Tiling, and N.F. Ferina. 2003. Causes of hot-spot wetland loss in the Mississippi delta plain. Environmental Geosciences 10:71-8

[12] Robert A. Morton, Julie C. Bernier, John A. Barras, and Nicholas F. Ferina. USGS Open File Report 2005-1216
Rapid Subsidence and Historical Wetland Loss in the Mississippi Delta Plain: Likely Causes and Future Implications *see also USGS ofr 2009-1158 and ofr 2011-1169*

[13] Reed and Yuill, 2009. Understanding Subsidence in Coastal Louisiana

[14] SMP, p. 100

[15] CPRA, Strategic Assets list. Received Feb 2012.

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Recently, because this issue has been neglected by CPRA, the SLFPA-E and some parishes have taken the mantle of leadership upon themselves, and filed time- and resource-intensive lawsuits against many companies. **After over a decade of precedent from landowner lawsuits working their way through the courts, we know that the evidence exists, from science and from the repeated statements of industry compliance officers themselves, that the industry has serious unresolved liabilities to the coast.**

The CPRA is in a unique position, with a unique authority to resolve this long-standing conflict for the industry and define the industry's role is in paying for coastal restoration. The CPRA could act much more swiftly and systematically than the courts; and ultimately, the CPRA must approve restoration plans that result from these lawsuits.

For the sake of the public trust, for the sake of saving invaluable time, and for the sake of establishing financial certainty for industry, CPRA should outline the liabilities of the oil and gas industry.

For example, the oil and gas industry could fund marsh restoration projects selected for the $100 billion scenario[16] within the footprint of historical oil and gas impact[17].

Despite Coastal Use Law[18], the industry's canals remain as ongoing, highly visible damage to the landscape. Many spoil banks still cover high-value edge marsh[19] and interrupt natural hydrology.[20,21] As the CPRA attempts to restore fresh water and sediment sources from the river, as well as regular drainage regimes to our embattled marshes, these canals are an unnecessary hindrance to coastal restoration and the working coast. Over 7000 acres of spoil bank surround even the unused canals in Upper Barataria and Western Terrebonne alone[22]. These canals lower the effectiveness of diversion projects, and should be backfilled by industry in areas targeted for hydrologic restoration.

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[16] SMP p. 52
[17] SMP pp A2-3 to A2-9: 002.MC.05,.06,.10; 03a.MC.02,.05,.06,.07;.10
[18] LAC Title 43 I.1 Chapter 7B §705.N *Areas dredged for linear* facilities [Ch7A: including "pipelines, roads, canals, channels, and powerlines"] *shall be backfilled or otherwise restored to the pre-existing conditions upon cessation of use for navigation purposes to the maximum extent practicable.*
[19] Peterson and Turner 1994 The value of salt marsh edge vs interior as a habitat for fish and decapod crustaceans in a Louisiana tidal marsh Estuaries and Coasts Volume 17, Number 1, 235-262, DOI: 10.2307/1352573
[20] Swenson and Turner, 1987. Spoil banks: Effects on coastal marsh water level regime. Estuarine, Coastal Shelf Science 24:599-609.
[21] Bahr et al. 1983 Ecological characterization of the Mississippi Deltaic Plain Region : a narrative with management recommendations. U .S . Fish and Wildlife Service, Division of Biological Services, Washington, D .C . FWS/OBS-82/69 . 189 pp
[22] Eustis and GRN, 2013 internal memo. Available upon request in GIS formats.

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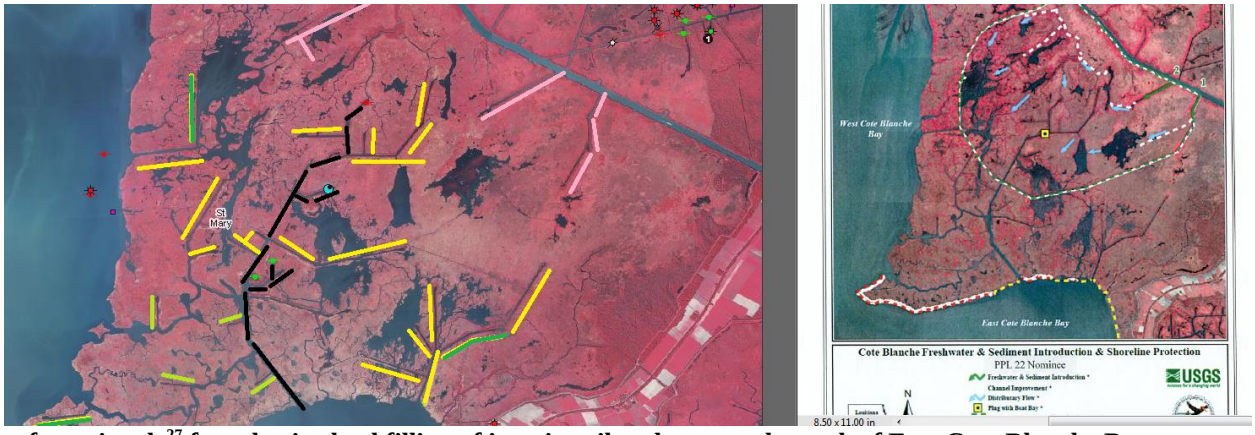
Certain industry representatives continue to argue for access for new extraction from rights that often have not been exercised in decades. During those decades, well-access technologies have already emerged[23] that eliminate the need for harmful canals and re-dredging to access mineral claims[24]. The SMP will work with landowner input[25] and not restrict access to mineral rights[26], but this simple restoration will not necessarily conflict with access to wells.

It strains the credibility of Louisiana's use of the word "restoration" that the simple "backfilling" restoration technique is not more widely applied. This technique, if applied coastwide, could improve hydrology for hundreds of square miles of marshes.



Example of a rationale[27] for selective backfilling of inactive oil and gas canals north of East Cote Blanche Bay. Backfilling would assist hydrologically impacted marshes by re-establishing a more natural drainage pattern over a large area. Canals in black have a need to remain open. Canals in yellow are prioritized for hydrological restoration of the area in question. Canals in green are second priority. Canals in pink may remain deep for the sake of diverting fresh water from the Intercoastal Canal.

CPRA, as the lead restoration agency , has a duty to the public as well as to industry, to outline the liabilities of the oil and gas industry.

CPRA should evaluate the impact of restoration of these legacy canals, or at the marsh restoration under their spoil banks; at least on public lands and lands targeted for hydrological restoration.

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[23] Two New Orleans-area companies team up to design eco-friendly, oil exploration hovercrafts Source:

[24] Walter B. Sikora, Ph.D., Louisiana State University, Baton Rouge, Louisiana "Assessing the Feasibility of Using Air Cushion Vehicles (Hovercraft) for Oil and Gas Exploration and Drilling in Louisiana's Coastal Wetlands"

[25] SMP p 42, 154

[26] SMP p 154

[27] Eustis et al, 2012 *State of the Coast 2012*

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CLIMATE CHANGE MEANS INCREASING SEA LEVEL RISE, BUT ALSO INCREASING INSTABILITIES, FOR RAINFALL, THE RIVER, AND FINANCES

The SMP should encourage planning for an upper bound to sea level rise at 2 meters by 2100, in order to be better prepared for a "worst-case" predicted scenario.

However, changing the climate does not only mean increasing the rate of sea level rise. The changed climate will mean increased mean temperatures across the state, as well as increased frequency of intense rain events and prolonged periods of drought[28].

While an individual flood seems unpredictable, the new climate system contains an increased likelihood of large rain events due to the increased capacity for water in the hydrological cycle because of increased air temperatures[29]. The Mississippi Flood of 2011 was so large because of record rains in the Ohio valley[30], even as Texas and western parts of Louisiana faced and still face an unprecedented period of intense drought.

Although tying the revenues of the annual financial plan to oil and gas profits and revenues is appropriate in the short-term, the State Master Plan should recognize the possibility that oil and gas reserves represent a financial "bubble[31]" that will be revealed over the next fifty years. To avoid catastrophe, the current carbon budget for the climate system should be set at 565 $GtCO_2$ to 2050[32]. Known global reserves of oil and gas are approximately 615 GtCO2 and 363 $GtCO_2$, respectively; thus they exceed this budget[33]. **Reserves that exceed this budget are at risk of being devalued, especially in a capital-intensive industry like oil extraction.**

CPRA should consider the financial implications of tying restoration programs to future extraction revenues.

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[28] Twiley, Robert, 2007 Gulf Coast Wetland Sustainability in a Changing Climate. Excerpted from the full report, Regional Impacts of Climate Change: Four Case Studies in the United States.
[29] Trenberth, K. E. 2011: Changes in precipitation with climate change. Climate Research, 47, 123-138, doi:10.3354/cr00953.
[30] Dr. Jeff Masters, 2011 Tornadoes, floods, and fires continue to pound U.S. Meterological weblog. Retrieved May 2011
[31] Mark Campanale & Jeremy Legget. Unburnable Carbon – Are the world's financial markets carrying a carbon bubble? accessed at carbontracker.org Feb 2012
[32] *Id.*
[33] *Id.*

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ENVIRONMENTAL COMPLIANCE IS COASTAL RESTORATION AND PROTECTION

The GRN does not believe that there is a need for alternative arrangements to NEPA in order to implement the Master Plan in a timely manner. As the SMP itself states, alternative arrangements are based upon emergencies and it is "[d]ifficult to demonstrate emergency for projects to be implemented over time."[34]
Moreover, because the NEPA process has a long history of improving projects, it is an effective mechanism for ensuring that best available science is considered in project design.

Although we understand concerns with the "standard Corps timelines for NEPA compliance," the SMP effort itself should speed the development of any EA, EIS, or PEIS necessary to implement projects. Given the background of Coast 2050, background studies like the Third Delta study[35], and the continued refinement of the SMP ecosystem services modeling efforts, it is reasonable to expect that NEPA will not hamper implementation of the SMP.

A robust regulatory system, including enforceable management plans, aggressive coastal use enforcement, ensures coastal restoration is sustained despite changes in executive and legislative leadership**.**

Intact forests and marshes are not just the "icing on the cake" of redistributed sediment, but "wheels on the vehicle" that drive accretion of land against sea level rise[36], the locus of strong roots that attenuate waves, soil processes that sequester carbon and assimilate nutrients.
Mitigation is an unmissable opportunity for coastal restoration. Mitigation can serve as coastal restoration. The recent in-lieu fee agreement between the Department of Natural Resources and USACE for marsh impacts in the coastal zone makes this statement redundant.

While this recent in-lieu fee program is an innovation, coastal forests still are in need of protection. There is little defined role for coastal forest in the Master Plan, despite its ecological importance. "Temporary" forest impacts from pipelines are in no way temporary, and should be mitigated, in full, in-kind, as forest.

Application "lines of defense" strategy hinges on wetlands as a key protection feature. The current goal of the regulatory agencies is ***no net loss*** of wetlands. The SMP has a goal of a significant **net gain** of wetlands. Weakening of the mitigation rules[37] would run counter to this

[34] SMP G3-3
[35] Third Delta Phase II Reconnaissance Study. Accessed Dec 2011
[36] DRAFT Recommendations for anticipating Sea-Level Rise Impacts on Louisiana Coastal Resources during Project Planning and Design: Technical Report LACES Division 24 Jan 2012
[37] EPA/USACE "Compensatory Mitigation for Losses of Aquatic Resources; Final Rule" (33 CFR 322.4[c])

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goal, undermining attempts to rebuild marshes and wetland forests to their former level of ecological function. Mitigation for wetlands impacted by protection features are not an added burden, but an opportunity to incorporate wetland restoration projects into the design of protection projects, according to the lines of defense paradigm and as prioritized by the "Surge Wave Attenuation Habitat Suitability Index."[38]

Efforts to mitigate wetland losses are challenging, and are far too often unsuccessful[39]. The general failure of mitigation to replace ecosystem services[40] is argument for a more stringent mitigation policy, such as requiring mitigation at a ratio of greater than 1:1, probably greater than 3:1.
The general lack of information on mitigation has made it difficult for independent scientists to track the success or failure of mitigation to compensate for ecosystem services in the Louisiana Delta[41]. Thus mitigation in the coastal zone has not been independently reviewed. While the Corps is not required to be in compliance with this Master Plan, the Department of Natural Resources is.

Because of the rate of failure of mitigation, and the likelihood that forward levee alignments proposed in the SMP will weaken wetlands behind them, the GRN is strongly opposed to any attempt to set a separate, more lenient mitigation standard for civil works projects. **The SMP cannot be a restoration plan if it sacrifices mitigation rules and does away with regulations that are currently insufficient to preserve current levels of wetlands acreage.**

CPRA, as part of this Annual Plan, periodically publish the success rate of all mitigation projects that are under the authority of the State (e.g. Coastal Use Permits), or, the success of all the restoration projects that substitute as mitigation through the in-lieu fee program.

[38] SMP Appendix D-23
[39] Spieles, D. J. 2005. Vegetation Development in Created, Restored, and Enhanced Mitigation Wetland Banks of the United States. Wetlands. 25:51-63.
[40] Moreno-Mateos D , Power ME , Comín FA , Yockteng R , 2012 Structural and Functional Loss in Restored Wetland Ecosystems. PLoS Biol 10(1): e1001247. doi:10.1371/journal.pbio.1001247
[41] Spieles, D. J. 2005. Vegetation Development in Created, Restored, and Enhanced Mitigation Wetland Banks of the United States. Wetlands. 25:51-63.

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CPRA SHOULD OUTLINE CARE FOR THE RIVER AND THE LANDS BUILT

In 2012 CPRA ordered a bathymetric study, to be authored by the State's Center of Excellence, of the impact of a proposed coal terminal upon the Myrtle Grove sediment diversion directly downstream. This study, initiated by the regulatory process, is an example of what opportunities are available, through a robust regulatory program, for industry to pay for changes in planning and adaptations the restoration and protection program must make for private interests.

Unfortunately, this study was hidden by the company, and not made public for environmental review, and was not incorporated into the company's permits. Rather than incorporate the results of that study into the regulatory process, the CPRA signed an unprecedented contract with the coal terminal, allowing them say over the management over a keystone river restoration project. **The CPRA has set bad precedent and missed a key opportunity by ignoring the RAM Terminal CFD Modeling Technical Memorandum.**

Given the long history of industrial abuse of wetlands, the **SMP should recommend use of non-destructive access technologies for the oil and gas industry,** such as barges that avoid destructive canal maintenance by riding over the top of the marsh layer[42]. Local development of these access technologies is yet another way that the SMP can promote a restoration economy while allowing natural processes to restore ecological function.

The Nature-based Tourism Habitat Sustainability Index[43] prioritizes projects that contain beaches. However, building parking lots, roadways, and otherwise promoting or allowing vehicle access to dunes will destroy the dune. Allowing vehicles to drive on restored beaches and dunes will impair the dune's protective function for coastal communities, as well as its suitability as habitat for nature-based tourism and for endangered species.

Fourchon Beach, in particular, is an incredibly vulnerable landform with an extremely high erosion rate[44],[45]. This erosion has been aggravated by industrial uses—not only Port Fourchon, but most recently vehicular access by BP cleanup vehicles. If vehicular access is allowed onto restored beaches, which are vulnerable to vehicles, part of CPRA's claim to BP damages is undermined; and ultimately less funding for coastal restoration may be available.

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[42] Two New Orleans-area companies team up to design eco-friendly, oil exploration hovercrafts Source:

[43] Nature-based Tourism Appendix, SMP D-21

[44] SMP Appx D-3 p. 10

[45] Miner M.D., Kulp M.A., Flocks J., Twichell D., Penland S., Weathers D., Martinez L., Motti J., DeWitt N., Reynolds B.J., Baldwin W., Danforth B., Worley C., Bergeron E., Ferina N., McCarty P., Brown, M., Torres J., (2009) Louisiana Barrier Island Comprehensive Monitoring program (BICM), vol 3. Bathymetry and historical seafloor change 1869–2007. Part 1. South-central Louisiana and northern Chandeleur Islands, bathymetry methods and uncertainty analysis. Univ. New Orleans Pontchartrain Inst. Environ Sci. Tech Rep.

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The SMP should recommend limiting vehicular access to marsh creation, barrier island, and dune restoration sites.

CPRA should respect the longstanding practices of landowners that have cared for the ecological function of their lands[46]. **The CPRA should advise non-destructive use of the wetlands and islands we have, as well as prescribe limitations of use of the lands the SMP will build.** The coastal use and 404 regulatory programs are not guarantees that private landowners will preserve ecological functions of lands built with state and federal monies.

The CWPPRA program remains an invaluable program for development of innovative approaches to coastal restoration implementation and monitoring. This program is also old enough that the project life of the earlier projects are ending, requiring that lands restored come under some kind of agreement that preserves the ecological function of restored wetlands.

The CPRA can look to the recent CWPPRA agreements on projects older than their design life for a model for how to proceed with a systematic set of land-use agreements with landowners, ensuring predictability for citizens and ensuring essential ecological functions of the lands themselves.

CPRA must withdraw from its MOA with RAM Terminal, as this agreement sets bad precedent for management of diversion projects and future conflicts with private interests.

CPRA must consider how strengthened environmental review and enforcement can provide necessary scientific and planning opportunities, as well as make coastal restoration more sustainable.

CPRA should consider a uniform set of practices for arranging land use of restored lands, and not negotiate land use agrements project by project, landowner by landowner.

[46] SMP p 42, 154

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THE LOUISIANA CONSTITUTION REQUIRES THE STATE TO ANALYZE THE ENVIRONMENTAL IMPACTS OF THE MASTER PLAN

The Louisiana Constitution requires the State, as public trustee, to analyze the environmental impacts of proposed projects. Article IX, Section 1 of Louisiana's Constitution states 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. The legislature shall enact laws to implement this policy[47].

Louisiana courts explained this constitutional requirement in the Supreme Court's decision in *Save Ourselves, Inc. v. Louisiana Envt'l Control Comm'n*[48], and in the First Circuit's decision in *In re Rubicon, Inc*.[49]. The court in *Rubicon* further elucidated public trustee responsibilities by setting out a series of specific inquiries that the public trustee must address in order to satisfy the Constitutional mandate. Specifically, trustees must address:
Whether:

1) the potential and real adverse environmental effects of the proposed project have been avoided to the maximum extent possible;
2) a cost/benefit analysis of the environmental impact costs balanced against the social and economic benefits of the project demonstrate that the latter outweighs the former; and
3) there are alternative projects which would offer more protection to the environment than the proposed project without unduly curtailing non-environmental benefits to the extent applicable[50].

The State must therefore meet certain basic substantive and informational requirements before proceeding with large projects which will impact the environment. These include accurately assessing the real and potential environmental harms of the project, examining alternatives to the proposed action, and performing a cost/benefit analysis. The State is therefore obligated to ensure compliance, but with state water laws and Louisiana's constitutional and statutory framework governing environmental decision-making.

While the SMP has attempted to address questions 1 and 3, the second question has not been thoroughly investigated.

The SMP 2017 needs to investigate the environmental impact costs balanced against the social and economic benefits of the plan.

[47] Article IX, Section 1
[48] 452 So. 2d 1152 (La. 1984)
[49] 95-0108 (La. App. 1 Cir. 2/14/96), 570 So. 2d 475, 481
[50] *Id*. at 483.

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CPRA SHOULD ADDRESS THE GULF HYPOXIC ZONE

The SMP and CPRA should be more explicit as to what state agencies can do to reduce the large, annual hypoxic zone on the near shelf, commonly known as the "Dead Zone." The Dead Zone is not just a hazard to our fisheries industry, but to the estuarine ecosystem services that produce those fisheries.

Restoration projects advanced by the CPRA have been advertised as a nutrient management strategy, but without a science-based, quantitatively measureable, nutrient *reduction* plan, such a strategy cannot be taken seriously.

Here, we summarize our comments on the recently released Draft Louisiana Nutrient Management Strategy.

The Louisiana Strategy does not fulfill the requirements set forth by the *Gulf Hypoxia Action Plan 2008 (2008 Action Plan)*.[51]

The 2008 *Action Plan* called for a *reduction* strategy, not a *management* strategy. Louisiana's Strategy does not establish quantitative reduction targets.[52]

The Louisiana Strategy does not fulfill the requirements set forth by EPA[53].

Numeric watershed goals are not set in Louisiana's Strategy.

Numeric nitrogen and phosphorous criteria are not even mentioned in Louisiana's Strategy, and Louisiana has blown all deadlines in its "Developing Nutrient Criteria for Louisiana" document.[54]

Regulatory mechanisms must be part of a nutrient management plan.

Basic technology limits on major sewage treatment plants should be required.

Techniques evidenced in the Environmental Leadership Program (ELP) should be adopted as

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[51] Mississippi River/Gulf of Mexico Watershed Nutrient Task Force. 2008. *Gulf Hypoxia action Plan 2008 for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico and Improving Water Quality in the Mississippi River Basin*. Washington, DC.
[52] Mississippi River Gulf of Mexico Watershed Nutrient Task Force. 2010. "State Nutrient Reduction Strategy Development Work Group Report and Requested Actions of the Task Force."
[53] Stoner, Nancy, Acting Assistant Administrator, US EPA . 2011. "Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reduction."
[54] LDEQ. 2006. "Developing Nutrient Criteria for Louisiana."

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best available technology for industrial nitrogen and phosphorus dischargers that are new, expanding, and/or renovating.

Narrative nutrient criteria should be adopted into permits as water quality based effluent limits.

Total Maximum Daily Loads (TMDLs) that include actual nitrogen and phosphorus reduction goals should be completed.

Given the long timelines, outstanding scientific questions, and geographic limitations, river diversions should not be so heavily relied upon to achieve reductions.

The timeline for having multiple diversions is too long for the seriousness of nitrogen and phosphorus pollution.

Several scientific and operational questions must be answered before diversions are adopted as a nitrogen and phosphorus pollution reduction measure.

We should make sure we aren't exchanging one environmental issue for another.

Will diversions operate such that significant reductions will occur?

Diversions will only impact Southeastern Louisiana.

Voluntary participation in incentive-based programs should have numeric goals and timelines.

How will monitoring improve and how will it be used?

Wetland assimilation must be approached carefully and not as "one size fits all."

CPRA should initiate a science-based, quantitatively measureable, nutrient reduction plan, in order to preserve and enhance fisheries.

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CPRA SHOULD CONSIDER ENVIRONMENTAL JUSTICE

Coastal communities that are in retreat[55] often have not received the benefits of the industries that have placed us into crisis. It is a basic injustice that fishing communities and native communities are to be sacrificed for the sake of the shipping and oil industries. In its selection of oil and gas facilities as "strategic assets," the SMP unfairly weighs one industry over other stakeholders. The SMP is currently silent about the tumult that use of the River for restoration will create for Louisiana's fisheries. Although long-term benefits to fishes that are harvested will arrive, **fisheries that operate on business plans of 3-5 years will need clear lines of communication and support to weather changes from a reconnected river.**

Our coastal heritage is more than nostalgia. Our coastal communities are repositories of contextual coastal knowledge that can improve coastal projects, **Coastal communities have traditional knowledge bases that can be integrated with more formal scientific efforts.**[56] Incorporating local community experts will allow the State to rapidly determine whether or not our efforts at restoration are the best they can be.

To ensure that our coastal heritage is not lost, **the SMP should suggest policy mechanisms by which coastal restoration activities can build an employment base for coastal communities**. Coastal restoration projects provide well-paying jobs[57][58]; these jobs should be preferentially given to residents of coastal communities unjustly impacted by the coastal crisis.

CPRA technical staff should work more closely with parish planning committees to ensure that local knowledge of an area is included in project planning, and that local communities are updated on the progress of projects.

CPRA should outline how the state will work with project contractors to ensure local hiring and coordinate with educational institutions to train and re-train our coastal workforce to take advantage of these jobs.

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[55] Laska, Shirley, George Woodell, Ronald Hagelman, Robert Gramling, Monica Teets Farris, with the assistance of Windell Curole, Becky Boudreaux, Traber Davis and William Kappel. 2005. "At Risk: The Human, Community and Infrastructure Resources of Coastal Louisiana." Journal of Coastal Research (44): 90-111.

[56] Bethel and others, 2011. Blending geospatial technology and traditional ecological knowledge to enhance
restoration decision-support processes in coastal Louisiana. Journal of Coastal Research, 27(3), 555–571.

[57] Lowe, Stokes, and Gereffi. 2011 Restoring the Gulf Coast: New Markets for Established Firms.

[58] Pendleton and Baldera, 2010. Measuring and Monitoring the Economic Effects of Habitat Restoration: A Summary of a NOAA Blue Ribbon Panel

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SUMMARY

Annual Plan hearings should be separate from other restoration hearings.

THE ANNUAL PLAN MUST BALANCE PROTECTION AND RESTORATION

CPRA should dedicate a percentage of RESTORE funding to non-structural protection to match the spirit of the SMP.

The CPRA should reconsider levees that cross interdistributary basins, and instead pursue a lines of defense strategy for St James and St John parish.

CPRA HAS A DUTY TO OUTLINE THE OIL AND GAS INDUSTRY'S LIABILITY FOR COASTAL RESTORATION

CPRA, as the lead restoration agency , has a duty to the public as well as to industry, to outline the liabilities of the oil and gas industry.

CPRA should evaluate the impact of restoration of these legacy canals, or at the marsh restoration under their spoil banks; at least on public lands and lands targeted for hydrological restoration.

CLIMATE CHANGE MEANS INCREASING SEA LEVEL RISE, BUT ALSO INCREASING INSTABILITIES, FOR RAINFALL, THE RIVER, AND FINANCES

CPRA should consider the financial implications of tying restoration programs to future extraction revenues.

ENVIRONMENTAL COMPLIANCE IS COASTAL RESTORATION AND PROTECTION

CPRA, as part of this Annual Plan, periodically publish the success rate of all mitigation projects that are under the authority of the State (e.g. Coastal Use Permits), or, the success of all the restoration projects that substitute as mitigation through the in-lieu fee program.

CPRA SHOULD OUTLINE CARE FOR THE RIVER AND THE LANDS BUILT

CPRA must withdraw from its MOA with RAM Terminal, as this agreement sets bad precedent for management of diversion projects and future conflicts with private interests.

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CPRA must consider how strengthened environmental review and enforcement can provide necessary scientific and planning opportunities, as well as make coastal restoration more sustainable.

CPRA should consider a uniform set of practices for arranging land use of restored lands, and not negotiate land use agrements project by project, landowner by landowner.

THE LOUISIANA CONSTITUTION REQUIRES THE STATE TO ANALYZE THE ENVIRONMENTAL IMPACTS OF THE MASTER PLAN

The SMP 2017 needs to investigate the environmental impact costs balanced against the social and economic benefits of the plan.

CPRA SHOULD ADDRESS THE GULF HYPOXIC ZONE

CPRA should initiate a science-based, quantitatively measureable, nutrient reduction plan, in order to preserve and enhance fisheries.

THE MASTER PLAN SHOULD CONSIDER ENVIRONMENTAL JUSTICE

CPRA technical staff should work more closely with parish planning committees to ensure that local knowledge of an area is included in project planning, and that local communities are updated on the progress of projects.

CPRA should outline how the state will work with project contractors to ensure local hiring and coordinate with educational institutions to train and re-train our coastal workforce to take advantage of these jobs.

For a healthy Gulf,

Scott Eustis, M.S., Coastal Wetland Specialist, Gulf Restoration Network

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