

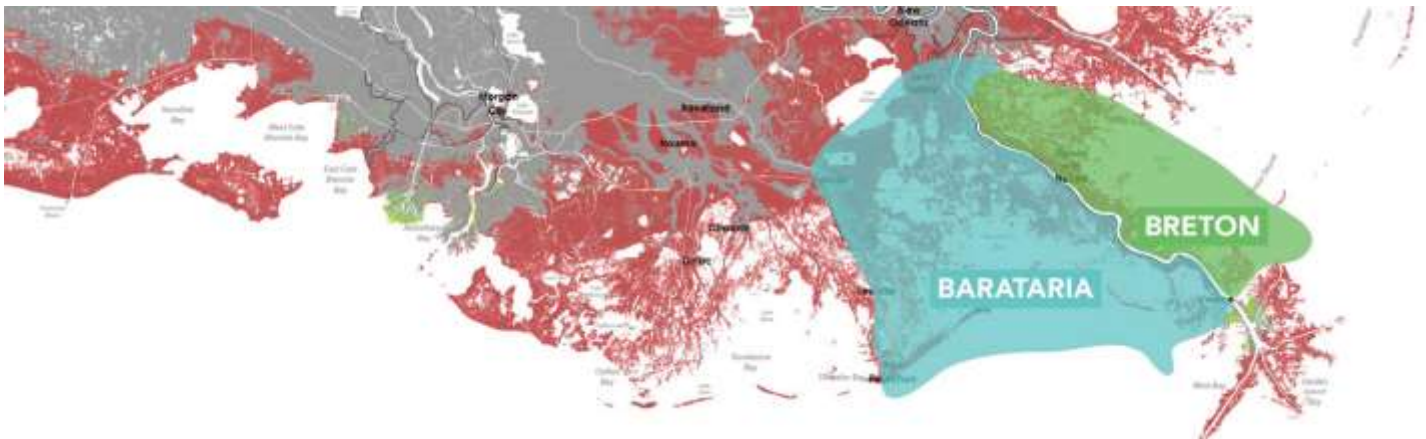


Mid-Barataria and Mid-Breton Sediment Diversions Overview & Frequently Asked Questions

Project Overview

Louisiana's continued land loss largely impacts our citizens, economy, commerce, infrastructure, and culture. Furthermore, the collapse of coastal Louisiana would negatively impact the entire country: Louisiana's coast provides protection for infrastructure that supplies 90% of the nation's outer continental oil and gas, 20% of the nation's annual waterborne commerce, 26% (by weight) of the continental U.S. commercial fisheries landings, and winter habitat for five million migratory waterfowl.

The Barataria and Breton Basins are two areas that have experienced significant land loss due to sediment deprivation, hydrologic alteration, subsidence, sea level rise, and salt water intrusion. Since the Mississippi River was leveed in the 1930s, the Barataria and Breton Basins and Mississippi River Delta have lost approximately 700 square miles (or 447,000 acres) of land, representing one of the highest land loss rates in the world.



Louisiana's Coastal Master Plan identifies sediment diversions as cornerstone projects, necessary to create a more sustainable coastal Louisiana landscape, and must be implemented to build and sustain coastal land in perpetuity. These two sediment diversion projects were analyzed to predict project effects on variables such as land building, salinity, sediment transport, nutrients, and water levels. As part of this analysis, the state also evaluated marsh creation projects that could be implemented in conjunction with sediment diversion projects.

Over the next several years, CPRA will work to optimize operations, formulate the final project design, and apply for appropriate permits in order to construct these large, innovative projects. At the same time, planning efforts will continue to evaluate additional diversions outlined in the Coastal Master Plan.

Issues to be Addressed

To address the root of the problem, it is important to "reconnect the river" and restore the natural processes that initially built the delta. Controlled sediment diversions offer a unique opportunity to

strategically reestablish hydrologic flows, carry land-building sediments, nourish marshes, and sustain land. When utilized with Louisiana's full suite of protection and restoration projects, this integrated systems approach can combat the grave land loss that threatens our coast. The Mid-Barataria and Mid-Breton diversions will divert sediment-laden water from the river and deposit it into the basins to build and sustain land.

Project Benefits

Since 2007, CPRA has dredged nearly 30 million cubic yards of sediment from Mississippi River borrow sites. This work has created, restored, and nourished nearly 4,000 acres of marsh, barrier islands, and ridge habitat. As outlined in Louisiana's Coastal Master Plan, Louisiana needs a holistic approach to coastal restoration and protection. Dredging projects create land immediately and provide critically needed short-term benefits. However, long-term sustainability is a major issue for these projects. The delivery of sediment via sediment diversion projects may take longer to yield land building results, but once established will continue to build and sustain land.

Additionally, over the next 15 years, CPRA plans to dredge as much as 55-65 million cubic yards. However, our latest research shows that when implemented together, marsh creation and sediment diversion projects perform better together and for a longer period than they do as individual projects. Sediment diversions will complement these restoration projects. The latest estimates show that constructing a marsh creation project within the proximity of a sediment diversion will prolong its life by 10 – 20 years.

Project Design and Location

Mid-Barataria

The Mid-Barataria Sediment Diversion structure will be located in Plaquemines Parish, LA, along the west bank of the Mississippi River, just north of Ironton and south of the Phillips 66 Alliance Refinery, near Mississippi River Mile 61.

Mid-Breton

The Mid-Breton Sediment Diversion structure will be located in Plaquemines Parish, LA, north of the Mid-Barataria location on the east bank of the Mississippi River, near Wills Point, approximately at Mississippi River Mile 69.

Next Steps

Environmental Permitting

The National Environmental Policy Act (NEPA) requires federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.

An Environmental Impact Statement (EIS) is a detailed analysis that serves to ensure that the policies and goals defined in NEPA are infused into the ongoing programs and actions associated with the project. The EIS will provide a discussion of potential environmental impacts and reasonable alternatives (including a No Action alternative) which would avoid or minimize adverse impacts or enhance the quality of the human environment.

Mid-Barataria

The EIS for Mid-Barataria is currently underway. In June 2016, CPRA submitted an updated permit application to the New Orleans District of the USACE. In January 2017, CPRA selected GEC, Inc. (GEC) as the third-party contractor to lead the EIS. Throughout 2017, GEC will engage the public, other federal agencies, and outside parties to provide input into the preparation of an EIS and to solicit public comment on the draft EIS once completed.

In January 2017, The White House Federal Permitting Improvement Steering Council rendered approval to include Louisiana's Mid-Barataria Sediment Diversion project on the Federal Permitting Dashboard, a government-wide effort to streamline the federal permitting and review process while increasing transparency. The dashboard can be viewed: <https://www.permits.performance.gov/>. The dashboard is just one tool within a larger strategy to facilitate enhanced interagency coordination for any infrastructure project of size, complexity, and significance that might experience a lengthy federal environmental review and permitting process.

Mid-Breton

The EIS process for the Mid-Breton Sediment Diversion project is anticipated to begin in 2018.

Engineering and Design

Over the next several years, CPRA will work to optimize operations, formulate the final project design, and apply for appropriate construction permits in order to construct these foundational projects for the coastal master plan. At the same time, planning efforts will continue to evaluate additional diversions.

In July 2017, CPRA selected AECOM to lead the engineering and design effort for the Mid-Barataria Sediment Diversion. Relevant deliverables for the Mid-Barataria Sediment Diversion are posted at [this page](#). In anticipation of the engineering and design solicitation for the Mid-Breton Sediment Diversion, (CPRA is posting applicable documentation at [this page](#)).

In the Fall of 2016, CPRA completed its Collaborative Delivery Analysis for the Mid-Barataria Sediment Diversion project. The results showed that a Construction Management At-Risk (CMAR) delivery model was best suited for this complex project. To learn more about CMAR and review "Frequently Asked Questions" about this delivery model and solicitation are posted at [click here](#).

Frequently Asked Questions:

1. How will this project be funded?

In early 2013, a U.S. District Court approved two plea agreements resolving certain criminal cases against BP and Transocean, which arose from the 2010 *Deepwater Horizon* explosion and oil spill. The agreements direct a total of \$2.544 billion to the National Fish and Wildlife Foundation (NFWF) to fund projects benefiting the natural resources of the Gulf Coast that were impacted by the spill. In Louisiana, this settlement mandated that these funds be dedicated to "create or restore barrier islands off the coast of Louisiana and/or to implement river diversion projects on the Mississippi and/or Atchafalaya Rivers for the purpose of creating, preserving and restoring coastal habitat".

2. When will these projects be built and begin operations?

The current schedule has the Mid-Barataria project permitted in 2022 and the Mid-Breton project permitted in 2023. These dates are contingent on funding, permitting, and real estate acquisitions. As such, these dates are subject to change. Construction would start once the permitting and design process is completed and is expected to take between two and four years. CPRA is pursuing a more aggressive schedule that would potentially expedite the permitting approvals.

3. How will these projects be operated? Will they operate at full capacity all the time?

Mid-Barataria

In April 2017, CPRA developed an initial draft operations strategy. The framework for the draft initial operations strategy was based on the State's goal of restoring natural processes and achieving long-term sustainability, which resulted in an analysis to maximize the delivery of river sediment while minimizing the amount of fresh water entering the receiving basin. Higher sediment concentrations of river water occur as the river rises, especially during earlier river peaks which typically occur in the

winter and spring months. In that context, the draft initial operations strategy envisions operation of the diversion when the Mississippi River reaches a discharge of 450,000 cubic feet per second (cfs) at Belle Chasse, which happens when the river stage is approximately 10-11 feet at the local gauge. When the river discharge falls below 450,000 cfs at Belle Chasse, the diversion structure would mostly close and only allow a base flow of up to 5,000 cfs in order to benefit existing and newly created wetlands, to maximize vegetation sustainability, and to accommodate future environmental changes.

During typical operations, it is anticipated the proposed project would discharge on the order of 30,000 to 50,000 cfs depending on the natural river power and head differential. During peak operations, it is anticipated that the proposed project would significantly advance efforts to restore vital wetlands by discharging up to 75,000 cfs of sediment laden Mississippi River water into the Barataria Basin. Based on historic river discharges, peak operations would only occur occasionally, estimated a few times every decade.

This draft initial operations strategy is the start of the operations discussion for the EIS and is anticipated to change over the life of the project. In order to help reduce uncertainty over time and adjust for the ever-changing environment, an adaptive management plan is being developed. The adaptive management plan will monitor the structure and the environment to allow for variable flow rates in response to seasonal, sediment, and environmental conditions to maximize the benefits of sediment transport for restoration.

Mid-Breton

An initial draft operations strategy is currently in development for Mid-Breton. Over the next year, CPRA will work to optimize operations and formulate a strategy tailored to this project and apply lessons learned from Mid-Barataria.

4. Will both projects have an adaptive management plan?

Yes. An Adaptive Management Plan will be developed for both projects. The goal of these plans will be to maximize sediment transport from the Mississippi River to the basins to build, sustain, and maintain land. The plans will help to accommodate uncertainty and allow the project to adjust for the ever-changing environment to ensure the projects meet their intended goals. These plans will monitor the diversion intake structures and outfall areas and allow for variable flow rates to respond to seasonal, sediment, and basin conditions in order to maximize the benefits of sediment transport for restoration. Monitoring stations will be placed in the Mississippi River near the intake structures and in the basins at the channel outfalls as well as other areas that are yet to be determined.

5. How do you determine the outfall areas?

Each project was modeled to predict project effects on variables, such as land building, salinity, sediment transport, nutrients, and water levels. As part of this analysis, the state also considered innovative marsh creation projects that could be implemented in conjunction with sediment diversion projects in order to enhance sediment capture and build more land.

6. How can you tell if the project is building land?

Over the next several years, CPRA will work to optimize operations, formulate the final project design, and apply for appropriate construction permits in order to construct these foundational projects for the coastal master plan. At the same time, planning efforts will continue to evaluate additional diversions.

7. Why is there so much land loss in coastal Louisiana?

Louisiana continues to experience coastal land loss, triggered by both human and natural forces. Levees and flood control structures on the Mississippi River have successfully provided flood control

and economic benefits; however, these forms of river management have also channeled the Mississippi River and its tributaries into the Gulf of Mexico, depriving the broader coastal ecosystem of the fresh water and nutrient-rich sediment it needs to survive. Dredging canals for oil and gas exploration and pipelines provided our nation with critical energy supplies, but these activities also took a toll on the landscape, weakening marshes and allowing salt water to invade deeper into coastal basins. In addition, recent hurricane events and the *Deepwater Horizon* (DWH) oil spill have exacerbated land loss impacts in Barataria and Breton Basins. Sea level rise, land subsidence, severe storms, and invasive species add further stress and contribute to further land loss.

8. How long has this Louisiana's land loss been going on?

Louisiana has lost nearly 2,000 square miles of land since the 1930s and we know we are going to lose more. In fact, our latest predictions show that if we do nothing, we stand to lose as much as 1,800 to 4,200 additional square miles over the next 50 years.

9. Why not just spend the time, money, and resources on dredging?

As outlined in the Coastal Master Plan, CPRA believes we need a holistic approach to coastal restoration and protection. In fact, since 2008, CPRA has dredged nearly 30 million cubic yards from the Mississippi River borrow sites. This work has created, restored, and nourished nearly 4,000 acres of marsh, island, and ridge habitat utilizing riverine sediment. Additionally, over the next 15 years, CPRA plans to implement several large-scale restoration projects using dredged material from the Mississippi River. Over 60 million cubic yards of Mississippi River sediment, the upper limit of sediment availability in this reach of the river, will be dredged to construct these projects. While dredging provides critically needed short-term benefits, it doesn't solve our fundamental issue of implementing projects that provide a sustainable and continuous source of new sediment. In fact, our latest research shows that when implemented together, marsh creation and sediment diversion projects perform better, longer.

10. How does a sediment diversion work? What does it look like?

Sediment diversions will harness the power of the Mississippi River for long-term, sustainable sediment, water, and nutrient delivery to the surrounding wetlands. The main elements of the diversion complex are the diversion structure and the conveyance channel. The diversion intake structure, located on the banks of the Mississippi River, replaces a section of the earthen levee system with gated structures to transport sediment. The conveyance channel is used for transporting the sediment from the river to the Barataria Basin.

11. Is there really enough sediment in the river to build and sustain land at these locations?

Yes, these projects propose to divert suspended sediment generated from the local sand bar as well as sediment carried in the river's flow. The majority of sediment diverted into the basin will be sediment that is suspended in the Mississippi River water.

For Mid-Barataria, the latest estimates show that, on average, the sediment diversion could deliver between 2 - 3 million cubic yards of sediment a year. To put that in perspective, that's 20 – 30 million cubic yards every ten years or 100 – 150 million cubic yards over the next 50 years. How much sediment is that? A dump truck holds 12 cubic yards of sediment. So one million cubic yards is equivalent to 83,333 dump trucks. It takes 385,901 dump trucks to fill up one Louisiana Superdome. By 2070, the Mississippi River will deliver enough sediment to these basins to fill 22 - 32 Louisiana Superdomes!

12. Are there examples of other successful diversions projects?

Large portions of the Mississippi River Delta are subsiding and eroding today. But 100 miles to east, the Atchafalaya River delta system, is actively creating new land everyday. A primary contributor to this land-building is the Wax Lake Outlet, which was constructed by the U.S. Army Corps of Engineers

in 1942 to reduce the risk of flooding in Morgan City and surrounding areas. The project consists of a 14-mile, manmade channel that creates a straighter, more efficient path between the Atchafalaya River and the Gulf of Mexico. The Wax Lake Delta has formed, as a by-product of the flood risk reduction project where the channel meets the Gulf and has been growing steadily for the past 40 years. This delta system has become a vibrant and productive ecosystem, playing host to a wonderful diversity of plants and animals.

13. Besides the EIS, are there other official steps required to implement and construct the Mid-Barataria and Mid-Breton Sediment Diversions?

Yes. Both projects will be designed and constructed to high standards with oversight from the United States Army Corps of Engineers (USACE). Before construction takes place, several permits/permissions must be obtained by the state:

- **Coastal Use Permit** - authorization to execute a project in Louisiana's Coastal Zone that is in compliance with the guidelines of the Louisiana Coastal Resources Program
- **404/10 Permit** - authorization for the construction of any structure in or over any navigable water and the discharge of fill material into the wetlands; and
- **408 Permission** - authorization for the alteration of a USACE Civil Works project. This permission is granted if the USACE determines the activity will not be injurious to public interest, and will not impair the usefulness of the original project.

14. What has been the reaction from the community to these projects?

Over the last 12 months, CPRA's Sediment Diversion Program Team has hosted office hours twice a month in Coastal Louisiana parishes to provide citizens an opportunity to learn more about these projects, ask questions, and pick up informational materials. Through these "Coastal Connections" events, CPRA staff has visited with hundreds of coastal residents, to provide project information and address misconceptions or misinformation surrounding sediment diversions. Overall, the feedback has been overwhelmingly positive.

15. How can the public engage in the process?

In addition to Public Scoping Meetings and other formal engagement opportunities outlined in the NEPA and permitting processes, CPRA is committed to providing numerous opportunities for public engagement:

- Visit with CPRA Staff at an upcoming Coastal Connections event. For a schedule of upcoming visits, please visit www.coastal.la.gov/calendar/
- Attend a CPRA Board Meeting (schedule posted at www.coastal.la.gov/calendar/)
- Visit www.coastal.la.gov to learn more about this project and other coastal program projects
- Email us at coastal@la.gov to request a meeting
- Connect with Us!
Facebook: @LouisianaCPRA
Instagram: @la_cptra
Email Sign Up: www.coastal.la.gov

Louisiana Coastal Protection and Restoration Authority is the single state entity with authority to develop, articulate, implement, and enforce a comprehensive coastal Master Plan of unified vision, to reduce tropical storm surge flood impact, to restore our bountiful natural resources, to build land to protect our nation's critical energy infrastructure, and to secure Louisiana's coast now and for future generations.