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Throw Me Something Else, Mister: A Solution to the Harmful Effects of Mardi Gras Bead Pollution

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Throw Me Something *Else*, Mister: A Solution to the Harmful Effects of Mardi Gras Bead Pollution

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INTRODUCTION

The crowd cheers and music plays as brightly-colored floats parade down St. Charles Avenue in New Orleans. People on the floats throw beads, doubloons, toys, and other items into the air for parade-goers to catch and wear around their necks. The streets are an explosion of purple, green, and gold, Mardi Gras's famous trilogy of colors.¹ Locals and visitors drink, dance, and laugh together celebrating the iconic holiday. Mardi Gras, which is French for "Fat Tuesday," is a holiday celebrated on the cusp of Lent and represents a time of celebration, tradition, and gluttony.² New Orleans is most widely known for its Mardi Gras celebrations; each year some 75 parades storm through the City displaying their opulent costumes and throwing beads and other trinkets to crowds of people.³

Unfortunately, while "[g]reen may be one of the three prominent colors of the Mardi Gras spectrum . . . the event is anything but."⁴ After the holiday ends, what once were shiny, dazzling beads are now dull, plastic debris left hanging in trees, swept into storm drains, or disposed of in landfills.⁵ Notably, the purpose of Mardi Gras beads is to be thrown to the crowds and eventually, thrown away.⁶ In 2014, the City of New Orleans ("the City") picked up over 3.5 million pounds of trash from just

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1. *The Truth About the Purple, Green, and Gold of Mardi Gras*, MARDI GRAS NEW ORLEANS, <https://www.mardigrasneworleans.com/history/traditions/colors> [<https://perma.cc/QM7A-9XLY>] (last visited Jan. 19, 2020); Purple, green, and gold represent justice, faith, and power, respectively. *Id.*

2. *Mardi Gras 2021*, HISTORY, <https://www.history.com/topics/holidays/mardi-gras> [<https://perma.cc/3H7L-53TD>] (last updated Jul. 7, 2020).

3. Alejandra Borunda, *It's Time To Rethink Mardi Gras – Without Tons of Plastic Beads*, NAT'L GEOGRAPHIC (Feb. 22, 2019), <https://www.nationalgeographic.com/environment/2019/02/rethink-mardi-gras-without-plastic-beads/> [<https://perma.cc/56MA-MFPE>]; see also *2020 Mardi Gras Parade Schedule*, MARDI GRAS NEW ORLEANS, <https://www.mardigrasneworleans.com/parades/> [<https://perma.cc/43VZ-GS8X>] (last visited Jan. 19, 2020).

4. Caroline Heneghan, *Can Mardi Gras Go Green?*, EARTH ISLAND J. (Feb. 17, 2015), http://www.earthisland.org/journal/index.php/articles/entry/can_mardi_gras_go_green/. [<https://perma.cc/4Z3Q-YBB4>].

5. Sybil Bullock, *The Plastic Problem at Mardi Gras*, GREENPEACE (Feb. 16, 2018), <https://www.greenpeace.org/usa/plastic-problem-mardi-gras/> [<https://perma.cc/7RPQ-M8E4>].

6. See David Redmon, *The Toxic Truth Behind Mardi Gras Beads*, SMITHSONIAN MAG. (Mar. 8, 2017), <https://www.smithsonianmag.com/science-nature/toxic-truth-mardi-gras-beads-180962431/> [<https://perma.cc/4APK-PPAD>].

ten days of Mardi Gras celebrations.⁷ Of this overall trash concern, Mardi Gras beads are especially worrisome. In 2018, the City excavated more than 93,000 pounds of Mardi Gras beads from its storm drains.⁸ The City is infamous for its propensity to flood⁹; undoubtedly the presence of these beads in the storm drains, in such catastrophic quantities, contributes to this issue.

Beyond the municipal and environmental consequences caused by the mere presence of Mardi Gras beads, the risk of exposure to the toxic ingredients discovered in the beads and other throws is equally concerning.¹⁰ Individuals, children, and the environment are exposed to these chemicals when they place the beads around their necks, when children put them in their mouths, and when they are disposed of in landfills or washed out to nearby waterways.¹¹ As a result, the colossal volume of Mardi Gras beads, multiplied by the presence of their toxic components, precipitates serious health and environmental concerns that beg an alternate solution.¹²

Though there are federal and state environmental regulations that address these issues, it is apparent that such regulations are either unsuccessful in fulfilling their overall environmental goals, or the City is simply ignoring these laws, because the toxic beads are able to enter the stream of commerce and implicate serious problems for both the environment and communities who come into contact with them.¹³ The economic benefits and historical significance of Mardi Gras both

7. Heneghan, *supra* note 4.

8. *46 Tons of Beads Found in New Orleans' Storm Drains*, HUFFPOST (Jan. 26, 2018), https://www.huffpost.com/entry/new-orleans-beads-storm-drains_n_5a6bb80be4b0ddb658c693bb?guccounter=1 [<https://perma.cc/MJ4H-WMA6>].

9. Chris Below, Chris Dierich, Keith Erickson, & Rachel Kjos, *Environmental Hazards Storm Surge Induced Flooding in New Orleans*, University of Wisconsin (May 7, 2006), <https://people.uwec.edu/jolhm/eh3/group7/WhyNOVulnerable.htm> [<https://perma.cc/AU25-7Y9E>].

10. Jeff Gearhart & Karla Peña, *The Chemical Hazards in Mardi Gras Beads & Holiday Beaded Garland*, THE ECOLOGY CTR. 2 (Dec. 5, 2013), https://www.ecocenter.org/sites/default/files/BeadReport2013_lowres.pdf [<https://perma.cc/3H6U-KU5K>].

11. Redmon, *supra* note 6; *see also Drainage System Facts & Map*, NEW ORLEANS SEWERAGE & WATER BOARD, <https://www.swbno.org/About/DrainageSystemFactsAndMap> [<https://perma.cc/P4US-45F9>].

12. Gearhart & Peña, *supra* note 10; *see also* Eric Roston, *What Happens to All Those Beads After Mardi Gras?*, BLOOMBERG BUSINESSWEEK (Mar. 6, 2019), <https://www.bloomberg.com/news/features/2019-03-06/what-happens-to-mardi-gras-beads-after-festival-ends> [<https://perma.cc/CV2L-SUDR>].

13. *See* 15 U.S.C. §§ 2051, 2601 (2018); 33 U.S.C. § 1251 (2018).

necessitate a sustainable future. It is apparent that there is a need to devise a solution that protects the environment and the local communities from the harmful effects of the toxic beads, while acknowledging and maintaining this holiday's longstanding tradition and embracing its cultural significance.

There are many other celebrations that incorporate parades and throw beads across the state of Louisiana and even across the country.¹⁴ For example, Mobile, Alabama; Galveston, Texas; St. Louis, Missouri; and San Diego, California also celebrate Mardi Gras.¹⁵ The City of Baton Rouge celebrates St. Patrick's Day with an annual parade, and New York City hosts the annual Macy's Thanksgiving Day Parade.¹⁶ The environmental effects caused by the toxic beads and throws is not an issue that is isolated to the City of New Orleans, nor to the Mardi Gras holiday. Therefore, the development and implementation of a sustainable New Orleans' Mardi Gras can be imitated in these other cities to continue generating the substantial revenue created by these parades and celebrating these holidays, while simultaneously reducing their sanitation costs and ultimate environmental effects.

Part I of this Comment will address the environmental effects caused by the presence of plastic Mardi Gras beads in the environment. It will also explore the findings of a study that tested these beads and other throws and discovered the presence of harmful chemicals. Lastly, it will discuss the environmental effects attributed to these harmful chemicals. Part II of this Comment will evaluate the pertinent environmental regulations that are triggered as a result of the infiltration of the plastic beads in the environment and the presence of the toxic chemicals in the community. Finally, Part III will propose a solution to further the goals of these regulations. This section will evaluate similar problems and their solutions, as well as solutions developed by members of the local community. Ultimately, Part III will propose a solution best suited for New Orleans' Mardi Gras, but with the potential to be implemented by any other city facing similar predicaments.

14. Melanie Renzulli, *The Best Cities for Celebrating Mardi Gras in the US*, TRIPSAVVY, <https://www.tripsavvy.com/mardi-gras-us-4157793> [<https://perma.cc/FE3Z-XDE3>] (last updated Jan. 19, 2020).

15. *Id.*

16. ST. PATRICK'S DAY PARADE, <https://wearinofthegreen.com> [<https://perma.cc/5P53-TL83>] (last visited Jan. 19, 2020); Craig Smith, *Interesting Macy's Thanksgiving Day Parade Facts and Statistics (2018)*, DMR BUSINESS STATISTICS (Jan. 28, 2019), <http://expandedramblings.com/index.php/macys-thanksgiving-day-parade-facts-and-statistics/> [<https://perma.cc/97ZL-Z2HT>].

I. BACKGROUND

In New Orleans, the tradition of throwing Mardi Gras beads can be traced back to the nineteenth century.¹⁷ Until recently, beads were made of glass, and many were imported from Czechoslovakia.¹⁸ It was in the 1960s when the inexpensive and brightly-colored plastic beads thrown today replaced these original, delicate glass beads.¹⁹ While Mardi Gras represents an important time of tradition, history, and culture, it also provides a substantial stimulus to the economy of New Orleans.²⁰ Over one million tourists travel to New Orleans to participate in this celebration, causing the city to expand roughly three times in size.²¹ In 2014, Mardi Gras celebrations produced \$164 million in direct economic impact and \$465 million in total direct and indirect economic impact for the City.²² This revenue accounts for more than 2% of New Orleans' gross domestic product.²³ Many other cities in Louisiana, and even across the country, celebrate Mardi Gras or other festivities that incorporate parades that throw beads, meaning the economic benefits transcend beyond New Orleans and are likely generated in these cities as well.²⁴ Further, most of the beads are now manufactured in China, where it has grown into a multi-million dollar industry.²⁵ Based on these figures, it is clear that this holiday provides a substantial local and global economic stimulus.

While the number of beads thrown and trash generated in New Orleans is representative of the crowds that each parade attracts, these figures certainly are not unique to the City. In Houma, a city in South Louisiana, it was estimated that the Krewe of Hercules threw roughly 840,000 pounds of beads during its parade in just one year.²⁶ Based on this figure, it was

17. Borunda, *supra* note 3.

18. *Id.*

19. *Id.*

20. *Study: Mardi Gras Economic Impact Hits \$465 Million*, 4WWL (Feb. 10, 2015), <https://www.wwtv.com/article/news/study-mardi-gras-economic-impact-hits-465-million/289-153628395> [<https://perma.cc/98H6-KD8Q>].

21. Roston, *supra* note 12.

22. *Study: Mardi Gras Economic Impact Hits \$465 Million*, *supra* note 20 (The total direct economic impact includes expenditures related to visitors staying in hotels, food and alcohol purchases, merchandise and services, and the expenses paid by the krewe members. The total indirect economic impact includes incremental revenues, such as taxes, that cannot be measured directly.).

23. *Id.*

24. Renzulli, *supra* note 14.

25. Heneghan, *supra* note 4.

26. Dan Copp, *Mardi Gras Beads: A Disposal Dilemma*, DAILYCOMET.COM (Feb. 14, 2018), <https://www.dailycomet.com/news/20180213/mardi-gras-beads->

estimated that a total of 3.6 million pounds of beads were thrown in the streets of Terrebonne Parish during just one Mardi Gras season.²⁷ The neighboring parish of Lafourche calculated that the 1,800 tons of beads its parades are estimated to throw in one Mardi Gras season weighs the same as: 18 Boeing 737 Max 9 airplanes, 360 killer whales, or 878 Ford F-150 pickups.²⁸ Furthermore, the trash generated from these parades is equally substantial.²⁹ The Krewe of Hercules parade alone produced over 17 tons of trash.³⁰ A majority of this trash was Mardi Gras beads and the bags and boxes that contained them.³¹ However, Terrebonne Parish distinguishes itself from New Orleans through its diligent and constant clean-up efforts during parade season to reduce the overall trash impact.³² In comparison, Terrebonne Parish notes that New Orleans neglects these clean-up efforts, which results in overwhelming build-up over the years.³³

While the amount of garbage and beads left on the ground after parades was once a measure of success, the City of New Orleans has grown more aware of the need to promote better clean-up habits.³⁴ To this end, the City now employs volunteer workers and city employees, street sweepers, tractors, and trucks to clean the streets after the parades and alleviate the overall trash concern.³⁵ In 2019, the City's budget allocated over \$1.5 million of the total \$39.7 million sanitation budget specifically for "Mardi Gras Cleaning."³⁶ The budget does not explicitly articulate

disposal-dilemma [<https://perma.cc/WKW3-RCMG>] (A "krewe" is a private organization staging festivities—such as parades—during Mardi Gras in New Orleans.)

27. *Id.* The City of Houma is located in Terrebonne Parish. *Houma*, ENCYCLOPAEDIA BRITANNICA (Feb. 22, 2012), <https://www.britannica.com/place/Louisiana-state> [<https://perma.cc/7S4A-F77R>].

28. Copp, *supra* note 26.

29. *Id.*

30. *Id.*

31. *Id.*

32. *Id.*

33. *Id.*

34. Tegan Wendland & Evie Stone, *New Orleans Hopes 'Gutter Buddies' Will Keep Mardi Gras Beads Out of Storm Drains*, NPR.COM (Feb. 12, 2018), <https://www.npr.org/2018/02/12/585168416/new-orleans-hopes-gutter-buddies-will-keep-mardi-gras-beads-out-of-storm-drains> [<https://perma.cc/2LV9-RSED>].

35. Faimon A. Roberts III, *New Orleans Picks Up After Mardi Gras: "It's Mesmerizing To Watch"*, NOLA.COM (Feb. 14, 2018), https://www.nola.com/news/article_180e9cc2-7d49-5c69-acaf-86b366a7c814.html [<https://perma.cc/VM5F-4Y7N>].

36. CITY OF NEW ORLEANS, 2019 ANNUAL OPERATING BUDGET 304, 308 (2019), <https://www.nola.gov/nola/media/Mayor-s-Office/Files/2019-Proposed->

what this cleaning entails, but it includes among the list of sanitation accomplishments that it facilitated the timely removal and disposal of “Special Event” debris from public rights of way, as well as manually cleaned litter, mechanically swept and flushed City roads, and ordered new public litter cans, and other efforts.³⁷ Community activists have also taken initiative to reduce the environmental impact through recycling efforts, as well as developing alternative solutions such as biodegradable Mardi Gras beads or throws made of recycled materials.³⁸

Though the amount of garbage and beads left on the ground after Mardi Gras parades is no longer a measure of success and the City has taken steps to counteract the bead pollution, these efforts have remained relatively stagnant in the past five years.³⁹ Despite the removal of 93,000 pounds of beads from the City’s storm drains in 2018, the 2019 budget allocated the same amount of money—\$1.5 million—to Mardi Gras cleaning efforts, as the budget did in 2014.⁴⁰ Of the estimated 25 million pounds of Mardi Gras beads thrown into the streets of New Orleans each year, less than 2% are recycled.⁴¹ If the beads are picked up, the majority are disposed of in landfills.⁴² The beads that otherwise fall into the storm drains are washed out to nearby waterways, such as Lake Pontchartrain or the Mississippi River.⁴³ The 25 million pounds of beads present a dangerous influx of plastic into the environment that creates serious environmental concerns, despite efforts to “timely . . . dispose” of the beads.⁴⁴

Further, studies show that Mardi Gras beads contain harmful ingredients, such as lead and plastic phthalates.⁴⁵ As these chemical-filled beads reside in storm drains, travel to nearby waterways, and accumulate in the environment, they cause damaging environmental and health

Budget-Book-File.pdf [<https://perma.cc/A8QP-TX3P>] [hereinafter 2019 NEW ORLEANS BUDGET].

37. *Id.* at 302.

38. Heneghan, *supra* note 4.

39. *Id.*; 2019 NEW ORLEANS BUDGET, *supra* note 36, at 308.

40. Heneghan, *supra* note 4; 2019 NEW ORLEANS BUDGET, *supra* note 36, at 308.

41. Heneghan, *supra* note 4.

42. Gearhart & Peña, *supra* note 10.

43. *Drainage System Facts & Map*, *supra* note 11 (noting that runoff goes into the streets, enters the network through the catch basins, then travels through pipes and canals to reach pump stations that “send it either into outfall canals or directly into Lake Ponchartrain or nearby waterways”).

44. Heneghan, *supra* note 4.

45. Gearhart & Peña, *supra* note 10.

consequences. This results from both the volume of pollution the beads contribute to, as well as the toxic chemicals that seep out of them.⁴⁶ One study by the Ecology Center analyzed the components of Mardi Gras beads and concluded that the beads release chemical hazards into the environment over time, so long as they remain hanging on fences or in the streets as litter.⁴⁷ Specifically, lead that is chemically locked in the beads is more likely to be released through “use, weathering, and age.”⁴⁸ Dr. Howard Mielke, a Tulane University research professor, discovered that a large portion of the high lead levels in the City’s soil are located on parade routes where the beads are often abandoned.⁴⁹ Dr. Mielke also raises concerns of the “collective impact” of the beads, estimating that roughly 4,000 pounds of lead are thrown into the streets during one year.⁵⁰

The life cycle of Mardi Gras beads creates two main issues: (1) the presence of the plastic beads in the environment, and (2) the toxic chemicals found in them.⁵¹ First, the staggering number of Mardi Gras beads thrown to parade-goers contributes to a greater issue of plastic pollution.⁵² Massive numbers of beads wind up in storm drains and enter the environment, creating harmful effects on organisms and their ecosystems.⁵³ Second, the beads themselves have been found to contain harmful chemicals that generate environmental and health effects.⁵⁴ Together, these toxic beads enter the environment at an alarming rate, multiplying the effects on our environment and communities.

Mardi Gras beads contribute to the greater global plastic crisis.⁵⁵ The beads are “petroleum-based plastics,” which means they will last for

46. *Id.*

47. *Id.*

48. Roston, *supra* note 12.

49. Kali Coleman, *This Is What Really Happens to All Those Old Mardi Gras Beads*, BESTLIFEONLINE.COM (Feb. 21, 2019), <https://bestlifeonline.com/old-mardi-gras-beads/> [<https://perma.cc/4JZB-8VFK>].

50. Redmon, *supra* note 6.

51. Gearhart & Peña, *supra* note 10.

52. *See generally Every Piece of Plastic Ever Made Still Exists Today*, PLANTING PEACE, <https://www.plantingpeace.org/2015/05/plastic-footprint/> [<https://perma.cc/X2US-768Z>] (last visited Jan. 19, 2020).

53. *See Drainage System Facts & Map*, *supra* note 11; Steve Hardy, *LSU Scientists Will Be Scanning Mississippi River For Mardi Gras Beads After Carnival; Here’s Why*, THE ADVOCATE (Feb 17, 2019), https://www.theadvocate.com/baton_rouge/news/environment/article_6ff0b236-314a-11e9-959f-4bdfa5a6e932.html [<https://perma.cc/TB4D-RSY7>].

54. Gearhart & Peña, *supra* note 10.

55. *See generally Every Piece of Plastic Ever Made Still Exists Today*, *supra* note 52.

centuries.⁵⁶ A disturbing truth is that “every piece of petroleum-based plastic ever made still exists today.”⁵⁷ The infiltration of Mardi Gras beads and other plastic throws creates foreseeable effects on municipalities, like obstructing the storm drains in New Orleans.⁵⁸ However, because the beads will last for centuries, even the measures taken to more effectively dispose of these beads will not ultimately reduce their environmental impact long-term.⁵⁹ Instead, the effect will simply become someone else’s problem.

II. LAISSEZ LES BON TEMPS ROULER? (LET THE GOOD TIMES ROLL?)

A. *The Life Cycle of a Mardi Gras Bead*

Mardi Gras beads cause environmental effects from the moment of their inception.⁶⁰ The plastic used in manufacturing the beads is produced in the Middle East through a “highly polluting and toxic” process that affects the environment and the workers.⁶¹ One study has even discovered that the plastic in the beads contain fragments of recycled electronic waste.⁶² The plastic is then shipped to factories in China, “where American companies are able to take advantage of inexpensive labor, lax workplace regulations and a lack of environmental oversight.”⁶³ Once the beads are manufactured, they are then shipped to the United States; as many as 75% are shipped just to the City of New Orleans.⁶⁴ Overall, roughly 45 million pounds of plastics are imported to New Orleans annually for Mardi Gras festivities.⁶⁵ Of this, over half are Mardi Gras beads.⁶⁶ These beads and other products are produced and manufactured for the sole purpose of being thrown to crowds and then eventually thrown away.⁶⁷

56. Borunda, *supra* note 3.

57. *Every Piece of Plastic Ever Made Still Exists Today*, *supra* note 52.

58. *46 Tons of Beads Found in New Orleans’ Storm Drains*, *supra* note 8.

59. *Every Piece of Plastic Ever Made Still Exists Today*, *supra* note 52.

60. Heneghan, *supra* note 4; Redmon, *supra* note 6.

61. Heneghan, *supra* note 4; Redmon, *supra* note 6.

62. *Mardi Gras Beads, A Toxic Legacy*, THE ECOLOGY CTR. (Mar. 5, 2020), <https://www.ecocenter.org/mardi-gras-beads-toxic-legacy> [<https://perma.cc/TGY7-STGJ>].

63. Redmon, *supra* note 6.

64. Coleman, *supra* note 49.

65. Roston, *supra* note 12.

66. *Id.*; see also Heneghan, *supra* note 4.

67. Redmon, *supra* note 6.

B. Plastic Pollution Specific to Mardi Gras Beads

Following the parades in New Orleans, many beads fall into storm drains along the parade routes and are eventually washed out to the nearby waterways, such as Lake Pontchartrain and the Mississippi River.⁶⁸ Once in these bodies of water, the beads cause harmful effects to marine life and their ecosystems.⁶⁹ The Louisiana State University (“LSU”) Department of Oceanography and Coastal Sciences plans to “begin systematically flying a camera-equipped drone over the [Mississippi] [R]iver . . . to record floating plastic debris.”⁷⁰ Specifically, the scientists will survey the Mississippi River for “colorful beads and other Mardi Gras throws.”⁷¹ The colorful beads and glitter resemble insects that reside on the surface of water, which many fish “pluck” off to eat.⁷² This is particularly true when a chain of beads breaks and an individual bead floats in the water.⁷³ Plastic is “inherently dangerous” because it can obstruct digestion or give animals a “false sense of fullness.”⁷⁴ Additionally, persistent organic pollutants bind to these plastic particles, creating “poison pellets.”⁷⁵ Not only do these plastic Mardi Gras beads contribute to the overall issue of widespread plastic pollution, but the beads also possess unique characteristics that make them susceptible to being ingested by marine life, ultimately impairing organisms and their ecosystems.⁷⁶

C. Overall Plastic Pollution

It is estimated that there are 5.25 trillion pieces of plastic debris in the ocean, and according to the United Nations Environment Programme, approximately 10 to 20 million tons of plastic are added to the ocean each year.⁷⁷ Scientists have concluded that “most plastic pollution enters marine

68. *Drainage System Facts & Map*, *supra* note 11.

69. *See generally* Hardy, *supra* note 53.

70. *Id.*

71. *Id.*

72. *Id.*

73. *Id.*

74. *Id.*

75. *Id.*

76. *Id.*

77. *Plastics in the Ocean Statistics 2020*, CONDOR, <https://www.condorferries.co.uk/plastic-in-the-ocean-statistics> (last visited Aug. 25, 2020); U.N. ENV'T PROGRAMME, VALUING PLASTICS: THE BUSINESS CASE FOR MEASURING, MANAGING AND DISCLOSING PLASTIC USE IN THE CONSUMER GOODS INDUSTRY 7 (2014), <http://wedocs.unep.org/handle/20.500.11822/9238> [<https://perma.cc/ZUH6-TA4V>].

environments from land-based sources,” including litter and “trash blown out of garbage containers, trucks, and landfills.”⁷⁸ Once plastic has infiltrated marine environments, it can create serious and irreparable consequences on individual organisms and the environment as a whole.⁷⁹ The Convention on Biological Diversity emphasizes that over 800 marine and coastal species are impacted by marine debris through ingestion, entanglement, and habitat effects, among other related causes.⁸⁰ The presence of the massive amounts of beads in landfills and the environment contributes to this greater crisis of marine plastic pollution, and this crisis is tremendous.⁸¹

D. Toxicity of Mardi Gras Beads

Beyond the issue of plastic pollution caused by Mardi Gras beads is the issue of the specific toxic chemicals found to be present in them.⁸² The Ecology Center, a nonprofit environmental organization based in Michigan, published a report in 2013 identifying the chemical composition of Mardi Gras beads.⁸³ The study tested 87 Mardi Gras bead necklaces, bracelets, and other accessories.⁸⁴ The results showed that over 60% of the products tested contained over 100 parts-per-million (ppm) of lead.⁸⁵ Shockingly, one single green bead necklace contained as much as 29,864 ppm of lead.⁸⁶ In comparison, the U.S. Consumer Product Safety Commission (CPSC) imposes a limitation on lead in children’s products to 100 ppm, and the American Academy of Pediatrics suggests an upper

78. Stephanie F. Wood, *Move Over Diamonds – Plastics Are Forever: How the Rise of Plastic Pollution in Water Can be Regulated*, 29 VILL. ENVTL. L.J. 155, 157 (2018).

79. *Id.* at 156–57.

80. CONVENTION ON BIOLOGICAL DIVERSITY, MARINE DEBRIS: UNDERSTANDING, PREVENTING AND MITIGATING THE SIGNIFICANT ADVERSE IMPACTS ON MARINE AND COASTAL BIODIVERSITY 16 (2016), <https://www.cbd.int/doc/publications/cbd-ts-83-en.pdf> [<https://perma.cc/TJG5-TSJV>].

81. See Hardy, *supra* note 53; U.N. ENV’T PROGRAMME, *supra* note 77.

82. Gearhart & Peña, *supra* note 10, at 5.

83. Gearhart & Peña, *supra* note 10. This study used a High Definition X-Ray Fluorescence device, a “testing device that can screen consumer products for hazardous substances.” The study used an analytical approach which allowed for “detection limits in the parts-per-million (ppm) range for many elements of interest in a variety of materials.” *Id.* at 4.

84. *Id.* at 5. Of the 87 beads, 197 components or areas were tested. *Id.* at 4.

85. *Id.* at 3, 5.

86. *Id.* at 5.

limit of 40 ppm.⁸⁷ Further, the Ecology Center estimates that just one year's inventory of Mardi Gras beads in New Orleans could contain up to 10,000 pounds of lead and up to 900,000 pounds of hazardous flame retardants.⁸⁸ In 2020, the Ecology Center conducted another study of Mardi Gras beads and discovered the beads continued to contain toxic chemicals.⁸⁹

E. Side-Effects of the Toxic Chemicals in Mardi Gras Beads

The beads and other throws tested by the Ecology Center were also found to contain: cadmium, mercury, arsenic, several flame retardants, and phthalate plasticizers.⁹⁰ While lead is notorious for its serious health effects on humans, especially children, it also creates environmental problems when ingested by marine and soil organisms.⁹¹ Lead can “accumulate” in individual organisms or disturb entire food chains.⁹² Cadmium “binds to soil particles that can easily be absorbed by plants and animals,” and this exposure can lead to developmental problems, such as possible decreases in birth weight, delayed sensory-motor development, hormonal effects, and altered behavior.⁹³ The introduction of certain halogenated flame retardants is connected to an extensive number of consequences on animals and humans, such as immunotoxicity, reproductive toxicity, endocrine disruption, effects on fetal and child development, thyroid and neurological function, and cancer.⁹⁴ Notably, phthalate plasticizers have been made illegal in California due to their harmful effects.⁹⁵

87. *Id.* at 3.

88. *Id.* at 2.

89. *Chemical Hazards in Mardi Gras Beads: 2020 Update*, THE ECOLOGY CTR. (Feb. 24, 2020), <https://www.ecocenter.org/healthy-stuff/reports/mardi-gras-beads-2020-update> [<https://perma.cc/3DNB-MPDW>].

90. Gearhart & Peña, *supra* note 10, at 6–8.

91. *Chemical Properties of Lead*, LENNTECH, <https://www.lennotech.com/periodic/elements/pb.htm> [<https://perma.cc/2G7D-S5FS>] (last visited Jan. 19, 2020).

92. *Id.*

93. Gearhart & Peña, *supra* note 10, at 17.

94. *Id.*

95. Heneghan, *supra* note 4.

III. KEEP CALM AND THROW ON?

A. *The Clean Water Act*

The Clean Water Act (“CWA”) establishes the basic structure for regulating the discharge of pollutants into the waters of the United States and regulating quality standards for surface waters.⁹⁶ Specifically, the CWA makes it illegal to discharge a pollutant from a point source into navigable waters without a permit.⁹⁷ Under the CWA, the definition of “pollutant” encompasses any garbage or municipal waste.⁹⁸ Further, a “point source” refers to any discernible, confined and discrete conveyance, such as a pipe or ditch from which pollutants are or may be discharged.⁹⁹ Based on these definitions, together storm drains and the tons of parade garbage disposed of in these drains implicate this federal regulation.¹⁰⁰

The CWA requires each state to submit to the Environmental Protection Agency (“EPA”): (1) a description of the water quality of all navigable waters in the state; (2) an analysis of the status of waters of the state with regard to their support of recreational activities and fish and wildlife propagation; (3) an assessment of the state’s water pollution control activities toward achieving the CWA goal of having water bodies that support recreational activities and fish and wildlife propagation; (4) an estimate of the costs and benefits of implementing the CWA; and (5) a description of the nature and extent of nonpoint sources (NPS) of pollution and recommendations for programs to address NPS pollution.¹⁰¹ According to Louisiana’s Water Quality Inventory Report submitted to the EPA in 2018, some of the suspected causes of impairment to water bodies

96. *Summary of the Clean Water Act*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/laws-regulations/summary-clean-water-act> [<https://perma.cc/4DRR-6JY3>] (last visited Jan. 19, 2020).

97. 33 U.S.C. § 1311(a) (2018).

98. 33 U.S.C. § 1362(6).

99. 33 U.S.C. § 1362(14).

100. 33 U.S.C. §§ 1311(a), 1362(6), 1362(14). Notably, the Navigable Waters Protection Rule was published to further define the scope of “waters of the United States” as listed in the CWA. This provision does not affect the application of the CWA to the discharge of parade garbage that ends up in the Mississippi River or Lake Pontchartrain. The Navigable Waters Protection Rule: Definition of “Waters of the United States,” 85 Fed. Reg. 22,250 (Apr. 21, 2020) (to be codified at 33 C.F.R. pt. 328).

101. LA. DEP’T OF ENVTL. QUALITY, 2018 LOUISIANA WATER QUALITY INVENTORY: INTEGRATED REPORT 1 (2018), https://deq.louisiana.gov/assets/docs/Water/Integrated_Report/2018_Integrated_Report/18_IR1_A_Master_Text_FINAL-CORRECTIONS_For_Website_04-17-19.pdf [<https://perma.cc/T3D5-B2FR>].

include: lead, municipal point source discharges, and municipalities (urbanized high density areas).¹⁰²

Though it is unclear, and perhaps impossible, to determine specifically how much of these impairments are attributable to Mardi Gras beads and other parade throws, what is clear is that the presence of lead, disposal of the beads in storm drains, and other means of pollution does ultimately affect Louisiana's water bodies.¹⁰³ Notably, the EPA designates di(2-ethylhexyl) phthalate ("DEHP") as a toxic pollutant under the CWA, and the Ecology Center has discovered DEHP in a Mardi Gras football throw.¹⁰⁴ Certainly the 93,000 pounds of Mardi Gras beads uncovered from New Orleans' storm drains, that contain lead and toxic pollutants, contribute to the impairment of Louisiana's water bodies.¹⁰⁵ Based on the current information available about the toxicity of Mardi Gras beads, a valid question is: how is it that we are allowed to import these beads to the United States?

B. The Toxic Substances Control Act

Congress enacted the Toxic Substances Control Act ("TSCA") in 1976 with the intent to "regulate commerce and protect human health and the environment by requiring testing and necessary use restrictions on certain chemical substances."¹⁰⁶ The TSCA provides the EPA with authority to require reporting, recordkeeping and testing requirements, and

102. *Id.*

103. *Id.*

104. OFFICE OF CHEM. SAFETY AND POLLUTION PREVENTION, U.S. ENVTL. PROT. AGENCY, PROPOSED DESIGNATION OF DI-ETHYLHEXYL PHTHALATE (DEHP) (1,2 BENZENE-DICARBOXYLIC ACID, 1,2-BIS (2-ETHYLHEXYL) ESTER) (CASRN 117-81-7) AS A HIGH-PRIORITY SUBSTANCE FOR RISK EVALUATION, UNITED STATES ENVIRONMENT PROTECTION AGENCY 30 (Aug. 22, 2019), https://www.epa.gov/sites/production/files/2019-08/documents/di-ethylhexyl_phthalate_117-81-7_proposeddesignation_082219.pdf [<https://perma.cc/SJ2E-WQW7>]; Gearhart & Peña, *supra* note 10, at 14 (finding that the Mardi Gras toy football contained 28% DEHP).

105. Bullock, *supra* note 5.

106. Toxic Substances Control Act, 90 Stat. 2003 (1976) (codified at 15 U.S.C. §§ 2601–2627). "Chemical substance" is defined as any organic or inorganic substance of a particular molecule identity, including any combination of such substances occurring in whole or in part as a result of a chemical reaction or occurring in nature, and any element or uncombined radical. 15 U.S.C. § 2602(2)(A)(i), (ii) (2018).

restrictions relating to chemical substances and/or mixtures.¹⁰⁷ However, the TSCA was widely criticized as ineffective.¹⁰⁸ Specifically, the Ecology Center's 2013 report identified the TSCA as being the reason why many of the chemical hazards are in the Mardi Gras products.¹⁰⁹ One of the criticisms of the TSCA was that it allowed tens of thousands of chemicals to prevail on the market without any safety assessment.¹¹⁰ However, in 2016, the TSCA was revised with the enactment of the Lautenberg Act.¹¹¹ This Act provides the TSCA with various improvements, such as a mandatory requirement for the EPA to evaluate existing chemicals with clear and enforceable deadlines, risk-based chemical assessments, increased public transparency for chemical information, and a consistent source of funding for the EPA to carry out the responsibilities under the new law.¹¹²

In December of 2019, the EPA was required to designate at least 20 chemical substances as “High-Priority.”¹¹³ A High-Priority Substance is defined as a chemical substance that the EPA concludes, without consideration of costs or other non-risk factors, may present an unreasonable risk of injury to health or the environment because of a potential hazard and a potential route of exposure under the conditions of

107. *Summary of the Toxic Substances Control Act*, U.S. ENVTL. PROTECTION AGENCY (Sept. 10, 2019), <https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act> [<https://perma.cc/2CE5-ZRCV>].

108. Rachael Rawlins, *Teething on Toxins: In Search of Regulatory Solutions for Toys and Cosmetics*, 20 *FORDHAM ENVTL. L. REV.* 1, 33–35 (2009); Gearhart & Peña, *supra* note 10, at 14; *Summary of the Toxic Substances Control Act*, *supra* note 107.

109. Gearhart & Peña, *supra* note 10, at 14 (stating that “many of the chemical hazards identified are in products because the primary U.S. law governing chemicals in products, the Toxic Substances Control Act (TSCA), is ineffectual in protecting the public”).

110. *A New Chemical Safety Law: The Lautenberg Act*, ENVTL. DEF. FUND, <https://www.edf.org/health/new-chemical-safety-law-lautenberg-act> [<https://perma.cc/DGV2-XZG7>] (last visited Jan. 19, 2020).

111. Frank R. Lautenberg Chemical Safety for the 21st Century Act, 130 Stat. 448 (2016) (codified as amended at 15 U.S.C. §§ 2601–2627 (2018)).

112. *The Frank R. Lautenberg Chemical Safety for the 21st Century Act*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/frank-r-lautenberg-chemical-safety-21st-century-act> [<https://perma.cc/EX7Q-EGH9>] (last visited Jan. 19, 2020).

113. *Prioritizing Existing Chemicals for Risk Evaluation*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/prioritizing-existing-chemicals-risk-evaluation> [<https://perma.cc/KCB6-5NQD>] (last visited Jan. 19, 2020).

use, including an unreasonable risk to potentially exposed or susceptible subpopulations identified as relevant by the EPA.¹¹⁴ The EPA has added DEHP to the high-priority substances list, in addition to designating it as a toxic pollutant under the CWA.¹¹⁵ In reaching this conclusion, the EPA identified and analyzed reasonably available information and concluded that DEHP may present an unreasonable risk of injury to health and/or the environment.¹¹⁶ Specifically, the EPA expects that the manufacturing, processing, distribution, use, and disposal of DEHP may result in the presence of DEHP in surface water and in groundwater, ingestion of the chemical in drinking water, inhalation of the chemical from air releases, and exposure to consumers, and the general population, including children.¹¹⁷ In addition, the EPA expects potential environmental and human health hazards to result.¹¹⁸

After being designated a high-priority substance, DEHP is now undergoing risk evaluation.¹¹⁹ Throughout this process, the EPA will determine whether DEHP presents an unreasonable risk to health or the environment under the conditions of use, including an unreasonable risk to a relevant potentially exposed or susceptible subpopulation.¹²⁰ If the EPA determines that DEHP presents an unreasonable risk, the chemical will then enter the risk management phase and the EPA will impose restrictions to eliminate such unreasonable risk.¹²¹ These restrictions may

114. *Id.* A low-priority substance is if the Administrator concludes, based on information sufficient to establish, without consideration of costs or other nonrisk factors, that such substance does not meet the [High-Priority] standard. *Id.*

115. *Chemical Substances Undergoing Prioritization: High-Priority*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/chemical-substances-undergoing-prioritization-high> [<https://perma.cc/JWV4-PRLU>] (last visited Jan. 19, 2020); OFFICE OF CHEM. SAFETY AND POLLUTION PREVENTION, *supra* note 104, at 30.

116. OFFICE OF CHEM. SAFETY AND POLLUTION PREVENTION, *supra* note 104.

117. *Id.*

118. *Id.*

119. *Risk Evaluation for Di-Ethylhexyl Phthalate – (1,2-Benzene-dicarboxylic Acid, 1,2-bis(2-ethylhexyl) Ester)*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-evaluation-di-ethylhexyl-phthalate-12-benzene> [<https://perma.cc/UQ6T-SS6C>] (last visited Jan. 7, 2021).

120. *Risk Evaluations for Existing Chemicals Under TSCA*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-evaluations-existing-chemicals-under-tsca> [<https://perma.cc/A5HU-452R>] (last visited Jan. 7, 2021).

121. *Id.*

include regulatory actions, such as limitations on manufacturing, processing, and use.¹²²

C. *The Consumer Product Safety Improvement Act of 2008*

The Consumer Product Safety Improvement Act of 2008 (“CPSIA”) was implemented after millions of children’s toys were recalled due to the excessive content of lead-based paint.¹²³ One of the CPSIA’s goals is “to protect the public against unreasonable risks of injury associated with consumer products.”¹²⁴ The CPSIA addresses lead and certain phthalates specifically.¹²⁵ The Ecology Center compared its findings with the CPSIA standards for lead and phthalates in children’s products.¹²⁶ In doing so, the Ecology Center found that Mardi Gras beads are composed of a “range of hazardous substances” that surpass the CPSIA regulation.¹²⁷

As mentioned, the Consumer Product Safety Commission (“CPSC”) imposes a 100 ppm limit on the lead content in children’s products.¹²⁸ A majority of the beads tested by the Ecology Center exceeded this limit.¹²⁹ The CPSIA declares that a children’s product that surpasses this 100 ppm limit “shall be treated as a banned hazardous substance under the Federal Hazardous Substance Act.”¹³⁰ Thus, the majority of the plastic beads tested should be declared a banned hazardous substance.¹³¹ The CPSC also limits the total concentration of three certain types of plastic phthalates to

122. *Risk Management for Existing Chemicals Under TSCA*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/current-chemical-risk-management-activities> [<https://perma.cc/5LXA-N7ZH>] (last visited Jan. 7, 2021).

123. Scott D. McBride, *Something Wicked This Way Comes: The United States Government’s Response to Unsafe Imported Chinese Toys and Subsidized Chinese Exports*, 45 TEX. INT’L L.J. 233, 236 (2009).

124. 15 U.S.C. § 2051 (2018).

125. Gearhart & Peña, *supra* note 10, at 3; *Phthalates Business Guidance & Small Entity Compliance Guide*, U.S. CONSUMER PRODUCT SAFETY COMMISSION, <https://www.cpsc.gov/Business--Manufacturing/Business-Education/Business-Guidance/Phthalates-Information> [<https://perma.cc/MP94-5AUQ>] (last visited Jan. 19, 2020).

126. Gearhart & Peña, *supra* note 10, at 3.

127. *Id.*

128. 15 U.S.C. § 1278a(a)(2)(C) (2018).

129. Gearhart & Peña, *supra* note 10, at 3 (finding that more than 60% of the products contained over 100 ppm of lead, and one bead necklace in particular contained as much as 29,864 ppm of lead).

130. 15 U.S.C. § 1278a(a)(1); *see also* 15 U.S.C. § 1261(q)(1).

131. *Id.*

0.1%.¹³² This regulation was also found to be violated by Mardi Gras products, as the Ecology Center's report discovered that a Mardi Gras football throw contained 28% DEHP.¹³³

However, the CPSC imposes these limits only in regard to children's products.¹³⁴ The EPA notes that "lead is particularly dangerous to children because their growing bodies absorb more lead than adults do and their brains and nervous systems are more sensitive to the damaging effects of lead."¹³⁵ A "children's product" is a consumer product designed or intended primarily for children 12 years of age or younger, while a "general use product" is one that is not so designed or intended.¹³⁶ If a consumer older than 12 years of age is as likely, or more likely, to interact with a product than a child 12 years of age or younger, the product is considered to be a general use product.¹³⁷ Certainly, children are more interested and excited by the brightly colored beads and toys than adults. For adults, the appeal of Mardi Gras lies in its social aspect. For children, the excitement is in the toys and brightly-colored beads.

Even if Mardi Gras beads and other throws are not considered "children's products," the very fact that these products exceed the CPSIA ban on both lead and phthalates indicates their harm not only to children, but also to adults.¹³⁸ Also, while Mardi Gras beads may not be specifically classified as children's products, their exposure to children is unquestionable, particularly since children and infants wear them around their necks, put the beads in their mouths, and play with the other types of toys, trinkets, and favors thrown during parades.

132. *Phthalates Business Guidance & Small Entity Compliance Guide*, *supra* note 125.

133. Gearhart & Peña, *supra* note 10, at 5.

134. *Children's Products*, U.S. CONSUMER PRODUCT SAFETY COMMISSION, <https://www.cpsc.gov/Business--Manufacturing/Business-Education/childrens-products/> [<https://perma.cc/TX4Y-RZNK>] (last visited Jan. 19, 2020).

135. *Learn About Lead*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/lead/learn-about-lead> [<https://perma.cc/ND65-2LER>] (last visited Jan. 19, 2020).

136. *Children's Products*, *supra* note 134.

137. *Id.* Factors to consider include: whether the product is represented in its packaging, display, promotion, or advertising as appropriate for use by children 12 years of age or younger; whether the product is commonly recognized by consumers as being intended for use by a child 12 years of age or younger; and the Age Determination Guidelines issued by the Commission staff. *Id.*

138. *See* Gearhart & Peña, *supra* note 10, at 12. (indicating the fact that these levels of phthalates are illegal in children's products "suggests that Mardi Gras beads with phthalates at that level can pose a potential hazard to the environment and human health").

IV. THROW ME SOMETHING *ELSE*, MISTERA. *Current Efforts*

As a result of the negative environmental and health impacts caused by Mardi Gras beads, many “community activists” in New Orleans have begun to “advocate for a greener and sustainable Carnival and Mardi Gras festivity.”¹³⁹ One example is a “Catch and Release” float that rides behind a parade, permitting parade-goers to throw beads and other products back to the float.¹⁴⁰ The purpose of these floats is to decrease the total number of beads left on the streets and to recycle and reuse the beads for the next year.¹⁴¹ “Catch and Release” floats reduce the potential for the beads to wind up in storm drains and in the environment, furthering the goals of the CWA.¹⁴² However, the Code of the City of New Orleans makes it “unlawful for a person to throw any object at a float or at any participant in a carnival parade.”¹⁴³ In 2013, the City proposed an exception to this rule for the specific purpose of allowing these “Catch and Release” floats to collect plastic beads.¹⁴⁴ Ultimately, the City revoked this proposal based on safety concerns.¹⁴⁵

The City of New Orleans has stepped in to try to alleviate the environmental burden created by Mardi Gras.¹⁴⁶ In 2018, officials organized bead-recycling stations and volunteers to gather unwanted beads.¹⁴⁷ Additionally, the City spent \$30,000 to purchase and assemble hundreds of “gutter buddies” to catch beads from falling into storm drains.¹⁴⁸ Gutter buddies further the goals of the CWA by preventing the beads from falling into the storm drains and being washed out to nearby bodies of water.¹⁴⁹ These gutter buddies work as filters that cover the

139. Gearhart & Peña, *supra* note 10, at 3.

140. *Environmental Impact of Mardi Gras*, TERRAPASS (Feb. 21, 2017), <https://www.terrapass.com/environmental-impact-mardi-gras> [<https://perma.cc/PB6H-6RNQ>].

141. *Id.*

142. *See* 33 U.S.C. § 1251 (2018).

143. LA. NEW ORLEANS CODE §34—29 (2019).

144. Bruce Egger, *Throwing Beads at Mardi Gras Floats Will Remain Illegal – No Exceptions*, NOLA.COM (Jan. 11, 2013), https://www.nola.com/news/politics/article_2d2a725c-987f-5886-bbf0-f7b87211e28c.html [<https://perma.cc/T9PD-SB57>].

145. *Id.*

146. *See* Heneghan, *supra* note 4.

147. *Id.*

148. Wendland & Stone, *supra* note 34.

149. *See id.*; *see also* 33 U.S.C. § 1251 (2018).

opening of the gutter and allow water, but not beads or other throws, to pass through.¹⁵⁰ The New Orleans Department of Public Works “experimented” with wire and other materials to develop these “rudimentary” filters.¹⁵¹ One of the companies holding a maintenance contract with the City has even installed a different style of filter for the “French drains” located on a portion of the parade route.¹⁵²

Other organizations and individuals have worked to eliminate the use of plastic beads altogether. For example, a local New Orleans organization, Zombeads, “uses repurposed and recycled materials to create paper beads and assorted throws like voodoo dolls and rice bags to sell to krewes.”¹⁵³ Also, LSU Department of Biological Sciences Professor Naohiro Kato has developed a method to grow biodegradable Mardi Gras beads.¹⁵⁴ These biodegradable beads could reduce the number of plastic beads that infiltrate the environment each year by tens of thousands.¹⁵⁵ Professor Kato currently has “patent applications pending on various formulations and methods of making these biodegradable beads.”¹⁵⁶ He states that after the beads are buried in soil, it will take approximately one to two years for the beads to disintegrate.¹⁵⁷ Unfortunately, a major obstacle to the implementation of these biodegradable beads is the high manufacturing cost.¹⁵⁸ According to Professor Kato, it will cost \$40,000 to produce the first batch of 3,000 bead necklaces, which comes out to

150. Wendland & Stone, *supra* note 34.

151. *Id.*

152. Beau Evans, ‘Gutter buddies’ To Keep Mardi Gras Beads Out of Storm Drains, NOLA.COM (Feb. 5, 2018), https://www.nola.com/news/politics/article_36c2c05c-013c-5036-9f9c-9355ff9f1d98.html [https://perma.cc/4MLS-CX4C]. A “French drain” is described as a “gravel-filled trench with a perforated pipe nestled in it” R. Stephanie Bruno, *Water Management Expert Has Tips for Sea-Level Gardeners*, NOLA.COM (Apr. 6, 2017), https://www.nola.com/entertainment_life/home_garden/article_4288c7de-2096-50f8-8777-2da1704c8c7a.html [https://perma.cc/QE8P-NUNS].

153. Heneghan, *supra* note 4.

154. Alison Satake, *Biodegradable Mardi Gras Beads Update*, LSU MEDIA CTR. (Jan. 28, 2019), https://www.lsu.edu/mediacenter/news/2019/01/28bio_kato_beads2019.php [https://perma.cc/3HY9-3M5S].

155. *Id.*

156. *Id.*

157. Sophie Hirsh, *Mardi Gras is Getting Greener as New Biodegradable Beads Emerge*, GREEN MATTERS, <https://www.greenmatters.com/p/mardi-gras-biodegradable-algae-based-beads> [https://perma.cc/E7GE-N4E5] (last visited Aug. 11, 2020).

158. Satake, *supra* note 154.

about \$13 per bead necklace.¹⁵⁹ In comparison, some of the more inexpensive Mardi Gras beads cost less than \$0.05 per necklace.¹⁶⁰

B. Plastic Bag and Straw Bans

A recent environmental trend has been the implementation of plastic bag and straw bans.¹⁶¹ Several countries and parts of the United States are working to reduce the negative effects of plastic through the imposition of such bans.¹⁶² France became the first nation to “embrace[] a sweeping ban on plastic,” banning “plastic plates, cups, and utensils, with exceptions for compostable, bio-sourced materials.”¹⁶³ In the United States, Florida and California have enacted statutes to “regulate the use and disposal of plastic.”¹⁶⁴ However, not every attempt to ban single-use plastic pollution has been as successful or widely accepted.¹⁶⁵

In 2018, the Supreme Court of Texas affirmed an appellate court decision “invalidating a plastic bag ban enacted by the city of Laredo, Texas.”¹⁶⁶ Further, state legislatures have begun enacting legislation precluding local plastic bans.¹⁶⁷ The National Conference of State Legislatures reports that ten states have enacted legislation that preempt such local laws.¹⁶⁸ Therefore, while a ban on Mardi Gras beads would reduce the plastic pollution created by this holiday, it would likely face serious backlash and obstruction by the community. Though plastic bags and plastic straws provide conveniences in grocery stores and restaurants, the connection to these tools is not as spirited and long-lasting as our community’s connection to Mardi Gras beads and the celebration and history they represent. This indicates the need for a solution that is effective in reducing plastic pollution and the imposition of toxic

159. *Id.*

160. *33 Inch Throw Beads*, EMARDIGRASBEADS.COM, <https://emardigrasbeads.com/beads-throw-beads-33-inch-throw-beads.aspx> [<https://perma.cc/SA2U-RJYY>] (last visited Aug. 11, 2020).

161. Hannah M. Diaz, *Plastic: Breaking Down the Unbreakable*, 19 FLA. COASTAL L. REV. 85, 96 (2018).

162. *Id.* (Countries such as China, India, Australia, Chile, Mexico, Canada and some European and East African countries have implemented such bans.).

163. *Id.*

164. *Id.*

165. *City of Laredo v. Laredo Merchants Ass’n*, 550 S.W.3d 586 (Tex. 2018); Sarah J. Morath, *Our Plastic Problem*, NAT. RESOURCES & ENV’T, Spring 2019, at 45.

166. *City of Laredo*, 550 S.W.3d at 590.

167. Morath, *supra* note 165, at 47.

168. *Id.*

chemicals into our communities, while preserving the identity of this unique and revered holiday.

It is important to note that the New Orleans City Council has recently implemented its own plastic bag ban that prevents krewes from throwing fully wrapped bags of beads.¹⁶⁹ This rule became effective for the last two weeks of the 2020 Carnival season.¹⁷⁰ Now, krewe members are required to unwrap the beads and dispose of the plastic wrapping, prior to throwing the beads during the parade.¹⁷¹ This rule works to alleviate the dangers of throwing a mass of beads into the air, assists the sanitation efforts, and reduces the burden on the storm drain system.¹⁷² Despite this rule, there will still be millions of pounds of toxic beads thrown in the streets that wind up in landfills or nearby waterways. Therefore, though it is a step in the right direction, the City should take more serious efforts to effectively reduce the massive amounts of toxic beads that are thrown.

C. Proposed Solutions

1. Solution to Control the Quantity and Quality of Plastic Beads

The City of New Orleans should adopt an ordinance imposing a limit on the number of plastic beads allowed to be thrown by each parade. It should organize a council to purchase the plastic beads and then distribute a limited number to each krewe to throw in their parades. Rather than allowing every individual krewe member to purchase his or her own beads at his or her own discretion, concentrating the buying to a distinct council will allow regulation of both the quantity and quality of the beads being thrown. Alternatively, because having masses of beads and exciting throws is an important part of each parade, krewes wishing to throw more than the restricted amount can be given the option to purchase non-plastic throws, such as the aforementioned biodegradable or paper Mardi Gras beads.

169. Jessica Williams, *Mardi Gras Changes: New Rules Affect Plastic Bags, RVs on Route, Number of Dancing Groups*, NOLA.com (Jan. 30, 2020), https://www.nola.com/news/politics/article_f35a4a5c-4377-11ea-8c07-e3cc3564076e.html [<https://perma.cc/F2KG-5C5X>].

170. *Id.*

171. *Id.*

172. Jessica Williams, *New Rules Likely Coming for Mardi Gras: No Throwing Bags of Beads, No RVs Near Parades, Others*, NOLA.com (Dec. 3, 2019), https://www.nola.com/news/politics/article_fb4856bc-1606-11ea-9f18-ab9022f358ae.html [<https://perma.cc/Y4DJ-6Q7P>].

a. The Clean Water Act and Overall Plastic Pollution

Louisiana's 2018 Water Quality Inventory Report submitted to the EPA reflects that the state's local water bodies are impaired due to lead, municipal point source discharges, and from municipalities generally.¹⁷³ Reducing the quantity of plastic beads thrown will directly reduce the number of beads that wind up in nearby waterways via the storm drains, a type of municipal point source discharge.¹⁷⁴ Additionally, impairment to the water bodies due to the concentrations of lead will also decrease due to the fewer toxic beads that infiltrate those water bodies. This solution complies with the CWA and works to improve the health of the local water bodies. On a larger scale, reducing the quantity of plastic beads that infiltrate the environment is a step towards reducing the overall plastic pollution crisis occurring today. This will alleviate the burden imposed on the environment and marine organisms that fall prey to these shiny, toxic beads.¹⁷⁵

As the quantity of plastic beads is reduced and krewe search for other, more sustainable throws, the cultural mindset will be forced to shift to one of sustainability rather than one of excess and waste. Fortunately, this shift has already begun.¹⁷⁶ In 2018, the New Orleans community organized a petition to the Mayor and King of Carnival to ban Mardi Gras beads "completely unless and until biodegradable, water soluble, non-toxic beads are developed and available."¹⁷⁷ As of August 2020, more than 129,000 people had signed this petition, just shy of the 130,000 goal.¹⁷⁸ This petition indicates a willingness by the community to develop a more sustainable Mardi Gras.¹⁷⁹ Though Mardi Gras beads are a part of this historic holiday, this petition makes it clear that the community is willing to forego the use of plastic beads in order to develop a more sustainable holiday and ensure its preservation.¹⁸⁰ Thus, it could very well be possible to completely eradicate the use of plastic Mardi Gras beads in the future, and the formulation of a council as suggested previously by this Comment could help increase the restrictions to eventually complete this eradication.

173. LA. DEP'T OF ENVTL. QUALITY, *supra* note 101, at 1.

174. 33 U.S.C. § 1362(14) (2018).

175. Hardy, *supra* note 53.

176. Aaron V. & Gionne C., *Ban Plastic Beads at Mardi Gras!*, CARE2 PETITIONS, <https://www.thepetitionsite.com/926/871/960/new-orleans-ban-beads-mardi-gras/> [<https://perma.cc/N7TH-EVXG>] (last visited Aug. 11, 2020).

177. *Id.*

178. *Id.*

179. *Id.*

180. *Id.*

b. The Toxic Substances Control Act, the Consumer Product Safety Improvement Act, and the Issue of Toxicity

As the EPA implements stronger controls in response to the Lautenberg Act, some of the chemicals found to be in the plastic Mardi Gras beads may become banned or subject to heightened scrutiny and regulation.¹⁸¹ By concentrating and restricting the purchase of plastic beads to a specific council, the City can better monitor and regulate the infiltration of these chemicals known to be in the plastic beads and work to be compliant with the TSCA and CPSIA. This will provide better safeguards to both the environment and community's interaction with these toxic beads.

New technologies, such as handheld screening devices, are trusted by the CPSC, the European Union's Product Safety Enforcement Forum, and other regulatory agencies to screen consumer products for lead and other regulated elements.¹⁸² The suggested council can implement the use of these screening devices to identify the concentrations of toxic chemicals in the beads and conform with the requirements of the CPSIA, and eventually of the TSCA. With greater scrutiny on the chemical components of the plastic beads, the suggested council could refuse to purchase beads that exceed certain requirements, such as the maximum levels of lead imposed for children's products.¹⁸³ By curtailing the demand for beads that do not conform to these regulations, suppliers and manufacturers will be forced to provide beads that comply, in order to remain competitive in the market.

As mentioned, one major obstacle to the implementation of the biodegradable beads developed by Professor Nato is the current high manufacturing cost.¹⁸⁴ However, Professor Nato notes that the cost will significantly decrease by the manufacturing of the second batch, costing only \$1 each.¹⁸⁵ Imposing a limit on the number of plastic beads will likely be an impetus for krewes to search elsewhere for other throws, such as these biodegradable beads. As more krewes purchase these beads, the

181. *Chemical Substances Undergoing Prioritization: High-Priority*, *supra* note 115.

182. *Consumer Goods Testing with XRF*, THERMO FISHER SCI., <https://www.thermofisher.com/us/en/home/industrial/spectroscopy-elemental-isotope-analysis/portable-analysis-material-id/portable-consumer-safety-regulatory-solutions/consumer-goods-testing-xrf.html> [<https://perma.cc/URR9-H68G>] (last visited Aug. 11, 2020).

183. *Children's Products*, *supra* note 134.

184. Satake, *supra* note 154.

185. Hirsh, *supra* note 157.

more this operation can become scalable, and the price will decrease.¹⁸⁶ Notably, Krewe of Freret, in New Orleans, plans to throw these beads at its Mardi Gras parade in 2021.¹⁸⁷

By reducing the quantity and monitoring the quality of the beads, this solution mirrors the plastic bag and plastic straw bans, in order to maintain the long-standing tradition of parade throws. Further, this solution alleviates the negative environmental impact caused by plastic pollution and these specific toxic substances. As many other cities in Louisiana, and across the United States, celebrate Mardi Gras and other festivities incorporating parades, implementing a city council to impose and enforce such restrictions is a solution that can easily be replicated.¹⁸⁸

2. *Solution for Sustainable Sanitation Efforts*

In 2014, the City of New Orleans allocated \$1.5 million to “Mardi Gras Cleaning” efforts. Despite uncovering over 93,000 pounds of beads from the City’s storm drains in 2018, the City continued to allocate this same amount of money to Mardi Gras cleaning efforts in 2019.¹⁸⁹ While the City has begun implementing “gutter buddies” to obstruct beads from entering the storm drains, these are described as “rudimentary.”¹⁹⁰ Due to the substantial revenue generated by this holiday, the City should take more serious and meaningful steps towards effecting a more sustainable Mardi Gras.¹⁹¹ Officials should develop concrete goals for effective sanitation efforts, such as implementing gutter barriers at every storm drain, requiring more routine storm drain cleaning, and providing more continuous cleaning during the week to avoid build-up. Lastly, the City should seriously consider the expenses necessary to ensure effective clean-up, rather than allocating the same budget year after year.

186. *Id.*

187. Missy Wilkinson, *Carnival is Getting Greener, as Recycling Expands and Handmade Throws Gain Steam*, NOLA.com (Feb. 5, 2020), https://www.nola.com/entertainment_life/home_garden/article_9babf178-477a-11ea-ac39-679670b7f616.html [<https://perma.cc/6GSY-SLD6>].

188. Renzulli, *supra* note 14.

189. Heneghan, *supra* note 4; 2019 NEW ORLEANS BUDGET, *supra* note 36, at 308.

190. Wendland & Stone, *supra* note 34.

191. *Study: Mardi Gras Economic Impact Hits \$465 Million*, *supra* note 20.

CONCLUSION

At present, it is estimated that a whopping 25 million pounds of plastic beads are thrown during New Orleans' Mardi Gras each year. Many of these are left in streets, hang in trees, or wind up in landfills.¹⁹² Additionally, thousands of beads fall into nearby storm drains, clogging the storm system and infiltrating the nearby waters and marine environments.¹⁹³ Individuals, children, and the environment are exposed to the toxic chemicals hidden in the Mardi Gras beads, and these chemicals create both health and environmental concerns.

Mardi Gras has both economic benefits and historical significance, and it deserves a future that is sustainable. Mardi Gras produces substantial revenue for the city of New Orleans and the state of Louisiana as a whole, as people travel from all over to participate in the Fat Tuesday celebrations. The economic and historical benefits unique to the Mardi Gras holiday necessitate a solution that addresses both the toxic chemicals and their burden on the environment, while acknowledging the uniqueness of the event.

By concentrating the purchase of beads to a specific council, the City can more effectively control both the quantity and quality of the beads thrown each year. Additionally, the City should impose more serious sanitation efforts to reduce the volume of parade garbage. These solutions work to comply with the Clean Water Act, the Toxic Substances Control Act, and the Consumer Product Safety Improvement Act, and are serious steps towards a more environmentally-friendly and sustainable holiday, so that one day the City will throw something *else*, mister.

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192. Gearhart & Peña, *supra* note 10, at 3.

193. *46 Tons of Beads Found in New Orleans' Storm Drains*, *supra* note 8.

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