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Shifting the Burden of Plastic Bags: A Proposal for a Federal Extended Producer Responsibility Law

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INTRODUCTION

The Mariana Trench is the deepest part of the ocean and the most remote part of the earth, measuring almost seven miles deep.¹ One may assume that the deepest location on earth contains pristine waters and no sign of human life, but they would be mistaken. A plastic bag managed to find its way into this supposedly unspoiled part of the world.² Plastic also travels into the digestive systems of humans through the seafood they consume, such as fish, oysters, crabs, and mussels.³ A recent study has shown that humans could be ingesting approximately five grams of plastic each week, which is equivalent to the amount of plastic that makes up a credit card.⁴ Plastic has become an inescapable component of human life with lasting and extraordinarily harmful impacts.

Whether carrying groceries or lining small trash bins, Americans use plastic bags every day.⁵ The majority of single-use plastic bags are used for about twelve minutes before disposal.⁶ The effects of this brief, twelve-minute use are significant, harmful, and long-lasting.⁷ Many countries, United States cities, and even some states have dealt with plastic bag

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1. Bill Chappell, *Descending Into the Mariana Trench: James Cameron's Odyssey*, NPR: THE TWO-WAY (May 23, 2013, 5:41 PM), <https://www.npr.org/sections/thetwo-way/2013/05/23/186302916/Mariana-Trench> [<https://perma.cc/89S7-252M>].

2. Sanae Chiba et al., *Human Footprint in the Abyss: 30 Year Records of Deep-Sea Plastic Debris*, 96 MARINE POL'Y 204 (2018).

3. Shivika Sharma & Subhankar Chatterjee, *Microplastic Pollution, A Threat to Marine Ecosystem and Human Health: A Short Review*, 24 ENVTL. SCI. & POLLUTION RES. 21,530, 21,541 (2017).

4. WIJNAND DE WIT & NATHAN BIGAUD, NO PLASTIC IN NATURE: ASSESSING PLASTIC INGESTION FROM NATURE TO PEOPLE 7 (2019).

5. *Plastic Bags*, 5 GYRES INST., <https://www.5gyres.org/plastic-bags> [<https://perma.cc/KZ4W-6LRK>] (last visited Feb. 1, 2021).

6. *Id.*

7. *Id.*; *Plastic in Our Oceans Is Killing Marine Mammals*, WWF (Oct. 11, 2018), <https://www.wwf.org.au/news/blogs/plastic-in-our-oceans-is-killing-marine-mammals#gs.8s8ast> [<https://perma.cc/Z5W5-BHJ9>]; Lara Korte, *Plastic Bags Are Killing Horses and Cows Across the State. What's Texas To Do?*, TEX. TRIB. (Aug. 14, 2019), <https://www.texastribune.org/2019/08/14/texas-wont-approve-bans-plastic-bags-which-can-be-fatal-livestock/> [<https://perma.cc/CY89-2D93>].

concerns through enacting bans or fees.⁸ Although these bans and fees have reduced the number of plastic bags entering the waste stream and landscape, plastic bags are still used in massive quantities while the recycling rates for the bags remain dismal.⁹ Further, an increasing number of states have started preempting local governments from instituting ordinances that regulate plastic bag use, inhibiting local progress toward creating a healthier environment.¹⁰ State preemption leaves the nation with a piecemeal approach to regulating plastic bag use rather than the comprehensive approach that is needed to significantly reduce plastic bag pollution.

Instead of placing the burden of reducing plastic bag consumption on government entities and consumers, manufacturers of these bags should be held accountable. Since fees and bans have not effected the change that is needed to mitigate the harmful environmental and economic impacts of plastic bag use in America, the federal government should enact an extended producer responsibility law specifically aimed at plastic bag manufacturers.¹¹ Extended producer responsibility (EPR) laws extend manufacturers' responsibility for their products to the post-consumer phase, largely through requiring manufacturers to take back products that

8. *State Plastic and Paper Bag Legislation*, NAT'L CONF. OF ST. LEGISLATURES (Sept. 29, 2020), <http://www.ncsl.org/research/environment-and-natural-resources/plastic-bag-legislation.aspx> [<https://perma.cc/V9MF-7BNV>].

9. METRO. WASH. COUNCIL OF GOV'TS., *PLASTIC BAG REPORT 2012 UPDATE*, at 11 (2012), <https://www.mwcog.org/asset.aspx?id=pub-documents/p15dWl820121105113857.pdf> [<https://perma.cc/9Y5L-575V>] (even with Washington, D.C.'s successful plastic bag fee, in January 2010, the month that the new fee went into effect, D.C. still used 3 million bags); MOORE RECYCLING ASSOCS., INC., *2015 NATIONAL POST-CONSUMER PLASTIC BAG & FILM RECYCLING REPORT 2*, 11 (2017), <https://www.plasticpackagingfacts.org/wp-content/uploads/2017/06/2015-National-Post-Consumer-Plastic-Bag-and-Film-Recycling-Report.pdf> [<https://perma.cc/NV9Q-XYPW>] (according to a study funded by the American Chemistry Council, 1.2 billion pounds of post-consumer film—which includes plastic bags and wrap—was recovered for recycling in 2015, meaning that roughly 1.2% of plastic bags were recycled in 2015); Travis P. Wagner, *Reducing Single-Use Plastic Shopping Bags in the USA*, 70 *WASTE MGMT.* 3 (2017) (Americans use about 100 billion plastic bags each year).

10. *State Plastic and Paper Bag Legislation*, *supra* note 8.

11. METRO. WASH. COUNCIL OF GOV'TS., *supra* note 9, at 11 (For example, even with an 86% reduction in the number of plastic bags used resulting from Washington, D.C.'s plastic bag fee, the city still used about 3 million plastic bags in one month's time. The 86% decrease was calculated by comparing the 3 million bags used in January 2010, when the new fee was in effect, compared to the 22.5 million bags used per month before the fee went into effect.)

would otherwise enter the waste stream.¹² Numerous states have EPR laws for manufacturers of products that pose environmental risks, such as electronics and thermostats made with mercury.¹³ Evaluating successful state EPR laws can facilitate the development of an impactful federal EPR law. But generally, a federal plastic bag EPR law must require manufacturers to collect and recycle the plastic bags they produced, reducing the likelihood that plastic bags will become waste in landfills and harmful litter in the environment.

Part I of this Comment will address the environmental harms, as well as the economic and health impacts, associated with plastic bag usage. Part II will discuss plastic bag regulations at the national, state, and local levels, as well as the successes and failures resulting from these regulations. This Part will also discuss the rise of state preemption laws within the U.S., particularly those that prohibit localities from enacting any type of plastic bag policy. Part III will suggest that the plastic bag problem in America should not be one for local or state governments to solve, but rather the federal government should hold manufacturers of the plastic bags accountable and charge the manufacturers with finding the right solutions to the numerous and widespread issues associated with single-use plastic bags.

I. BACKGROUND

A. Marine Impacts

About 100,000 marine mammals die from ingestion of or entanglement in plastic debris each year.¹⁴ In March 2019, a young whale washed ashore in the Philippines.¹⁵ Scientists found 88 pounds of plastic bags in its stomach and determined the whale died from starvation and dehydration caused by the plastic bag ingestion.¹⁶ Just one month later, another whale was found washed up on an Italian shore after ingesting 48

12. Leila Monroe, *Tailoring Product Stewardship and Extended Producer Responsibility to Prevent Marine Plastic Pollution*, 27 TUL. ENVTL. L.J. 219, 224 (2014).

13. Jennifer Nash & Christopher Bosso, *Extended Producer Responsibility in the United States: Full Speed Ahead?*, 17 J. INDUS. ECOLOGY 175, 179–80 (2013).

14. *Plastic in Our Oceans Is Killing Marine Mammals*, *supra* note 7.

15. Daniel Victor, *Dead Whale Found With 88 Pounds of Plastic Inside Body in the Philippines*, N.Y. TIMES (Mar. 18, 2019), <https://www.nytimes.com/2019/03/18/world/asia/whale-plastics-philippines.html> [<https://perma.cc/ZL2G-GV35>].

16. *Id.*

pounds of debris, including plastic bags.¹⁷ In addition to whales being victims of plastic bag litter, sea turtles mistake plastic bags for jellyfish or algae which are both major components of their diet, a mistake that often results in death.¹⁸ A study conducted by scientists at The Commonwealth Scientific and Industrial Research Organization, Australia's national science research agency, researched sea turtles off the coast of Brazil and found that 100% of the sea turtles had ingested plastic.¹⁹ The study concluded that once a sea turtle ingests 14 pieces of plastic, it has a 50% higher chance of mortality resulting from the plastic ingestion.²⁰ Because almost all species of sea turtles are classified as endangered, plastic bags pose a significant risk to sea turtle populations, whose numbers will continue to dwindle if plastic bag usage does not change.²¹

Coral reefs are another marine organism that will continue to extensively suffer from plastic debris in the oceans if plastic bags continue to enter into the environment.²² A coral reef is 89% more likely to suffer from disease if it comes in contact with plastic, compared to a 4% chance of disease if it does not.²³ Since coral reefs provide a habitat for many fish and reef-associated organisms, the marine animals that rely on coral reefs will also suffer from plastic pollution that comes into contact with the coral.²⁴

Confusion may exist regarding the presence of plastic bags in our oceans. Many people swim and boat in the ocean each year and may never see any plastic bags floating in the water. Although the plastic seems to be out of sight, it has likely already transformed into microplastics in the

17. Iliana Magra, *Whale is Found Dead in Italy with 48 Pounds of Plastic in Its Stomach*, N.Y. TIMES (Apr. 2, 2019), <https://www.nytimes.com/2019/04/02/world/europe/plastic-whale-dead-italy.html> [<https://perma.cc/GMD3-Z9X7>].

18. *What Do Sea Turtles Eat? Unfortunately, Plastic Bags*, WORLD WILDLIFE FUND, <https://www.worldwildlife.org/stories/what-do-sea-turtles-eat-unfortunately-plastic-bags> [<https://perma.cc/9R9P-Y82J>] (last visited Feb. 1, 2021).

19. Chris Wilcox et al., *A Quantitative Analysis Linking Sea Turtle Mortality and Plastic Debris Ingestion*, 8 SCI. REP. 12536, at 1, <https://www.nature.com/articles/s41598-018-30038-z.pdf> [<https://perma.cc/ZA7N-W89A>].

20. *Id.*

21. *Sea Turtle: Threats*, WORLD WILDLIFE FUND, <https://www.worldwildlife.org/species/sea-turtle> [<https://perma.cc/X3PP-WMZ6>] (last visited Feb. 1, 2021).

22. Joleah Lamb et al., *Plastic Waste Associated with Disease on Coral Reefs*, 359 SCIENCE 460, 460 (2018).

23. *Id.*

24. *Id.* at 462.

oceans or soil.²⁵ There are two types of microplastics: primary and secondary.²⁶ Primary microplastics begin as tiny plastic pieces that are manufactured primarily for use in soaps and cosmetics.²⁷ Secondary microplastics are formed when large plastics, such as single-use plastic bags, enter into oceans and break down into tiny fragments.²⁸

Exposure to sunlight, wave action, and turbulence in the ocean causes the breakdown of the plastic bags into secondary microplastics that affect every level of the food chain.²⁹ The microplastics are then ingested by marine invertebrates, fish, seabirds, and mammals, including humans.³⁰ Microplastics are ingested by oysters, mussels, crabs, and fish; therefore, when people eat seafood, they inadvertently eat the microplastics their seafood once consumed.³¹ A study by the University of Birmingham and Imperial College in the United Kingdom found that although microplastics have not been found to penetrate deeply into the organs of mammals, they can cause local inflammatory responses, a biological response of the immune system that can be caused by toxic compounds or pathogens or, as seen here, by microplastics.³² The study concluded that plastic pollution in the food chain will likely not cause serious side effects in humans until high levels of contaminants are found.³³ Therefore, the U.S. must change its significant plastic bag usage now in order to prevent harmful health effects in the future.

25. Chung-Sum Lam et al., *A Comprehensive Analysis of Plastics and Microplastic Legislation Worldwide*, 229 WATER AIR SOIL POLLUTION 345, 349–50 (2018).

26. *Id.* at 350.

27. *Id.*

28. *Id.*

29. Matthew Cole et al., *Microplastics as Contaminants in the Marine Environment: A Review*, 62 MARINE POLLUTION BULL. 2588, 2589–90 (2011); Christopher M. Free et al., *High-Levels of Marine Plastic Pollution in a Large, Remote Mountain Lake*, 85 MARINE POLLUTION BULL. 156 (2014).

30. Free et al., *supra* note 29, at 156.

31. Sharma & Chatterjee, *supra* note 3, at 21,541.

32. R.H. Waring, R.M. Harris & S.C. Mitchell, *Plastic Contamination of the Food Chain: A Threat to Human Health?*, 115 MATURITAS 64, 66 (2018); Linlin Chen et al., *Inflammatory Responses and Inflammation-Associated Diseases in Organs*, 40 ONCOTARGET 7204 (2017).

33. Waring, Harris & Mitchell, *supra* note 32, at 66.

B. Terrestrial Impacts

In addition to harming marine organisms and ascending the food chain to humans, plastic bags also impact large terrestrial animals.³⁴ For example, cows and horses die from ingesting plastic bags that blow into the fields where they graze and roam.³⁵ One rancher in Texas witnessed a young horse playing with a plastic bag; despite immediately racing to its aid, she could not reach the horse fast enough before the colt suffocated to death.³⁶ Another Texas rancher states he is constantly pulling plastic bags off his barbed wire fencing, adding that he has lost cattle to plastic bags, often not noticing that the livestock swallowed the plastic bags until it was too late.³⁷ Not only are plastic bags permeating our landscape and invading our oceans with plastic, they also have economic impacts.

C. Local Economic Impacts

In addition to destroying the environment, single-use plastic bags present financial burdens for localities. Because localities are generally responsible for waste management, they must deal with large quantities of plastic bags entering their environments and waste management facilities.³⁸ Many people with good intentions place plastic bags in recycling bins, but most recycling facilities cannot handle plastic bag waste.³⁹ Local waste management efforts are frustrated by plastic bags becoming entangled in and often breaking the recycling machinery.⁴⁰

34. Korte, *supra* note 7.

35. *Id.*

36. *Id.*

37. *Id.*

38. Deb Starkey & Kelly Hill, *A Legislator's Guide to Solid Waste Management*, NAT'L CONF. ST. LEGISLATURES (1996), <https://www.nrel.gov/docs/legosti/old/21698.pdf> [<https://perma.cc/B27L-GJNZ>]; EQUINOX CTR., PLASTIC BAG BANS: ANALYSIS OF ENVIRONMENTAL AND ECONOMIC IMPACTS 5 (2013) (about 100 billion single use plastic bags are used in the U.S. each year; with a recycling rate of five percent or less, the majority of these plastic bags end up in local waste facilities).

39. See Elisabeth Rosenthal, *Is It Time to Bag the Plastic?*, N.Y. TIMES (May 18, 2013), <https://www.nytimes.com/2013/05/19/sunday-review/should-america-bag-the-plastic-bag.html> [<https://perma.cc/KGD5-BRZA>]; *Bring Your Own Bag Ordinance*, CITY OF SAN JOSE, <https://www.sanjoseca.gov/your-government/environment/recycling-garbage/waste-prevention/bring-your-own-bag-ordinance> [<https://perma.cc/TUH6-NAVZ>] (last visited Feb. 1, 2021).

40. Rosenthal, *supra* note 39; *Bring Your Own Bag Ordinance*, *supra* note 39.

When this occurs, localities must spend money to either replace or repair the broken machinery.⁴¹

In addition to impeding recycling efforts, cities also spend significant amounts of money on general management efforts concerning plastic bags. For example, New York City pays 10 million dollars each year to send 100,000 tons of plastic bags to landfills in Ohio, Pennsylvania, and South Carolina.⁴² Los Angeles County spends over 375 million dollars per year for the litter prevention, disposal, and clean-up of plastic bags.⁴³ In San Jose, California, plastic bags cause about one million dollars in damages per year resulting from plastic bags interfering with the recycling machinery.⁴⁴ Unregulated plastic bag use is causing serious and widespread effects, from humans to animals to local economies. Evaluating the impacts of current plastic bag regulations can lead to solving America's plastic bag problem.

II. CURRENT APPROACHES TO PLASTIC BAG WASTE

To prevent the further destruction of the environment, many government entities have imposed regulations on single-use plastic bags.⁴⁵ These regulations focus on the consumer phase of a plastic bag's life cycle, imposing fees on individuals who choose to use plastic bags, taxing retailers who distribute plastic, or completely banning plastic bags and making them unavailable to consumers.⁴⁶ Replicating these successful approaches at a nationwide level in the U.S. is not likely to produce the results needed to win the war on plastic bags in America. A critical analysis of several plastic bag policies at a nationwide, statewide, and local level will demonstrate varying approaches, the successful results of each, and reasons why replicating these approaches will not provide an impactful reduction of plastic bag litter in the U.S. An examination of political and economic factors that play a role in instituting plastic bag policies will further demonstrate why a consumer-based approach is unlikely to accomplish the results needed to effectively reduce plastic bag pollution in the U.S.

41. EQUINOX CTR., *supra* note 38, at 22.

42. Rosenthal, *supra* note 39.

43. METRO. WASH. COUNCIL OF GOV'TS., *supra* note 9, at 9.

44. *Bring Your Own Bag Ordinance*, *supra* note 39 (the City has since enacted a plastic bag ordinance in response to the issues associated with plastic bag use).

45. *State Plastic and Paper Bag Legislation*, *supra* note 8.

46. *Id.*

*A. Successful Approaches to Reducing Plastic Bag Pollution**1. Tax*

Ireland's natural landscape consists mostly of small fields enclosed by shrubs and hedges, the ultimate collection site for lightweight plastic bags that are picked up by the country's frequent winds.⁴⁷ In 2002, plastic bag litter was visible and widespread throughout the countryside as well as the Irish Coastline.⁴⁸ This prompted the government to institute a tax on single-use plastic bags in order to discourage the use of these bags that were destroying the natural beauty of the country.⁴⁹ The retailers are taxed 15 euro cents⁵⁰ per plastic bag purchased, and this cost is then passed on to consumers who choose to use a plastic bag at checkout.⁵¹ The money earned from the bag tax is used to support administration of the tax and to support the national environmental fund.⁵² The tax has caused a 94% reduction in the number of plastic bags used by consumers in Ireland.⁵³ Before the tax was implemented, plastic bag litter accounted for 5% of the national litter composition, but by 2015, plastic bags constituted just 0.13% of the national litter.⁵⁴

Ireland's plastic bag tax has been regarded as one of the most successful plastic bag regulations in the world.⁵⁵ A study published in

47. Frank Convery, Simon McDonnell & Susana Ferreira, *The Most Popular Tax in Europe? Lessons from the Irish Plastic Bags Levy*, 38 ENVTL. & RESOURCE ECON. 1, 3 (2007).

48. *Id.*

49. *Id.*

50. The equivalent to 18 cents in United States dollars. *Currency Converter*, MSN MONEY, <https://www.msn.com/en-us/money/tools/currencyconverter> [<https://perma.cc/W7L4-92A9>] (last visited Feb. 1, 2021); Joe Curtin, *Ireland Can Lead Charge in War Against Plastic*, IRISH TIMES (Jan. 31, 2018), <https://www.irishtimes.com/opinion/ireland-can-lead-charge-in-war-against-plastic-1.3374066> [<https://perma.cc/PK33-NCJ8>] (the fee was raised to 22 euro cents in 2007).

51. Samantha Weinstein, "Main Ingredient in Marine Soup": *Eliminating Plastic Bag Pollution through Consumer Disincentive*, 40 CAL. W. INT'L L.J. 291, 310 (2010).

52. Convery, McDonnell & Ferreira, *supra* note 47, at 4.

53. *Id.* at 7.

54. MAURO ANASTASIO & JAMES NIX, GREEN BUDGET EUROPE, PLASTIC BAG LEVY IN IRELAND 1 (2016), <https://ieep.eu/uploads/articles/attachments/0817a609-f2ed-4db0-8ae0-05f1d75fbaa4/IE%20Plastic%20Bag%20Levy%20final.pdf?v=63680923242> [<https://perma.cc/Y7X6-PG9T>].

55. Convery, McDonnell & Ferreira, *supra* note 47, at 6.

Environmental and Resource Economics, a peer-reviewed journal, cites Ireland's public awareness campaigns as an essential component for the success of its plastic bag tax.⁵⁶ These public campaigns in Ireland created strong public acceptance of the plastic bag tax by highlighting the environmental impacts of plastic bag usage.⁵⁷ Because consumers are informed of the dangers and consequences associated with plastic bag use, people are more likely to pause and contemplate whether paying for a plastic bag is worth the environmental impacts and unsightly litter that once permeated the country's landscape.⁵⁸ Thus, simply informing the public of the environmental costs of using a plastic bag at the store can have a meaningful impact on acceptance of a plastic bag reduction scheme. Ireland's approach to reducing plastic bag pollution remains overwhelmingly successful and exemplifies the goals of a federal plastic bag policy in the U.S.

2. Plastic Bag Ban

In 2014, California became the first state in the U.S. to institute a ban on the distribution of carryout bags.⁵⁹ The law, Proposition 67, was enacted by the State Senate in 2014, put on the ballot in a veto referendum in 2016,⁶⁰ and was subsequently approved by the citizens.⁶¹ Proposition 67 prohibits stores from distributing single-use carryout bags.⁶² The law provides specific details on what kind of establishment qualifies as a store,

56. *Id.* at 3.

57. *Id.* at 10.

58. *Id.* at 3.

59. *State Plastic and Paper Bag Legislation*, *supra* note 8.

60. *California Proposition 67, Plastic Bag Ban Veto Referendum (2016)*, BALLOTPEDIA, [https://ballotpedia.org/California_Proposition_67,_Plastic_Bag_Ban_Veto_Referendum_\(2016\)](https://ballotpedia.org/California_Proposition_67,_Plastic_Bag_Ban_Veto_Referendum_(2016)) [<https://perma.cc/3TEP-MVNS>] (last visited Feb. 1, 2021); *Veto Referendum*, BALLOTPEDIA, https://ballotpedia.org/Veto_referendum [<https://perma.cc/Y2QV-TAUA>] (last visited Feb. 1, 2021) (“A veto referendum is a type of citizen-initiated ballot measure that asks voters whether to uphold or repeal a law passed by the state legislature, a city council, a county board of supervisors, or some other legislative body.”)

61. CAL. SEC'Y OF STATE, STATEMENT OF VOTE 12 (Nov. 8, 2016), <https://elections.cdn.sos.ca.gov/sov/2016-general/sov/2016-complete-sov.pdf> [<https://perma.cc/7M2U-XDRV>].

62. *Ban on Single-Use Carryout Bags (SB 270/Proposition 67) Frequently Asked Questions*, CALRECYCLE, <https://www.calrecycle.ca.gov/plastics/carryoutbags/faq> [<https://perma.cc/FJP7-UKE3>] (last updated Oct. 10, 2018) [hereinafter *SB 270 FAQ*].

but generally, it defines “store” as a large retail store that sells groceries, has a pharmacy, or both.⁶³

Unlike most bag fees and bans, California’s carryout bag ban includes paper bags.⁶⁴ Specifically, California’s law prohibits stores from giving out any single-use bag made of plastic, paper, or other material.⁶⁵ A store may provide a paper bag for a fee, as long as the bag is made out of recycled paper or is certified as a reusable bag.⁶⁶ According to a survey conducted six months after the carryout bag ban went into effect, 86% of consumers brought their own bags to the store, resulting in an “85% reduction in the number of plastic bags and a 61% reduction in the number of paper bags provided to customers.”⁶⁷

3. Plastic Bag Fee

Washington, D.C., saw a serious and preventable environmental problem, took the initiative to address it, and successfully reduced the amount of plastic bag litter in its waterways.⁶⁸ In 2010, Washington, D.C., enacted a five-cent fee to be paid by consumers for each single-use plastic bag distributed at a retail location.⁶⁹ A study funded by the District Department of the Environment and conducted by the Anacostia Watershed Society found that 47% of trash items in Washington, D.C.’s waterways were plastic bags.⁷⁰ Before the plastic bag law became effective, estimated monthly bag usage in Washington, D.C., was 22 million bags.⁷¹ After implementation, the monthly bag usage was three

63. *Id.*

64. *Id.*

65. *Id.*

66. *Id.*

67. CALRECYCLE, SB 270 REPORT TO THE LEGISLATURE: IMPLEMENTATION UPDATE AND POLICY CONSIDERATIONS FOR MANAGEMENT OF RECYCLABLE GROCERY BAGS IN CALIFORNIA 15 (2019) (The survey was conducted by CalRecycle, California’s Department of Resources Recycling and Recovery. CalRecycle was not able to determine how much of a reduction was specifically attributable to SB 270 (the statewide carryout bag ban) versus local ordinances, because stores that were already subject to a local carryout bag ordinance were not subject to SB 270. Nonetheless, the data still shows a significant reduction in carryout bag use in the state.).

68. See *Anacostia River Trash Reduction Plan*, D.C. DEP’T OF ENERGY & ENV’T, <https://doee.dc.gov/service/anacostia-river-trash-reduction-plan> [<https://perma.cc/75PS-ESZZ>] (last visited Feb. 1, 2021).

69. METRO. WASH. COUNCIL OF GOV’TS., *supra* note 9, at 10.

70. *Anacostia River Trash Reduction Plan*, *supra* note 68.

71. METRO. WASH. COUNCIL OF GOV’TS., *supra* note 9, at 11.

million, an 86% reduction.⁷² According to 78% of businesses in Washington, D.C., the fee had a neutral or positive impact on their business.⁷³ Overall, businesses reported customers adjusted to the fee and there were very few reports of customers complaining of the five-cent fee.⁷⁴ Furthermore, an organization that monitors trash in the Washington, D.C., waterways reported a 72% reduction in the number of bags found during clean-up events.⁷⁵ Washington, D.C., implemented a small fee for plastic bags and saw a substantial reduction in plastic bags used in the District, leading to a meaningful mitigation of plastic bag pollution in nearby waterways.

The successful outcomes associated with taxes, bans, and fees on plastic bags are likely constrained to the distinct area where the regulation was enacted. Extrapolating these results to a nationwide tax, ban, or fee that effectively reduces plastic bag pollution in the U.S. is improbable.

B. Issues Associated with Replicating Prior Successes on a National Level in the United States

Although Ireland, California, and Washington, D.C., had success with their respective plastic bag policies, modeling a nationwide plastic bag policy based on a tax, ban, or fee is not likely to produce substantial and effective results in the U.S. A prudent analysis regarding the results of these consumer-based plastic bag policies reveals factors that will inhibit complete success in alleviating the issue of plastic bag pollution such as lobbying, leakage, and state preemption of local plastic bag laws.⁷⁶

72. *Id.*

73. *Id.* at 12.

74. *Id.*

75. ALICE FERGUSON FOUND., BAG FEES AT WORK: AN ANALYSIS OF REDUCTION IN PLASTIC BAGS FROM POTOMAC RIVER WATERSHED CLEANUPS 2007–2014, at 1 (2015), http://fergusonfoundation.org/wp-content/uploads/2015/05/DC_Plastic-Bag-reduction_OnePager_5-11-15-Final.pdf [<https://perma.cc/8XVS-XDMF>].

76. Rebecca Taylor, *Bag Leakage: The Effect of Disposable Carryout Bag Regulations on Unregulated Bags*, 93 J. ENV'T ECON. & MGMT. 254, 254 (2019) (leakage can occur when partial regulation of one product results in increased consumption of similar products in an unregulated part of the economy); Bridget M. Warner, *Sacking the Culture of Convenience: Regulating Plastic Shopping Bags to Prevent Further Environmental Harm*, 40 U. MEM. L. REV. 645, 665 (2010) (lobbying can defeat local efforts to reduce plastic bag pollution, as seen in Seattle); *State Plastic and Paper Bag Legislation*, *supra* note 8 (state preemption of local plastic bag laws can block all efforts to reduce plastic bag use and pollution).

1. *Replicating Ireland's Plastic Bag Tax*

Although Ireland's plastic bag tax reduced bag use by 94%, replicating this success in the U.S. is not realistic.⁷⁷ The population of Ireland is 4.76 million⁷⁸ while the U.S. population is 329.8 million,⁷⁹ making Ireland's population only 1.44% of the U.S. population.⁸⁰ Ireland's small population size may have been a factor in the success of its plastic bag tax, as a smaller population size is likely more conducive to having a unified opinion. Ireland's strong public acceptance of the tax may not be as easily achieved in a nation that is significantly larger and contains more diverse interests and opinions than Ireland. Particularly, Ireland's plastic bag tax received full support from governmental authorities, including the Minister for Finance and the Revenue Commissioners,⁸¹ the retail industry, and most importantly, consumers.⁸² Although Ireland's retail industry initially lobbied for a voluntary take-back program rather than the tax, once consumers realized that the government was determined to proceed with the tax, resistance subsided.⁸³ In the U.S., the government rarely shows strong determination on environmental issues, leading to powerful lobbying schemes and less powerful implementation schemes.

Another major difference between Ireland and the U.S. is that most plastic bags in Ireland are imported from other nations; the plastics industry does not constitute or contribute to a large portion of Ireland's economy.⁸⁴ Three years before the Irish plastic bag tax was implemented, the vast majority of plastic bags were imported, while only a small percentage were manufactured by four firms within Ireland.⁸⁵ Four to five years after the tax was implemented, one plastic manufacturing firm went out of business, but a study published in *Environmental and Resource Economics*⁸⁶ could not conclude that this was caused by the tax, as there

77. ANASTASIO & NIX, *supra* note 54.

78. CENT. STATISTICS OFFICE, IR., CENSUS 2016 SUMMARY RESULTS – PART 1, at 8 (2017), <https://www.cso.ie/en/media/csoic/newsevents/documents/census2016summaryresultspart1/Census2016SummaryPart1.pdf> [<https://perma.cc/4RK8-QEFK>].

79. *U.S. and World Population Clock*, U.S. CENSUS BUREAU, <https://www.census.gov/popclock/> [<https://perma.cc/Z9GZ-K6W7>] (last visited Feb. 1, 2021).

80. CENT. STATISTICS OFFICE, *supra* note 78, at 8.

81. Irish government agency responsible for taxation.

82. Convery, McDonnell & Ferreira, *supra* note 47, at 5.

83. *Id.*

84. *Id.* at 9.

85. *Id.*

86. A peer-reviewed journal.

were other factors that could have contributed to the shutdown of the factory.⁸⁷ Ireland's lack of plastics industries likely contributed to the lack of resistance experienced when the tax was introduced.⁸⁸

However, in the U.S. the plastics and chemical industries have a forceful and dominant presence in the economy and politics.⁸⁹ According to the Size and Impact Report of the Plastics Industry Association, the U.S. plastics industry accounted for \$432 billion in shipments and almost one million American jobs in 2017, earning its rank as the eighth largest industry in the nation.⁹⁰ The Plastics Industry Association has an entire plastic bag division—the Flexible Film and Bag Division—dedicated to “creating opportunities and providing a central location for relevant technology, topical information and advocacy through industry interaction.”⁹¹ The lucrative plastics industry would likely have a large interest in funding a strong lobbying campaign against any federal plastic bag regulation in order to preserve the industry's success.

Ireland has a negligible presence of the plastics industry compared to the U.S., a substantially smaller population size, and a government with a more unified voice on environmental matters. Therefore, instituting a similar plastic bag tax in America is not likely to produce the same meaningful results seen in Ireland.

2. Replicating California's Plastic Bag Ban

Since California's plastic bag ban is relatively new, there are few studies on the impacts of the ban. However, one study was completed before the statewide ban went into effect, when 139 localities, affecting over one-third of the state's population, had implemented plastic bag bans.⁹² The goal of the study was to quantify the theory of plastic leakage that occurs after plastic bag bans are initiated.⁹³

In cities where bans were in effect, plastic grocery bag usage decreased, which led to 40 million fewer pounds of plastic waste per

87. Convery, McDonnell & Ferreira, *supra* note 47, at 9.

88. *Id.*

89. PLASTICS INDUS. ASS'N, 2018 SIZE & IMPACT SUMMARY 3–4 (2018), <https://www.plasticsindustry.org/sites/default/files/2018-06763-Size%20%26%20Impact%20Report%20Summary-2.pdf> [<https://perma.cc/ZJD7-MCTR>].

90. *Id.* at 3.

91. *Flexible Film and Bag Division*, PLASTICS INDUSTRY ASS'N, <https://www.plasticsindustry.org/supply-chain/processors/flexible-film-and-bag-division> [<https://perma.cc/PM6F-K5MX>] (last visited Feb. 1, 2021).

92. Taylor, *supra* note 76, at 256.

93. *Id.* at 255.

year.⁹⁴ However, this reduction was offset by a 12 million pound increase in purchases of small, four-gallon garbage bags, which spiked 120% after the bag policies went into effect.⁹⁵ Medium and tall garbage bag purchases also increased by 64% and 6%, respectively.⁹⁶ The phenomenon is called “leakage,” which occurs when “partial regulation directly results in increased consumption of these products in unregulated parts of the economy.”⁹⁷ Overall, the study predicted that purchases of garbage bags increased because people still need plastic bags for uses other than bagging groceries, such as lining small trash bins.⁹⁸

Although garbage bags filled with trash pose fewer threats to the environment as they are less likely to fly away and create litter, garbage bags are thicker than single-use plastic grocery bags.⁹⁹ The greenhouse gas emissions from the production of these thicker trash bags and the greater space taken up in landfills means that negative environmental impacts still exist even when a city has implemented a plastic bag ban.¹⁰⁰ Because the carryout bag ban in California causes individuals to choose thicker bags that create more greenhouse gas emissions and take up more landfill space, a nationwide carryout bag ban similar to California’s is not likely to create a positive environmental impact.¹⁰¹

3. *Replicating Washington, D.C.’s Plastic Bag Fee*

Washington, D.C.’s five-cent fee on single-use plastic bags is an example of a highly successful policy that discourages use of plastic bags and greatly reduces plastic bag pollution in the community and local waterways.¹⁰² The problem is that there are still around 36 million plastic bags used each year in Washington, D.C., alone.¹⁰³ According to a study funded by the American Chemistry Council, 1.2 billion pounds of post-consumer film—which includes plastic bags and wrap—were recovered for recycling in the U.S. in 2015, meaning that only roughly 1.2% of

94. *Id.*

95. *Id.*

96. *Id.*

97. *Id.* at 254.

98. *Id.* at 255, 270.

99. *Id.* at 268.

100. *Id.*

101. *Id.*

102. ALICE FERGUSON FOUND., *supra* note 75, at 1.

103. METRO. WASH. COUNCIL OF GOV’TS., *supra* note 9, at 11.

plastic bags were recycled.¹⁰⁴ Even though Washington, D.C.'s fee caused a successful reduction in the number of plastic bags used, given the exceedingly low recycling rate of plastic bags, one city using 36 million bags annually still equates to a large number of plastic bags ending up in the environment or in a landfill.¹⁰⁵ Even an 86% reduction in the number of plastic bags used each year, as seen with Washington, D.C.'s fee, would mean that America would still be using 14 billion plastic bags each year.¹⁰⁶ After examining Washington, D.C.'s impactful plastic bag fee, it is evident that even a nationwide plastic bag fee instituted with the same success as Washington, D.C.'s fee will not come close to ending plastic bag-related pollution in America.

Plastic bag policies aimed at discouraging consumers from using plastic bags have been successful, but these successes are not likely to be attainable on a national level in the U.S. A tax, ban, and fee each have restrictions, such as customers choosing heavier bags when plastic bags are not available or individuals simply choosing to pay a fee for a single-use plastic bag. These consumer-driven policy options are therefore not likely to create the substantial reduction in plastic bag pollution that is needed for the health of the environment.

4. Political and Economic Resistance

In addition to numerous limitations created by consumer-driven plastic bag policies, other complications arise when governments want to implement a ban, tax, or fee to reduce plastic bag pollution. Due to political and economic interests being dominant factors in American public policy, state legislatures can be influenced by political interests and make decisions without proper justifications. Industries are willing to invest large sums of money into lobbying against laws that may negatively impact their business.¹⁰⁷ Some examples of these actions reveal additional barriers to implementing a plastic bag policy aimed at creating a healthier environment and healthier local economies.

104. MOORE RECYCLING ASSOCS., INC., *supra* note 9, at 2; Wagner, *supra* note 9, at 3 (Americans use about 100 billion plastic bags each year).

105. METRO. WASH. COUNCIL OF GOV'TS., *supra* note 9, at 11.

106. Wagner, *supra* note 9, at 3 (Americans use about 100 billion plastic bags each year).

107. Warner, *supra* note 76, at 665.

a. Seattle's Fee and Lobbying Efforts

Seattle's plastic bag fee is an example of the plastic industry's willingness to invest in resisting laws that are detrimental to their financial welfare. In 2008, Seattle City Council passed an ordinance requiring a plastic bag fee of 20 cents, and the ordinance was set to be implemented by January 2009.¹⁰⁸ However, a local trade group, sponsored by the American Chemistry Council¹⁰⁹ (ACC) launched a campaign "to overturn the ordinance and have it placed on a citywide ballot."¹¹⁰ After an extensive lobbying campaign by the ACC and an expenditure of \$1.4 million, Seattle citizens rejected the ordinance.¹¹¹

Private groups, such as the ACC, are able to influence the decision-making process of citizens and defeat laws designed to address serious environmental issues.¹¹² Because the ACC was willing to spend a large sum of money on preventing a plastic bag fee from being instituted in just one city, their lobbying efforts are likely to be just as forceful and overwhelming if a fee, tax, or ban is instituted across an entire state or nation. Unfortunately, the ACC is just one example of lobbying efforts by interested industries that may effectively impede any progress toward creating a national consumer-based solution to plastic bag pollution.

b. State Preemption of Local Plastic Bag Ordinances

In addition to lobbying efforts impeding local progress to reduce plastic bag pollution, state preemption¹¹³ of local plastic bag ordinances is becoming increasingly popular.¹¹⁴ Once a state preempts local plastic bag regulations such as a ban or fee, a locality is left with no options for enforcing plastic bag policies. Currently, fourteen states have preempted

108. *Id.*

109. *Plastics*, AM. CHEMISTRY COUNCIL, <https://plastics.americanchemistry.com/> [<https://perma.cc/5JH9-6F43>] (last visited Mar. 31, 2021) (the ACC has a plastics division).

110. Warner, *supra* note 76, at 665.

111. *Id.*

112. *Id.*

113. NICOLE DUPUIS ET AL., NAT'L LEAGUE OF CITIES, CITY RIGHTS IN AN ERA OF PREEMPTION: A STATE-BY-STATE ANALYSIS, 2018 UPDATE 3 (2018), <https://www.nlc.org/wp-content/uploads/2017/02/NLC-SML-Preemption-Report-2017-pages.pdf> [<https://perma.cc/4KGJ-MNS7>] (explaining that state preemption occurs when a state uses statutory or constitutional law to prevent local governments within that state from legislating on a particular issue).

114. See *State Plastic and Paper Bag Legislation*, *supra* note 8.

local governments from enacting any regulations on plastic bags.¹¹⁵ It seems counterintuitive for a state legislature to stifle the efforts of local governments in reducing harmful plastic bag litter that causes wildlife deaths, increases recycling costs, and creates unsightly litter. For these reasons, preemption laws are seen as an effort by state legislatures to “rein in” progressive localities, with the need for statewide control and uniformity cited as justification.¹¹⁶

In order to further political interests, the American Legislative Exchange Council (ALEC), an organization of conservative state legislators, developed a template for a model bill that states can use to preempt plastic bag regulations by local governments.¹¹⁷ The model bill cites numerous justifications, including the idea that “confusing and varying [plastic bag] regulations . . . could lead to unnecessary increased costs for retail and food establishments to comply with such regulations.”¹¹⁸

ALEC’s justifications for a preemption law are not convincing. Research shows that plastic bag regulations improve a state’s economy by reducing the amount of plastic bag litter that each locality must handle.¹¹⁹ With fewer plastic bags clogging the waterways and becoming entangled in recycling machinery, local economies will be healthier since cities will spend less money on clean-up efforts and recycling maintenance.¹²⁰ Furthermore, the improved aesthetics of the state will encourage tourists to visit and appreciate the beauty that the state has to offer, rather than

115. *Id.*; *What’s the Score on Plastic Pollution Laws and Preemption of Local Ordinances?*, SURFRIDER FOUND. (May 28, 2019), <https://www.surfrider.org/coastal-blog/entry/whats-the-score-on-plastic-pollution-laws-and-preemption-of-local-ordinance> [<https://perma.cc/PED9-63CF>].

116. Lori Riverstone-Newell, *The Rise of State Preemption Laws in Response to Local Policy Innovation*, 47 J. FEDERALISM 403, 404 (2017); Sarah Fox, *Home Rule in an Era of Local Environmental Innovation*, 44 ECOLOGY L.Q. 575, 595 (2017).

117. *Regulating Containers to Protect Business and Consumer Choice*, AM. LEGIS. EXCHANGE COUNCIL, <https://www.alec.org/model-policy/regulating-containers-to-protect-business-and-consumer-choice/> [<https://perma.cc/RLS8-RSMU>] (last visited Feb. 1, 2021).

118. *Id.*

119. See EQUINOX CTR., *supra* note 38, at 22 (explaining that San Francisco reports annual savings of \$100,000 from reduced plastic bag cleanup costs and savings of \$600,000 from avoided plastic bag waste-processing costs, resulting from a plastic bag ban; New York City, which sends about 100,000 tons of plastic bag waste to out-of-state landfills each year, estimates savings of about \$10 million resulting from a plastic bag ban).

120. *Id.*

avoiding the state due to unsightly litter.¹²¹ The concern that varying local regulations could lead to increased costs for businesses is valid, but the solution is not to preempt all local regulation of auxiliary containers. These preemption laws, which have weak justifications, inhibit local innovation and initiatives that promote a healthier environment and economy. The problem is that these preemption laws have not been declared unconstitutional; therefore, cities have few avenues for redress once their plastic bag regulations are preempted by the state.¹²²

There are two sides to the issue of local plastic bag laws and state preemption. One is that localities are responsible for most solid waste management services and therefore are more directly affected by plastic bag litter and the problems associated with recycling than the state.¹²³ Thus, the cities should have the authority to decide how to control the overwhelming amount of plastic bag litter in their communities, one solution being a fee or ban on the plastic bags. On the other hand, plastic bag fees are a matter of statewide concern because consistency is needed to relieve the burdens imposed when businesses must comply with varying local plastic bag regulations.¹²⁴

c. City of Laredo v. Laredo Merchants Association

Many cities recognize the harmful effects of plastic bags and attempt to enact plastic bag ordinances to prevent these effects, but instead become victims of state preemption. Laredo, Texas, is one example of a city that witnessed the problems associated with plastic bag usage and enacted a plastic bag ban to remedy this problem.¹²⁵ The harms of plastic bags were widespread, permeating multiple industries that are essential to the economic health of the state of Texas as well as local communities, including ranching, fishing, and cotton production.¹²⁶ Hoping to ease the

121. *Impacts of Mismanaged Trash*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/trash-free-waters/impacts-mismanaged-trash> [<https://perma.cc/2H9J-XLWH>] (last visited Feb. 1, 2021).

122. See *City of Laredo v. Laredo Merchs. Ass'n*, 550 S.W.3d 586, 598 (Tex. 2018).

123. Starkey & Hill, *supra* note 38.

124. See *Regulating Containers to Protect Business and Consumer Choice*, *supra* note 117; ARIZ. REV. STAT. §9-500.38 (Westlaw 2020).

125. *City of Laredo*, 550 S.W.3d 586.

126. *Id.* at 600–02 (Guzman, J., concurring). Plastic bags were tarnishing the landscape and ranchers reported that their cows were mistakenly eating the plastic bags—thinking they were food—and often resulting in death caused by the plastic bag ingestion. In addition to cows, the plastic bags also harm the Texas fishing

environmental and financial burdens imposed by plastic bags, the City of Laredo enacted an ordinance prohibiting commercial establishments from providing checkout bags to customers.¹²⁷ Just prior to the ordinance's effective date, the Laredo Merchants Association sued the City, claiming that the ordinance was preempted by the Texas Solid Waste Disposal Act (the Act).¹²⁸ The Act states that a local government "may not prohibit or restrict, for solid waste management purposes, the sale or use of a container or package in a manner not authorized by state law."¹²⁹

Ultimately, the Texas Supreme Court declared that the ordinance was adopted for solid waste management purposes and that a plastic bag does fit within the definition of a container.¹³⁰ The court also determined the clear, stated intent of the Act was to control the manner of regulating the sale or use of containers or packages for solid waste management purposes.¹³¹ Therefore, Laredo's checkout bag ban was preempted by the Act.¹³² The court's decision withdrew all power from the City of Laredo to regulate the use of plastic bags and prevent further environmental and economic destruction. The concurrence stated that while the problems associated with plastic bag use are severe and detrimental to the irreplaceable environment, the remedy for the problems are not found in the judicial branch,¹³³ rather, it is an issue for the legislature to cure.¹³⁴

As exemplified by Ireland, California, and Washington, D.C., bans and fees can reduce the number of bags used. However, bans and fees are not the answer in a large country with diverse viewpoints on plastic bag policies, where a state bag ban leads to more purchases of trash bags,¹³⁵ and where even a successful bag fee cannot prevent extensive single-use

industry, "an economic powerhouse," by damaging boats, injuring fish, and diminishing recreational experiences for tourists. Furthermore, cotton ginners were frustrated with the prevalence of plastic bag litter. Cotton harvests were increasingly contaminated with plastic, which directly influenced the value of the cotton, causing many members of the cotton industry to suffer financially. *Id.*

127. LAREDO, TEX., CODE OF ORDINANCES §§ 33-454, 33-455 (2014). A checkout bag is defined as a plastic bag less than four Mils (a Mil is one hundredth of an inch) thick or a paper bag that contains old growth fiber or less than 40% post-consumer recycled material. *Id.*

128. *City of Laredo*, 550 S.W.3d at 591.

129. TEX. HEALTH & SAFETY CODE ANN. § 361.0961(a)(1) (West 2020).

130. *City of Laredo*, 550 S.W.3d at 596-97.

131. *Id.* at 593.

132. *Id.* at 598.

133. *Id.* at 604 (Guzman, J., concurring).

134. *Id.*

135. Taylor, *supra* note 76, at 268.

plastic bag usage.¹³⁶ Cities generally do not have the means to deal with the huge quantities of plastic bag waste, especially since the bags disrupt their recycling processes, create unsightly litter, and pose serious risks to livestock.¹³⁷ The burden of finding solutions to these issues should not be placed on cities or states, particularly because many cities may be preempted from creating any plastic bag regulations.¹³⁸ To remedy the rise of states using preemption laws to frustrate local environmental and economic concerns, the federal government should hold manufacturers accountable for the plastic bag problems that are plaguing cities and states.

III. A FAMILIAR SOLUTION: HOLDING MANUFACTURERS ACCOUNTABLE

A. Federal Extended Producer Responsibility Law

A federal law is necessary in order to provide a comprehensive approach to plastic bag pollution that permeates the entire nation. Extended Producer Responsibility (EPR) laws extend manufacturers' responsibility for their products to the post-consumer phase, largely through requiring them to take back products that would otherwise enter the waste stream.¹³⁹ A federal EPR law must require manufacturers to collect the single-use plastic bags during the post-consumer phase. This would prevent plastic bag waste from permeating the landscape, waterways, and landfills, while also alleviating the financial burdens that cities take on due to the existence of massive quantities of plastic bag waste.

Considering the large number of factors that can prevent a nationwide consumer-based plastic bag policy from succeeding within the U.S., an effective federal plastic bag law must shift the burden of reducing plastic bag pollution from the consumer to the manufacturer. Currently, plastic bag regulations in the U.S. impose burdens on consumers to work towards solving the plastic bag pollution crisis.¹⁴⁰ Even with a significant reduction in plastic bag use, some consumers are not deterred by the fees and plastic bag use continues to be pervasive, as seen in Washington, D.C.¹⁴¹ Certain plastic bag bans may only target large retail stores, leaving small stores

136. METRO. WASH. COUNCIL OF GOV'TS., *supra* note 9, at 11.

137. Rosenthal, *supra* note 39; *Bring Your Own Bag Ordinance*, *supra* note 39; Korte, *supra* note 7.

138. *State Plastic and Paper Bag Legislation*, *supra* note 8.

139. Monroe, *supra* note 12, at 224.

140. *State Plastic and Paper Bag Legislation*, *supra* note 8.

141. METRO. WASH. COUNCIL OF GOV'TS., *supra* note 9, at 11.

and restaurants with the ability to freely distribute plastic bags.¹⁴² Additionally, a bag ban has been shown to cause consumers to shift toward using thicker bags which, in turn, defeats the ban's purpose of promoting a healthier environment.¹⁴³

Instituting a successful plastic bag tax, as seen in Ireland, requires full and unwavering support from the government, retailers, and consumers.¹⁴⁴ Attaining such support is an onerous and unrealistic task in the U.S., especially considering the strong and influential presence of the U.S. plastics industry.¹⁴⁵ The increasing popularity of states preempting local plastic bag ordinances further prevents communities from managing the enormous quantities of plastic bag waste entering the environment, landfills, and recycling facilities that are not properly equipped to process single-use plastic bags.¹⁴⁶ Because of this, consumer-based approaches are not likely to create the type of improvements that are needed to address plastic bag pollution. Placing the burden of decreasing plastic bag pollution on manufacturers rather than consumers is more likely to be a realistic option with a significant impact. An evaluation of the structure and success of numerous EPR laws can aid in creating a federal EPR law that effectively decreases plastic bag pollution in the U.S.

B. Lessons Learned From State EPR Laws

While federal EPR laws currently do not exist, many states have EPR laws for products such as electronics and mercury thermostats.¹⁴⁷ As of 2013, 32 states had enacted at least one EPR law.¹⁴⁸ The motivation for states in enacting EPR laws is that, in theory, requiring manufacturers to internalize post-consumer phase management costs will incentivize the manufacturers to create products that are “more durable, more recyclable, less resource intensive, and less toxic.”¹⁴⁹ Applying this theory to the single-use plastic bag industry is likely to encourage the development of improved recycling methods for plastic bags and may even incentivize the creation of alternative materials that are less toxic to the environment.

142. *SB 270 FAQ*, *supra* note 62.

143. Taylor, *supra* note 76, at 268.

144. Convery, McDonnell & Ferreira, *supra* note 47, at 5.

145. PLASTICS INDUS. ASS'N, *supra* note 89, at 3–4.

146. *State Plastic and Paper Bag Legislation*, *supra* note 8; *Plastic Pollution and Preemption*, *supra* note 115.

147. Nash & Bosso, *supra* note 13, at 175.

148. *Id.*

149. *Id.* at 176.

State approaches to producer responsibility of electronics in the post-consumer phase vary, but an evaluation of the most successful EPR laws provides a useful resource for developing an effective federal EPR law for plastic bags.¹⁵⁰ Electronic waste (e-waste) EPR laws in Washington, Minnesota, Wisconsin, and Oregon achieve the highest collection rates in the nation.¹⁵¹ These laws require manufacturers to be responsible for collection, transportation, and recycling costs of the electronics they distribute within the state.¹⁵² They also establish performance goals for the manufacturers, a component not contained within some other states' EPR laws.¹⁵³ Additionally, Maine and Vermont boast the highest collection rates for mercury thermostats by requiring incentives for individuals to return their thermostats after use.¹⁵⁴ An analysis of these successful state EPR laws can assist in determining the components needed to develop an impactful federal EPR law.

C. Essential Components of a Federal Extended Producer Responsibility Law

In order to create a successful federal EPR law, four components are necessary: performance standards; a take-back program; recycling; and a research and development tax credit.

1. Performance Standards

Based on an evaluation of the most successful e-waste EPR laws across the nation, the federal government must not simply force the manufacturer to bear the collection, transportation, and recycling costs. Rather, the federal government must also set specific performance standards for manufacturers. Setting a performance standard based on weight of plastic bags collected, as opposed to having a standard based on the number of bags collected, is likely the simplest option for manufacturers and government agencies to ensure compliance. Both Oregon and Minnesota require a set amount of waste to be collected in order for a manufacturer to be considered compliant with the EPR law.¹⁵⁵

150. *Id.* at 181.

151. *Id.*

152. *Id.*

153. *Id.* (Virginia, Texas, Missouri, and Oklahoma EPR laws do not set any particular performance standards but instead require computer manufacturers to offer collection and recycling programs for the computers sold within the state).

154. *Id.* at 180.

155. *Id.* at 181.

Minnesota's successful e-waste EPR law requires a certain percentage of the weight that was distributed in one year to be collected the next year.¹⁵⁶ Another option is to base performance standards on a specific number of pounds of waste collected, similar to Oregon's approach.¹⁵⁷ The percentage or pounds of plastic bag waste required for collection in the first few years of the EPR law's existence may be lower than the following years, giving manufacturers the opportunity to figure out the logistics of collecting the plastic bags.¹⁵⁸ Without a performance standard for plastic bag manufacturers, it will be difficult to enforce the law, which is a crucial component to successfully reducing plastic bag waste.

2. Take-Back Program

A take-back program is another essential element to creating an impactful EPR law that meets the performance standards imposed by the law. Many retailers already have take-back programs for plastic bags, but there is no guarantee that the bags are effectively recycled.¹⁵⁹ Similar to Oregon's e-waste EPR law, a federal plastic bag EPR law must require the manufacturer to have collection sites convenient to all consumers.¹⁶⁰ Otherwise, consumers will not bother taking back their plastic bags to a designated yet inconvenient facility.

The most realistic way to meet this standard would be to have collection bins in retail and grocery stores, places that people visit throughout the week. Manufacturers may elect to partner with one another to reduce these collection and transportation costs.¹⁶¹ Closing the gap between consumers and manufacturers is an important step in the process of reducing plastic bag waste in the environment. Without reliable take-

156. *Id.* ("In the program's first year, manufacturers must collect 60% of the weight they sold in the state the previous year, a target that increases to 80% thereafter.").

157. *Id.* at 196 (Oregon required manufacturers to collect at least 3.3 pounds per capita of e-waste in 2009, 5.8 pounds per capita in 2010, and 7.1 pounds per capita in 2012).

158. *Id.* (During the first year of the EPR law's existence, Minnesota required manufacturers to collect 60% of the weight of electronics they sold in the state the previous year. The percentage then increased to 80% in the following years.).

159. *Find a Drop Off Location*, PLASTIC FILM RECYCLING, <https://www.plasticfilmrecycling.org/recycling-bags-and-wraps/find-drop-off-location/> [<https://perma.cc/JL5R-XJ29>] (last visited Feb. 1, 2021).

160. Nash & Bosso, *supra* note 13, at 182.

161. *Id.* at 179–80 (Thermostat manufacturers established a recycling program to meet the requirements of the Minnesota EPR law. The program expanded to operate nationally.).

back programs that enable plastic bags to reach the proper recycling facilities, the bags will likely end up in a landfill, in waterways, or in the landscape, circumventing the purpose of an EPR law.

Plastic bag manufacturers may also need to provide incentives for consumers to return the plastic bags to the retailer. This may be in the form of a small fee or other incentive to the consumer for every bag brought back to the retailer. Consumers will be rewarded for getting rid of plastic bags that are not useful to them, while manufacturers will be able to account for the plastic bags they have distributed in order to meet the requirements of the EPR law.

For example, Maine and Vermont have EPR laws for mercury thermostats that require manufacturers to provide five dollars to individuals who bring their thermostats to collection sites.¹⁶² These two states have the highest collection rates in the nation for mercury thermostats, thus the legislature should contemplate requiring plastic bag manufacturers to offer an incentive to customers.¹⁶³ Alternatively, a federal plastic bag EPR law could require manufacturers to offer incentives only if they cannot meet the performance standards of the law, an approach that some states have taken for mercury thermostat EPR laws.¹⁶⁴ This option may prevent pushback from plastic bag manufacturers by first allowing these manufacturers to try to meet the performance standards before being required to spend money on offering incentives to consumers.

3. Recycling

In addition to setting a performance standard and requiring a take-back program, the EPR law must mandate that manufacturers prove they have recycled the plastic bags rather than sent the bags to a landfill or sold the waste to another country. Approximately 12 million barrels of oil are used to create the 100 billion plastic bags that are consumed in the U.S. each year.¹⁶⁵ Encouraging better recycling techniques for plastic bags will benefit the environment since manufacturing with recycled plastic requires significantly less energy; specifically, “one ton of recycled plastic saves

162. *Id.* at 180–81.

163. *Id.* at 181.

164. *Id.* at 180 (“California, Illinois, and Rhode Island require manufacturers to offer an incentive if collection goals are not met.”).

165. *100 Billion Plastic Bags Used Annually in the US*, UNITED NATIONS REGIONAL INFO. CTR. FOR WESTERN EUR. (October 19, 2013, 10:04 AM), <https://archive.unric.org/en/latest-un-buzz/28776-100-billion-plastic-bags-used-annually-in-the-us> [<https://perma.cc/Y5HS-HWQM>].

16.3 barrels of oil . . . and 30 cubic yards of landfill space.”¹⁶⁶ Utilizing recycled plastic bags will also reduce water and air pollution associated with new plastic bag production.¹⁶⁷ Not only will developing better recycling techniques improve the state of our environment, it can also improve our economy. Recycling plastic bags will create jobs for both the collection of plastic bags and for manufacturing the used bags into new ones.¹⁶⁸

In addition to saving oil and landfill space and creating jobs, improving recycling processes utilized by manufacturers will also relieve financial burdens placed on localities. Localities currently bear the burdens of prolific plastic bag use as localities have not developed proper techniques for managing the post-consumer phase of plastic bags.¹⁶⁹ Forcing manufacturers to recycle the plastic bags they produce, as opposed to leaving it up to localities, will help reduce the amount of plastic bag litter in the environment, ease the economic burdens of plastic bags on localities, and reduce the amount of resources needed to create new plastic bags. Improved recycling techniques are currently the most attainable means of meeting these objectives and therefore must be a requirement of a plastic bag EPR law.

4. Research and Development Tax Credit

The timeline for the return on research, development, and other costs for creating effective recycling techniques is likely long-term rather than short-term.¹⁷⁰ This could be a major reason why the recycling rate for plastic bags is low: The cost of recycling is simply too great, and there is no immediate return on any investment.¹⁷¹

166. *Frequently Asked Questions: Benefits of Recycling*, STAN. U., <https://lbre.stanford.edu/pssistanford-recycling/frequently-asked-questions/frequently-asked-questions-benefits-recycling> [<https://perma.cc/2V4E-HE9H>] (last visited Feb. 1, 2021).

167. *100 Billion Plastic Bags Used Annually in the US*, *supra* note 165.

168. *Frequently Asked Questions: Benefits of Recycling*, *supra* note 166. (“In California, for every job in recycling collection there are eight jobs created through manufacturing the recovered material into a new product.”).

169. See discussion *supra* Part I.C; Rosenthal, *supra* note 39; *Bring Your Own Bag Ordinance*, *supra* note 39.

170. Laura Moss, *Why Plastic Bag Bans Are Being Fought by the Recycling Industry*, HUFFPOST (Sept. 18, 2013), https://www.huffpost.com/entry/plastic-bag-bans_n_3769826 [<https://perma.cc/JTZ2-GT89>] (given that recycling one ton of plastic bags currently costs \$4,000, finding less expensive recycling methods may take some time).

171. *Id.* (it costs about \$4,000 to recycle one ton of plastic bags).

To help relieve the financial burden of developing effective means of recycling plastic bags, a Research and Development Tax Credit (R&D Credit) should be given to manufacturers who can prove they are researching and implementing better methods of addressing plastic bag waste in the post-consumer phase. According to Moss Adams, one of the largest public accounting firms in the nation, an R&D Credit is given to “taxpayers that design, develop, or improve products, processes, [or] techniques.”¹⁷² Qualified research under the Internal Revenue Code is defined as research “undertaken for the purpose of discovering information . . . which is technological in nature, and the application of which is intended to be useful in the development of a new or improved business component of the taxpayer.”¹⁷³ Under this definition, a plastic bag manufacturer that conducts research for new or improved recycling techniques would therefore likely qualify for an R&D Credit.

Although this R&D Credit would be available to plastic bag manufacturers even if it were not included within the EPR law, providing for the tax credit within the EPR law would make manufacturers aware of a valuable incentive that they otherwise may not know about. Most importantly, the tax credit can significantly help plastic bag manufacturers meet the requirements of the EPR law. If manufacturers do not have recycling facilities in place for plastic bags, the manufacturers will be required to take back the bags and find a facility willing to recycle the massive amounts of plastic bag waste. Instead of paying third parties to recycle the bags, plastic bag manufacturers should be encouraged to create their own recycling facilities through an R&D Credit. Developing better recycling techniques will mitigate the costs associated with finding recycling facilities to effectively manage the post-consumer phase of the plastic bags, as mandated by the EPR law. Encouraging the development of improved recycling techniques will ensure that used plastic bags are recycled into new ones instead of becoming litter in the environment or a landfill, furthering the objectives of a plastic bag EPR law.

D. Federal-State Cooperation

Because plastic bag pollution is not confined to one state, the federal government needs to set a national standard for plastic bag collection and recycling. Plastic bags are often windblown across states lines and travel

172. Tom Sanger & Star Fischer, *5 Common Misconceptions About the R&D Tax Credit—and Whether You Qualify*, MOSS ADAMS, <https://www.mossadams.com/articles/2018/may/company-qualifications-for-the-r-and-d-tax-credit> [<https://perma.cc/LS9L-QG2B>] (last visited Feb. 1, 2021).

173. I.R.C. § 41(d)(1)(B) (2018).

down waterways throughout the nation.¹⁷⁴ While creating a federal EPR law with particular components will facilitate much-needed change across the nation, the federal government must have the authority to do so. The authority for the federal government to enact a law that regulates the disposal of plastic bags comes from Article 1, Section 8, Clause 3 of the United States Constitution, commonly referred to as the Commerce Clause.¹⁷⁵ According to *United States v. Lopez*, the federal government can regulate economic or commercial activities—or activities with a close nexus to economic or commercial activities—that have a substantial effect on interstate commerce.¹⁷⁶ Plastic bag manufacturers conduct commercial activities that substantially affect interstate commerce because plastic bag manufacturers sell their products nationwide.¹⁷⁷ This nationwide commercial activity gives the federal government the power to regulate the distribution of plastic bags.¹⁷⁸

To create a national EPR law for plastic bags, the legislature could amend the Resource Conservation and Recovery Act (RCRA) to include the EPR program. RCRA is an amendment to the Solid Waste Disposal Act of 1965.¹⁷⁹ The objectives cited when the legislature proposed RCRA include: reducing the amount of waste generated; improving solid waste management in an environmentally sound manner through research and development; and facilitating a “cooperative effort . . . to recover valuable materials and energy from solid waste.”¹⁸⁰ In addition to these objectives, other components of RCRA include: directing the Environmental Protection Agency (EPA) to develop guidelines for solid waste

174. Alissa Scheller, *This is How Your Plastic Bag Ends Up in Massive Ocean Garbage Patches*, HUFFPOST (DEC. 6, 2017), https://www.huffpost.com/entry/plastic-ocean-garbage_n_5191294 [<https://perma.cc/6M68-C7UD>].

175. U.S. CONST. art. I, § 8, cl. 3.

176. *United States v. Lopez*, 514 U.S. 549 (1995).

177. *Id.*; *About Us*, MULTI-PAK USA INC., <https://www.multipakusa.com/pages/about-us-1> [<https://perma.cc/5R4N-KZ4Q>] (last visited Feb. 1, 2021) (Multi-Pak USA manufactures plastic bags that are sold nationwide); INT'L PLASTICS, <https://www.interplas.com/> [<https://perma.cc/9EHE-6BSX>] (last visited Feb. 1, 2021) (manufactures plastic bags and packaging, sells to national and international entities such as Pillsbury, Pfizer, and 3M); NOVOLEX, <https://novolex.com/> [<https://perma.cc/F65H-MNT7>] (last visited Feb. 1, 2021) (one of the industry's leaders in manufacturing plastic bags).

178. *Lopez*, 514 U.S. 549.

179. *EPA History: Resource Conservation and Recovery Act*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/history/epa-history-resource-conservation-and-recovery-act> [<https://perma.cc/8KBY-LEAJ>] (last visited Feb. 1, 2021).

180. Resource Conservation and Recovery Act of 1976, Pub. L. No. 94-580, § 1003, 90 Stat. 2795, 2798 (codified at 42 U.S.C. § 6902).

management; providing procedures for federal enforcement; providing grants to states for development and implementation of state plans; and conducting special studies and publishing reports on resource recovery from glass and plastic waste.¹⁸¹

According to the objectives and purposes of RCRA, a federal EPR law based on cooperative federalism¹⁸² fits within already-established solid waste provisions.¹⁸³ Under RCRA, states can have their own program for hazardous waste disposal but it must be equivalent to the federal program, authorized by the EPA, and have adequate enforcement measures.¹⁸⁴ For a federal plastic bag EPR law, the EPA will set the framework for state EPR laws, including mandatory performance standards. This RCRA cooperative federalism scheme is just one option for creating an effective EPR law.

In the alternative, if the federal government is not willing to enact a federal EPR law in the near future, states should act independently of the federal government and institute their own EPR laws for plastic bags. Because many states are familiar with EPR laws, adding plastic bags to an existing EPR law should not be difficult. Through experience, some states have discovered the types of performance standards that are obtainable and the best ways for manufacturers to meet these standards, whether it is an incentive-based approach or requiring manufacturers to pay a surcharge for their shortcomings.¹⁸⁵ For those states that do not currently have an EPR law in place, enacting an EPR law with the essential components of a performance standard, a take-back program, and effective recycling methods will lead to successfully reducing plastic bag pollution within the state and across the nation.

A comprehensive approach is needed to address the far-reaching environmental and economic consequences of unregulated plastic bag use. A federal EPR can avoid the numerous obstacles associated with reducing plastic bag pollution through a consumer-based solution. An EPR law will

181. *Id.* §§ 1003, 1008, 4007, 8002, 90 Stat. at 2798, 2803, 2817, 2831.

182. *Cooperative Federalism at EPA*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/home/cooperative-federalism-epa> [<https://perma.cc/L6GC-4BSK>] (last visited Feb. 1, 2021) (Cooperative federalism utilizes collaboration between federal and state governments in obtaining the objectives of a federal law. This concept of cooperative federalism is often used by the United States EPA and allows states to take part in the administration of environmental laws rather than giving total control to the federal government.).

183. *See* Resource Conservation and Recovery Act of 1976 § 4001, 42 U.S.C. § 6941 (2018).

184. 42 U.S.C. § 6962(b).

185. Nash & Bosso, *supra* note 13, at 181.

not be affected by state preemption of local bag regulations as the law will not require local governments to institute their own plastic bag ordinances. Further, requiring manufacturers to collect and recycle plastic bags is less likely to experience resistance from political groups concerned about the plastic industry and the economy.¹⁸⁶ The plastic industry will not be losing jobs but rather will be creating more jobs for the collection and recycling of the plastic bag waste. Given the significant state support of EPR laws for mercury thermostats and e-waste, a federal EPR law for plastic bags is likely to be an attainable goal.¹⁸⁷ If it is not, states should acknowledge the numerous harms associated with unregulated plastic bag use and enact their own single-use plastic bag EPR laws.

CONCLUSION

The environmental and economic effects of plastic bag usage will continue to persist if the federal government does not take action. State preemption is becoming increasingly popular. Three states preempted local governments from enacting plastic bag policies in 2019 alone.¹⁸⁸ As stated by Justice Guzman and Justice Lehrmann in their concurring opinion in *City of Laredo v. Laredo Merchant's Association*, state preemption cannot be cured by the judicial branch; it is up to the legislature to “balance the benefits of uniform regulation and the myriad burdens (financial or otherwise) that may be imposed on taxpayers, businesses, and the environment.”¹⁸⁹

Unlike a plastic bag ban or fee, developing a federal Extended Producer Responsibility law will facilitate significant environmental and economic benefits while eliminating the issues of uniform regulation associated with plastic bag bans and fees. By placing the burden of collecting and properly recycling plastic bags on manufacturers, the financial and environmental costs of plastic bags incurred by local governments will be alleviated. Not only does the federal government have the authority to enact a nationwide plastic bag EPR law, such an EPR law fits within the stated purpose of the Resource Conservation and Recovery Act: reducing the amount of waste generated; improving solid waste management through research and development; and facilitating a “cooperative effort . . . to recover valuable materials and energy from solid

186. *Frequently Asked Questions: Benefits of Recycling*, *supra* note 166.

187. See Nash & Bosso, *supra* note 13, at 179–81.

188. *State Plastic and Paper Bag Legislation*, *supra* note 8.

189. *City of Laredo v. Laredo Merchs. Ass'n*, 550 S.W.3d 586, 604 (Tex. 2018) (Guzman, J., concurring).

waste.”¹⁹⁰ Thus, a federal EPR law is the best option for addressing the serious costs of plastic bag usage suffered by the environment, avoiding issues associated with state preemption, and encouraging innovation that can reduce the damaging impacts of plastic bag use in America.

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190. Resource Conservation and Recovery Act of 1976, Pub. L. No. 94-580, § 1003, 90 Stat. 2795, 2798 (codified at 42 U.S.C. § 6902).

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