



November 20, 2008

Via email: sandra.e.stiles@usace.army.mil

Ms. Sandra Stiles
U.S. Army Corps of Engineers
CEMVNPM-RS
P.O. Box 60267
New Orleans, LA 70160-0267

Re: Comments on Proposed Draft Environmental Impact Statement for the Mississippi River-Gulf Outlet Ecosystem Restoration Feasibility Study; Scoping Comments

Dear Ms. Stiles:

American Rivers appreciates the opportunity to comment on the U.S. Army Corps of Engineers' (Corps) Notice of Intent to Prepare a Draft Environmental Impact Statement for the Mississippi River-Gulf Outlet Ecosystem Restoration Feasibility Study (the "Proposed Draft EIS").

American Rivers is a national conservation organization working to protect and restore the nation's rivers and wetlands so communities can thrive. American Rivers has a long history of working for the effective closure of the Mississippi River-Gulf Outlet (MRGO) to protect New Orleans and St. Bernard Parish and to restore the wetlands lost to the MRGO. American Rivers has more than 65,000 supporters nationwide, and works in partnership with thousands of river and conservation organizations.

I. The Corps Must Prioritize MRGO Planning And Complete The Feasibility Study As Quickly As Possible; The Corps' Current Planning Timeline Is Unacceptable

Section 7013 of the Water Resources Development Act of 2007 (WRDA 2007) directs the Corps to develop and implement a plan to restore natural ecosystem features of the MRGO channel that will reduce or prevent damage from storm surge and restore the areas affected by the navigation channel. Specifically, WRDA 2007 requires the Corps to develop a plan to: (1) physically modify the MRGO channel and restore the areas affected by the MRGO; (2) restore the natural features of the ecosystem that will reduce or prevent damage from storm surge; and (3) prevent the intrusion of saltwater into the waterway. The Corps was required to finalize this plan by May 8, 2008 – more than six months ago. Public Law 110-114, 121 Stat. 1281.

While the Corps has recommended (and is in the process of awarding a contract for) construction of a rock closure at Bayou la Loutre to minimize saltwater intrusion,¹ the Corps has announced that it will not release a *draft* of the remaining elements of this legally required plan until March 2010 at the “earliest.” 73 Fed. Reg. at 57342 (October 2, 2008). The Corps does not even attempt to estimate when the EIS and restoration plan will be finalized.

This delay violates the plain language of WRDA 2007 and ignores the clear intent of Congress that the Corps must act quickly to address the dire threat posed by the MRGO. Importantly, this delay is not acceptable from a public safety perspective. Highly credible scientific evidence also makes it clear that public safety will continue to be in jeopardy until the MRGO channel and the wetlands affected by the MRGO are restored. Full and rapid compliance with the WRDA 2007 is essential for public safety and the Corps should prioritize this critical project and commit to finalizing the restoration plan and necessary environmental review as soon as possible. On the ground implementation of the restoration plan should begin within two years (by November 2010), *at the absolute latest*.

While American Rivers recognizes the significant amount of planning currently being carried out by the Corps’ New Orleans District, Congress has made it clear that minimizing the dire safety threats posed by the MRGO is of the highest priority. The Corps should comply with this Congressional mandate and place the highest priority on finalizing the restoration plan for the MRGO. If resource constraints nevertheless continue to slow MRGO planning, the Corps should contract out some, or all, of its planning and modeling efforts on the MRGO to other governmental agencies (such as NOAA or USGS), academic or scientific institutions, or private entities with extensive and proven experience in developing effective ecosystem restoration plans.

II. The Proposed Draft EIS and Restoration Plan Should Comprehensively Examine – And Recommend – The Full Suite Of Scientifically Sound Measures Already Provided To The Corps In Connection With Its MRGO Planning Efforts

The Corps has already been presented with a host of recommended measures designed by scientists to ameliorate the public safety risks created by the MRGO and to restore the wetlands lost to the MRGO.² These measures would: reduce storm surge; protect the MRGO levees – and the communities behind those levees – from the destructive assault of wind-driven waves; and restore vital, storm-buffering coastal wetlands. The Corps should start from this significant base of information and fully evaluate these recommendations.

¹ The rock closure was recommended by the Corps in the Integrated Final Report to Congress and Legislative Environmental Impact Statement for the Mississippi River – Gulf Outlet Deep-Draft Deauthorization Study, November 2007 (the “Phase I MRGO Report”). American Rivers strongly supports the closure at Bayou la Loutre. However, that single closure does nothing to address the significant public safety threats created by the MRGO. Significant additional measures are also required to restore the wetlands lost to the MRGO.

² These measures were improperly dismissed, without any meaningful analysis, in the Phase I MRGO Report. Proper compliance with the National Environmental Policy Act requires a full and robust evaluation of these measures in the Proposed Draft EIS.

A number of these critical, scientifically-based measures to minimize the storm surge impacts of the MRGO channel and restore the wetlands and storm buffering capabilities lost to the MRGO are discussed in detail in the *MRGO Must Go* report previously submitted to the Corps in connection with its planning for the MRGO. These measures were developed by scientists from Louisiana State University Department of Oceanography and Coastal Sciences, Louisiana University Hurricane Center, the Coalition to Restore Coastal Louisiana, and the Lake Pontchartrain Basin Foundation. The *MRGO Must Go* report is endorsed by American Rivers, Lake Pontchartrain Basin Foundation, Coalition to Restore Coastal Louisiana, Environmental Defense, Gulf Restoration Network, National Wildlife Federation, Louisiana Wildlife Federation, and St. Bernard Parish. A copy of the *MRGO Must Go* report is attached at Tab A to these comments.

The Proposed Draft EIS should fully evaluate – and the Corps should recommend and implement – measures to:

1. *Restore and Rehabilitate the Bank Lines Along the MRGO.* It is essential to reclaim as much of the original 1965 bank lines of the MRGO as is reasonable to: reduce destructive storm surge and storm-driven waves; reduce the vulnerability of the MRGO levee to those forces; and restore vital, storm-buffering coastal wetlands. While reclamation of both bank lines will provide the most benefit, reclamation must take place along the west side of the MRGO as quickly as possible to provide an essential buffer for the MRGO levees.³ Reclamation should be done with dredged material to the elevation needed to support native vegetation, approximately three to five feet. The reclaimed banks should be planted with dense native coastal vegetation to provide added critical protection from storm surge, wind, and wave action. The Corps should also investigate additional opportunities for minimizing, and protecting against, wave attack on the MRGO levee and for bolstering the Forty Arpent Levee.

Bank reclamation will provide at least the following benefits:

- Bank reclamation/planting would provide a vitally important line of defense against future levee breaches. As a result, the benefits of such reclamation/planting would include reduced threat to public health, safety, and welfare, and reduced damage to property from future levee breaches.
- Bank reclamation/planting would help protect the MRGO levees by minimizing the impacts of storm surge and wind and wave action. The reclaimed banks and vegetation would cause waves to break away from the levees, instead of on or directly against the levees. Evidence shows that south Louisiana levees protected by an appropriate buffer of wetlands or cypress forest had dramatically less chance of failure during Katrina. Studies of Asian tsunamis have also shown that a football field length of dense vegetation could reduce wave energy by up to 95 percent.

³ Contrary to the Corps' assertion in the Phase I MRGO Report, this recommendation does not demand activities that are infeasible from an engineering perspective.

- Bank reclamation/planting would help minimize the development of destructive storm-driven waves as winds and storm surge sweep across the MRGO channel. Even where wetlands on the east side of the MRGO channel are available to reduce the size and intensity of wind-driven waves and storm surge, the open expanse of the MRGO channel can allow those forces to return to their original strength, posing a significant risk to the MRGO levees and the communities behind those levees.
- Bank reclamation/planting would help prevent the continued widening of the MRGO channel. The Phase I MRGO Report concludes that widening of the MRGO channel from erosion could increase by 1/3 over the next 50 years. As the channel widens, it will put additional stress on the MRGO levees, making them more vulnerable than they are today. Continued erosion could make the levee base vulnerable to geo-technical failures and could require the implementation of expensive protective measures.
- Bank reclamation/planting would reduce the future costs associated with maintaining and reinforcing the MRGO levees.

2. *Construct Channel Constrictions / Lateral Fills at Additional Locations.* It is essential that Reach 2 of the MRGO channel be constricted or closed with lateral fills at four or preferably more locations in addition to the closure at Bayou la Loutre (as the number of lateral fills decrease, the size of those fills would need to increase to provide effective storm surge protection). These lateral fills should be planted with dense native vegetation to anchor them in place and to provide an additional buffer to wind and wave action during future storm events. These constrictions would convert the MRGO from an open channel into a series of pools, providing at least the following benefits:

- The constrictions/lateral fills would reduce the channel cross section and conveyance capacity of the MRGO channel, reducing both the speed and volume of water that could reach New Orleans, the MRGO levees, or any floodgates or other barriers.
- The constrictions/lateral fills would reduce the amount of flood damage that would be caused by any possible future breach of the MRGO levees by limiting the amount of water available to flow through any breach to the water in the pool immediately adjacent to the breach. Without the constrictions, the MRGO channel would continue to provide a virtually unlimited amount of water at a faster rate through any future levee breaches.
- The constrictions/lateral fills would keep introduced freshwater moving east into now-degraded marshes instead of north into the Industrial Canal and Lake Pontchartrain.
- The constrictions/lateral fills would create an uneven shoreline making it more difficult for storm surge in one part of the coastline to flow sideways and take advantage of a MRGO levee breach in another part of the coastline.
- The constrictions/lateral fills would promote the filling in of the existing channel with sediment and marine debris deposited during storm events. Without the lateral fills, Reach 2 of the MRGO would be more likely to remain at, or close to, its current depth.

3. *Restore and Maintain the Narrow Land Between Lake Borgne and the MRGO.* This thin strip of land was once part of the mainland of what is called the Central Wetlands. Construction of the MRGO isolated this thin strip of land, increased its exposure to storm tides and waves, and exposed it to erosion from boat wakes. This has greatly accelerated land loss in this area. Full restoration of this land mass is necessary to protect the Lake Borgne ecosystem and to ensure that the newly constructed levees on the southwest side of the MRGO are not exposed to even greater winds, tides, and surges. Efforts are currently underway to address this critical problem, but full restoration of this land mass must be an essential component of the final restoration plan should the current efforts prove to be insufficient.

4. *Rebuild and Restore Natural Ridges, Including the Ridge at Bayou la Loutre.* Reversing the damage caused when the MRGO channel was cut through the natural ridge at Bayou la Loutre involves plugging the ridge across the channel, restoring the ridge to its natural level, and planting the ridge. Salinity modeling done by scientists at the University of New Orleans shows that pre-MRGO salinity conditions would be restored through combining a Bayou la Loutre closure and freshwater diversion at Violet (see below). Restoring the ridge to its natural level and planting it with dense native vegetation will add to the benefits of the rock closure at Bayou la Loutre by reducing the artificial flow of saltwater into Lake Borgne and Lake Pontchartrain, eliminating the annual dead zone in Lake Pontchartrain, and increasing the effectiveness of freshwater reintroductions. The Biloxi, Breton, and New Orleans East land bridges should also be restored.

5. *Move Nourishing Freshwater and Sediment into the Wetlands.* If properly implemented, the Violet Diversion and the Central Wetlands wastewater assimilation projects will restore some of the Mississippi River's natural capacity to build land; reduce salt water stress and improve conditions for wetland restoration; and reduce the amount of harmful nutrients carried to the Gulf of Mexico by the Mississippi. These projects are needed to restore and rehabilitate the historic water conditions and wetlands that used to reduce storm surge and provide vital habitat, and both projects should be included in the MRGO restoration plan. Preliminary modeling of saltwater flows by the University of New Orleans suggests that approximately 7,500 cubic feet per second of freshwater from the Violet Diversion will be needed to reestablish historic salinity levels in Lake Borgne during normal rainfall years. The restoration plan for the MRGO should be designed to accommodate and take advantage of this new freshwater flow, and should include a Violet diversion of the appropriate size as an identified and integral component of the final MRGO restoration plan.

6. *Restore Degraded Marshes and Cypress Forests:* Replanting, restoring, and sustaining the Central Wetlands cypress forest will reduce the risk to levees and communities from waves and storm surge and provide critical habitat for economically important fish and wildlife species.

American Rivers urges the Corps to fully evaluate and include this full suite of measures in the Proposed Draft EIS and the final restoration plan for the MRGO. Each of these measures is essential for ensuring the future safety and well-being of the people of St. Bernard Parish and the greater New Orleans area, and for promoting effective restoration of the wetlands lost to, and affected by, the MRGO.

III. The Proposed Draft EIS And Restoration Plan Must Fully Consider The Highly Credible Scientific Evidence On The MRGO's Role In Significantly Exacerbating The Effects Of Hurricane Katrina

Highly credible scientific evidence demonstrates that the MRGO channel greatly exacerbated the effects of Hurricane Katrina, and that the MRGO will continue to pose a significant threat even after completion of the rock closure at Bayou la Loutre and planned levee upgrades. The Phase I MRGO Report improperly dismisses this scientific evidence out of hand, and as such, the conclusions in the Phase I MRGO Report cannot be relied on in developing the Proposed Draft EIS or the restoration plan.

The Phase I MRGO Report completely ignores highly credible scientific evidence which demonstrates that the MRGO greatly exacerbated the effects of Hurricane Katrina, leading to catastrophic flooding in New Orleans and St. Bernard Parish. These scientific studies draw a markedly different picture than the Phase I MRGO Report about the public safety risks posed by the MRGO, and they dictate additional critical measures that must be taken to protect the greater New Orleans region. Failure to consider the full body of available scientific information led the Corps to incorrectly conclude in the Phase I MRGO Report that measures to reduce the storm surge propagation effects of the MRGO channel are not needed.

It is essential that the Corps comprehensively evaluate the scientific information discussed below, and any additional scientific information that has been, or is currently being, developed by storm surge and engineering experts on the role of the MRGO during Katrina.

Detailed post-Katrina modeling has been carried out by a group of scientists known as Team Louisiana⁴ and by Dr. Hassan Mashriqui formerly with Louisiana State University.⁵ This modeling shows that the MRGO channel acts as a conveyor belt for storm surge during Katrina, increasing the speed, volume, and height of waters that eventually flooded much of New Orleans and St. Bernard Parish.⁶ The Team Louisiana report discussed below and Dr. Mashriqui's initial modeling shows that during Katrina:

⁴ Louisiana State University (LSU) was commissioned in October, 2005 by the Louisiana Department of Transportation and Development (LDOTD) to assemble a team of Louisiana-based academic and private sector experts to collect, review, and evaluate data related to the failure of the levee systems in and around New Orleans during Hurricane Katrina. This group later became known as Team Louisiana.

⁵ Copies of selected slides prepared by Dr. Mashriqui are attached to these comments at Tab B.

⁶ Dr. Mashriqui's findings, which have enormous implications for the appropriate steps to take to address the storm surge problems created by the MRGO channel, were presented by Dr. Mashriqui to Maj. General Riley, Director of Civil Works, Steve Stockton, Deputy Director of Civil Works, Zoltan Montvai, Deputy Chief, MVD Regional Integration Team and other Corps employees at a science and technology briefing in Washington, D.C. on March 5, 2007. At that meeting, Dr. Mashriqui offered to work with the Corps to help them better understand his findings and their implications for closing the MRGO, and American Rivers and other conservation organizations urged the Corps to work with Dr. Mashriqui and other scientists. Dr. Mashriqui's findings were also discussed in American Rivers' comments on the draft Phase I MRGO Report and in Group comments on the Final Phase I MRGO Report. Copies of these comments are attached at Tabs C and D.

- Water traveled 8 to 10 feet per second through Reach 1 of the MRGO channel—approximately 3 to 4 times faster than it would have traveled over natural wetlands.
- The peak flow rate through Reach 1 of the MRGO channel was about 350,000 cfs—approximately between 6 and 7 times greater than it would have been without the MRGO channel.
- Water traveled 6 to 7 feet per second through Reach 2 of the MRGO channel—approximately 2 to 3 times faster than it would have traveled over natural wetlands.
- The peak flow rate through Reach 2 of the MRGO channel near Bayou Bienvenue was about 258,000 cfs—between 6 and 7 times greater than it would have been without the MRGO channel.
- Approximately 60 billion gallons of water surged through Reach 1 of the MRGO channel—almost 10 times more than the volume of water that would have passed through the original dimensions of the GIWW or through natural wetlands.
- Flooding attributable to the MRGO was particularly catastrophic. In Chalmette and the Lower Ninth Ward—where virtually all of the flooding came from the MRGO (and associated navigation channels)—water levels reached 11 feet above sea level in just 3 to 4 hours. By contrast, in metro New Orleans—which saw less flooding from the MRGO—it took much longer for water levels to reach depths of 5 to 6 feet. While this flooding was also horrendous, the slower rate of flooding gave residents far more time to escape.

To fully appreciate the strength of the flooding from the MRGO it is also important to recognize that Chalmette and the Lower Ninth Ward are located at much higher elevations than metro New Orleans and East New Orleans. Some parts of Chalmette are approximately 3 feet above sea level; the Lower Ninth Ward is approximately 4 feet below sea level; and Lake View of New Orleans and some parts of East New Orleans are approximately 8 feet below sea level.

A December 2006 report prepared for the State of Louisiana by Team Louisiana provides a detailed analysis of the role of the MRGO in the post-Katrina flooding of New Orleans. Ivor Ll. van Heerden, G. Paul Kemp, Hassan Mashriqui, *et al.*, *The Failure of the New Orleans Levee System during Hurricane Katrina*, A Report prepared for Secretary Johnny Bradberry Louisiana Department of Transportation and Development, Baton Rouge, Louisiana State Project No. 704-92-0022, 20, December 18, 2006, at Chapter 7 (the “Team Louisiana Report”). The Team Louisiana Report reaches starkly different conclusions than the MRGO Report regarding the role of the MRGO channel in the propagation of storm surge. The Team Louisiana Report also highlights numerous limitations, shortcomings, and misinterpretations applicable to the post-Katrina storm surge modeling relied on in the MRGO Report. Team Louisiana Report at 259-266. A copy of Chapter 7 of the Team Louisiana Report is attached to these comments at Tab E.

In December 2006, a number of scientists and engineers also advised Congress that the findings in the draft interim MRGO deauthorization report submitted to Congress were “demonstrably erroneous” and that the Corps’ plan for the MRGO was inadequate for providing hurricane and storm protection to the region. Dr. Robert Bea, University of California at Berkeley; Dr. John Day, Louisiana State University; Dr. Sherwood Gagliano, Louisiana Citizen/Coastal Scientist; Dr. Paul Kemp, Louisiana State University; Dr. Ivor van Heerden, Louisiana State University, *Statement of Concerns* regarding the Corps’ Mississippi River Gulf Outlet Deep-Draft De-Authorization Interim Report to Congress, transmitted to Congress by letter dated December 21, 2006. The findings and plan in the Phase I MRGO Report are essentially unchanged from the challenged findings in the draft interim deauthorization report. A copy of the *Statement of Concerns* and transmittal letter are attached to these comments at Tab F.

It is our understanding that scientists from the Netherlands have also found that the open expanse of the MRGO channel provides the conditions necessary for significant increases in the size and intensity of wind-driven waves and storm surge across the channel, posing a significant risk to the MRGO levees and the communities behind those levees.

In addition to fully evaluating the scientific analyses discussed above:

- The Corps should reassess its wholesale reliance on the IPET findings discussed in the Phase I MRGO Report. It is our understanding that the IPET modelers had all the ADCIRC model data available to Louisiana State University and other scientists. As a result, the IPET modelers could have estimated the maximum velocity, peak surge, and volume of surge that passed through the MRGO. However, the IPET report suggests that neither the IPET modelers nor the Corps looked at water velocity or water transport through the MRGO channel. Instead, the IPET report looked only at surge height. If our understanding is correct, the IPET analysis would have limited application as surge height is not the only (nor indeed, the controlling) factor in hurricane and storm induced flooding. Water volume, velocity, wave generation, and duration of high water levels are critical elements that also must be assessed to properly evaluate the MRGO’s role in Katrina.
- The Corps should reassess its reliance on the conclusion drawn from the May 2004 Mississippi River Gulf Outlet Reevaluation Study Storm Surge Modeling Assessment. According to the Phase I MRGO Report, the only conclusion that can be drawn from that report is that “the MRGO has a minimal influence upon storm surge propagation.” Phase I MRGO Report at D-EI-1. However, the May 2004 pre-Katrina study looked only at the differences in storm surge propagation with and without a single closure at Bayou la Loutre. As a result, we would posit that the *only* conclusion that could reasonably be drawn from that study is that a single closure structure at Bayou la Loutre would have minimal effect on storm surge propagation; a conclusion that has little to no bearing on the role of the entire MRGO channel in propagating storm surge.

IV. The Proposed Draft EIS Should Prioritize Assessment of Socioeconomic Issues On Public Safety, Housing, Community Cohesion, And Environmental Justice

American Rivers strongly supports a full and robust evaluation of the socioeconomic issues related to the comprehensive restoration of the MRGO channel and impacted wetlands. We believe, however, that this analysis should prioritize the implications of restoring the MRGO on public safety, housing, community cohesion and environmental justice. Because the MRGO has been deauthorized as a federal navigation channel, we believe that the implications on navigation, which is identified in the Federal Register Notice as the first socioeconomic issue to be evaluated, should have a lesser priority in this analysis.

V. Conclusion

The construction and operation of the MRGO destroyed more than 27,000 acres of wetlands that used to help protect the people of St. Bernard Parish and the New Orleans Metropolitan Area from storm surge and waves. The MRGO also funneled and intensified Hurricane Katrina's storm surge, and exposed the MRGO levees to significant and catastrophic assault by waves and storm surge. American Rivers urges the Corps to comprehensively evaluate and recommend the full suite of measures discussed above to minimize the continued danger from the MRGO and restore the wetlands lost to the channel. The Corps should complete this study as soon as possible, and begin on the ground construction and implementation of the restoration plan within two years, at the absolute latest.

Sincerely,



Melissa Samet
Senior Director, Water Resources

Attachments:

Tab A—*MRGO Must Go* Report

Tab B—Selected Slides Prepared by Dr. Hassan Mashriqui

Tab C—American Rivers' Comments on the Draft Phase I MRGO Report, September 4, 2007

Tab D—Group Comments on Phase I MRGO Report, dated December 14, 2007

Tab E—Team Louisiana Report, Chapter 7

Tab F—Statement of Concerns and Transmittal Letter, December 21, 2006