

14 January 2025

Testimony on Montgomery County Council Bill 24-24, “Bring Your Own Bag” Bill

I am Dr. Vivian E. Thomson, and I have lived in Montgomery County since 2022. I am a retired [Professor](#) of environmental policy at the University of Virginia in Charlottesville, where I was in the Department of Environmental Sciences and the Department of Politics.

I have expertise in several environmental policy areas, including trash management. My first book was about trash transport in the US. As a senior policy analyst at the US EPA, I helped design EPA’s air pollution regulations for solid waste landfills. And I was a member of a local solid waste task force in Charlottesville, Virginia.

I am the author of three books, on garbage transport (2009); climate change policy in the US, Brazil, and Germany (2014); and, the politics of power in state-level air pollution policymaking (2017). I was appointed to the Virginia State Air Pollution Control Board by Governors Mark Warner and Tim Kaine. Now I produce a [podcast](#) called The Meaning of Green that is about solving environmental problems.

**Summary** Based on a considerable amount of research, which includes scientific journal articles, I support the Montgomery County Council’s proposal to ban plastic grocery bags and to increase the bag tax. My figures, based on County waste composition surveys, indicate that County residents are discarding hundreds of millions of plastic bags yearly. Plastic bag pollution is an important environmental threat, especially in coastal areas. I urge the County to fix its failed program for collecting bag taxes. I support the proposed increase in the bag tax and urge further increases in the future, with no bag charge collected for food assistance recipients. Montgomery County residents should be given free reusable shopping bags, much as has happened [before](#). I advocate a public education campaign to urge residents to reduce and reuse bags of all kinds.

**Details and analysis (citations provided at the end of this testimony)**

There is ample evidence [locally](#), [nationally](#), and [globally](#) that many lightweight plastic grocery bags wind up as litter, contaminating our waterways and polluting the [ocean](#).

**When exposed to environmental forces, plastic bags break up into [microplastics](#), which [contaminate](#) Chesapeake Bay organisms and wind up in our food chain.**

**Plastic bags threaten wildlife, especially marine wildlife, through ingestion and entanglement.** Marine debris experts [say](#) that compared to most other consumer plastic items, plastic bags pose one of the greatest threats to ocean wildlife and that, from an environmental impact perspective, plastic bags warrant the specific attention they have received from governments and advocates to address their use.

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**Because of the environmental threats posed by plastic bag litter, the European Union has adopted a Plastic Bags Directive.** Member nations must reduce lightweight plastic bag consumption to 40 bags per person annually by the end of 2025.

**Despite the bag tax, my estimates, based on County waste composition data, indicate that County residents are discarding hundreds of millions of lightweight plastic bags annually. Disposal rates have increased since 2012, the first year the bag tax was in effect. These results indicate that the bag tax is not discouraging the consumption of single use plastic bags.**

Using preliminary 2023 waste composition figures supplied by DEP staff, I estimate that residents of Montgomery County discarded between 241 and 294 million plastic shopping bags, or 228 to 278 bags per person per year, in 2023. This represents an increase from 2012, the first year that the bag tax was in effect. Using waste composition figures provided by DEP staff for 2012, I estimate that County residents disposed of 211 to 259 million bags, or 211 to 258 bags per capita yearly. The range represents varying estimates for how much one plastic bag weighs ([here](#) and [here](#)).

Disposal figures do not capture all plastic bags consumed in Montgomery County, because some escape into the environment, some may be used erroneously in the County’s blue recycling bins, and some might be reused or placed in designated plastic bag recycling bins. But for perspective, average consumption in 2022 across all EU nations was 67 lightweight plastic bags annually. The latest reliable figures I could find for consumption in the USA as a whole are for 2014, and they show an average of 327 plastic bags used per capita per year.

The County’s 2022/2023 waste composition [survey](#) further indicates that there were 60 million paper bags in the waste stream, for a per capita annual disposal rate of 57 bags. This almost surely represents an undercount of paper bags consumed, since the survey includes the waste stream but not the recycling stream.

**The County has seemingly failed to collect tens of millions of dollars in bag taxes because of a system that has proven difficult to administer.**

The Montgomery County Office of Inspector General [reported](#) in June 2023 that the County had collected \$3 million in taxes on 75 million bags in 2022, a figure that includes plastic and paper bags. My estimates, based on the County’s 2022/2023 waste composition study, indicate that County residents discarded between 283 and 333 million paper and plastic bags in 2022.

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This gap implies that the County may well have failed to collect between \$8.3 million and \$10.3 million in bag fees in 2022 alone, at a minimum, since my figures do not account for all bags consumed. The OIG report concludes (p. i) that “data limitations and shortcomings in the Bag Tax System make enforcement of the carryout tax problematic.” The report also says (p. 6) that 600 retailers are paying the tax when an estimated 3,800 should be paying the tax.

Bag taxes involve a tradeoff between revenues and environmental objectives: If the taxes work, revenues will drop. Bag tax revenues help support water quality protection in the County.

**Many jurisdictions around the world, including (but not limited to) Prince George's County, California, Delaware, New York, New Jersey, Vermont, Washington, Austria, Belgium, Canada, France, Germany, Malta, Northern Territory of Australia, and Rwanda, have banned the use of some or all plastic grocery bags. But all bags involve environmental burdens, so the message to the public should be: Reduce your use of all kinds of bags and reuse your bags.**

When plastic grocery bags are banned, people tend to [increase](#) the use of other kinds of bags for carrying groceries and/or for household use. Public education programs are needed to encourage extensive reuse of bags and to explain the rationale for the higher tax.

A careful 2024 [study](#) concluded that, when marine pollution is considered, single-use plastic bags cause more environmental harm than paper bags. Some analyses conclude that single use plastic bags carry a lower manufacturing, transport, and disposal burden than other kinds of bags. But these studies tend to be locale-specific, make a long list of simplifying assumptions, and ignore effects that are hard to quantify, like [litter](#), marine pollution, and ingestion. The authors of one widely cited [study](#) deliberately omitted littering impacts. The study continues to be applied generally even though the authors [say](#) the results are specific to Denmark. Perhaps most importantly, these kinds of studies do not attempt to predict how environmental impacts will change when bag usage changes.

Still, paper bag manufacture, transport, recycling, and disposal all cause a variety of environmental harms. The County should not encourage its residents to think of paper bags as pollution-free, merely because they are biodegradable. Therefore, raising the tax on paper bags is necessary and appropriate.

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**Recommendations**

Montgomery County residents should be given free reusable shopping bags, as [before](#).

The bag fee should be transparent to customers so they can make informed choices.

To encourage reuse and reduction in use, the bag fee on paper bags should be gradually increased over a period of years. The bag fee should also apply to the exempted uses of plastic bags (e.g., newspaper bags, bags for packaging bulk items like fruit and vegetables, dry cleaning bags, etc.). Even permitted plastic bag uses should be discouraged.

Do not exempt pharmacies and seasonal events from the plastic bag ban.

Do not exempt any uses of paper bags from the tax, except for SNAP recipients. Consider a smaller charge (five cents, perhaps) for small paper bags.

Since bag taxes, by their very nature, should decrease bag use and, therefore, revenues, Council might consider the following option for revamping the bag fee system altogether, while retaining the plastic bag ban:

*Eliminate the requirement for retailers to remit any portion of the paper bag fee to the County.* My figures indicate that, in the 12 years since the bag tax went into effect, the County has not been able to collect a large portion of taxes owed.

*But let retailers charge what they want, as long as the fee is at least 10 cents per bag and as long as the fee is transparent to customers.* We really don’t know how high the fee must go to get people to reduce the number of bags they use.

*To make up \$3.0 million in lost revenues from the bag tax:* Increase the Water Quality Protection Charge, which raised revenues of \$45 million in 2023 and which is a progressive tax.

*To track effectiveness of the bag fee:* Mandate reporting on number of, and revenues from, bags sold.

**Sources cited**

**News media articles**

Pipkin, Whitney. Picture of Chesapeake Microplastics Grows Clearer. *Bay Journal*, 7 June 2021. [https://www.bayjournal.com/news/pollution/picture-of-chesapeake-microplastics-grows-clearer/article\\_87bd3606-c3e1-11eb-bdc4-4f1a3864c6f9.html](https://www.bayjournal.com/news/pollution/picture-of-chesapeake-microplastics-grows-clearer/article_87bd3606-c3e1-11eb-bdc4-4f1a3864c6f9.html)

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**Peer-reviewed publications**

Abate, Tenaw G., and Katarina Elofsson. Environmental Taxation of Plastic Bags and Substitutes: Balancing Marine Pollution and Climate Change. *Journal of Environmental Management* 359 (May 2024): 120868.

<https://www.sciencedirect.com/science/article/pii/S0301479724008545>

Ahamed, Ashiq, Pramodh Vallam, Nikhil Shiva Iyer, Andrew Veksha, Johan Bobacka, and Grzegorz Lisak. Life Cycle Assessment of Plastic Grocery Bags and Their Alternatives in Cities with Confined Waste Management Structure: A Singapore Case Study. *Journal of Cleaner Production* 278 (January 2021): 123956.

<https://www.sciencedirect.com/science/article/pii/S0959652620340014#sec4>

Bisinella, Valentina, Paola Frederica Albizzati, Thomas Fruergaard Astrup, and Anders Damgaard. Life Cycle Assessment of Grocery Carrier Bags. Copenhagen: Danish Environmental Protection Agency, 2018.

Dauvergne, Peter. Why Is Global Governance of Plastic Failing the Oceans? *Global Environmental Change* 51 (July 2018): 22-31.

Civancik-Uslu, Didem, Rita Puiga, Michael Hauschild, and Pere Fullana-i-Palmer. Life Cycle Assessment of Carrier Bags and Development of a Littering Indicator. *Science of the Total Environment* 685 (2019): 621-630.

Taylor, Rebecca L., and Sofia B. Villas-Boas. Bans vs. Fees: Disposable Carryout Bag Policies and Bag Usage. *Applied Economic Perspectives and Policy* 38(2) (2016): 351-372.

Tziourrou, P., S. Kordella, Y. Ardali, G. Papatheodorou, and H.K. Karapanagioti. Microplastics Formation Based on Degradation Characteristics of Beached Plastic Bags. *Marine Pollution Bulletin* 169 (August 2021): 112470.

<https://www.sciencedirect.com/science/article/pii/S0025326X2100504X>

Wilcox, Chris, Nicholas J. Mallos, George H. Leonard, Alba Rodriguez, and Britta Denise Hardesty. Using Expert Elicitation to Estimate the Impacts of Plastic Pollution on Marine Wildlife. *Marine Policy* 65 (2016): 107-114.

**Government reports or information sites**

Dept. of Environmental Protection, Montgomery County, Maryland. 2022/2023 Waste Composition Survey. <https://www.montgomerycountymd.gov/DEP/trash-recycling/index.html>

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\_\_\_\_\_. 2012/2013 Waste Composition Survey. Provided by DEP staff.

European Commission. The Plastic Bags Directive. Brussels: European Commission. [https://environment.ec.europa.eu/topics/plastics/plastic-bags\\_en](https://environment.ec.europa.eu/topics/plastics/plastic-bags_en)

Eurostat. Consumption of Plastic Carrier Bags - Estimates. Luxembourg: European Union, November 2024. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Consumption\\_of\\_plastic\\_carrier\\_bags\\_-\\_estimates#Lightweight\\_plastic\\_carrier\\_bag\\_consumption](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Consumption_of_plastic_carrier_bags_-_estimates#Lightweight_plastic_carrier_bag_consumption)

Montgomery County, Maryland. Montgomery County’s Carryout Bag Law. <https://www.montgomerycountymd.gov/bag/#:~:text=The%20Department%20of%20Environmental%20Protection,Medicaid%20Outreach%2C%20and%20Manna%20Foods.>

Office of Inspector General, Montgomery County, Maryland. Carryout Bag Tax. 13 June 2023. <https://www.montgomerycountymd.gov/OIG/igproduct.html>

United States International Trade Commission. Polyethylene Retail Carrier Bags From China, Indonesia, Malaysia, Taiwan, Thailand, and Vietnam. October 2021. [https://www.usitc.gov/commission\\_publications\\_library?search=polyethylene%20carrier%20bags&f%5B0%5D=date\\_of\\_publication%3A2021](https://www.usitc.gov/commission_publications_library?search=polyethylene%20carrier%20bags&f%5B0%5D=date_of_publication%3A2021)

**NGO reports or news stories**

Anacostia Riverkeepers. 2024 Riverkeeper Annual Report (Washington, DC: Anacostia Riverkeepers, 2024), <https://www.anacostiariverkeeper.org/resource-library/publications/>

Keep America Beautiful. 2020 National Litter Study Summary Report (Washington, DC: Keep America Beautiful Foundation, 2021), <https://kab.org/keep-america-beautiful-releases-largest-study-on-litter-in-america-2/>

Oceanic Society. Global Ocean Cleanup Nets 78,477 Pounds of Waste. 29 July 2024. <https://www.oceanicsociety.org/news-and-announcements/2024-global-ocean-cleanup-nets-78477-pounds-of-waste/>