



Committee: Environment and Transportation Committee
Testimony on: HB0331 Maryland Beverage Container Recycling Refund and Litter Reduction Program
Position: Support
Hearing Date: 2/11 at 1pm

Dear Del. Marc Korman (Chair) and Del. Michele Guyton (Vice-Chair):

Chesapeake Physicians for Social Responsibility (CPSR) is a statewide evidence-based organization of nearly 900 physicians, other health professionals, and supporters that addresses the existential public health threats of nuclear weapons, climate change, and pollution, as seen through the intersectional lens of environmental, racial and social justice.

CPSR strongly supports [HB0331](#), a bill establishing a beverage container deposit program in the State of Maryland at no added cost to the State (and with savings to waste management costs for local municipalities). Every year, over 5.5 billion beverage containers are sold in Maryland, and only 25% are recycled. As structured, the proposed program will increase the recycling rates to over 90%.

Because most of these beverage containers are made from plastic, this bill would recapture over 2 billion plastic bottles annually that would otherwise be trashed or littered, conferring public health benefits in three ways:

(1) By providing high-quality food-grade plastics for recycling, this bill will reduce greenhouse gas emissions and alleviate the burden of climate change-related illness.

Plastic bottles are made from fossil fuels. Due to exponential growth of plastics production, much of it in single-use plastics like beverage containers, the plastics industry accounts for a rising share of global carbon emissions (from 3.7% in 2015 to 5.3% in 2019).¹⁻³ If the plastic industry were a country, it would be the fifth most polluting country in the world. Most of the carbon emissions result from producing the building blocks needed for new (“virgin”) plastics.² Increasing recycling rates of plastics can offset virgin plastic production and is therefore an important strategy for mitigating plastics-related climate impacts.³ Indeed, this program would eliminate 231,707 metric tons of CO₂ equivalent annually, the equivalent of removing 50,371 cars from the road. Climate change-induced extreme weather events negatively impact human health. Heat waves increase the rates of heart attacks, strokes, preterm births, suicidal behavior, and interpersonal violence.⁴ Flood kill people during the event, and survivors experience adverse effects, including infections, respiratory problems, stillbirths, as well as anxiety, depression, and PTSD.⁵ Additional climate change-related health concerns include the spread of mosquito- or tick-borne disease.⁶ For example, Maryland has seen an increase in Lyme disease cases.

2) By recapturing littered and landfilled plastics, this bill will reduce environmental microplastic contamination and alleviate the burden from toxic exposures.

Littered or landfilled plastic bottles do not biodegrade. Instead, they break up into tiny fragments, called microplastics and nanoplastics (MNPs), which readily disperse in our air, water, and land and cause widespread environmental pollution.⁷ For example, oysters harvested from the Bay contain detectable amounts of microplastics.⁸ People then ingest or inhale MNPs through the air we breathe, the food we eat, and the water we drink.⁷ Studies have detected MNPs in most human organs tested, including the brain, heart, lungs, intestines, testicles, and placenta.^{7,9-10} Recent animal studies show that microplastic polymers cause inflammation in every tissue they end up in, disrupt the microbiome in the gut, and cause abnormal protein folding in the brain consistent with dementia.^{7,11-13} This research is still being developed. However, MNPs also contain plastics-related chemicals, many of which are endocrine disruptors. Decades of animal and human studies have implicated endocrine-disrupting chemicals in obesity, type 2 diabetes, preterm birth, decreased sperm count, early puberty in females, and neurodevelopmental conditions like ADHD, autism, and IQ loss.^{7,11,14-16} Health economists estimate the economic burden of these health issues to be substantial, costing the United States \$920.6 billion dollars in healthcare costs, disability, and premature death from just three plastics-related chemicals.⁷ Additionally, leading cancer researchers named microplastics and related chemicals as drivers of rising cancer rates in young adults.¹⁷

3) By keeping plastic bottles out of incinerators, this bill will reduce the burden of air pollution.

Bottles that are trashed can end up incinerated. Unfortunately, when plastic bottles are burned, they release harmful air pollutants that worsen heart disease, asthma, and COPD; they also increase the risk of learning and behavioral problems in children as well as dementia in adults.¹⁸ By keeping plastic bottles out of trash incinerators in Baltimore City and Montgomery County, the Bottle Bill will help improve those communities' health.

We therefore urge you to vote in favor of the Bottle Bill because it is a net win for the health of Marylanders.

Sincerely,

Chesapeake Physicians for Social Responsibility

References:

1. OECD. *Global Plastics Outlook: Policy Scenarios to 2060*. OECD Publishing; 2022.
2. Karali N, Khanna N, Shah N. Climate impact of primary plastic production. Lawrence Berkeley National Laboratory Publications. 2024. Available at <https://www.osti.gov/biblio/2336721>
3. Zheng J and Suh S. Strategies to reduce the global carbon footprint of plastics. *Nature Climate Change* 2019; 9: 374-378.
4. Bell ML, Gasparrini A, Benjamin GC. Climate change, extreme heat, and health. *New England Journal of Medicine* 2024; 390: 1793-1801.
5. Wu Y, Wen B, Gasevic D, *et al.* Climate change, floods, and human health. *New England Journal of Medicine* 2024; 391: 1949-1958.
6. Butler, Colin. "Climate change and human health: Primary, secondary, and tertiary effects." In: *Living with climate change* (Ed: T. Letcher). Elsevier: 2024.
7. Landrigan PJ, Raps H, Cropper M, *et al.* The Minderoo-Monaco commission on plastics and human health. *Annals of Global Health* 2023; 89(1): 23, 1–215.
8. Godiner J. "Rising microplastics endanger Chesapeake Bay oysters, human health." *Baltimore Sun* Nov 24, 2025. Available at: <https://www.baltimoresun.com/2025/11/24/rising-microplastics-endanger-chesapeake-bay-oysters-human-health/>
9. Amato-Lourenço LF, Dantas KC, Júnior GB, *et al.* Microplastics in the olfactory bulb of the human brain. *JAMA Network Open* 2024; 7(9): e2440018.
10. Campen M, Nihart A, Garcia M, *et al.* Bioaccumulation of microplastics in decedent human brains assessed by pyrolysis gas chromatography-mass spectrometry. 2024 *Res Sq* [Preprint].
11. Ryznar E, Haase E, Lauterbach M. The plastics crisis: a neuropsychiatric problem hidden in plain sight. *Psychiatric Times* 2024; 41(9): 13-16.
12. Sofield CE, Anderton RS, Gorecki AM. Mind over microplastics: exploring microplastic-induced gut disruption and gut-brain-axis consequences. *Curr Issues Mol Biol.* 2024; 46(5):4186-4202.
13. Liu Z, Sokratian A, Duda AM, *et al.* Anionic nanoplastic contaminants promote Parkinson's disease-associated α -synuclein aggregation. *Science Advances* 2023; 9(46).
14. Khan LG, Philippat C, Nakayama S, *et al.* Endocrine-disrupting chemicals: implications for human health. *Lancet Diabetes Endocrinol* 2020; 8: 703-18.
15. Woodruff T. Health effects of fossil fuel-derived endocrine disruptors. *New England Journal of Medicine* 2024; 390: 922-33.
16. Symeonides C, Vacy K, Thomson S, *et al.* Male autism spectrum disorder is linked to brain aromatase disruption by prenatal BPA in multimodal investigations and 10HDA ameliorates the related mouse phenotype. *Nature Communications* 2024; 15: 6367.
17. Mauri G, Patelli G, Sartore-Bianchi A, *et al.* Early-onset cancers: biological bases and clinical implications. *Cell Reports Medicine* 2024; 5: 101737.
18. Livingston G, Huntley J, Liu KY, *et al.* Dementia prevention, intervention, and care: 2024 report of the *Lancet* standing Commission. *The Lancet* 2024; 404(10452): 572-628.