

COMMENTS

The Mardi Gras Pass: Coastal Restoration and Public Rights in a Mississippi River Distributary Channel

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I. INTRODUCTION

Louisiana’s coastline is disappearing at an alarming rate. In the last eighty years, Louisiana has lost over 1880 square miles of land, and Louisiana risks losing an additional 1750 square miles in the next fifty years.¹ Human efforts to control the Mississippi River have contributed to much of this loss. Levees and flood control structures, while allowing for flood protection and economic and navigational uses, have altered the river’s natural hydrologic regime. The vital sediment that the Mississippi River formerly distributed across the entire delta is now largely confined to the main river channel, thus starving outlying wetlands and

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1. COASTAL PROT. & RESTORATION AUTH., LOUISIANA’S COMPREHENSIVE MASTER PLAN FOR A SUSTAINABLE COAST 18 (2012) [hereinafter MASTER PLAN].

accelerating deteriorative processes, such as subsidence, sea level rise, and saltwater intrusion.²

Increased public scrutiny of Louisiana's vanishing coastline, especially after Hurricanes Rita and Katrina, prompted the Louisiana Legislature to form the Coastal Protection and Restoration Authority (CPRA) in late 2005.³ The CPRA's mandate is to develop, implement, and enforce a comprehensive coastal protection and restoration Master Plan (Master Plan).⁴ One of the fundamental elements of the Master Plan is the construction along the Mississippi River of several large river diversions that are designed to capture and distribute sediment into coastal basins. Proponents of the diversions argue that they are the most efficient way to quickly build large quantities of coastal land. Opponents are concerned that the sudden introduction of large volumes of fresh water into saltwater coastal areas will negatively impact local industries, such as commercial fishing and oyster farming.⁵ Cost is also a major factor in the river diversion controversy because project costs for each diversion can exceed hundreds of millions of dollars.⁶

On Mardi Gras day in 2012, the Mississippi River overran its east bank downstream of New Orleans.⁷ The breach, subsequently named "Mardi Gras Pass" (MGP), formed when floodwaters overwhelmed a road and culvert, and the floodwaters began to pour into the adjacent Bohemia spillway and surrounding saltwater marsh. Since its formation, the width and the volume of water that the MGP carries has continued to increase.⁸ The MGP represents an interesting development in the CPRA's mission to restore the Louisiana's coastal marshes. On one hand, the MGP appears to be a boon for coastal restoration because the Mississippi

2. *Id.* at 18.

3. *History*, COASTAL PROTECTION & RESTORATION AUTHORITY, <http://coastal.la.gov/about/history/> (last visited Apr. 14, 2017).

4. *About CPRA*, COASTAL PROTECTION & RESTORATION AUTHORITY, <http://coastal.la.gov/about/> (last visited Apr. 14, 2017).

5. MASTER PLAN, *supra* note 1, at 104.

6. *Id.* at 132.

7. Mark Schleifstein, *Mississippi River Creates Its Own Diversion at Bohemia*, TIMES PICAYUNE (Mar. 13, 2012), http://www.nola.com/environment/index.ssf/2012/03/river_creates_its_own_diversio.html.

8. See EZRA BOYD ET AL., SUMMARY OF OBSERVED DEPTHS AND WIDTHS MARDI GRAS PASS IN THE BOHEMIA SPILLWAY, SOUTHEAST LOUISIANA: JANUARY 2013 UPDATE 4 (2013); FELIX CRETINI ET AL., SUMMARY OF OBSERVED CHANNEL DIMENSIONS IN MARDI GRAS PASS IN THE BOHEMIA SPILLWAY, SOUTHEAST LOUISIANA: NOVEMBER 14 & 15, 2016 7 (2016); IOANNIS Y. GEORGIU ET AL., MEASUREMENTS OF LATERAL FLOW FROM THE MISSISSIPPI RIVER AT MARDI GRAS PASS IN THE BOHEMIA SPILLWAY USING SYNOPTIC ADCP 3 (2016), [http://www.saveourlake.org/PDF-documents/our-coast/Mardi%20Gras%20Pass%20Survey%20November%2014,%202016_survey16%20\(1\).pdf](http://www.saveourlake.org/PDF-documents/our-coast/Mardi%20Gras%20Pass%20Survey%20November%2014,%202016_survey16%20(1).pdf).

River created a free sediment diversion that the state had proposed to build for hundreds of millions of dollars. On the other hand, the MGP may be poorly located, impossible to properly manage, and may impermissibly interfere with the overall hydrologic and sedimentary regime of the Master Plan.

Cost-effective coastal restoration is not the only issue surrounding the formation of the MGP. In breaching its banks, the Mississippi River created a new distributary channel that cuts across private property and prevents land access to a local oilfield.⁹ The presence of the MGP distributary channel thus raises legal questions, including the ownership of the newly created channel, the possibility of private indemnification, the navigability of the new channel, regulatory jurisdiction, and permitting requirements. Unfortunately, Louisiana law does not provide clear answers to all of these important legal questions.

The resolution of the legal issues surrounding the MGP is important for determining the future of the MGP and future natural river diversions. In addition, delineating the legal landscape surrounding the MGP will have important implications for public policy and the overall effort to restore coastal Louisiana. This Comment will discuss the law governing distributary channels of navigable rivers in Louisiana, including the extent of the current law's applicability. This Comment will further discuss the public policy surrounding the maintenance or closure of the MGP and the law's strengths and weaknesses in dictating policy and potential outcomes.

II. HISTORICAL AND SCIENTIFIC PERSPECTIVES

The Louisiana coastline is a vital regional and national asset of economic and ecological importance. The coast is responsible for 20% of the nation's waterborne commerce, 26% of continental U.S. commercial fishing, and 90% of the nation's outer continental oil and gas production. Additionally, the coast provides critical habitat for five million migratory waterfowl and countless other species.¹⁰ More than two million people call the Louisiana coast their home, and the coast's marshes and waterways are critical to local history and culture.¹¹

Several processes, both natural and man-made, have led to the diminution of the Louisiana coastline. Centuries of efforts to control the

9. See John Snell, *Real or Man-made? The Mississippi's "Gift" to Louisiana Creates Controversy* (Feb. 27, 2013, 8:39 PM), <http://www.fox8live.com/story/21419566/real-or-man-made-the-mississippi-gift-to-louisiana-creates-controversy>.

10. MASTER PLAN, *supra* note 1, at 20.

11. *Id.*

Mississippi River and other rivers, while providing for flood control as well as economic and navigational uses, have disturbed the natural hydrological and sedimentary distribution regimes. While leveeing and channelization of rivers alleviates immediate concerns related to safety and shipping, it prevents vital sediment from being distributed by floodwaters across the entire deltaic region.¹² That is, instead of accreting and building land in outer marshlands, sediment generally remains within the confines of the Mississippi River channel. In the absence of land-building, deteriorative processes have greatly diminished the size of Louisiana's coastal habitat. Canal dredging and energy exploration have weakened marshes already challenged by sea level rise, subsidence, hurricanes, and invasive species.¹³ Because of the vital importance of the Louisiana coast, immediate action must be taken to stem the tide of coastal land loss and commence restoration.

The Master Plan issued in 2012 by the CPRA examines and adopts a portfolio of different strategies to prevent further coastal loss and to begin to build and restore the Louisiana coast.¹⁴ These strategies include barrier island and oyster reef creation, channel realignment, bank stabilization, and sediment dredging and replacement.¹⁵ Perhaps the most critical restoration technique, however, is the use of sediment diversions.¹⁶ Sediment diversions are structures that allow river water, sediments, and nutrients to flow out of the river and into adjacent wetlands.¹⁷ Diversions harness the power of the river and mimic the natural processes which originally built the state's coastal marshes.¹⁸

Using predictive modeling techniques, the CPRA compared several plans both with and without sediment diversions to assess relative impacts on land-building and ecosystem services. The CPRA found that a restoration strategy utilizing non-diversion techniques would provide little to no increase from the level of ecosystem services predicted in the absence of any restoration strategy. More importantly, however, utilizing such a non-diversion approach cut land-building projections down to 340 square miles as compared to 630 square miles achieved under an

12. *Id.* at 18.

13. *Id.*

14. *Id.* at 68-70.

15. *Id.* at 68-69.

16. Although many stakeholders recognize distinctions between sediment diversions and freshwater diversions, the terms should be considered synonymous for the purposes of this Comment.

17. RESTORE THE MISS. RIVER DELTA, RESTORATION SOLUTIONS: SEDIMENT DIVERSIONS 1 (2012), <http://www.mississippiriverdelta.org/files/2012/05/Sediment-Diversion.pdf>.

18. *Id.*

approach using diversions.¹⁹ This 340-square-mile projection represented roughly half of the expected land built under an approach using diversions and resulted in negative net projections for coastal land loss in the future.²⁰ Therefore, these findings led to the conclusion that sustainable coastal development is impossible without the use of sediment diversions.²¹ The CPRA also examined the impacts effected by multiple small river diversions compared to a few larger river diversions on ecosystem services.²² The CPRA found that the multiple small diversion approach impacted ecosystem services like oyster farming more negatively when compared with the large diversion approach, but the multiple small diversion approach tended to positively impact other ecosystem services, such as waterfowl habitat and freshwater fisheries.²³ Again, however, the large diversion approach was projected to build far more land than the multiple diversion approach, leading the CPRA to use the large diversion approach in the Master Plan.²⁴

One large sediment diversion is the Lower Breton Diversion, which was selected for construction in the Master Plan's first implementation period.²⁵ The Lower Breton Diversion will be built just 1.3 miles from MGP and is designed to divert 50,000 cubic feet per second (cfs) of sediment-laden river water into the adjacent Black Bay area.²⁶ The Lower Breton Diversion's construction costs are projected at \$212 million.²⁷ The nearby MGP, however, was constructed by the forces of nature at no cost. This cost discrepancy alone begs the question whether MGP can serve as an adequate sediment diversion substitute for the Lower Breton Diversion because it presents the opportunity to save the state of Louisiana hundreds of millions of dollars while still accomplishing restoration goals.

The answer, it seems, is probably yes. The CPRA modelled Lower Breton Sound diversion discharge under two different discharge scenarios.²⁸ The low discharge scenario modelled a 5000 cfs discharge rate when the Mississippi River flow was above 200,000 cfs.²⁹ This low

19. MASTER PLAN, *supra* note 1, at 104.

20. *Id.*

21. *Id.*

22. *Id.* at 106.

23. *Id.*

24. *Id.*

25. *Id.* at 132.

26. *Id.*; John A. Lopez, Comments Submitted to the Corps of Engineers Regarding Permitting of Fill and Culverts Across Mardi Gras Pass (Jan. 22, 2013).

27. MASTER PLAN, *supra* note 1, at 132.

28. *Id.* at Appendix A2 73-74.

29. *Id.* at Appendix A2 73.

scenario discharge rate roughly equals the present maximum capacity of MGP.³⁰ Under the low discharge model, the Lower Breton Sound diversion is projected to create between 7381 and 9765 acres of wetland over the next fifty years.³¹ Because the MGP and proposed Lower Breton Diversion are in such close proximity and divert water into the same area, one might expect the land-building capacity of the MGP to approximate that of the Lower Breton Diversion under this scenario. The high discharge scenario for the Lower Breton Diversion modelled a 50,000 cfs discharge rate when Mississippi River flows are between 600,000 and 900,000 cfs, and a rate equivalent to 8% of river flows when river discharge is above 200,000 cfs but below 600,000 cfs.³² While the MGP's current maximum discharge capacity is considerably less than 50,000 cfs, some researchers believe that MGP could reach 50,000 cfs of discharge in a matter of years.³³ According to the Master Plan, a sediment diversion of this capacity would create between 8087 and 15,412 acres of coastal land in the next fifty years.³⁴ Models aside, field studies indicate that MGP is indeed moving sediment, freshwater, and nutrients into the surrounding marshlands.³⁵ The discharge is moving through thirty-six pre-existing natural and man-made channels extending through an area of 15,000 acres of coastal marsh.³⁶ The pattern of sediment distribution from MGP effectively mimics a natural deltaic distributary system with an increasing number of channels and with channel size decreasing downstream.³⁷ The flow affects half of the sub-basins within the Bohemia Spillway area as well as two sub-basins outside of the Bohemia Spillway area, which are otherwise cut off from natural river sedimentation.³⁸ The CPRA diversion models and field data thus support the argument that the MGP would be a viable and cost-effective substitute for the proposed Lower Breton Diversion.

30. Lopez, *supra* note 26, at 19.

31. MASTER PLAN, *supra* note 1, at Appendix A2 73.

32. *Id.* at 74.

33. Lopez, *supra* note 26, at 19.

34. MASTER PLAN, *supra* note 1, at Appendix A2 74.

35. JOHN LOPEZ ET AL., EVOLUTION OF MARDI GRAS PASS WITHIN THE BOHEMIA SPILLWAY OF THE MISSISSIPPI DELTA IN SOUTHEAST LOUISIANA: MARCH 2012 THROUGH DECEMBER 2013, 11-12 (2014) [hereinafter EVOLUTION]; JOHN LOPEZ ET AL., PATTERNS OF SEDIMENT, NUTRIENT AND SALINITY DISTRIBUTION DISCHARGING FROM MARDI GRAS PASS, CIRCA 2013 TO 2014, SOUTHEAST LOUISIANA 7 (2017), http://saveourlake.org/wp-content/uploads/PDF-Documents/our-coast/Mardi%20Gras%20Pass/MGP%20Report_FINAL_6-26-2014.pdf [hereinafter PATTERNS].

36. PATTERNS, *supra* note 35, at 7.

37. *Id.*

38. *Id.*

While MGP is effectively conveying sediment and freshwater from the Mississippi River, water flows are also eroding sediment from within the MGP channel, creating concerns that it will enlarge indefinitely and become unmanageable.³⁹ These concerns should be alleviated, however, by historical records of geomorphological processes and contemporary methods of controlling river channels. The geologic record of the region indicates that erosional processes in channels similar to MGP do not continue indefinitely.⁴⁰ Instead, competing processes ameliorate or hamper the erosional processes, leading the channel to gradually reach a flow limit and either stabilize or dissipate entirely.⁴¹ Cost-effective engineering techniques are also available to prevent excessive enlargement of the MGP, and these techniques have been successfully employed nearby on the Mississippi River.⁴² For example, a rock dike placed to manage the flow and bank of the river has successfully prevented excessive enlargement of the nearby Fort St. Phillip cut.⁴³ Several other cuts in the area have been successfully managed with simple rock dikes, which are easily modified to allow unhindered boat travel.⁴⁴ Further, seasonal low water periods reduce the water discharge through MGP and make it easily accessible for additional engineering.⁴⁵ Therefore, MGP will likely either stabilize on its own, or it can be easily engineered to prevent unwelcomed expansion.

As the Louisiana coastline disappears, so too do the innumerable economic and ecological benefits it confers. Efforts to restore the coastline, however, are not without costs. At a minimum, the MGP presents a natural experiment to study the effectiveness of sediment diversions for coastal restoration. When viewed from a different perspective, the MGP represents a boon for the coastline and taxpayers alike, with the potential to restore vast areas of coastal marsh while saving the state hundreds of millions of dollars. Convenience and thrift alone will not provide answers to all questions surrounding the future of the MGP. To help resolve these questions one must also examine Louisiana law.

39. EVOLUTION, *supra* note 35, at 11.

40. *Id.* at 12.

41. *Id.*

42. Lopez, *supra* note 26, at 28.

43. *Id.*

44. *Id.*

45. *Id.*

III. LEGAL PERSPECTIVES

A. *Ownership, Indemnification & Navigability*

The Louisiana Civil Code (Civil Code) contains several articles that might apply to the situation at the MGP. By their literal interpretations, none of these articles directly cover the situation in which a navigable river develops a new distributary channel without abandoning the old channel. However, when examined using various modes of statutory interpretation, the articles provide several principles that inform resolution of the legal issues surrounding the MGP.

In civil law jurisdictions, such as Louisiana, code interpretation is a complex inquiry requiring the use of multiple interpretive methods.⁴⁶ The two most prominent methods of civilian code interpretation are the exegetical method and the teleological method.⁴⁷ The exegetical method focuses on the text of the code but also looks beyond the text to determine the reasons for the code's enactment.⁴⁸ While similar to the literal method of interpretation in which the words and grammar of a code article are dispositive, the exegetical method does not require the text to be read literally.⁴⁹ Instead, the exegetical method is premised on the idea that the text in question is logically coherent and consistent with the larger system of law and requires interpretations that are consistent with that larger system.⁵⁰ An important element of the exegetical method is logical interpretation, which is composed of several maxims guiding code interpretation. One important maxim requires that unambiguous texts must be interpreted under their plain meaning.⁵¹ Another important maxim, which qualifies the first, holds that if the text is obscure or ambiguous, the spirit of the law should guide interpretation.⁵² This maxim recognizes that literal, isolated reading of code articles presents mere "floating and imprecise significations, without bearing and without

46. Katie Drell Grissel, Comment, *The Legal Fiction of "Clear Text" in Willis-Knighton v. Caddo-Shreveport Sales and Use Tax Commission*, 67 LA. L. REV. 523, 527, 529 (2007) (for more information regarding civil code interpretive methods, see *supra* text).

47. *Id.* (citing KENNETH M. MURCHISON & J.-R. TRAHAN, WESTERN LEGAL TRADITIONS AND SYSTEMS: LOUISIANA IMPACT 175 (rev. ed. 2003)).

48. *Id.* at 530 (citing EVA STEINER, FRENCH LEGAL METHOD 61 (2002)).

49. *Id.* at 527, 529 (citing Grissel, *supra* note 46, at 530).

50. *Id.*

51. *Id.* at 527 (citing Pierre-Andre Cote, THE INTERPRETATION OF LEGISLATION IN CANADA 257 (Katherine Lippel, John Philpot, William Schabas & Douglas J. Simsovic trans., 3d ed. 2000)).

52. *Id.* at 530 (citing STEINER, *supra* note 48, at 58).

stability.”⁵³ Instead, clarity must be found in the context in which the proposition has been made,⁵⁴ and even unambiguous texts may still require interpretation.⁵⁵ In contrast to the exegetical method, which prioritizes the textual language itself, the teleological method “seeks to identify the social purpose or objective of the legislation under consideration with a view to applying it in a way that does not conflict with this purpose.”⁵⁶ Both methods of Civil Code analysis are useful for interpreting the Civil Code articles potentially applicable to the MGP.

Civil Code article 450, which covers public things, is most directly applicable to the situation at the MGP and provides a starting point for further code analysis. Article 450 states that “[p]ublic things that belong to the state are such as running waters, the waters and bottoms of natural navigable water bodies, the territorial sea, and the seashore.”⁵⁷ Because the text of article 450 unambiguously provides that navigable water bodies belong to the state, the first maxim of exegetical interpretation dictates that it should be accorded its plain meaning. In addition, the unambiguous interpretation of article 450 provides context for exegetical and teleological interpretations of related code articles.

The MGP formed during a high water event in which the Mississippi River breached its eastern bank. In common parlance, this situation is likely described as an avulsion or avulsive event, which is defined as “a sudden removal of land caused by change in a river’s course or by flood.”⁵⁸ The terms “avulsion” or “avulsive event” do not appear in the Civil Code. In addition, avulsion has never been the subject of any reported Louisiana case.⁵⁹ However, article 502, entitled “[s]udden action of waters,” approximately describes the phenomenon:

If a sudden action of the waters of a river or stream carries away an identifiable piece of ground and unites it with other lands on the same or on the opposite bank, the ownership of the piece of ground so carried away is not lost. The owner may claim it within a year, or even later, if the owner of the bank with which it is united has not taken possession.⁶⁰

53. *Id.* at 523 (citing Michel van de Kerchove, *La Doctrine du Sens Clair des Textes et la Jurisprudence de la Cour de Cassation de Belgique*, in *L’INTERPRETATION EN DROIT* 13, 20 (Michel van de Kerchove ed., J.-R. Trahan trans., 2005) (1978)).

54. *Id.*

55. *Id.* at 561 (citing Marcel Planiol, *Case When a Clear Test Requires Interpretation* § 1:216, in *1 TRAITE ELEMENTAIRE DE DROIT CIVIL* 158 (La. State Law Inst. Trans., 1959) (12th ed. 1939)).

56. *Id.* at 530 (citing STEINER, *supra* note 48, at 64).

57. LA. CIV. CODE ANN. art. 450 (2016).

58. *Avulsion*, BLACK’S LAW DICTIONARY (10th ed. 2014).

59. A.N. YIANNOPOULOUS, CIVIL LAW PROPERTY COURSEBOOK 34 (9th ed. 2009).

60. LA. CIV. CODE ANN. art. 502 (2016).

While article 502 indeed considers the sudden action of waters, it also contemplates that the land claimed by that sudden action will be deposited nearby and will be readily identifiable. Under a literal reading, article 502 is inapplicable to the MGP because the land supporting the road and flood control structure at the MGP have simply washed away, rather than moved from one side of an existing waterway to the other. Under a logical interpretive view, however, article 502 may be interpreted *a contrario* to imply that if a sudden action of water covers land so that the land is no longer identifiable, the area the water covers is owned by the state. Under this view, because article 502 does not provision ownership of the waters to private parties, those waters must therefore be owned by the state.

Civil Code article 504 addresses events in which a river changes course and forms a new channel. However, it also contemplates that the river will abandon its old channel:

When a navigable river or stream abandons its bed and opens a new one, the owners of the land on which the new bed is located shall take by way of indemnification the abandoned bed, each in proportion to the quantity of land that he lost. If the river returns to the old bed, each shall take his former land.⁶¹

Because the Mississippi River has not abandoned its old channel, a literal reading of article 504 provides somewhat limited application to the MGP situation. However, because article 504 does not speak to ownership of a new navigable riverbed, a logical reading of article 504 implies that when a navigable river abandons its bed, new beds of navigable rivers or streams must necessarily belong to the state.

Civil Code article 499 covers alluvion and dereliction of shorelines:

Accretion formed successively and imperceptibly on the bank of a river or stream, whether navigable or not, is called alluvion. The alluvion belongs to the owner of the bank, who is bound to leave public that portion of the bank which is required for public use. The same rule applies to dereliction formed by water receding imperceptibly from a bank of a river or stream. The owner of the land situated at the edge of the bank left dry owns the dereliction.⁶²

Under a literal reading, article 499 covers imperceptible gains and losses of river banks, which applies poorly to the rapidly formed MGP. Like articles 504 and 502, however, article 499 can be interpreted logically to imply that the state owns the waterway because article 499 does not

61. LA. CIV. CODE ANN. art. 504 (2016).

62. LA. CIV. CODE ANN. art. 499 (2016).

specifically provision ownership of the waterway involved in alluvion or dereliction to a private party.

Given the unambiguous interpretation of article 450 that navigable water bodies belong to the state, articles 502, 504, and 499 may also be viewed from a teleological interpretive perspective. Under the teleological interpretive method, “when the language of the law is susceptible to different meanings, it must be interpreted as having the meaning that best conforms to the purpose of the law.”⁶³ Articles 502, 504, and 499 are all susceptible to different meanings under literal and exegetical interpretative methods. Despite their varied potential meanings, the purpose of articles 502, 504, and 499 is to delineate public and private ownership of river bodies or lands under different situations.⁶⁴ When considered in conjunction with the unambiguous interpretation of article 450 that navigable rivers are owned by the state, articles 502, 504, and 499 may be viewed teleologically in a way which accords with article 450. Therefore, the articles may be interpreted to support the principle that navigable river bodies are owned by the state and to identify what private riparian ownership rights exist concurrently to the state’s ownership of the water body. Article IX section 3 of the Louisiana Constitution, which states that “the legislature shall neither alienate nor authorize the alienation of the bed of a navigable water body . . .,” further contributes to the inevitable teleological interpretation that navigable waterways are owned by the state.⁶⁵

Although less prevalent than the principle of public ownership of navigable water bodies, indemnification and reclamation of private property lost due to changes in river flows is another principle present in the Civil Code. Article IX section 3 of the Louisiana Constitution expresses the inalienability of navigable water bodies, “except for purposes of reclamation by the riparian owner to recover land lost through erosion.”⁶⁶ Article IX section 3 thus creates a notable exception under which private parties may regain ownership of property lost to the state via erosion.⁶⁷ Civil Code article 499, which covers alluvion and dereliction, also expresses a means by which private parties may regain formerly state-owned property, but the situation article 499 addresses is

63. LA. CIV. CODE ANN. art. 10 (2016).

64. The MGP’s status as a river channel instead of a lake is notable because Louisiana law differentiates between ownership of river banks and lake banks. *See, e.g.,* *Esso Standard Oil Co. v. Jones*, 98 So. 2d 236, 245-246 (La. 1957).

65. LA. CONST. art. IX, § 3.

66. *Id.*

67. *Id.*; LA. STAT. ANN. § 41:1702 (2016).

very different from the situation at the MGP.⁶⁸ Article 504 also contemplates indemnification of private landowners in the case of abandoned riverbeds, but the differences in the particular situation described in article 504 and that of the MGP are so stark as to render private indemnification impossible or impracticable at the MGP. One could hardly argue that transferring ownership of the primary Mississippi River channel to a private landowner is a realistic result.

The combined weight of articles 450, 502, 504, 499 of the Civil Code, and the Louisiana Constitution indicates a pervasive principle that navigable waterways are owned by the state, no matter the circumstances. The principle of indemnification or reclamation exists in articles 504 and 499 and in the Louisiana Constitution, but it is dependent on specific circumstances. Therefore, if river channels and bottoms of a navigable waterway belong to the state, it follows that if a river branches out and creates a new navigable channel it belongs to the state, regardless of whether an abandoned channel exists to indemnify private landowners.

If a newly created navigable river channel belongs to the state, then whether MGP is navigable will be critical to determining the ownership of the channel, which in turn will determine its future. “A body of water is navigable in law when it is navigable in fact.”⁶⁹

Whether a river is navigable in fact depends on whether the evidence shows a body of water to be suitable by its depth, width, and location for commerce.⁷⁰ However, lack of commercial traffic does not preclude a finding of navigability.⁷¹ Past and contemporary measurements of the channel at the MGP support the inference that the MGP is indeed a navigable water body. In January 2013, the MGP had an average width of 78.8 feet,⁷² and by July 2016 this average width had increased to 169.1 feet.⁷³ Depth measurements in July 2016 also indicated an average depth of 23.4 feet across the entire channel.⁷⁴

68. See LA. CIV. CODE ANN. art. 499 (2016). Legislative history also supports the argument that navigable waterways are neither alienable nor susceptible to private ownership, despite the literal language of article 504. *Gulf Oil Corp. v. State Mineral Bd.*, 317 So. 2d 576, 582 (La. 1974).

69. State ex rel. *Guste v. Two O’Clock Bayou Land Co.*, 365 So. 2d 1174, 1177 (La. Ct. App. 1978), *cert. denied*, 367 So. 2d 387 (La. 1979).

70. Historically, the State of Louisiana has followed an unofficial threshold of sixty-six feet wide and six feet deep in determining whether a body of water is navigable. See, e.g., *Guidelines for Determining State Water Bottoms*, OFF. ST. LANDS 7, http://www.wlf.louisiana.gov/sites/default/files/guidelines_for_determining_state_water_bottoms.pdf (last visited Apr. 27, 2017); Lopez, *supra* note 26, at 21.

71. *Two O’Clock Bayou*, 365 So. 2d at 1177.

72. Lopez, *supra* note 26, at 21.

73. CRETINI ET AL., *supra* note 8, at 7.

74. *Id.*

Because of the already large and consistently increasing width and depth of the MGP, it seems very likely that it is suitable for commerce. Indeed, while commercial traffic is not a prerequisite for navigability, the MGP is at least large enough to facilitate recreational fishing and scientific research vessels,⁷⁵ which suggests it would also be suitable for commercial vessels.

Suitability for commerce is not the only factor that plays a role in navigability and attendant public ownership. Logjams and other obstructions may pose an issue to actual navigational use of the channel. Indeed, a Lake Pontchartrain Basin Foundation expedition exploring the newly created pass in September 2012 had to contend with several logjams in navigating the channel.⁷⁶ However, this fact is of no consequence because navigability is not destroyed by the existence of removable obstacles such as downed trees, sandbars, or other river debris.⁷⁷ Another potential way the MGP might remain privately owned is if the waters creating it were merely temporary floodwaters. Navigability fails to confer public ownership when private riparian lands are temporarily submerged by a navigable waterway, such as in a flood event.⁷⁸ However, the waters creating the MGP are not temporary. While the adjacent Bohemia Spillway only experiences over-topping at river stages greater than five to seven feet, the MGP continually moves water regardless of river stage, precluding the possibility that the channel might remain privately owned under this theory.⁷⁹

Because the MGP is almost certainly a navigable river channel, it is likely owned by the state by direct operation of Civil Code article 450. Aside from the navigability requirement, however, the plain text of article 450 also requires that navigable water bodies be natural.⁸⁰ Because MGP formed by overwhelming a man-made culvert, the requirement that it be natural in order to be navigable has the potential to undermine the application of article 450 to the MGP and to defeat state ownership of the otherwise navigable channel. In *Fitzsimmons v. Cassity*, the Red River abandoned its old channel by overtaking and widening a man-made canal dug by the local Levee Board across a peninsula in the river. The Louisiana Court of Appeals for the Second Circuit found that the fact that the canal was man-made did not deprive the eventual new channel of

75. Lopez, *supra* note 26, at 5.

76. *Id.* at 21.

77. Ramsey River Rd. Prop. Owners Ass'n v. Reeves, 396 So.2d 873, 876 (La. 1981).

78. See Edmiston v. Wood, 566 So. 2d 673, 673 (La. Ct. App. 1990).

79. Lopez, *supra* note 26, at 10.

80. LA. CIV. CODE ANN. art. 450 (2016).

its natural and navigable qualities. Instead, the court concluded that “[i]t was certain the river was destined very soon to connect at this point and the cutting of the canal only accelerated this event a brief time.”⁸¹ Like the canal in *Fitzsimmons*, the culvert and canal at the MGP may have facilitated the MGP’s formation, but under *Fitzsimmons* this fact is not enough to render MGP non-natural and preclude application of article 450. Therefore, the unambiguous principle of article 450 still applies, and its application, combined with exegetical and teleological interpretations of related code articles, leads to the conclusion that the MGP is a natural, navigable water body owned by the state.

B. Regulatory Jurisdiction and Permitting

If the waterway is deemed unnavigable, then its bed would remain under the ownership of the riparian landowner. In this case, the private landowner may be able to fill the MGP by obtaining permits under several applicable state and federal laws. One such law is the Clean Water Act (CWA).⁸² Under the CWA, the riparian landowner would need to obtain a permit under § 404 to discharge fill material into the MGP.⁸³ The CWA permit is contingent on the landowner acquiring a Water Quality Certification from the Louisiana Department of Environmental Quality.⁸⁴ Similarly, the landowner must obtain a permit under § 10 of the Rivers and Harbors Appropriations Act (RHA).⁸⁵ The obtaining of both of these permits is governed by 33 C.F.R. § 332.1, which establishes standards and criteria for the compensatory mitigation required by the CWA and RHA for unavoidable impacts on waters of the United States.⁸⁶ In addition, the landowner would need to acquire a Coastal Use Permit from the Louisiana Department of Natural Resources.⁸⁷ Finally, the landowner would also have to obtain a permit under the Coastal Zone Management Act, which outlines programs designed to facilitate state and federal cooperation in preserving and protecting the nation’s coastal zone.⁸⁸ Clearly, even if MGP is unnavigable and privately owned, it would be a burdensome task for the landowner to fill it.

81. *Fitzsimmons v. Cassity*, 172 So. 824, 829 (La. Ct. App. 1937).

82. 33 U.S.C. § 1251 (2012).

83. 33 U.S.C. § 1344 (2012).

84. *Water Quality Certifications*, LA. DEP’T ENVTL. QUALITY, <http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityCertifications.aspx> (last visited Apr. 14, 2017); *see* LA. STAT. ANN. § 30:2074 (2016).

85. 33 U.S.C. § 403 (2012).

86. 33 C.F.R. § 332.1 (2016).

87. *See* LA. REV. STAT. ANN. § 49:214:30 (2016).

88. 16 U.S.C. § 1452 (2012).

Even if the MGP is considered navigable, the riparian landowner may still be able to fill it. In order to do this, the landowner would need to obtain, in addition to the aforementioned permits, a reclamation permit from the Louisiana Department of Natural Resources.⁸⁹ These permits are discretionary,⁹⁰ and they are subordinate to any prior servitudes, agreements, or leases to the contrary.⁹¹ However, if granting the permit would interfere with the public interest, the permit must be denied.⁹² Under Louisiana law, navigable waterways must be managed in accordance with the public interest. The public trust doctrine holds that water is a natural resource which requires protection, conservation and replenishment insofar as possible and consistent with the health, safety and welfare of the people, and it requires the legislature to enact laws to implement this policy.⁹³ Because of the clear interest of the state in coastal restoration, it is likely, if not certain, that granting a permit to fill the MGP would be contrary to the public interest. Indeed, the state has identified the construction of sediment diversions near the MGP as a coastal restoration priority,⁹⁴ and the opportunity to immediately utilize a natural sediment diversion in that area at little to no cost to the state seems clearly to fall in the public interest.

Federal and state servitudes are also in play at the MGP. The Louisiana Constitution grants the legislature the authority to establish flood protection authorities, such as the Southeast Louisiana Flood Protection Authority (SLFPA), and to provide for their territorial jurisdiction for the purposes of constructing and maintaining levees, managing flood protection, and other purposes.⁹⁵ Civil Code article 665 imposes a public servitude on the shores of navigable rivers for the construction and maintenance of common utilities, including levees, roads, or other public works.⁹⁶ Louisiana Revised Statute section 330.1, in turn, gives the SLFPA all authority, management, oversight, and control over the district encompassing the MGP in order to accomplish its mission.⁹⁷ Because the MGP cuts through the banks of the Mississippi River, it thus interferes with the public servitude granted over the

89. LA. REV. STAT. ANN. § 41:1702 (2016).

90. *Id.*

91. LA. REV. STAT. ANN. § 41:1711 (2016).

92. LA. REV. STAT. ANN. § 41:1712 (2016).

93. *Save Ourselves, Inc. v. La. Env'tl. Control Comm'n*, 452 So. 2d 1152, 1154 (La. 1984); LA. CONST. art. IX § 1.

94. MASTER PLAN, *supra* note 1, at 132.

95. LA. CONST. ANN. art. VI, § 38.1.

96. LA. CIV. CODE ANN. art. 665 (2016).

97. LA. STAT. REV. ANN. § 38:330 (2016).

shoreline and likely falls within the jurisdiction of the SLFPA. Similarly, because the MGP in all likelihood is a navigable waterway, the SLFPA would also enjoy a public servitude over the shores of the MGP itself. Complicating matters further, navigability of the MGP would also create a federal navigational servitude over the water body, which could invite further regulation.⁹⁸ These overlapping servitudes only add to the regulatory web surrounding the MGP.

IV. WHICH OUGHT TO COME FIRST: THE POLICY OR THE LAW?

The MGP's status as a deltaic riverine distributary channel is likely to blame for the inadequacy of Louisiana law to address the legal issues it creates. Louisiana is replete with laws and court decisions relating to the situation in which a river abandons its old channel for a new one; less common, or less obvious, are decisions relating to the creation of a new distributary channel. Perhaps such a result is not unsurprising because most river mileage in Louisiana is upstream of the deltaic coastal region. Twisting and turning through countless parishes and towns, mighty waterways such as the Mississippi and Red Rivers have consistently changed course over time, creating oxbow lakes, abandoning channels, shifting banks, and generally creating cause for private and public disputes and resulting legal action. As a result, much of the jurisprudence surrounding riverine navigability, ownership, and indemnification focuses on rivers in this inland context. The MGP however, lies squarely in a deltaic region, lying next to the freshwater Mississippi River and bound on either side by saltwater marshes and bays. Here, major rivers have also changed course countless times throughout history, but distributary channels are much more common and play an important role. Indeed, the very definition of a delta involves a river giving rise to multiple smaller branches or distributaries.⁹⁹ For whatever reason—geographic, demographic, historical, or otherwise—riverine distributary channels are seldom addressed under Louisiana law.

In a modern era of disappearing marshes, rising sea levels, and severe storm events, coastal restoration has risen to the forefront of public consciousness. Considerable effort has been exerted to study the causes and effects of coastal loss, and considerable funds will be spent to try and prevent it. The economy, environment, cities, culture, and people

98. See *Kaiser Aetna v. United States*, 444 U.S. 164, 186 (1979) (Blackmun, J., dissenting).

99. *Delta*, CAMBRIDGE DICTIONARY, <http://dictionary.cambridge.org/us/dictionary/english/delta> (last visited Apr. 27, 2017).

of south Louisiana are at stake. Prudent public policy dictates that Louisiana must rebuild its coastline now.

On its face, Louisiana law provides incomplete answers to the legal questions surrounding the MGP. With such enormous public policy considerations at stake, these questions must be decided quickly. The question thus becomes: Should the resolution of the issues surrounding the MGP be decided by conforming the policy to the imperfect law, or selectively choosing the law to reach a desired public policy result? Further, what laws or principles should govern distributary river channels in Louisiana in general? An examination of potential outcomes at the MGP begins to approach answers to these questions.

V. LAW AND POLICY INTERSECT: POTENTIAL OUTCOMES FOR THE MARDI GRAS PASS

A. *Principles of Law*

Although the Civil Code fails to specifically address the question of what public rights attach when a navigable river develops a distributary channel, distilling common principles from the most applicable code articles assists in arriving at an answer. The most pervasive and fundamental theme present in the code is that navigable channels are unquestionably owned by the state. This proposition is supported directly by article 450 and indirectly by articles 502, 504, and 499. Further, the Louisiana Constitutional directive that the navigable river bottoms are largely inalienable from the state drives home this principle.¹⁰⁰ The primacy of this proposition in the Louisiana law thus indicates that it should supersede any propositions to the contrary.

Private indemnification for lands claimed by navigable waterways is another principle present in the Civil Code and Louisiana Constitution. However, this tenet is only found in limited contexts. Under article 504, private indemnification exists only in the specific context of new channels opening alongside an abandoned riverbed. In article 499, a private landowner may only gain ground that was formerly covered by state-owned waterways by operation of alluvion or dereliction. Similarly, the reclamation exception found in article IX section 3 pertains only to limited circumstances and is qualified by the public interest. Unlike the proposition that navigable waterways are always owned by the state, which is present across Louisiana law, the theme of private indemnification only occurs in these specific contexts. Accordingly, it

100. LA. CONST. art. IX § 3.

appears that the application of indemnification and reclamation principles to situations involving distributary channels should be limited and should be secondary to the general proposition that navigable waterways are owned by the state in the vast majority of circumstances.

Considerations of the public interest are also important in the law. The public trust doctrine derived from the Louisiana Constitution article IX section 1 mandates that natural resources be managed for the health, safety, and welfare of the people. This idea is echoed in the reclamation provision of article IX section 3, the grant of which is discretionary and conditioned on accordance with the public interest.¹⁰¹ In light of the overarching public trust doctrine and similar constitutional provisions, it is clear that the public interest should play an important role in the outcome at the MGP.

This ordering of legal principles makes sense in light of the public policy surrounding the MGP. In order for the state to accomplish its critical goals of coastal restoration, it ought to control the outcome of naturally occurring river passes like the MGP. If the MGP were to remain in private hands, this goal would be impossible to achieve. Happily, the law, however bare, supports the proposition that the MGP, as a navigable waterway, belongs to the state and should be managed in accordance with the public interest.

B. Potential Outcomes

A first, and unlikely, potential outcome for the MGP is that it is unnavigable and thus privately owned. In such a situation, the private landowner would need to obtain a host of permits to fill the pass including those under the CWA, RHA, and CZMA. However, this outcome is likely precluded by the strong evidence supporting the navigability of the MGP. Current and past measurements of depth and width at the MGP indicate suitability for commerce.¹⁰² This fact, along with the fundamental principle of law that navigable waters belong to the state, make this outcome very unlikely.

A second potential outcome is that the MGP may be filled if the private landowner is able to acquire a reclamation permit. Under the Louisiana Constitution and statutory law, a landowner whose land has been overtaken by a navigable water has the right to reclaim that land by filing for a reclamation permit. Although public ownership of navigable waterways is a fundamental theme in the Civil Code, these provisions

101. LA. REV. STAT. ANN. § 41:1702 (2016).

102. Lopez, *supra* note 26, at 21; CRETINI ET AL., *supra* note 8, at 7.

provide a special exception.¹⁰³ However, this exception is tempered by a statutory provision that allows the state to refuse a permit if issuance would violate an important state interest.¹⁰⁴ Further, the public trust doctrine dictates that the state should manage navigable waterways in accordance with such important public interests.¹⁰⁵ Here, the critical state interest in saving time, hundreds of millions of dollars, and commencing coastal reconstruction should prevail over the private interest in gaining a reclamation permit.

A third potential outcome for the MGP would be a bridge spanning the pass. A bridge would accord with public rights in the channel, and it would to some degree reflect the spirit of private indemnification found in article 504. Construction of a 2000-foot-long single lane bridge has already been contemplated, for which construction costs were estimated at around \$2 million.¹⁰⁶ A bridge of this nature would allow private interests to access the nearby oilfield, while retaining the essential land-building capacity of the MGP. Price, too, is an attractive factor, especially when compared to the anticipated costs for the Lower Breton diversion planned nearby. When compared with the more than \$200 million price tag of the Lower Breton Diversion, a \$2 million bridge seems like a bargain.¹⁰⁷ This outcome is not without its own pitfalls though. Requiring the state to provide a bridge to indemnify a private landowner when a navigable river impedes access could set a dangerous precedent, opening the door for private landowners to argue for such indemnification in the future. Some of these concerns could be alleviated, perhaps, by sharing costs between the state and the private landholder, but even this arrangement may create dangerous precedent for the state. Because rivers can be unpredictable, this policy could create potential liability for the state if a similar breach occurs in the future. Regardless, keeping in mind the pervasive legal theme that navigable waterways belong to the state and the absence of any explicitly required indemnification in the code, this result would likely not be required under law, and the state need not pay for it.

The outcome most concretely supported by law, and overwhelmingly supported by the public interest, is that MGP should be kept open. This outcome most reflects the bedrock principle of the Louisiana law that best addresses distributary channels: navigable

103. LA. CONST. art. IX § 3; LA. REV. STAT. ANN. § 41:1702 (2016).

104. LA. REV. STAT. ANN. § 41:1702 (2016).

105. See LA. CONST. art. IX § 1.

106. Lopez, *supra* note 26, at 26.

107. MASTER PLAN, *supra* note 1, at 132.

waterways are owned by the state as a public thing. While the private landowner may argue for indemnification because some spirit of indemnity exists in similar contexts under the Civil Code, this argument reaches absurd results. One could hardly argue that the landowner should receive part of the Mississippi River bed as article 504 might indicate. In addition, it would be quite difficult to administer indemnification every time a navigable waterway in Louisiana breaches its banks and creates a distributary channel. More persuasively, perhaps even dispositive, the argument for indemnification pales in consideration with the insurmountable public interest in immediately restoring Louisiana's coastline.

Keeping the MGP open without indemnifying the landowner in some fashion might seem an unjust result at first glance, but a variety of options exist to lessen the burden on the private landowner in this case. For example, private interests can still access their oilfield via existing waterways. In fact, until 2004, oil and gas operators in the area accessed their wells solely by water.¹⁰⁸ Service dockage already exists to provide access to the area.¹⁰⁹ Further, forty-five miles of canals already exist in the Bohemia spillway, twenty-four miles of which were built specifically to access the oil and gas wells.¹¹⁰ Some private operators in the area even continued to access their wells via water prior to the road's demise.¹¹¹ A different alternative would be water access via the Mississippi River. Because MGP is almost certainly a navigable waterway, it is capable of being used for a commercial purpose "over which trade and travel are or may be conducted in the customary modes of trade and travel."¹¹² Such commerce includes waterborne oil and gas operations. The Mississippi River is a heavily industrialized river, providing plenty of dockage and access for this service route. The existence of these alternatives, which lessen the burden on the private landholder, add further weight to the conclusion that available Louisiana law can create a just result and that public policy should carry the day.

VI. CONCLUSION

In the face of a rapidly disappearing coastline, public policy choices should reflect the immense importance of immediately commencing

108. Lopez, *supra* note 26, at 26.

109. *Id.*

110. *Id.*

111. *Id.*

112. Ramsey River Rd. Prop. Owners Ass'n. v. Reeves, 396 So. 2d 873, 875 (La. 1981) (citing *The Daniel Ball*, 77 U.S. 557, 563 (1870)).

coastal restoration. The MGP represents a natural windfall for restoration because it effectively conveys freshwater and sediment at a fraction of the price of other sediment diversions detailed in the Master Plan. Located near the planned site of the Lower Breton Diversion, the MGP could act as an effective substitute, presenting an opportunity to save state funds, which could then be allocated elsewhere for coastal restoration. If permitted to run its natural course, or even with minor engineering, the MGP has the potential to positively impact coastal restoration long into the future.

Although Louisiana law is largely silent on the specific issue of distributary channels of navigable rivers, it tends to support the proposition that the MGP should remain in operation and under state ownership. The pervasive principles that navigable waterways are owned by the state, virtually insusceptible to alienation, and must be managed in accordance with the public interest dictate that the MGP should remain in use as a natural sediment diversion to rebuild critical coastal areas. Considerations of private indemnification exist in only limited contexts within the applicable law and should remain secondary to the important goal of restoring the coastline in accordance with the public interest. These legal principles should govern Louisiana distributary river channels in general, especially in the unique deltaic context and when important public interests are at stake.