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COMMENT

MARYLAND’S ENVIRONMENTAL AND LEGAL TREND AWAY FROM A PLASTIC PACKAGING CONSUMER CULTURE TO A MORE SUSTAINABLE SOLUTION

By: Michael Hart¹

I. INTRODUCTION

In a global shift away from single-use plastics, lawmakers are implementing significant changes to reduce consumer dependence on single-use plastic packaging.² Examples range from countries, such as Peru, which phased out all single-use plastic bags, to cities, such as Washington D.C., that banned businesses from distributing plastic straws.³ Maryland recently enacted one of the first statewide bans on single-use plastics, which prohibited the sale of expanded polystyrene food service products.⁴ The ban represents Maryland’s role in a broader effort to reduce the harmful environmental effects of single-use plastic packaging experienced around the country and the world.⁵

On June 27, 2017, Governor Hogan signed Executive Order 01.01.2017.13, known as the Resource Recovery Plan for Maryland.⁶ This

¹ Michael Hart: J.D. Candidate, 2021, University of Baltimore School of Law. Special thanks to the entire University of Baltimore Law Forum staff for their editorial assistance. Also, thank you to my faculty advisor, Donald Jodrey, for his wonderful insight and guidance. Finally, many thanks to my family and friends for their support throughout my law school career.

² Brian Clark Howard, Sarah Gibbens, Elaina Zachos & Laura Parker, *A Running List of Action on Plastic Pollution*, NAT’L GEOGRAPHIC (June 10, 2019), <https://www.nationalgeographic.com/environment/2018/07/ocean-plastic-pollution-solutions/#close>.

³ *Id.*

⁴ Scott Dance, *Maryland is Set to Become the First State to go Foam-free. What Will it Cost?*, BALT. SUN (Apr. 18, 2019, 10:10 AM), <https://www.baltimoresun.com/news/environment/bs-md-foam-ban-20190411-story.html> (Expanded polystyrene is commonly known as Styrofoam. The specific Styrofoam that is targeted by this statewide ban is the Styrofoam typically used in the food service business. These are referred to as “take-out” containers. There are several other Styrofoam products that are used in Maryland, such as Styrofoam trays used for meals at public schools statewide).

⁵ *Id.*

⁶ *Waste Reduction and Resource Recovery Executive Order*, MD. DEP’T OF THE ENV’T (Nov. 1, 2019),

order seeks to implement a sustainable materials management system by evaluating the environmental impacts of consumer products in Maryland.⁷ One phase of this commitment is the statewide polystyrene ban that will go into effect July 1, 2020.⁸ The bill specifically prohibits the sale of polystyrene food service products used within Maryland.⁹ The polystyrene ban is certainly part of a larger movement towards mitigating consumer dependency on single-use plastics. However, the polystyrene ban may only reflect a modest attempt to curb environmental concerns surrounding plastic pollution, and may not be the most effective approach to achieve Maryland's environmental goals.

This comment will analyze the impact that the polystyrene ban will have in Maryland and how the state should further address the environmental concerns surrounding single-use plastic use. Part I will discuss the history of single-use plastic pollution, beginning with the global shift in consumer demand for more environmentally beneficial materials.¹⁰ Part I will further provide the history of single-use plastic bans in the United States, the types of plastic products targeted, and the rate at which these bills are introduced each year across the country.¹¹ Last, Part I will focus on the development of the recent statewide polystyrene ban in Maryland and its relationship to earlier polystyrene bans initiated by specific counties in Maryland.¹²

Part II will analyze the issues surrounding a polystyrene ban, and whether this type of legislative action will sufficiently achieve Maryland's environmental goals. Part III will discuss the implementation and enforcement of the polystyrene ban, recommendations for further legislative action, and alternative materials that could potentially replace the banned polystyrene products.¹³ Finally, this comment will provide answers to the noted issues, and propose legislation that could concentrate and amend policies to accurately and adequately address Maryland's environmental concerns.¹⁴

<https://mde.maryland.gov/programs/LAND/RecyclingandOperationsprogram/Pages/Waste-Reduction-and-Resource-Recovery-Executive-Order.aspx>.

⁷ *Id.* (The order focuses on a Sustainable Materials Management (SMM) program that involves a comprehensive approach to product sustainability).

⁸ H.B. 0109/S.B. 0285, 439th Gen Assemb., Reg. Sess. (Md. 2019).

⁹ Dance, *supra* note 4.

¹⁰ *See infra* Part I.A.

¹¹ *See infra* Part I.B.

¹² *See infra* Part I.C.

¹³ *See infra* Part II.

¹⁴ *See infra* Part III.

II. HISTORICAL DEVELOPMENT

A. *Global impact of single-use plastic pollution.*

Over the past several decades, the world population has grown dependent upon plastic packaging, resulting in a single-use plastic consumer culture.¹⁵ Since 1974, plastic consumption per year has increased from 4.4 pounds per capita to ninety-five pounds per capita globally, and continues to increase.¹⁶ Recently, the estimated total of plastic produced worldwide annually was over 300 million tons, and more than half of that plastic was designated for single-use purposes.¹⁷ Of the overall plastic produced, an average of nine percent is typically recycled.¹⁸ Therefore, the ninety-one percent of plastic that is not recycled either collects in landfills or pollutes waterways.¹⁹ Thus, studies estimate that more than eight million tons of plastic finds its way to the oceans each year.²⁰

Plastic is a significant pollutant because it does not decompose easily, and sometimes requires hundreds of years to break down.²¹ When plastic enters waterways, marine life typically ingests the plastic components.²² Reports show that more than ninety percent of marine life has consumed plastic particles, and that plastic ingestion kills more than one hundred thousand marine life each year.²³ While plastic pollution directly affects marine life, it also substantially harms the health of consumers who depend on marine life.²⁴ Individuals ingest approximately seventy-thousand micro plastics each year after consumption of some type of marine life.²⁵ As a result, there has been a global movement to reduce the amount of single-use

¹⁵ Seneo Mwamba, *10 Facts About Plastic Pollution You Absolutely Need to Know*, GLOB. CITIZEN (June 14, 2018), <https://www.globalcitizen.org/en/content/plastic-pollution-facts/>.

¹⁶ *Id.* (To put this statistic into perspective, each person in 1974 used an average of 4.4 pounds of plastic packaging, and as of 2018, each person in the world used an average of ninety-five pounds of plastic packaging. This increase is substantial because of the significant growth in population since 1974 and the expansion of plastics in daily life).

¹⁷ *The Facts Are Overwhelming*, PLASTIC OCEANS, <https://plasticoceans.org/the-facts/> (last visited Mar. 13, 2020).

¹⁸ Mwamba, *supra* note 15.

¹⁹ *Id.* (The focus globally is on the plastic pollution that ends up in the oceans. Landfills are not addressed in this section because the landfill issue is more appropriate to the United States).

²⁰ *The Facts Are Overwhelming*, *supra* note 17.

²¹ *Id.*

²² Mwamba, *supra* note 15 (“Additionally, more than 90% of all birds and fish are believed to have plastic particles in their stomach”).

²³ *Id.* (“According to the United Nations, ingestion of plastic kills an estimated 1 million marine birds and 100,000 marine animals each year”).

²⁴ *The Facts Are Overwhelming*, *supra* note 17.

²⁵ *Id.*

plastic in the waterways by implementing laws against manufacturing, selling, or using specific single-use plastics.²⁶

B. History of single-use plastic bans in the United States.

Throughout the country, there is a trend towards banning a variety of single-use plastic packaging.²⁷ The movement is gaining traction because “the equivalent of sixty-five trash trucks per day of plastic waste are dumped into the ocean in the United States via our land, rivers, and coasts.”²⁸ Additionally, in 2018, records show that from the plastic that was able to be collected, over 81.4 percent of the plastic waste ended up in landfills.²⁹ Plastic is lightweight, has complex dimensions, and decomposes slowly, so it ends up occupying an extraordinary amount of space in landfills for a long period of time.³⁰ These conditions are problematic provided the amount of plastic produced each year for single-use packaging.

Across the country, plastic regulations are typically focused on three current types of single-use plastics: (1) polystyrene, (2) lightweight plastic bags, and (3) plastic straws.³¹ Approximately twenty-five percent of the United States population lives in a state that has a ban on some type of single-use plastic.³² These regulations aim to reduce the amount of plastic pollution that exists in landfills and waterways, as well as implement preventative approaches to future single-use plastic pollution.³³ Although there is a common goal, states are considering a wide variety of approaches to plastic packaging laws.³⁴ Indeed, “while some states are focusing on implementing effective recycling programs, others are imposing bans or fees to discourage the use” of plastic packaging.³⁵ The approaches reflect the different environmental interests of each state within a larger movement.

²⁶ *Id.*

²⁷ Howard et al., *supra* note 2.

²⁸ Jan Dell, *Six Times More Plastic Waste is Burned in U.S. than is Recycled*, PLASTICPOLLUTIONCOALITION (Apr. 30, 2019), <https://www.plasticpollutioncoalition.org/blog/2019/4/29/six-times-more-plastic-waste-is-burned-in-us-than-is-recycled>.

²⁹ *Id.* (Figure 1 – Fate of Post-Consumer Plastic Waste Generated in the United States.)

³⁰ Mwamba, *supra* note 15.

³¹ *Beyond Plastic*, MD. PUB. INT. RSCH. GRP. (Nov. 21, 2019), <https://marylandpirg.org/feature/mdp/beyond-plastic>.

³² *Id.*

³³ *Id.*

³⁴ *State Plastic and Paper Bag Legislation*, NAT'L CONF. OF STATE LEGISLATURES (Nov. 1, 2019), <http://www.ncsl.org/research/environment-and-natural-resources/plastic-bag-legislation.aspx>.

³⁵ *Id.*

1. National polystyrene regulations.

Nonetheless, a significant environmental development throughout the United States is the reduction in the use of polystyrene.³⁶ Polystyrene is commonly known as “Styrofoam,”³⁷ and is recognized as the most harmful form of single-use plastic waste.³⁸ Polystyrene “contains the toxic substances Styrene and Benzene, [as well as] suspected carcinogens and neurotoxins that are hazardous to humans” when absorbed by the body.³⁹ Polystyrene products are able to break down into smaller components, but the smaller components are dangerous because they can take “hundreds of years to fully degrade.”⁴⁰ Some polystyrene products used on a daily basis include food containers, plates, hot and cold beverage cups, trays, and cartons for eggs or other foods.⁴¹ Statistics show that “Americans throw away an estimated twenty-five billion polystyrene cups every year, or about eighty-two cups per person.”⁴² Polystyrene products are difficult to recycle because they are composed of fossil fuels, and when these products are recycled, they typically contaminate other materials that are recycled more efficiently than polystyrene.⁴³

Due to the harmful characteristics of polystyrene products, several cities, counties, and states throughout the U.S. are implementing bans on polystyrene packaging.⁴⁴ Bans have been implemented in more than two hundred cities and counties.⁴⁵ States that have implemented, or are in the process of implementing statewide bans on polystyrene include Maryland, Vermont, and Maine.⁴⁶ States that are considering bans include California, Oregon, Montana, Hawaii, Colorado, Florida, Virginia, Pennsylvania, New Jersey, Connecticut, Rhode Island, Massachusetts, and New Hampshire.⁴⁷

³⁶ FUTURE CENTRE TRUST, *The Dangers of Polystyrene*, BUS. BARB (July 6, 2010), <http://businessbarbados.com/trending/green-business/the-dangers-of-polystyrene/>.

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Beyond Plastic*, *supra* note 31.

⁴¹ H.B. 0109/S.B. 0285, 439th Gen Assemb., Reg. Sess. (Md. 2019).

⁴² *Beyond Plastic*, *supra* note 31.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.* (“Both McDonalds and Dunkin have committed to phasing out foam cups and containers worldwide”).

⁴⁶ *Id.*

⁴⁷ *Beyond Plastic*, *supra* note 31 (The total number of states with polystyrene ban legislation under consideration is sixteen. It will be interesting to see how the rest of the country follows).

Analyzing the pattern of polystyrene legislation suggests that the number of polystyrene bans will continue to grow each year.⁴⁸

2. Plastic bag bans driven by pollution.

Another targeted area for reduction in plastic is the use of lightweight plastic bags.⁴⁹ Typically, a person only uses a plastic bag on average for twelve to fifteen minutes, yet it typically takes hundreds of years for the bag to decompose.⁵⁰ Around two million lightweight plastic bags are used globally every minute, which accumulates to about five hundred billion to one trillion plastic bags discarded annually.⁵¹ New York alone uses twenty-three billion lightweight plastic bags every year.⁵² Similar to polystyrene, plastic bags are often blown by the wind into the ocean and other waterways due to its lightweight.⁵³ As a result, “state legislatures have considered a number of measures to reduce the prevalence of plastic bags at grocery stores and other businesses.”⁵⁴

Regulators find that “reducing bag use can mitigate harmful impacts to oceans, rivers, lakes, forests, and the wildlife that inhabit(s) them.”⁵⁵ Furthermore, reductions “also relieve pressure on landfills and waste management.”⁵⁶ Since 2014, eight states have banned lightweight plastic bags statewide.⁵⁷ Additionally, ninety-five bills related to plastic bag bans were introduced in 2019.⁵⁸ The ninety-five bills concerning plastic bags also include proposed legislation preventing bans on plastic bags, and instead preempts local government bans and authorizes statewide focus on recycling program improvements.⁵⁹ As the United States concentrates more on plastic single-use bags, states will be forced to make a decision whether to preempt

⁴⁸ *Id.*

⁴⁹ Mwamba, *supra* note 15.

⁵⁰ Mwamba, *supra* note 15; *The Facts Are Overwhelming*, *supra* note 17 (This time period is referred to as the “working life” of the plastic bag, meaning the total time that the bag is actually used).

⁵¹ Mwamba, *supra* note 15.

⁵² *Id.* (According to the New York City Department of Environmental Conservation.)

⁵³ Irina Ivanova, *States Declare War on Styrofoam – “People Think it Breaks Down”*, CBS NEWS (May 1, 2019, 5:39 PM), <https://www.cbsnews.com/news/styrofoam-ban-states-declare-war-people-think-it-breaks-down/>.

⁵⁴ *State Plastic and Paper Bag Legislation*, *supra* note 34.

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.* (California, Connecticut, Delaware, Hawaii, Maine, New York, Oregon, and Vermont have banned single-use plastic bags.)

⁵⁸ *Id.*

⁵⁹ *State Plastic and Paper Bag Legislation*, *supra* note 34.

government action, improve recycling opportunities, or implement statewide bans.

3. Consumer and business implementation of plastic straw bans.

Finally, a third recent trend in the national movement to eliminate plastic single-use packaging has been the introduction of bills to reduce the prevalence of plastic straws.⁶⁰ Regulations on plastic straws are less focused on consumer utilization, but rather, the effects that these products have on wildlife.⁶¹ Reports show that Americans use 175 million straws daily, which amounts to enough straws to circle the globe.⁶² Straws are difficult to recycle due to their dimensions and material structure, so states have chosen alternative approaches to reduce the amount of plastic straw pollution.⁶³ In states such as California, Oregon, and Vermont, straws can be distributed by businesses only if requested by the consumer.⁶⁴ Other states considering similar regulations include Montana, Colorado, Florida, and New Jersey.⁶⁵ Regulation on plastic straws is only beginning to be proposed in legislatures, but it is another indicative aspect of the larger trend away from single-use plastic packaging.

C. History of polystyrene bans in Maryland.

Within the global and national movement in controlling single-use plastic packaging, Maryland is on the forefront of this issue through implementation of its statewide polystyrene ban.⁶⁶ Maryland has enforced polystyrene bans since 2014, but these bans have only been used in a few counties.⁶⁷ Specifically, Montgomery County, Prince George's County, and Anne Arundel County have all implemented polystyrene bans.⁶⁸ As a result of the legislation passed in local counties, Maryland considered and approved a statewide polystyrene ban in 2019.⁶⁹

⁶⁰ *Beyond Plastic*, *supra* note 31.

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Beyond Plastic*, *supra* note 31 (New Jersey, however, considered a complete statewide ban in July 2018 as opposed to a straw on request bill).

⁶⁶ Dance, *supra* note 4.

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ H.B. 0109/S.B. 0285, 439th Gen Assemb., Reg. Sess. (Md. 2019).

Maryland is one of the first states to implement a statewide ban because of the significant effects plastic pollution has on marine life.⁷⁰ Maryland has over 7,719 miles of tidal shoreline that borders the Chesapeake Bay, its tributaries, its coastal bays, and the Atlantic coast.⁷¹ In Baltimore, reports showed that an estimated “115,000 polystyrene cups and carry-out containers washed down Baltimore’s Jones Falls” in just one year, which represents a common path for plastic pollution in Maryland.⁷² Prior to the polystyrene ban, Baltimore installed trash wheels in the Inner Harbor area, which have collected more than 1.028 million polystyrene containers in the last five years.⁷³ The trash wheels prevent polystyrene from carrying further into the Chesapeake Bay and reaching the Atlantic Ocean, but do not stop the littering of polystyrene.⁷⁴

In April 2019, Maryland became one of the first states in the country to pass a statewide ban on polystyrene food containers and cups.⁷⁵ The “House of Delegates voted 100-37 to approve the legislation sponsored by Del. Brooke Lierman, a Baltimore Democrat.”⁷⁶ The Senate also passed the polystyrene ban legislation with a 31-13 vote.⁷⁷ The overwhelming support for the ban meant that “the bill passed both chambers with more than enough votes to override a [potential] veto” by Governor Larry Hogan.⁷⁸ The legislation focused on polystyrene used in food services, carving out exceptions for foam “used to package raw or butchered meat and foam products not used for food service.”⁷⁹ Arguments against the bill represent the resulting challenges for farmers, small businesses, restaurants, coffee shops, and grocery stores that find alternatives to polystyrene more costly.⁸⁰ If organizations do not obey the polystyrene law, “violators would face fines

⁷⁰ Dance, *supra* note 4.

⁷¹ *Maryland’s Shoreline Length Background & Guidance*, MD. DEP’T OF NAT. RES. (Jan. 2013), <https://dnr.maryland.gov/ccs/Documents/MDSshorelineMilesReference.pdf>.

⁷² Dance, *supra* note 4.

⁷³ Scott Broom, *1,028,000 Styrofoam Containers Counted in Just One Maryland Waterway*, WUSA9 (May 14, 2019, 11:28 PM), <https://www.wusa9.com/article/news/local/maryland/1028000-styrofoam-containers-counted-in-just-one-maryland-waterway/65-9a0ec3f8-e1a3-46fc-b24e-26c8dc6acf29>.

⁷⁴ *Id.*

⁷⁵ Luke Broadwater, *Maryland Lawmakers Approve Bill to Become First State in the Country to Ban Foam Food Containers*, BALTIMORE SUN (Apr. 04, 2019, 5:45 PM), <https://www.baltimoresun.com/politics/bs-md-foam-ban-passes-20190403-story.html>.

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *Id.* (This includes packaging used to secure electronics or other fragile products).

⁸⁰ *Id.*

up to \$250.”⁸¹ The polystyrene ban will go into effect July 1, 2020.⁸² This legislation is an initial step in a larger movement towards phasing out single-use plastic packaging in Maryland, and reaching Maryland's environmental goals.⁸³

III. ISSUE

Plastic pollution in Maryland and its waterways is a complex issue. While plastic pollution is harmful, the most lethal pollutants in Maryland are from treatment plants, nitrogen and phosphorus in agricultural runoff, vehicles, and air pollution.⁸⁴ Banning polystyrene may address one harmful pollutant, but whether it will help Maryland achieve its broader environmental goals is a potential issue. The ban burdens food service providers and includes sizeable enforcement costs, where other predominant plastics may be controlled to greater satisfy environmental interests. The recently passed bill prohibiting the sale of polystyrene is a necessary step towards phasing out single-use plastic packaging. However, the bill would likely require further legislation on single-use plastics to effectively address environmental pollution concerns in Maryland.

A. *Polystyrene ban disproportionality holds food service businesses and consumers responsible for polystyrene pollution with higher costs.*

The first question focuses on who bears the responsibility of polystyrene litter and pollution. In making this decision, lawmakers must decide whether consumers, retailers, or manufacturers should be targeted by the impact of a polystyrene ban.⁸⁵ Here, the bill places the cost of eliminating polystyrene on food service businesses.⁸⁶ These organizations include all types of restaurants, cafes, delicatessens, coffee shops, supermarkets, grocery stores, vending trucks, food trucks, movie theatres, dinner theatres, business

⁸¹ Dance, *supra* note 4.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Nitrogen & Phosphorus*, CHESAPEAKE BAY FOUND. (Jan. 4, 2020), <https://www.cbf.org/issues/agriculture/nitrogen-phosphorus.html>.

⁸⁵ H.B. 0109/S.B. 0285, 439th Gen Assemb., Reg. Sess. (Md. 2019) (The bill specifically targets businesses and retailers. It does not discuss whether the responsibility should be placed on consumers or manufacturers. The bill does not discuss why the responsibility is on the businesses and retailers. The reason may be convenience because a transaction between a business or retailer and a consumer is the last step before these items typically result in polluting waterways).

⁸⁶ *Id.*

cafeterias, institutional cafeterias, and schools operated by the state.⁸⁷ There were no indications that the state considered whether other options were available to hold other types of organizations responsible for additional costs caused by a polystyrene ban.

The primary effect of this change is the increase in operational costs for businesses.⁸⁸ The secondary effects of these costs will likely be passed on as higher prices for consumers.⁸⁹ The estimated increase for some restaurants is from five cents to more than a dollar per item for alternative food packaging, which could reflect a small increase for everyday consumers but large increases for businesses.⁹⁰ Additionally, the polystyrene ban placed on food service businesses is part of a set of Maryland laws that recently increased minimum wage and paid sick leave for employees of food service businesses.⁹¹ The combination of these recent laws in such a short period of time creates a great deal of strain for food service businesses in Maryland.⁹²

While small food service businesses are most affected by the polystyrene ban, larger institutions that will also observe higher costs are public schools in Maryland.⁹³ When the polystyrene ban was implemented in Anne Arundel County in early 2020, school officials estimated that costs per year would increase individual school budgets close to \$700,000 for polystyrene alternatives used to serve everyday meals for students.⁹⁴ According to the polystyrene legislation fiscal and policy note, Baltimore County Public Schools estimate expenditures will increase by close to \$304,000 annually.⁹⁵ These increases could amount to millions in additional costs for schools across the state as the institutions look for alternatives to polystyrene packaging.⁹⁶

Finally, larger corporations such as Dart Container Corporation (“Dart”) will also be impacted by the legislation.⁹⁷ Dart is a manufacturer of polystyrene food packaging and employs over eight hundred people in

⁸⁷ *Id.*

⁸⁸ Dance, *supra* note 4.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.* (This viewpoint was expressed by one particular restaurant owner in a Baltimore Sun article. It does not reflect the opinion of all food service business owners in Maryland. However, it is in line with the concerns that were addressed during the hearings in the General Assembly. Some business owners were concerned with the costs, while others already made the change to alternative products without evidence of additional strain).

⁹³ Dance, *supra* note 4 (These include grocery stores, hospitals, and school cafeterias).

⁹⁴ *Id.*

⁹⁵ GEN. ASSEMB. OF MD. DEPT. OF LEGIS. SERV., FISCAL AND POLICY NOTE THIRD READER-REVISED HOUSE BILL 109/ SENATE BILL 0285 1, at 1 (2019).

⁹⁶ Dance, *supra* note 4.

⁹⁷ *Id.*

Maryland.⁹⁸ Although Dart does not produce polystyrene packaging in Maryland, the legislation complicates the company's ties to Maryland and its future as an employer in the state.⁹⁹ Dart is currently challenging polystyrene bans across the country as more are introduced each year.¹⁰⁰

B. Implementation of the polystyrene ban ties up government resources while also leaving significant gaps in reducing litter.

To implement and educate Marylanders on the polystyrene ban, statewide governments estimate that general fund expenditures will increase by \$150,000 in 2020.¹⁰¹ The unknown is whether this increase will move Maryland towards greater environmental benchmarks. The polystyrene ban is not particularly complex or punitive.¹⁰² Businesses must receive written notice of a potential violation and fail to correct it before receiving a fine of only \$250.00.¹⁰³ Further, the bill provides a one-year exemption to businesses that potentially find the polystyrene ban to be a significant burden.¹⁰⁴

The ban is limited to polystyrene that is used for food and beverages, and ignores the polystyrene used extensively outside of food packaging.¹⁰⁵ Since the enforcement of the polystyrene ban is limited to the use of polystyrene in food service, it leaves extensive gaps for litter and pollution to continue in Maryland.¹⁰⁶ In a recent report, seventy-five percent of individuals admitted to littering in a five-year period.¹⁰⁷ Polystyrene is one

⁹⁸ *Id.*

⁹⁹ Scott Broom, *The Decision to Ban Styrofoam Containers in Maryland isn't Easy. Here's Why.*, WUSA9 (May 23, 2019, 6:25 PM), <https://www.wusa9.com/article/news/local/the-decision-to-ban-styrofoam-containers-in-maryland-isnt-easy-heres-why/65-80bff5af-9308-40ef-9e7f-909cb7a93cb3>.

¹⁰⁰ Michael Corkery, *Your Foam Cup Is Fighting For Its Life*, N.Y. TIMES (Feb. 10, 2020), <https://www.nytimes.com/2020/02/10/business/dart-foam-recycling.html>.

¹⁰¹ *Fiscal and Policy Note*, *supra* note 95 (Largely focused on education and providing resources for county departments of health or environmental protection. These departments will oversee enforcement).

¹⁰² Dance, *supra* note 4.

¹⁰³ H.B. 0109/S.B. 0285, 439th Gen Assemb., Reg. Sess. (Md. 2019). (This is for each item or per violation.)

¹⁰⁴ *Id.*

¹⁰⁵ Dance, *supra* note 4 (This includes packaging used to secure electronics or other fragile products).

¹⁰⁶ Frank Liesman, *Opinion: Instead of Banning Polystyrene Foam, Enhance State's Ability to Recycle It*, MD. MATTERS (May 22, 2019), <https://www.marylandmatters.org/2019/05/22/opinion-instead-of-banning-polystyrene-foam-enhance-states-ability-to-recycle-it/>.

¹⁰⁷ Brandon Gaille, *11 Littering Statistics in America*, BRANDONGAILLE (May 28, 2017), <https://brandongaille.com/littering-statistics-america/>.

of the leading contributors to littering in Maryland's waterways, but it may be the result of a littering problem, and not a polystyrene issue.¹⁰⁸

In San Francisco, California, the polystyrene ban there has raised doubts as to its effectiveness in the short period since implementation.¹⁰⁹ Specifically, the city claimed a reduction of polystyrene litter by thirty-six percent, however, reports show that polystyrene represented less than two percent of litter from the start of the program.¹¹⁰ The polystyrene ban focuses on a very limited product, and fails to address whether or not individuals will simply litter the alternatives to polystyrene after the ban.

C. *The polystyrene ban's environmental effect is disproportionate to other plastic packaging.*

There is uncertainty whether the bill will have a significant impact on pollution and the environment. Polystyrene represents a small portion of overall pollution, and a ban may not lead to achieving environmental reduction goals.¹¹¹ Polystyrene accounts for an insignificant amount of landfill use, has less of an environmental effect than other materials in its production, and is already food certified and recyclable.¹¹² Polystyrene should be banned to clean up litter in the waterways, but regulation should focus on more harmful single use plastics, and promote sustainable alternatives.

1. The ban reduces water pollution, but is indifferent to landfill use.

For every one percent of overall waste, polystyrene accounts for nearly ten to forty percent of litter found in the waterways in Maryland.¹¹³ However, the lightweight of polystyrene takes up far less than one percent of the overall volume of waste in landfills, demonstrating the bills weakness in reducing landfill use.¹¹⁴ The polystyrene ban could eliminate a portion of litter in the waterways, but still fail to maintain the overwhelming amount of plastic pollution found in landfills.

¹⁰⁸ Liesman, *supra* note 106.

¹⁰⁹ Broom, *supra* note 99.

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.* (According to Baltimore Doctor Richard Bruno).

¹¹⁴ Broom, *supra* note 99.

2. Legislation should compare life cycles of plastic packaging and alternatives.

The environmental impact caused by polystyrene may be outweighed by the full life cycle of other plastic packaging such as plastic bags, straws, and other plastic packaging materials.¹¹⁵ Full life cycle refers to the overall production and distribution of materials and the methods used to recycle materials.¹¹⁶ Legislation should focus on other forms of plastic packaging because their full life cycle typically have a greater impact on the environment than polystyrene.¹¹⁷ Reports show that lightweight plastics like polystyrene may not have as much of an impact on pollution given that the material is fairly easy to produce, which requires less energy consumption and raw materials for production.¹¹⁸ Further, legislation should not only regulate other forms of plastic packaging based on life cycle, but consider use of potential environmentally beneficial materials such as paper packaging.¹¹⁹

3. Polystyrene already has food safety approvals and may be recycled.

Polystyrene is used in food packaging that has been approved by the U.S. Food and Drug Administration for decades, whereas new products may require a review period to determine its food safety qualities.¹²⁰ Therefore, the statewide polystyrene ban raises concerns as to whether alternatives would be able to overcome the health environmental benchmarks.¹²¹ Other plastics can replace polystyrene, but this dependence on plastic may result in similar issues in other plastics leading to similar bans. The alternative that meets the quality and food safety regulations of the federal government is paper packaging, which is an alternative that closely identifies with the characteristics of plastic packaging.¹²²

The polystyrene ban introduces the issue of whether polystyrene should be incorporated into Maryland recycling programs.¹²³ The concept of recycling polystyrene is difficult given the complex and expensive process

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.* (The full life cycle, including production, must be taken into consideration when assessing the environmental impact).

¹¹⁸ *Id.*

¹¹⁹ Broom, *supra* note 99.

¹²⁰ Liesman, *supra* note 106.

¹²¹ *Id.*

¹²² *Id.*

¹²³ Broom, *supra* note 99.

for such an inexpensive product.¹²⁴ While polystyrene is recyclable, reports find that there is no practical space or use for a polystyrene recycled product.¹²⁵ Specifically, “foam is a problem child for many facilities since it can easily break up and contaminate other, more profitable recyclables.”¹²⁶ Polystyrene containers are hard to clean and add a complicated step to recycling processes.¹²⁷ Still, polystyrene had an overall recycling rate of thirty-eight percent in 2016.¹²⁸ Policymakers worry that Maryland does not have the infrastructure to support recycling of alternatives to polystyrene when a recycling option for polystyrene may already be implemented.¹²⁹

D. *The polystyrene ban has a minor role in the larger movement.*

While Maryland remains one of the first states to implement a statewide polystyrene ban, lawmakers are behind in addressing broader single-use plastic issues.¹³⁰ In the global shift to eliminate single-use plastics, questions must be raised as to whether a polystyrene ban is focused on the correct area of litter and pollution in Maryland.¹³¹ A polystyrene ban may be an important symbolic step in the right direction to phase out consumer dependence on single-use plastic packaging, however, more effective and stronger regulations could be implemented to tackle environmental issues in Maryland.

IV. SOLUTION

A. *Polystyrene ban should be implemented, but also expanded to have a significant effect on environmental issues.*

Overall, Maryland’s recent polystyrene ban will likely have a positive impact on the shift towards eliminating dependence on single-use plastic packaging. The ban will be effective because polystyrene is harmful to marine life given its chemical components, and it typically pollutes Maryland waterways because of its capacity to float.¹³² However, when it is broken

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ Lisa McTigue Pierce, *Target, McDonald’s and Others Nix EPS Packaging*, PACKAGING DIG. (Aug. 18, 2017), <https://www.packagingdigest.com/sustainable-packaging/target-mcdonalds-and-others-nix-eps-packaging-2017-08-15>.

¹²⁹ Liesman, *supra* note 106.

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² Broom, *supra* note 99.

down into small components, it does not float and it is difficult to filter out of the waterways the same way that mechanical collection units, such as the Mr. Trash Wheel, are able to filter hard and rigid plastic packaging.¹³³ Additionally, polystyrene may only account for a small percentage of overall waste in landfills, but its weight to space ratio is a distinct quality.¹³⁴ Polystyrene takes up more than four times the amount of space compared to other forms of waste with the same weight, which also makes recycling drastically inefficient.¹³⁵

In spite of the fact that there is limited economic and environmental information in Maryland given that the majority of polystyrene bans are new, Montgomery County, Prince George's County, and Anne Arundel County have reported successful implementation of their initial polystyrene bans in the time leading up to the statewide ban.¹³⁶ Lawmakers argued that the economic impact on businesses and the state are minimal compared to the environmental momentum and litter reduction created by the polystyrene ban.¹³⁷ The polystyrene ban may not fully address Maryland environmental goals and concerns, but instead, represent a small step in a larger movement away from single-use plastic packaging.

B. A more comprehensive approach to environmental goals instead of a single ban may help achieve Maryland goals.

A polystyrene ban may represent a shift to eliminate single-use plastic packaging, however, Maryland should propose further legislation in order to support a significant change.¹³⁸ Two straight forward initiatives that could be implemented in the wake of the polystyrene ban are banning lightweight plastic bags and the use of plastic straws.¹³⁹ These bans are implemented in several cities, counties, and states, and continue to be introduced into local legislatures each year.¹⁴⁰

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ Dance, *supra* note 4.

¹³⁷ *Id.*

¹³⁸ This would be proposed in conjunction with educational programs on plastic litter and pollution.

¹³⁹ Sarah Gibbens, *See the Complicated Landscape of Plastic Bans in U.S.*, NAT'L GEOGRAPHIC (Aug. 15, 2019), <https://www.nationalgeographic.com/environment/2019/08/map-shows-the-complicated-landscape-of-plastic-bans/>. (There is very limited discussion in Maryland of a statewide ban concerning lightweight plastic bags and plastic straws.)

¹⁴⁰ *Id.*

As previously discussed, several states implemented a statewide ban on lightweight plastic bags.¹⁴¹ Similar to polystyrene, lightweight plastic bags “are among the most ubiquitous forms of litter, fouling ecosystems and harming wildlife.”¹⁴² Several counties in Maryland have attempted to issue lightweight plastic bag bans, but only a handful of these counties have actually succeeded.¹⁴³

Maryland may soon decide whether to implement a statewide ban on lightweight plastic bags while the topic is currently debated in Baltimore City.¹⁴⁴ Reports concerning litter collected in Baltimore’s harbor indicate that the Mr. Trash Wheel has collected over 673,218 plastic bags since its implementation in 2014.¹⁴⁵ Baltimore is proposing a regulation, in which retailers would be banned from using plastic bags and five cents extra would be charged for other types of bags in order to eliminate this type of litter.¹⁴⁶ The ban on lightweight plastic bags could prevent a great deal of harm caused to marine life and reduce more widely used plastic bags compared to eliminating the limited uses of polystyrene food packaging.¹⁴⁷ The structure of this proposed bill in Baltimore could be implemented statewide to eliminate one of the most harmful forms of single-use packaging found in Maryland.

Maryland lawmakers have not introduced single-use plastic bans on straws, but ironically, restaurants and corporations throughout the state are leading the initiative.¹⁴⁸ Governments typically implement regulations to enforce change, but this is another approach to an environmental issue where businesses and consumers are creating changes without the government’s directive.¹⁴⁹ The ban on straws is a relatively new concept due to the effect of plastic straws on wildlife.¹⁵⁰ The shift away from plastic single-use straws was not driven by government legislation, but instead, by consumers holding large brand owners responsible for the effects these single-use plastics have

¹⁴¹ *Beyond Plastic*, *supra* note 31.

¹⁴² Liz Bowie, *Baltimore City Council Approves Bill to Ban Retailers’ Use of Plastic Bags, Set 5-cent Per Paper Bag*, BALT. SUN (Nov. 4, 2019, 7:53 PM), <https://www.baltimoresun.com/politics/bs-md-ci-bag-ban-vote-20191105-pyrrqz2acwjhpdxhdbh22ecik2e-story.html>.

¹⁴³ *Maryland Bag Legislations*, S. WALTER PACKAGING (Jan. 4, 2020), <https://www.baglaws.com/legislation/state/maryland/>.

¹⁴⁴ Bowie, *supra* note 142.

¹⁴⁵ *Mr. Trash Wheel*, WATERFRONT P’SHP (Jan. 4, 2020), <https://www.mrtrashwheel.com>.

¹⁴⁶ Bowie, *supra* note 142.

¹⁴⁷ *Id.*

¹⁴⁸ Lorraine Mirabella, *More Eateries, Businesses do Away with Plastic Straws*, BALT. SUN (July 13, 2018, 5:00 AM), <https://www.baltimoresun.com/business/bs-bz-plastic-straw-replacements-20180711-story.html>.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

on marine life.¹⁵¹ As a result, companies such as Starbucks have committed to reducing the amount of plastic straws that are used each year in the operation of their business.¹⁵² This change is a more national approach as opposed to local governments implementing the change in a small area and moving outwards.¹⁵³ Proposed legislation for a statewide ban could amplify momentum to eliminate pollution from this type of single-use plastic.

C. Why paper packaging as an alternative to polystyrene and other single-use plastics may achieve environmental goals

The polystyrene ban is a reactive approach to littering and pollution in Maryland, rather than a preventative approach in the manufacturing of polystyrene products. Banning polystyrene does not address the littering problem that will likely continue to result in the use of an alternative product. It further fails to provide sufficient alternatives to replace the newly banned material.¹⁵⁴ Instead, lawmakers rely on the notion that a ban will create demand for alternatives from manufacturers, but there is no guarantee the substitutes will be environmentally friendly.¹⁵⁵ Therefore, lawmakers should not only target those selling polystyrene and single-use plastic products, but also implement changes in manufacturing to support alternatives found to be more environmentally friendly.

As technology in paper packaging and environmentally focused polymers develop, Maryland can take a more active role in providing consumers with appropriate materials to achieve food safety, environmental, economic, and health goals. Of course, there is doubt as to whether an alternative such as paper would be able to achieve these results. In a recent Minnesota report, the Pollution Control Agency found that, “a paper bag has over three times the global warming potential of a conventional plastic bag.”¹⁵⁶ The life cycle production of paper packaging, “requires several times more energy, fossil fuel and water use, causes more greenhouse gas emissions, and results in more solid waste than thin plastic film.”¹⁵⁷ This is comparable to polystyrene cups and poly coated paper cups.¹⁵⁸ Thus, it is unclear whether paper would be able to sufficiently replace polystyrene products when the ban goes into effect, or the plastic alternatives likely to be used.

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ Mirabella, *supra* note 148.

¹⁵⁴ Liesman, *supra* note 106.

¹⁵⁵ *Id.*

¹⁵⁶ Broom, *supra* note 99.

¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

Paper may involve a more harmful life cycle in manufacturing a paper packaging product compared to plastics.¹⁵⁹ However, studies show that developments in these processes are reducing the manufacturing footprint on the environment and slowly becoming a preferable alternative to plastics.¹⁶⁰ In addition to manufacturing efficiencies, the paper packaging product is able to reduce litter and pollution sought by the environmental goals of Maryland because it is typically biodegradable.¹⁶¹

Both paper and plastic packaging have negative impacts on the environment.¹⁶² While paper may be biodegradable, paper causes greater short term pollution than plastic, consumes more energy and water in its processing, produces waste, and is not always easy to recycle.¹⁶³ However, as made clear in the polystyrene ban, plastic is a large contributor to litter, poses danger to wildlife, takes a significantly long time to degrade, and is also very challenging to recycle.¹⁶⁴ Weighing the environmental characteristics of plastic and paper demonstrate that environmental goals should be systematically approached by specific material production, use, and recyclability, rather than target an end consumer product with a ban.

Therefore, there is no clear distinction between whether paper or plastic is better for the Maryland environment. Instead, policymakers should work with manufacturers and focus on technology to create materials that are biodegradable or paper processes that have a less substantial environmental impact. Groups such as the American Chemistry Council turn more towards this approach, placing the environmental burden on manufacturers and requesting that manufacturers perform collective research to develop a more holistic approach to eliminating harmful materials.¹⁶⁵ Placing the environmental responsibility on the manufacturers who have the resources to be most informed about the characteristics of their products allows these organizations to collectively provide a better environment for Maryland.

¹⁵⁹ *Id.*

¹⁶⁰ Tom Edgington, *Plastic or Paper: Which Bag is Greener?*, BBC NEWS (Jan. 28, 2019), <https://www.bbc.com/news/business-47027792>.

¹⁶¹ *Id.*

¹⁶² Jane McGrath, *Which is more Environmentally Friendly: Paper or Plastic?*, HOWSTUFFWORKS (Jan. 4, 2020), <https://science.howstuffworks.com/environmental/green-science/paper-plastic1.htm>.

¹⁶³ *Id.*

¹⁶⁴ *Id.*

¹⁶⁵ Allyson Wilson, *Plastics Don't Belong in Oceans; Industry Taking Action on Marine Debris*, AM. CHEMISTRY COUNCIL (Jan. 16, 2013), <https://www.americanchemistry.com/Media/PressReleasesTranscripts/ACC-news-releases/Plastics-Dont-Belong-in-Oceans-Industry-Taking-Action-on-Marine-Debris.html>.

V. CONCLUSION

A polystyrene ban reflects a positive movement away from single-use plastic packaging, but leaves several questions and concerns surrounding the ban unanswered. There is ample support to show that single-use plastic dependency needs to be addressed, however, policy approaches to this issue have proven difficult. A polystyrene ban in Maryland could have positive impact on the litter and pollution problems caused by this product. However, this ban only reflects a small step in a larger movement away from single-use plastics and towards a more sustainable future.