Mississippi River Delta Restoration Campaign

Comments on the

2012 Draft Louisiana Comprehensive Master Plan for a Sustainable Coast

Submitted February 25, 2012

We strongly commend the Coastal Protection and Restoration Authority (CPRA) for the *2012 Draft Louisiana Comprehensive Master Plan for a Sustainable Coast* (hereinafter 'the Plan"). The Plan builds upon and hones ideas from prior planning efforts to create a practical, achievable and scientifically credible program. Implementing this Plan is urgently needed to reduce asset damage and change the trajectory from land loss to land gain on the Louisiana coast. This Plan, implemented within an Adaptive Management Framework over its fifty-year time frame, takes the necessary actions that will allow the Mississippi River to re-occupy its delta, thereby creating incalculable long-term benefits for the nation's most productive ecosystem.

The Plan correctly lays out a stark future for the coast if no action is taken. Indeed, if we just continue the half measures that have characterized coastal restoration efforts to date, the future will be nearly as bleak. By embracing river re-connection to the delta and non-structural asset protection, coupled with traditional and proven marsh creation and barrier island replenishment techniques, the Plan promises to fundamentally reshape our relationship to forces that will otherwise overwhelm our children and grandchildren. By committing to such bold action, Louisiana will establish itself as a national leader in demonstrating how to use sound science, stakeholder involvement, and wise resource allocation to reverse decades of decline. Getting it right in Louisiana could make the state a national and global model in how communities can and must adapt to complex coastal problems that will only become worse with sea level rise.

<u>We Support the State Master Plan Process and Recommend Improvements Going Forward</u>

The painstaking process used to develop the Plan represents a milestone, not only for Louisiana, but for our nation. Integration of landscape-scale coastal restoration and structural and non-structural protection required groundbreaking methods and analytical techniques.

The state's development of models, which applied science, engineering and economics to assess multi-layered solutions, shows its robust commitment to produce the best possible plan using the best available information. This technical groundwork was in turn informed and guided by teams of outside experts, consultants, focus groups, the public and the Framework Development Team. Taken together, these methods and inputs helped the state better understand options and ecosystem responses and to define, more accurately than ever before, what is feasible and what is not for our coast.

We recommend that the state begin now to develop the next generation of projects to incorporate into the 2017 Master Plan. Given the adaptive management emphasis in the Plan, it is important to have a mechanism for developing new project ideas, based on what has been learned from the Master Planning Process and from projects on the ground. This adaptive process is essential if we are to fully understand how the current projects in the plan stack up against what is needed. It will provide credible mechanisms for closing the gap between what appears feasible at present and what is really necessary for coastal restoration and protection.

The ecologic models were developed using appropriate experts and capture critical information about ecosystem response under various scenarios. Although such models can and should be improved, they provided an invaluable comparison among different scenarios that helped guide the allocation of limited resources. We encourage the state to continue to develop the capability of these models and to share outcomes with the public for specific projects and for programmatic changes to our coastal ecosystem.

Our organizations support the Objectives, Principles, Decision Criteria and Decision Drivers developed by the State to guide the State Master Plan project analysis and selection. Considering the comprehensive, coast-wide planning approach of the Plan, we believe that its primary Decision Drivers of *flood-risk reduction* and *land building*, although broadly constructed, are appropriate at this time. In the future we recommend an expansion of the land-building criterion to incorporate risk-reduction, strategic location and the economic value of *ecosystem services*.

We also support the Decision Criteria selected by the State to evaluate trade-offs and influencing factors within the Decision Drivers. Specifically, we strongly support the State's reliance on *sustainability*, *use of natural processes*, and *operations and maintenance costs* as key influencers of the Decision Drivers. We also strongly support the Plan's adoption of less-optimistic scenarios for future conditions and the subsequent emphasis placed on persistence of benefits over time. Among the Decision Criteria that could be improved, we recommend

that the State incorporate a more thorough quantitative analysis of enhancements or impediments under the criterion of *support for navigation*.

We further recommend that the State improve the Master Plan process going forward with a more thorough analysis and integration of *ecosystem services*. Specifically, we urge the State to develop a more quantitative analysis of how project outputs influence *ecosystem services*. The State should also develop a more detailed process to calculate changes in ecosystem productivity rather than relying solely on Habitat Suitability Indices as a proxy.

We support the State's decision to allocate funding equally between near-term and long-term restoration efforts as well as the State's decision to allocate funding equally between restoration and risk-reduction projects. More specifically, we endorse the methodology of using population density as the most objective, fair and transparent criteria for establishing risk-reduction targets. However, risk reduction without ecosystem restoration will amount to a hollow victory as the loss of coastal wetlands and the jobs, industries and way of life that depend upon them would obviate the need for many to live here. The state should therefore be prepared to skew expenditures toward restoration if it becomes apparent that a better balance can be achieved thereby.

<u>Delay in Implementing Large-scale Restoration Projects Could Jeopardize Long-term Success</u>
The draft plan recognizes that the timing of the implementation of restoration and protection projects, and even the timing of the implementation of large-scale diversions, including a lower Mississippi River re-alignment, can make a difference in terms of the sustainability and vitality of the coastal ecosystem and its economic and environmental assets. Delay in moving forward means more land loss before we embark on the large-scale restoration projects that will ultimately be necessary to rebuild the ecosystem. The plan also recognizes that financial uncertainties, among others, directly influence project implementation and selection.

The severe implications of delay, like taking No Action, should be stressed in the draft Plan. Furthermore, an increase in dedicated State revenues for the coastal program would improve the predictability of annual funding and provide a better opportunity for near-term project prioritization and a clearer pathway toward achieving specific project-implementation goals.

<u>We Encourage the State to Develop Partnership Opportunities</u>
We encourage the state to develop innovative partnerships in order to take advantage of additional expertise and potentially more rapid implementation of projects. One such opportunity could be in partnership with non-governmental entities in acquiring surface or other real estate rights. We recommend the plan reference "donations to the state or other

non-governmental organizations seeking to implement components of the Master Plan" so that those opportunities are not precluded.

We Urge that Channel Re-Alignment Be Made an Express Priority

The Master Plan's modeling analysis indicates that Mississippi River channel realignment projects are the most capable alternatives for achieving maximum land-building capacity. We support the State's position that these benefits warrant further evaluation. However we question the Master Plan's reliance on the Mississippi River Hydrodynamic and Delta Management Study as the sole and most appropriate venue to pursue a thorough and adequate evaluation of these projects. Although the H&H should remain a critical focus of the State's efforts to plan for a sustainable River system, we additionally recommend that the State Master Plan articulate a commitment to advance Mississippi River channel realignment projects through multiple and dynamic venues that will enhance efforts to resolve the cost, design and constructability uncertainties referred to in the existing draft master plan. New venues should incorporate innovate designs, engineering and stakeholder engagement with the stated purpose of advancing channel realignment projects that deliver maximum sediment while simultaneously providing a more sustainable and effective navigation system. The State Master Plan should commit resources to ensure sufficient scientific and engineering design work is completed over the next five years to confidently include a fully-vetted and developed Mississippi River channel realignment alternative as a specific project in the 2017 Master Plan.

Channel re-alignment, and indeed massive upstream diversions, could hasten the demise of the Bird's Foot, and specifically of state and federal trust resources at Pass a Loutre Wildlife Management Area and Delta National Wildlife Refuge. These crucial habitats exist nowhere other than at the mouths of the Mississippi and Atchafalaya rivers. Upstream diversion and channel realignment will eventually create even more habitat than now exists. But until that can happen, immediate measures must be taken to better manage the diminishing habitat in the Bird's Foot, and the Plan should acknowledge the problem and spell out the strategy. This should include better sediment management and channel maintenance in Pass a Loutre and Main Pass. The Plan should also identify the role of federal partners to work in a unified way to advance restoration of the coast, including the Bird's Foot, pursuant to the recommendations of the Gulf Coast Ecosystem Restoration Task Force.

Future Models Should Include Swamp Conversion Measurements and Opportunities

One of the limitations of the 2012 planning effort was that the Land Change module of the Morphology Model is not sensitive to the tree thinning that occurs over decades prior to conversion of swamps to marshes or open water. This gap should be acknowledged in the Plan, along with a commitment to refine the approach to reflect the uniqueness of the swamp transition/loss as a critical next step of the modeling team.

Strategies for preserving coastal swamps, and for restoring lost swamp, both for their habitat value and because they reduce storm surge and attenuate waves more effectively than other wetlands, should become a goal of the 2017 plan, and that goal should be expressly stated in this Plan. Swamp-sustaining diversions or spillways designed not just for land sustenance, but also for habitat value, will be necessary. Otherwise, three of the nation's largest swamps in the upper Pontchartrain, Barataria and Terrebonne basins will eventually be converted to floating freshwater marsh, with serious loss of vital habitat for a suite of species that reach their highest abundance in the delta. Opportunities also exist for restoring and sustaining remnant swamps in the vicinities of Lake Borgne and Terrebonne Bay.

An important but as yet unexplored role for diversion design and location is flood protection. As the Mississippi River and Tributaries flood control system ages, as river stages rise, and as relative sea level continues to rise as well, properly sited diversions or spillways in the upper basins could relieve stress on the levee system, sustain swamps and reduce downriver flood threats to people and assets.

<u>We Endorse the Marsh Creation Program and Recommend Continued Refinement</u>

The Plan clearly shows that creation of wetlands through pumping of dredged sediment is appropriate, but has reduced effectiveness due to high cost and limited sediment availability. We recognize the importance of marsh creation as one of multiple lines of defense, required because we have allowed the situation to deteriorate for so long that coastal communities are now exposed to the Gulf, and require immediate buffering. The state's plan to allocate $17.9 billion for marsh creation is a huge financial commitment, but will only produce a finite number of acres. Further, marsh creation efforts alone are inadequate to achieve a sustainable and functioning coast. The underlying causes of land loss must be addressed by river re-connection on the southeast and central coasts or hydrological modification in the southwest.

March creation projects should be located strategically. The Plan proposes to use critical landscape features to identify coastal areas that are not only ecologically significant, but also provide critical surge buffering for our coast. This is appropriate and leads to strategically placed marsh creation areas that provide dual ecological and economic benefits that are desperately needed along our coast. Future modeling should continue to identify synergies between marsh creation and diversions that increase both land built, assets protected, and provision of ecological services.

<u>We Encourage the State to Protect Freshwater Inflow</u>

We commend the recognition that the freshwater flows have an impact on the health of the coastal ecosystem, and as such should be maintained and enhanced. We encourage an

evaluation of freshwater needs take place throughout the coastal zone, particularly in areas that have limited opportunity for freshwater introduction, as in the Chenier Plain.

We Encourage the Utilization of Living Shorelines

Conventional shoreline protection often consists of armoring or hardening shorelines with non-native materials. In a subsiding coastline, use of this protection technique often requires the addition of materials to maintain height over time. We recommend, when possible, the use of living shorelines, such as vertical oyster reefs, which have the capability of protecting the shoreline, providing other ecosystem services such as water quality improvement and production of spat. Living shorelines are self-maintaining, having the capacity for increasing height without the addition of materials.

We Endorse the Nonstructural Program and Recommend Enhancements

We applaud the Plan for developing $12.9 Billion in nonstructural projects in order to increase the resilience of coastal communities. The sheer scope and breadth of projects in the Plan demonstrate the State's commitment to providing a robust system of risk reduction for coastal communities in a cost-effective and comprehensive manner. This Plan places nonstructural measures, as we have encouraged, as a critical tool alongside coastal restoration and targeted structural measures in the creation of a resilient and sustainable coastal Louisiana.

To ensure that the Plan's ambitious commitment to nonstructural approaches is met, significant efforts to build capacity and coordinate state programs will be necessary. The Plan should enhance the nonstructural program development language in the main document to include active commitments for coordination and authority. We suggest replacing the passive suggestion of coordination of nonstructural approaches and disaster mitigation activities by borrowing language from Appendix G to actively recommend that "a single entity be responsible for coordinating all hazard mitigation activities including: hazard risk assessment, hazard mitigation planning and project implementation." Consolidating and coordinating program authorities, funding streams and efforts under CPRA will improve efficiencies in meeting the Plan's project goals. It would ensure that nonstructural risk reduction is consistent with restoration and protection efforts.

We also encourage the State to develop specific program recommendations regarding nonstructural approaches. Most notably, voluntary acquisition (or relocation) is proposed as a necessary action in the most vulnerable coastal communities. The Plan correctly acknowledges the sensitivity of relocation, as well as the need to keep the decision for relocation voluntary, but the Plan should set a timeline and specific steps for developing a program that makes voluntary acquisition an available option and resource for individuals and communities. The

program should have capacity to help communities assess risk, develop community-based plans for coordinated relocation, locate viable locations for relocation that decrease risk and provide resources that make voluntary acquisition a fair but feasible option. The state must also have programs in place that can be implemented immediately in the aftermath of disasters, when providing options to citizens and communities is of vital importance.

Nonstructural asset risk reduction is an efficient and cost-effective risk reduction tool, one that the state and coastal parishes have already implemented in many locations. Therefore, we encourage the Plan to note that nonstructural projects can readily be moved into "Implementation Period One," if resources become available from programs specific to hazard mitigation. This will allow projects to be put in place quickly without compromising funding for other risk-reduction priorities in the first twenty years.

The modeling and planning tools selected structural projects as the most effective means for achieving asset risk reduction in densely populated areas. In some cases the projects modeled were little more than conceptual lines on a map. Going forward, the state should seek to design structural projects that will complement, rather than impede, future restoration efforts, even efforts that are not yet fully envisioned. Put simply, the state should avoid designs that bisect wetlands or add new impediments to future diversion or spillway needs. This is the most prudent approach to structural design, because the assumptions about future climate and sea level changes on which the Plan is based are reasonable, but they do not begin to approach the worst-case scenario.

Equally important, the state should declare in the Plan its intention to seek innovations in structural hurricane protection, including incorporating forested or wetland aprons, stand-alone ridges, and other modifications as self-mitigating and surge-reducing features. The state should be open to nontraditional levee design, especially considering the ecosystem impacts of obtaining clay from the coastal landscape. And the state should work with local government to evaluate the risk associated with and sustainability of proposed new development within protected footprints, and where appropriate, to reduce structural costs by requiring non-structural measures and facilitating non-structural work within those structural footprints.

<u>We Recommend Specific Milestones for Assisting Transitions</u>

We recommend that the Plan include specific milestones, actions and tasks that will be undertaken to help transition key stakeholders or commercial sectors that may be adversely impacted by projects included in the Plan. We believe the Master Plan's section on Adaptive Management could serve as an excellent template for developing a strategy to address Transition Assistance. For example, the Adaptive Management section outlines a phased approach to developing an Adaptive Management Framework, including specific actions for

Phase 1 to be completed by the release of the 2014 Annual Plan, and initial thoughts on specific tasks for Phase 2. We strongly support the development of a similar framework to address Transition Initiatives that should articulate how and when the state will set up a framework to work with stakeholders on operational regimes of diversions, landowner involvement and community and user group assistance as we transition to a changing coast, as well as assist other sectors not identified in the Master Plan.

Conclusion

We support the process used to develop the 2012 State Master Plan and we urge that the Plan, with its commitment to nonstructural risk reduction and re-connection of the river to the delta, be adopted by CPRA and forwarded to the legislature for adoption. Our comments above reflect our desire to enhance the State's efforts and help move the state towards a resilient, sustainable future. We look forward to working with the state to implement the Plan, and to convince the nation to become a committed partner in achieving its vision.

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