



Maryland Chapter

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Committee: Environment and Transportation
Testimony on: HB109 “Expanded Polystyrene Food Service Products – Prohibition”
Position: Support
Hearing Date: February 6, 2019

The Maryland Chapter of the Sierra Club strongly supports HB109, one of our priority bills in 2019. This legislation would establish a statewide ban on expanded polystyrene (EPS) food containers. These products are harmful to the environment and wildlife, contribute to solid waste, and endanger public health. For these reasons, increasing numbers of businesses no longer use them and have switched to food service products that are recyclable or compostable. The two largest counties in Maryland, representing about a third of the state’s population, have successfully banned the use and sale of EPS foam food containers, with no significant impact on businesses or their customers. Similar bans in Annapolis, Rockville, and the City of Baltimore have been approved and are set to go into effect in 2019. HB109 will ensure consistent policy across jurisdictions in Maryland, which is helpful to businesses.

EPS litter is ubiquitous, and is especially harmful to the marine environment

Because EPS foam is inexpensive, lightweight, and nearly indestructible, it is a pervasive form of litter worldwide, and an increasingly serious environmental problem.¹ Sometimes called “white pollution,” EPS litters our land, our rivers and streams, and the oceans.

EPS is an especially harmful form of marine debris. It does not biodegrade; instead, it breaks down into increasingly smaller pieces, known as micro-plastics, which become a garbage soup floating on the ocean surface and are virtually impossible to clean up. EPS is a major component of this mixture.² In some locations, there is almost six times as much plastic as plankton, absorbing oil and other toxins. The alarming increase in ocean plastic pollution has had enormous impact on nearly 300 animal species around the world that includes 44 percent of all seabird species, 43 percent of all marine mammal species, and 86 percent of sea turtles. Marine life – coral, sea turtles, marine mammals, and fish consumed by humans – mistake it for food, with nearly 100 percent mortality from ingestion, starvation, and suffocation.³

¹ “Facts about Styrofoam Litter (Expanded Polystyrene Foam)”; California Clean Water Action:

http://www.cleanwater.org/files/publications/ca/cwa_fact_sheet_polystyrene_litter_2011_03.pdf

² “The Plastics Ban List” note discussion specifically about EPS foam on page 6

<https://static1.squarespace.com/static/5522e85be4b0b65a7c78ac96/t/581cd663d2b857d18a7db3fd/1478284911437/PlasticsBANList2016-11-4.pdf>.

³“The Problem of Marine Plastic Pollution”: <https://www.cleanwater.org/problem-marine-plastic-pollution>

A ban on EPS food containers will *greatly* reduce the harmful environmental effects of EPS litter, by stopping it at its source. That's not insignificant, given the astounding prevalence of EPS foam containers. The United States alone uses and discards over 25 billion foam cups a year, an average of 82 per person! Products with microbeads, a form of microplastics that cause many of the same environmental problems as EPS foam, were banned by the Maryland General Assembly in 2015, followed by a ban nationwide later that same year.

EPS food containers also may be harmful to human health

There is no evidence that the components of EPS foam are as safe as the industry claims. Styrene is a known human carcinogen, and the largest single use for it is in the manufacture of polystyrene.⁴ Workers exposed to styrene have a higher incidence of certain cancers.⁵ Therefore, with respect to the health effects of foam food containers, the Sierra Club subscribes to the Precautionary Principle: "*When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.*"⁶ In other words, why risk the health of people and the environment with a product that has a significant possibility of harm, especially when known safer materials are readily available?

Fish, including species eaten by humans, have been found with plastic microparticles, including polystyrene, in their tissues. Plastics attract toxins in the environment; so humans and animals alike accumulate contaminants as they participate in the food chain.⁷ The long-term, negative effects of human consumption of microplastics through seafood consumption are uncertain; however, given that seafood is a critical food source for vast numbers of human beings, the Precautionary Principle is important in considering a ban on EPS foam containers.

EPS waste cannot be solved through recycling or composting, and is incompatible with Maryland's zero waste goals

EPS food containers are not commonly recycled, nor are they compostable. Recycling foam is not economically sustainable: it's more than 95 percent air and takes up a large amount of space in relation to the amount and value of the product. There are no markets for recycled food-service foam and when included in single-stream recycling, food-service foam contaminates other more valuable materials.⁸ Further, EPS food containers are usually contaminated by food, which renders them unrecyclable or in need of processing before they can be recycled. The *EPS Industry Alliance* has identified six recycling drop-off centers for EPS foam in Maryland, statewide, collected by the industry. However, volunteers who visited these sites found that either they did not accept food containers or would only accept food containers

⁴ Huff and Infante. "Styrene Exposure and Risk of Cancer," *Oxford Journals, Mutagenesis*, 2011. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3165940/>

⁵ National Toxicology Program, "Report on Carcinogens Background Document for Styrene," 2008. https://ntp.niehs.nih.gov/ntp/roc/twelfth/2010/finalbds/styrene_final_508.pdf

⁶ Science and Environmental Health Network, "Precautionary Principle FAQs". <https://www.sehn.org/ppfaqs.html>

⁷ Cole *et al.* "Microplastics as contaminants in the marine environment: A review," *Marine Pollution Bulletin*, 2011. http://www.adventurescientists.org/uploads/7/3/9/8/7398741/cole_et_al_2011_mar_poll_bull.pdf

⁸ New York City Department of Sanitation (NYCDS). "Determination on the Recyclability of Food-service Foam." May 12, 2017, p. 2.

not contaminated with food (see the photos in [Annex 1](#)). Based on an in-depth analysis and consultation, the New York City Department of Sanitation determined in 2017 that “Food Service Foam **cannot be recycled** in a manner that is economically feasible or environmentally effective for New York City.”⁹

As a result, virtually all EPS food containers that are captured in the waste stream are landfilled or incinerated. Looking at EPS only in terms of its weight, the *2016 Maryland Statewide Waste Characterization Study* found that EPS comprises 1.5 percent of municipal solid waste (MSW) generated statewide and 4.5 percent of MSW that “is not current/widely recyclable” – an estimated 56,761 tons.¹⁰ But the impact of EPS on landfills is many times greater because of its *high volume*, notwithstanding its very light weight (see the photo in [Annex 2](#) comparing the volume of EPS foam cups and rigid polystyrene cups.)

An EPS food container ban will help Maryland achieve its zero waste goal of overall waste diversion of 85 percent by 2040. Maryland’s *2014 Zero Waste Plan* advocates banning products that are economically or technologically infeasible to recycle or that are not typically accepted through main recycling channels.¹¹ The zero waste goals are an important part of the state’s *Greenhouse Gas Emission Reduction Plan*; their achievement would reduce carbon dioxide-equivalent emissions by 1.48 million metric tons by 2020.¹²

Bans on EPS food containers are already working in Maryland’s two largest counties

Bans on the provision and sale of EPS food containers similar to what is proposed by this legislation went into effect in Montgomery and Prince George’s Counties in 2016.¹³ The bans were designed so that the launch dates were preceded by information campaigns to educate businesses about the reasons for banning EPS food containers and the availability of alternative products. Businesses were given 12-15 months to draw down their stocks. Enforcement in both counties is complaint-driven and also monitored by public health inspectors in the course of their normal work in inspecting food service establishments. Businesses using foam after the bans went into effect are given warnings and additional time to draw down their stock.

Even before these bans were adopted, alternatives to EPS food containers were already in wide use. In March 2015, prior to the passage of the Prince George’s County ban, the Sierra Club surveyed a 15 percent random sample of restaurants, fast food businesses, and carry-outs countywide ([Annex 3](#), Figure 3a). While three-quarters of these eateries had at least one EPS

⁹ *Ibid*, p. 2. This determination has been upheld by the courts as “neither arbitrary or capricious, nor without rational basis.” Eric A. Goldstein, NY City Environment Director, National Resources Defense Council blog, 10/18/2018.

¹⁰ Northeast Maryland Waste Disposal Authority on behalf of Maryland Department of the Environment, *2016 Maryland Statewide Waste Characterization Study*, Final Report, July 14, 2017. Estimated total MSW = 3,784,062 tons annually (Table 3-1). EPS is 1.5% (Table 3-3, Adjusted Composition) = 56,761 tons; MSW tonnage not currently/widely recyclable is 33.6% (Figure 3-5) = 1,271,445 tons. $56,761 \div 1,271,455 = 4.5\%$.

¹¹ Maryland Department of the Environment, *Zero Waste Maryland: Maryland’s Plan to Reduce, Reuse, and Recycle Nearly All Waste Generated in Maryland by 2040*. December 2014, p. 53.

¹² Maryland Department of the Environment, *Greenhouse Gas Emissions Reduction Act Plan UPDATE*, 2015, p. 82.

¹³ The Montgomery County ban covers unincorporated areas. Municipal bans have been adopted in Takoma Park, Gaithersburg, and Rockville. The first two of these municipal bans are already in effect; Rockville’s will begin in late 2019. Prince George’s County’s ban includes all incorporated and unincorporated areas. Washington, D.C., has a ban on EPS foam containers in food service establishments, but excludes the retail sale of EPS food containers.

single-use food container, they were simultaneously using other types of containers, including recyclable plastic (81 percent), compostable paper (63 percent), and recyclable aluminum (20 percent, Figure 3b). Only 3 percent were exclusively using EPS food containers before the ban.

Compliance with the bans in the two counties is high and increasing. Schools and hospitals in both counties have replaced their foam containers with alternatives. In 2017-18, Sierra Club volunteers in Prince George's and Montgomery Counties went door-to-door in shopping centers, educating businesses about the ban and monitoring compliance.¹⁴

- Among the 465 businesses contacted in Prince George's County, the compliance rate in spring 2017 (8-10 months after the ban went into effect) was 76 percent (Annex 4, Figures 4a-b). Following the face-to-face education with businesses, compliance as of October 2017 rose to 91 percent. Most of the remaining non-compliant businesses were in the process of transitioning. According to the County's Department of the Environment, no businesses in Prince George's have been fined; all have complied after inspectors' visits.
- Among the 328 businesses contacted by Sierra Club volunteers in Montgomery County in winter 2017-18, overall compliance stood at 86 percent, and the compliance rate in Gaithersburg – with a separate municipal ban – was 90 percent (Annex 4, Figures 4c-d).

The Sierra Club's monitoring has found that the main reason for non-compliance is lack of information. In both counties, pharmacies were less informed but have promptly complied once they learned of the ban and the rationale. Turnover in businesses, ownership, and management also needs to be anticipated; some degree of educational outreach will be necessary on a continuing basis. Adoption of uniform statewide regulations, as provided by this legislation, would eliminate confusion and inconvenience among.

Conclusion

EPS foam food containers have particularly harmful impacts on the environment, are incompatible with Maryland's zero waste goals, and may be harmful to human health. Bans on EPS food containers already have been successfully implemented for a third of Maryland's population, with no significant impact on businesses or consumers. The Sierra Club urges you to extend these bans statewide by acting favorably on this bill.

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Founded in 1892, the Sierra Club is America's oldest and largest grassroots environmental organization. The Maryland Chapter has more than 70,000 members and supporters, and the Sierra Club nationwide has approximately 800,000 members.

¹⁴ Businesses are educated about the objectives of the ban; those who are non-compliant are given literature on the ban and advised to draw down their stock as soon as possible and to replace it with alternatives. The objective is to help businesses to comply, not to report them to authorities.

Annexes

1. EPS foam drop-off recycling centers in Maryland
2. EPS foam is lightweight and high volume
3. Baseline use of EPS foam food containers and alternatives before the Prince George's County ban was approved (March 2015)
4. Compliance with EPS foam bans in Prince George's and Montgomery Counties

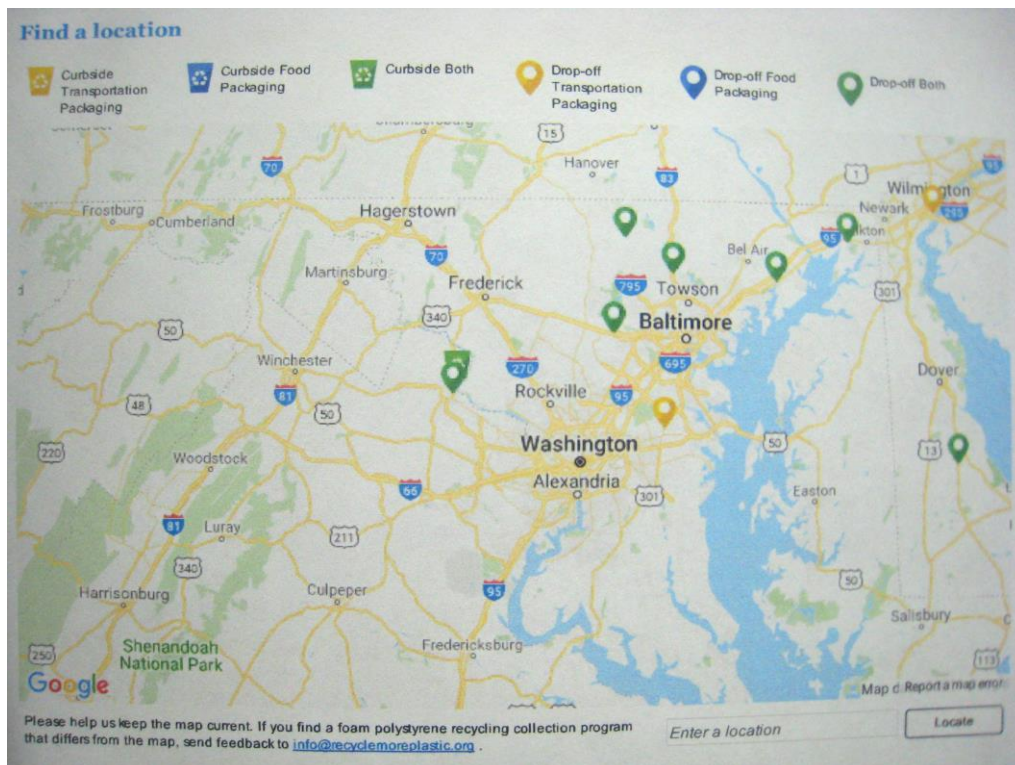
Annex 1: EPS foam drop-off recycling centers in Maryland

The website for the *EPS Industry Alliance* maps six recycling drop-off centers for EPS foam in Maryland, with symbols indicating that five accept both foam food packaging and foam transportation packaging (large blocks of foam). Volunteers visited all of the functioning sites and took photos of the containers and signage, presented in this Annex.¹⁵

The *EPS Industry Alliance* offers the following advice on drop-off recycling of EPS foam:¹⁶

“The majority of EPS recycling locations listed are intended to serve as outlets for EPS packaging only. Each EPS collection site has distinct criteria regarding the types of material they accept. Food service EPS materials are usually NOT accepted.”

This conclusion was borne out by the volunteers. To the extent that recycling of EPS is taking place at these centers, it is for the most part large blocks of foam used for packaging. The drop-off centers either do not accept EPS food containers or only accept them if they are not contaminated with food. In explaining the rationale for their “Mail-Back Recycling” program, the website says, *“Because of challenging transportation logistics and high contamination rates, there are a limited number of community-based collection programs that accept EPS.”*



¹⁵ One of the six drop-off sites – Lifoam Industries, in Hunt Valley, MD -- no longer exists because Lifoam Industries at this location has closed. Since 2018, the drop off center on Sisson Street in the City of Baltimore has also closed and no longer appears on the map, and the Crofton drop-off does not accept EPS food service ware.

¹⁶ http://www.epspackaging.org/index.php?option=com_content&view=article&id=8&Itemid=4

#1 Anne Arundel County: EPS Industry Alliance, 1298 Cronson Blvd, Crofton, MD 21114 (800-607-3772) Does not accept food packaging or packing peanuts.



#2 **Howard County: Alpha Ridge Landfill, Residents' Convenience Center, 2350 Marriottsville Road, Marriottsville, MD 21104 (410-313-6444)** Foam must be #6; must be clean with no food remnants or liquid. Accepted: foam packaging; clean cups and containers, egg cartons, meat trays, lunch trays. Not accepted: foam peanuts; straws, lids, tape, stickers; insulation; non-foam #6 containers.



#3 Harford County: Lifoam Industries, 121 Bata Blvd (Suite D), Belcamp, MD 21017 (866-770-3626) 2018: “Here are the photos I took of the styrofoam "recycling" facility. The only signs read, "Drivers chock wheels", there are no collection bins or recycling signs of any sort anywhere. You are supposed to walk up the stairs and knock on the delivery door, which is located between two giant trucks. I actually ended up in the lobby of the Lifoam building with a bag of Styrofoam. The secretary told me to take it down to the next door, the one between the tractor trailers. There were no signs about any type of recycling, I got the feeling that I was the first person to ever drop off Styrofoam for recycling. When I walked into the lobby and asked if they accepted recycling, a man came through another door and took the bag from me.” **2019:** “Nothing has changed. There are no recycling signs or collection bins anywhere.”



#4 Carroll County: DART Container Corp, 630 Hanover Pike, Hampstead, MD 21074 (410-374-8588) Accepts food containers if they are clean; does not accept packing peanuts.



#5 Cecil County: Central Landfill, Homeowner Convenience Center, 758 E. Old Philadelphia Road, Elkton, MD 21921. Accepts food containers if they are clean; does not accept foam packing peanuts or insulation.

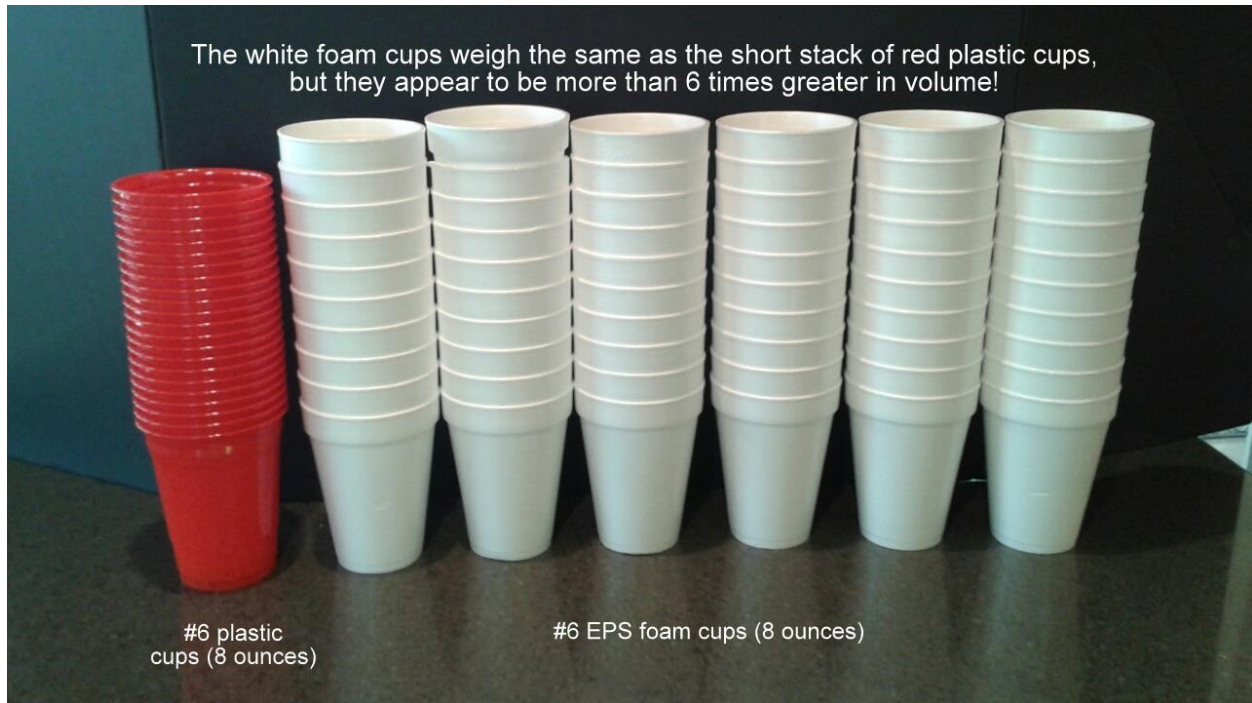


#6 Carroll County: Northern Landfill, Westminster. This drop-off was not cited on the Dart or EPS Alliance website, but known to Sierra Club members in Westminster. Foam packing peanuts are not accepted. Food containers must be rinsed.



Annex 2: EPS foam is lightweight and high volume

Most statistics on the composition of litter and waste measure it by *weight*, but this understates the contribution of expanded polystyrene foam in both cases because it is lightweight – about 95 percent air – and high volume. To illustrate, the photo below compares the volume of 8 ounces of red polystyrene plastic cups (on the left) with 8 ounces of expanded polystyrene foam cups (on the right).



Annex 3: Baseline use of EPS foam food containers and alternatives before the Prince George's County ban was approved (March 2015)

Figure 3A. Random sample of 186 restaurants, fast food, and take-out food service establishments surveyed

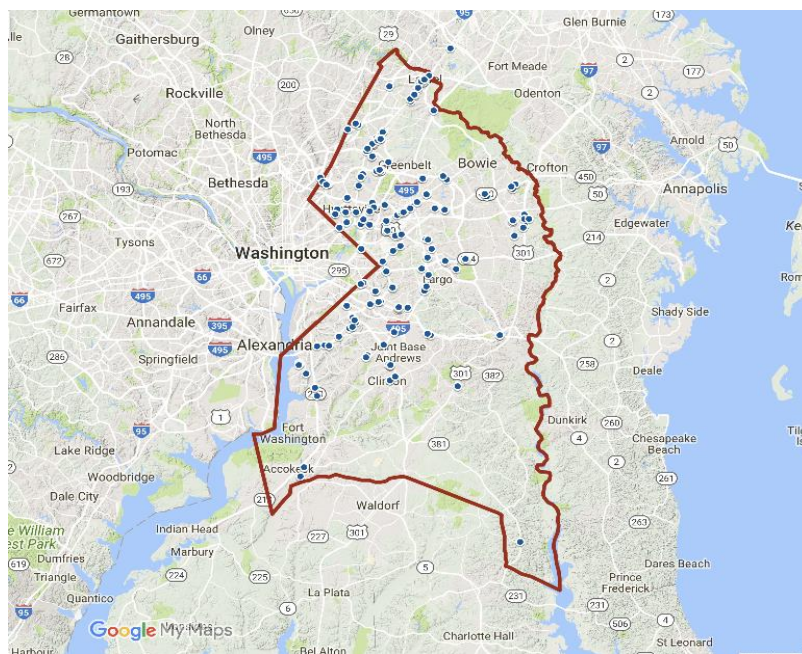
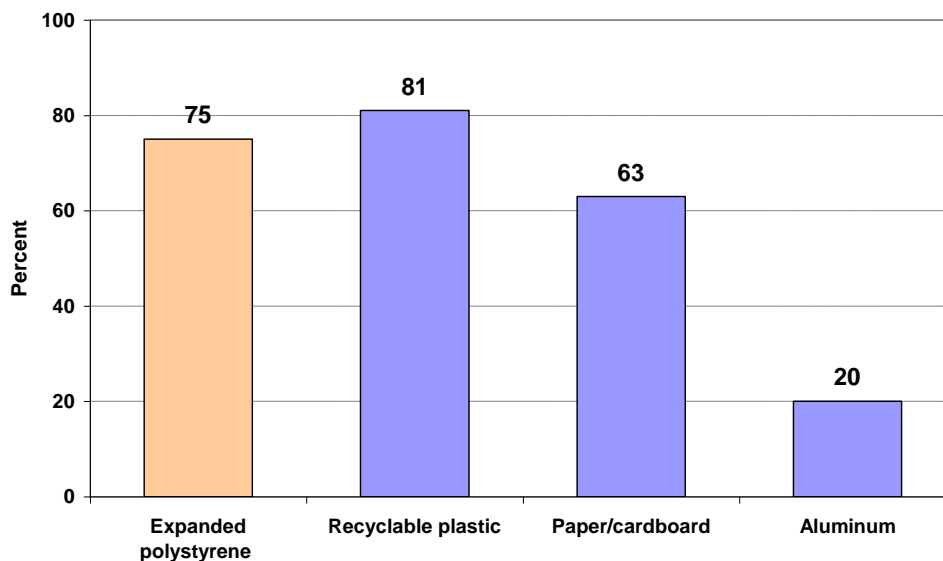


Figure 3B. Percent of food service businesses with foam food containers and alternatives^a before the ban (n=186 businesses)



Source: Prince George's Sierra Club, "Survey of disposable containers in food service establishments in Prince George's County," March-April 2015. Sample drawn randomly from a list of eateries from the health department.

a. Only 3 percent of businesses were using exclusively foam food containers.

Annex 4: Compliance with foam bans in shopping centers in Prince George’s and Montgomery Counties

Figure 4A. Prince George’s County: 45 shopping centers with 465 businesses educated and monitored for compliance with the foam ban

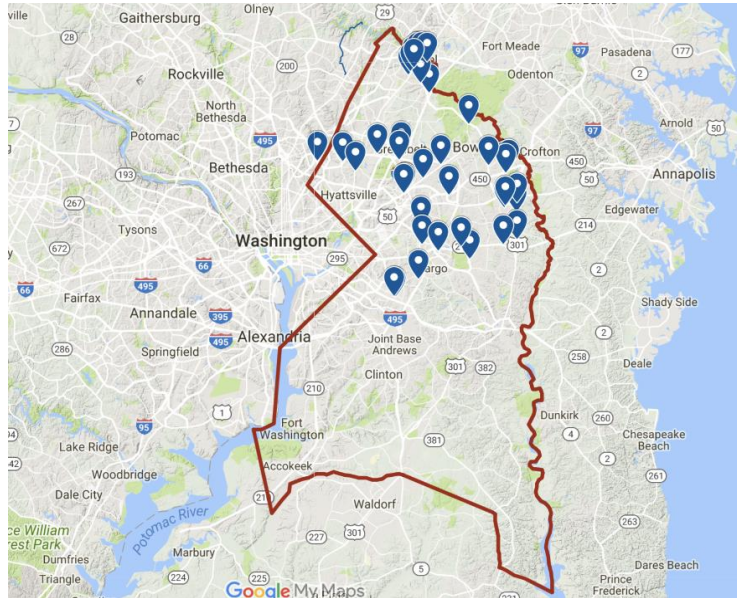


Figure 4B: Compliance with the foam ban rose to >90% after face-to-face education by Sierra Club volunteers

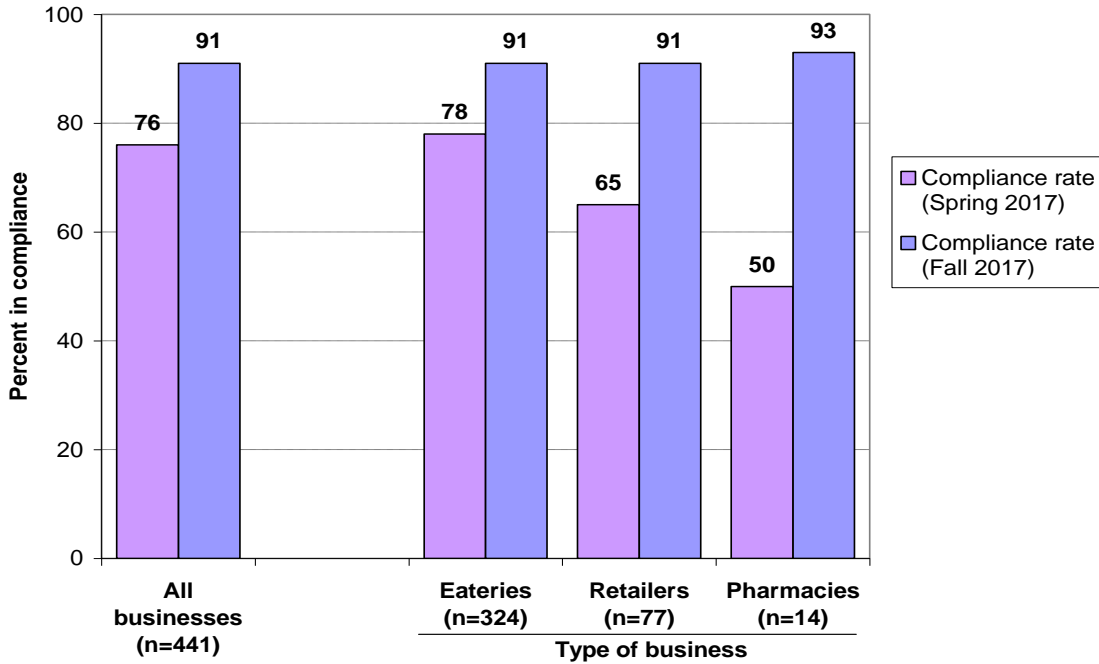


Figure 4C. Montgomery County: 38 shopping centers with 328 businesses educated and monitored for compliance with the foam ban

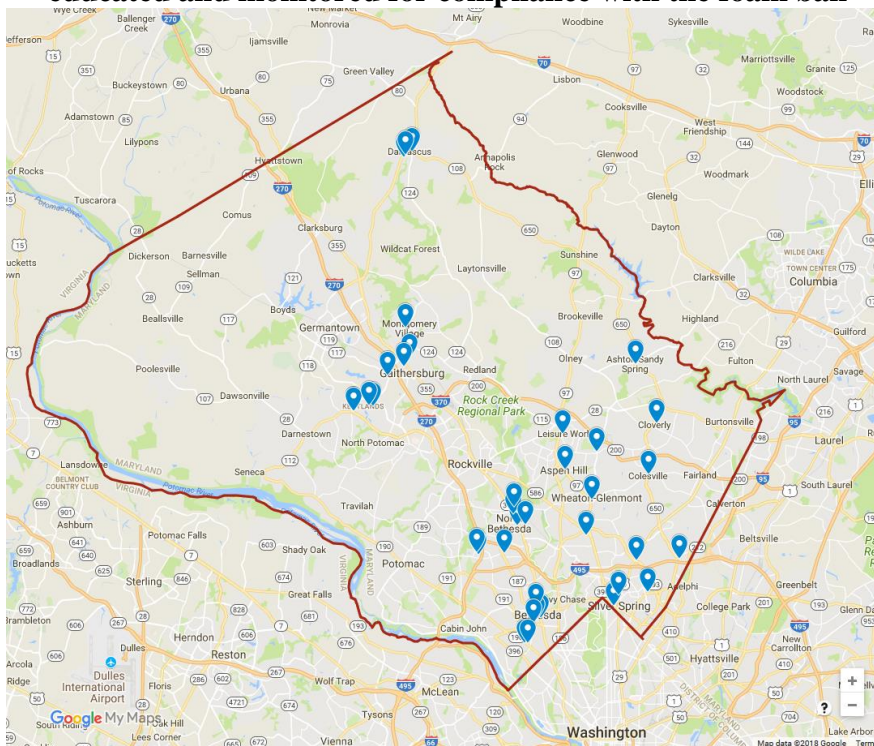
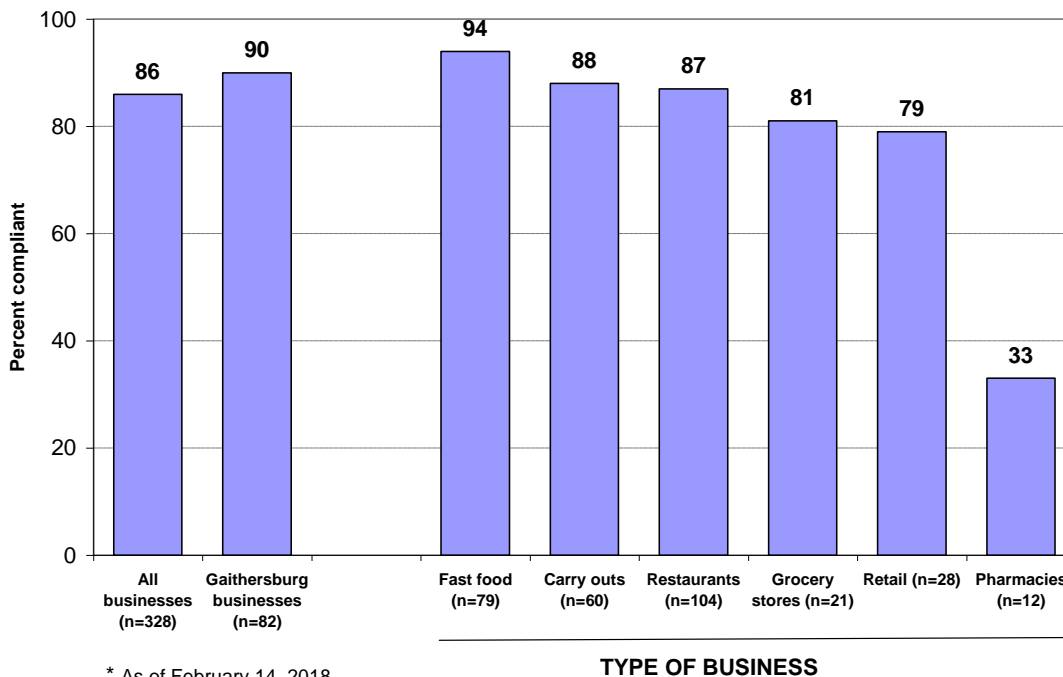


Figure 4D. Foam ban compliance by type of business in Montgomery County (38 shopping centers, 328 businesses), Winter 2017-18



* As of February 14, 2018