SB0273_BWalls_PRKN_Favorable.pdf
Uploaded by: Brent Walls
Position: FAV

SB0273: Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)
Education, Health, and Environmental Affairs Committee
February 2nd, 2022
Brent Walls, Potomac Riverkeeper Network

FAVORABLE

Potomac Riverkeeper Network: *Our mission is to protect the public's right to clean water in the Potomac and Shenandoah Rivers and their tributaries. We stop pollution to enhance the safety of our drinking water, protect healthy river habitats, and enhance public use and enjoyment.*

Potomac Riverkeeper Network support SB0273 to restrict the use and disposal of products that contain PFAS compounds. PFAS is a class of over 9000 chemical compounds that are considered "forever" compounds because they do not break down easily. In the last decade, an increasing number of independent research has identified hazards of PFAS contamination to our health. Unfortunately, EPA has yet to fully acknowledge the toxicity of all PFAS chemicals to humans nor has EPA issued toxicity standards; therefore, it is left up to the States to protect its citizens from exposure of PFAS pollutants. SB0273 is a necessary first step in our fight against this new public health risk.

Stop the cycle of PFAS contamination.
PFAS compounds have been around since the 1950's. Two particular PFAS pollutants, PFOA and PFOS, were found to be toxic to humans by the 1970s according to researchers at 3M and later by Dupont. These two compounds (PFOA/PFOS) have been put into products that citizens across the world use and therefore have polluting our environment and poisoning our bodies. The Federal government has known about the toxic nature of PFAS chemicals since 1998 and yet we still do not have adequate protections for the people of this nation. The CDC and The Agency of Toxic Substances and Disease Registry have identified four routes of PFAS exposure to our bodies: eating and drinking foods with PFAS, breathing in dust from products with PFAS and applying beauty products to the skin. SB0273 begins to stop the PFAS pollution cycle.

- PFAS in products that we use everyday flow through our bodies and washed down the drain into public sewer systems.
- The wastewater treatment plants do not have the ability to filter out PFAS and therefore discharge into rivers and streams throughout Maryland. Sample results collected by Upper Potomac Riverkeeper of wastewater treatment plants in Washington County showed high levels of PFAS with no obvious industrial source.
- The PFAS cycle continues with public water supplies using surface water polluted by PFAS as a public source of drinking water, where PFAS is not filtered out.
- The cycle continues with low-income families keeping fish caught out of Maryland streams that are polluted with PFAS to feed their families. In October 2021, MDE released a press release about a fish consumption advisory for Piscataway Creek in Prince George's County because of PFAS pollution.
- The PFAS contamination continues with biosolids from those same wastewater plants containing concentrated PFAS pollutants to be used as fertilizer on our crops for human consumption or to feed our livestock that eventually pollutants our bodies.

Why is this bill needed?

It is up to the States to pass laws that will begin to protect people from more PFAS poisoning.

- The prices of food at the grocery store have been increasing more than many families can afford and the use of fast food to feed families has grown exponentially. The food wrappers from fast food chains are just one example of how PFAS is impacting families. Our children are at greater risk of building up higher levels of PFAS in their blood; which can complicate their health as they get older, all because they will be exposed to food packaging with PFAS throughout their childhood.
- We all love the idea of stain resistant carpets and rugs so that we can clean those messes up. And we love that clean carpeted area where our children and grandchildren can play at such young ages. But the dust from those stain resistant carpet products are loaded with PFAS and breathed in by families unknowingly adding to the PFAS pollution in their system.
- Firefighters and other first responders in Maryland do not need another reason to be concern about the health and safety of their job. It is already harmful enough to be in the presence of burning buildings and chemicals from cars and planes to also be poisoned by a product that is used frequently for difficult fires.
- When PFAS chemicals are incinerated, they pollute the air of surrounding communities because PFAS is not destroyed by burning.
- When PFAS chemicals are landfilled, they can leach into our groundwater, putting our drinking water further at risk.

What does this bill do?

- Stops the use of firefighting foam or AFFF containing PFAS
- Stops the use of food packaging products that contain PFAS
- Stops the use of rugs and carpets that have PFAS in the product.
- Protects our air and water from the mass disposal of these products by incineration or landfill.

Bill SB0273 is the first step for Maryland in stopping the cycle of PFAS contamination and one step closer to better health for Maryland citizens.

Potomac Riverkeeper Network urges a favorable report.

Brent Walls,
Upper Potomac Riverkeeper

SB0273_PFAS_MLC_FAV.pdf
Uploaded by: Cecilia Plante
Position: FAV

TESTIMONY FOR SB0273
ENVIRONMENT - PFAS CHEMICALS – PROHIBITIONS AND REQUIREMENTS (GEORGE 'WALTER' TAYLOR ACT)

Bill Sponsor: Senator Elfreth
Committee: Education, Health, and Environmental Affairs
Organization Submitting: Maryland Legislative Coalition
Person Submitting: Cecilia Plante, co-chair
Position: FAVORABLE

I am submitting this testimony in favor of SB0273 on behalf of the Maryland Legislative Coalition. The Maryland Legislative Coalition is an association of activists - individuals and grassroots groups in every district in the state. We are unpaid citizen lobbyists and our Coalition supports well over 30,000 members.

PFAS chemicals are 'forever chemicals' since they never break down. PFAS chemicals are used in firefighting foam, food packaging, rugs and carpets. They are polluting our drinking water and are accumulating in our bodies. They have been linked to cancer and other serious illnesses.

This bill, if passed, would prevent the mass incineration or landfilling of PFAS chemicals. It would also prohibit the manufacture, sale or distribution of products containing PFAS chemicals, such as rugs and carpets, food packaging and firefighting foam.

We are poisoning ourselves and our children. Think of the future effects of this poison as it continues to accumulate in our children. We must stop the use of these toxic chemicals immediately.

We support this bill and recommend a **FAVORABLE** report in committee.

SB0273_ Favorable PFAS Written Testimony.pdf
Uploaded by: Claire Miller
Position: FAV

SB0273: Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)
Education, Health, and Environmental Affairs Committee
February 2nd, 2022
Claire Miller, Maryland Campaign for Environmental Human Rights
FAVORABLE

Chairman Senator Pinsky, Vice-Chair Senator Kagan, and members of the Education, Health and Environmental Affairs Committee

I'm writing to ask for you to vote for and pass SB0273, because PFAS contamination poses serious risks for the public health of Marylanders. As citizens, we rely on our government to protect us from harm in our environment and from the goods and services we consume. It is very disturbing that PFAS, also known as forever chemicals, have infiltrated our drinking water and our seafood in Maryland, and the public is exposed to these chemicals in consumer products like cookware and in food packaging. The federal government failed to regulate these chemicals, so it is up to the state to act.

The Maryland Department of the Environment found PFAS in 75% of the drinking water it tested. We also know of contamination in and around more than a dozen military sites in the state and in seafood and oysters in our creeks. Recent studies also found high levels of PFAS chemicals in seafood, drinking water, and at various military sites in Maryland.

Exposure to PFAS is linked to cancer and other severe illnesses including liver and kidney disease, hormone disruption, immune suppression, reproductive problems and developmental issues. Other states have already taken action and it is time for Maryland to do the same.

SB0273 restricts the use and disposal of PFAS chemicals in Maryland

- Stops the use of PFAS in firefighting foam (like CA, CT, IL, ME, NH, NY, VT, WA), food packaging (like CA, CT, ME, MN, NY, VT, WA), and in rugs and carpets (like Lowes and Home Depot). **In all of these areas there are safer alternatives to PFAS.**
- Protects our air and water by banning the mass disposal of these chemicals by incineration (NY) and landfilling (CA).
- Requires disclosure that firefighter gear contains PFAS when selling it in the state including jackets, pants, shoes, gloves, helmets and respiratory equipment.

The public in Maryland depends on our government to protect us from harmful chemicals. We have evidence of both the harm these chemicals cause and that it exists in our drinking water and our food supply. Your constituents and the people of Maryland are relying on you to take action and restrict the use and disposal of PFAS chemicals in Maryland.

We ask that you vote favorably on SB-0273 and support the firefighters and the public to restrict the use and disposal of PFAS chemicals in Maryland.

Sincerely,

Claire Miller, Communications Director
Maryland Campaign for Environmental Human Rights

2022-1-31- SB273 - ANS - FAV.pdf
Uploaded by: Denisse Guitarra
Position: FAV

January 31, 2022

Written testimony for SB273 - Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)

Position: Favorable
Submitted by: Denisse Guitarra, Maryland Conservation Advocate, Audubon Naturalist Society (ANS)

Dear Senate Education, Health, and Environmental Affairs Committee,

For 125 years, Audubon Naturalist Society (ANS) has inspired people to enjoy, learn about and protect nature. We thank the Senate Education, Health, and Environmental Affairs Committee for the opportunity to provide testimony for SB273 - Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act). **ANS supports SB273.**

As we navigate today's public health, social, and economic crises, it is critical to support the passage of SB273. This bill prohibits the manufacture, sale, use, distribution, and disposal of certain products – firefighting foams, food packaging and new rugs and carpets - containing PFAS chemicals. The bill also requires notification of PFAS in firefighting gear and prohibits the disposal of PFAS chemicals in landfills or by incineration.

As defined in the bill, PFAS chemicals are fluorinated organic chemicals containing at least one fully fluorinated carbon atom, including perfluoroalkyl and polyfluoroalkyl substances. These human-made chemicals are used in a variety of products, including non-stick pots and pans, rugs and carpets, food packaging, firefighting foam, and making products grease-proof or water-resistant.

PFAS do not break down in human bodies or in the environment. Rather, these "forever chemicals" continue to threaten environmental and human health as they pollute waterways and drinking water. PFAS have also been linked to cancer and other adverse human health effects. Maryland PIRG notes that the MDE has found PFAS in 75% of the drinking water that the agency has tested. PFAS contamination also has been detected in and around various military sites and in seafood.[1]

The passage of this bill would provide a necessary step forward for Maryland in mitigating the environmental and public health risk presented by the continuing manufacture, sale, and use of PFAS chemicals. ANS and our 28,000 members and supporters recommend that the Senate Education, Health, and Environmental Affairs Committee support the passage of SB273.

Sincerely,
Anne Cottingham
Conservation Volunteer, Audubon Naturalist Society (ANS)

Denisse Guitarra
Maryland Conservation Advocate, Audubon Naturalist Society (ANS)

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[1] Maryland PIRG. 2021. The threat of "Forever Chemicals" Available at: https://marylandpirgfoundation.org/reports/mdp/threat-forever-chemicals

SB 273_CBF SUPPORT PFAS Prohibition and Requiremen
Uploaded by: Doug Myers
Position: FAV

CHESAPEAKE BAY FOUNDATION

Environmental Protection and Restoration
Environmental Education

Senate Bill 273

Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)

Date: February 2, 2022
To: Education, Health, and Environmental Affairs

Position: **Support**
From: Doug Myers, Maryland Senior Scientist

Chesapeake Bay Foundation (CBF) **SUPPORTS** SB 273 which bans or restricts sale and distribution of certain products containing PFAS intentionally added for its flame retardant properties including firefighting foam, carpet and food packaging. The bill also establishes containment and disposal criteria for firefighting foam, where necessary, to protect waters of the state and groundwater.

CBF continues to follow the science of emerging chemicals like PFAS realizing its widespread use, potential environmental and human health hazards, and particularly, its persistence in the environment, the quality that has led to the moniker "Forever Chemical." As in the past with organohaline pesticides, industrial solvents, and Polychlorinated Bipheyls (PCBs), these legacy chemicals create costly cleanup requirements, sometimes leading to hurdles for property transfers and creating decades-long risks to the surrounding environment and to human health.

PFAS health effects in both humans and other animals include reproductive, developmental, endocrine and cardiovascular diseases.[1] US Geologic Survey scientists have discovered PFAS in fish tissues throughout the bay watershed.[2] The provisions of this bill are consistent with EPA's emerging PFAS Action Plan.[3]

CBF urges the Committee's FAVORABLE report on SB 273. For more information, please contact Robin Clark, Maryland Staff Attorney at rclark@cbf.org and 443.995.8753.

[1] 7 Human and Ecological Health Effects of select PFAS, Interstate Technology Regulatory Council, PFAS — Per- and Polyfluoroalkyl Substances.
[2] Swartwood, Hillary, Tracing the "Forever Chemical" in the Chesapeake, Chesapeake Bay Program, October 27, 2020.
[3] EPA's PFAS Action Plan: A Summary of Key Actions, US EPA, 2019 Factsheet.

Maryland Office ▪ Philip Merrill Environmental Center ▪ 6 Herndon Avenue ▪ Annapolis ▪ Maryland ▪ 21403
Phone (410) 268-8816 ▪ Fax (410) 280-3513

2.2_SB273_ StopToxicPFAS_FAV_Emily Scarr_MDPIRG_CO

Uploaded by: Emily Scarr

Position: FAV


Emily Scarr, Maryland PIRG Emily@MarylandPIRG.org
@emilyscarr @marylandpirg

SB273: Environment – PFAS Chemicals – Prohibitions and Requirements
George "Walter" Taylor Act
Education, Health, and Environmental Affairs Committee
January 28th, 2021
Emily Scarr, Maryland PIRG Director

FAVORABLE

Maryland PIRG is a statewide, non-partisan, non-profit, citizen-funded public interest advocacy organization with grassroots members across the state. For fifty years we've stood up to powerful interests whenever they threaten our health and safety, our financial security, or our right to fully participate in our democratic society.

We support SB273 to restrict the use and disposal of PFAS chemicals. We thank Sen. Elfreth for introducing the bill and Senators Lam, Beidle, and Bailey for co-sponsoring this important bi-partisan legislation. PFAS chemicals are polluting our waterways and drinking water and putting public health at risk.

- This bill does not ban PFAS in all uses.
- This bill is based on existing laws in other states and market trends, catching Maryland up with some of our peers in addressing this growing crisis.
- There are safer alternatives to PFAS chemicals in the products restricted in this bill.
- Our nation's leading experts on PFAS exposure have called for regulating these chemicals as a class and stopping non-essential uses because of the risks they pose to public health.

We face an uphill battle to clean up PFAS from our communities and waterways. In order to address the problem, we need to stop new contamination, which this bill can help do. In the years to come, the state will be facing challenges to address PFAS contamination through testing and remediation.

What's in the bill:

- Stops the use of PFAS in:
    - Firefighting foam
    - Food packaging
    - Rugs and carpets.
- Requires notification for PFAS in firefighting gear.
- Prevents the mass disposal of PFAS chemicals by incineration and landfilling.

The threat of "forever chemicals"

Seemingly every week we are hearing about more communities who have been exposed to dangerous levels of PFAS in their drinking water.

The Maryland Department of the Environment (MDE) found PFAS in 75% of the drinking water it has tested. We also know of contamination in and around more than a dozen military sites in the state and in Oct. 2021, MDE issued their first fish consumption advisory for PFAS in Piscataway Creek leading to Prince George's County filing suit against chemical manufacturers 3M and DuPont. Independent testing has also found alarming levels of PFAS in water and seafood.

Last month, Maryland PIRG Foundation released a report, *The Threat of "Forever Chemicals,"* which outlines known contamination in Maryland, impacts, and potential state actions.

PFAS are still widespread in both production and use. Safeguarding against PFAS chemicals as a class is the best way to protect human health. Trying to regulate one chemical at a time will only leave us in an endless game of whack-a-mole. Marylanders deserve the same public health protections from PFAS that we see in other states. Maryland firefighters shouldn't have to suffer and die from exposure to toxic chemicals, especially when there are safer alternatives.

In addition to supporting this critical legislation, we hope the legislature will take further action on PFAS. We need to ensure Maryland has the legal framework to hold polluting industries accountable for the pollution they produce and the harm they cause, we need robust water testing to identify the extent of the problem, and we need to clean up contamination where it exists.

Firefighting

In particular, the use of firefighting foams containing PFAS, no longer makes sense. PFAS foam puts our water at risk. It also endangers our firefighters, who are at increased cancer risk due to exposure to PFAS. **In fact, cancer is the leading cause of death among firefighters in the United States,** according to the Firefighter Cancer Support Network and the International Association of Fire Fighters.

There are already safer alternatives to PFAS foam on the market. Six states (WA, CA, CO, NH, NY, VT), the U.S. Military and the EU are already moving away from using PFAS fire fighting foam completely. Congress has directed the Department of Defense to end the use of firefighting foam containing PFAS by 2024, and to immediately quit using it during training exercises.

Multiple states (including CA, CO, NY) have laws on the books which include a provision to require notification for firefighting personal protective equipment (PPE) that contains PFAS.

Food Packaging

- A 2017 study found grease-proof PFAS coatings on 46% of food-contact papers (such as hamburger wrappers) and 20% of paperboard samples (such as french fry boxes) collected from fast food restaurants throughout the United States.
- 7 states have restricted PFAS in food packaging and due to public demand, major retailers are eliminating PFAS from key product lines. But there are laggards in the market. In order to ensure we protect the public it is time for state action.
- Grocery chains including Giant, Whole Foods, Trader Joe's, Food Lion, Stop & Shop, Amazon, and Hannaford's have all committed to eliminating PFAS from their packaging.
- Fast food chains McDonald's, Burger King, Chipotle, Taco Bell, Panera, Wendy's, and Sweetgreen have all made commitments to phase out PFAS food packaging, and testing has confirmed that PFAS use is not universal in fast food food packaging.
- As of November 2021,18 retailers selling food or food packaging have announced steps to reduce or eliminate PFAS in food packaging at their more than 77,000 stores.

Rugs and Carpets

- A 2008 report from the Ecology Center found PFAS in half of the carpet samples tested.
- Since that time, Shaw Industries, the largest carpet manufacturer in the world and Interface, the largest commercial carpet manufacturer in the world, both stopped using PFAS. Lowe's has stopped selling residential carpets containing PFAS, and Home Depot has stopped selling both residential and commercial wall-to-wall carpets that contain PFAS chemicals. Indications are that much of the carpet and rug industry has moved away from PFAS, though some is still found. Green Science Policy Institute has published a list of carpet manufacturers that are PFAS-free

- Significant progress has been made on aftermarket treatments as well as upholstery. California's Department of Toxics Substances Control has found that aftermarket treatments are "significant sources of human and ecological PFAS exposures," and has done some work on identifying safer alternatives.
- In 2021 Maine and Vermont passed laws to ban PFAS in carpets, rugs and aftermarket treatments. Washington has identified PFAS in carpets, rug, leather and textile furnishings, and aftermarket treatments as priority products under its new Safer Products law in order to pursue restrictions. California has declared carpets and rugs containing PFAS as priority products under its Safer Consumer Products law.

Incineration and Landfilling

- EPA notes that disposing of PFAS in **landfills** has many unknowns, such as how the waste will interact with landfill liners and the possibility of chemicals escaping into the environment.
- Though high temperatures potentially can destroy PFAS, EPA notes that more research is needed to understand the environmental impacts of this approach. Incomplete destruction could create byproducts that might be chemicals of concern, which would cause concentrated harm on communities near incinerators.
- Given that all currently available disposal and destruction options involve a large degree of uncertainty about how much environmental and health protection they provide, **the best approach is to securely store PFAS and PFAS-containing substances.**

Maryland PIRG
Audubon Naturalist Society
Blue Water Baltimore
CCAN Action Fund
Chesapeake Bay Foundation
Clean Water Action
Climate Exchange
Climate Law and Policy Project
Environmental Justice Ministry of Cedar Lane Unitarian Universalist Church
Environment Maryland
Food and Water Watch
Greenbelt Climate Action Network
Interfaith Partners for the Chesapeake
League of Women Voters of Maryland
Maryland Campaign for Environmental Human Rights
Maryland Climate Justice Wing
Maryland League of Conservation Voters
Maryland Legislative Coalition
Maryland Pesticides Education Network
Maryland Public Health Association
Natural Resources Defense Council
Public Employees for Environmental Responsibility
ShoreRivers
Strong Future Maryland
Takoma Park Mobilization Environment Committee
Unitarian Universalist Legislative Ministry of Maryland
Waterkeepers Chesapeake
WISE

Additional information on the next page.

ADDITIONAL BACKGROUND AND FACTS

Video Clip from Bloomberg News

PFAS are harmful to public health. Even low levels of exposure to PFAS are linked to a range of health damages, including:

- Harm to the kidneys, leading to chronic kidney disease or kidney cancer,[1]
- Reduced antibody responses to vaccinations in both children and adults,[2] and
- Increased risk of gestational diabetes, preeclampsia, low birth weight and childhood obesity

Newer types of PFAS are no safer for human health and the environment than older PFAS, such as PFOA and PFOS.[3]

- New PFAS travel more easily through water, resulting in widespread exposure, and thus may pose more risks to human and environmental health.[4]
- The U.S. Environmental Protection Agency has found that two newer PFAS chemicals create many of the same health impacts as older PFAS.[5]
- EPA determined the toxicity of the PFAS known as GenX is in the same range as PFOA, the legacy PFAS it replaced.[6]
- Hundreds of public health experts around the globe have expressed concern about the health impacts of continuing to produce and use all varieties of PFAS.[7]

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[1] Kidney disease: Anoop Shankar, Jie Xiao, and Alan Ducatman, "Perfluoroalkyl chemicals and chronic kidney disease in US adults," American Journal of Epidemiology, 174(8), DOI: 10.1093/aje/kwr171, 26 August 2011, archived at http://web.archive.org/web/20210311183344/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3218627/; Kidney cancer: DCEG Staff, National Cancer Institute, Environmental Pollutant, PFOA, Associated with Increased Risk of Kidney Cancer, 20 September 2020, archived at http://web.archive.org/web/20210725190158/https://dceg.cancer.gov/news-events/news/2020/pfoa-kidney.

[2] Philippe Grandjean et al., "Estimated exposures to perfluorinated compounds in infancy predict attenuated vaccine antibody concentrations at age 5-years," Journal of Immunotoxicology, 14(1), DOI: 10.1080/1547691X.2017.1360968, 2017, archived at http://web.archive.org/web/20210606181809/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6190594/; Claire Looker et al., "Influenza vaccine response in adults exposed to perfluorooctanoate and perfluorooctanesulfonate," Toxicological Sciences, 128(1), DOI: 10.1093/toxsci/kft269, March 2014, archived at http://web.archive.org/web/20210220220028/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4724206/.

[3] Anna Reade, Natural Resources Defense Council, The Scientific Basis for Managing PFAS as a Chemical Class (blog), 30 June 2020, archived at https://web.archive.org/web/20210514051247/https://www.nrdc.org/experts/anna-reade/scientific-basismanaging-pfas-chemical-class.

[4] Fan Li et al., "Short-chain per- and polyfluoralkyl substances in aquatic systems: occurrence, impacts and treatment," Chemical Engineering Journal, 15 January 2020, https://doi. org/10.1016/j.cej.2019.122506, available at https:// www.sciencedirect.com/science/article/abs/pii/S1385894719319096.

[5] Anna Reade, Natural Resources Defense Council, EPA Finds Replacements for Toxic "Teflon" Chemicals Toxic, 15 November 2018, archived at https:// web.archive.org/web/20211002204550/https://www. nrdc.org/experts/anna-reade/epa-finds-replacementstoxic-teflon-chemicals-are-also.

[6] Ibid.; U.S. Environmental Protection Agency, Fact Sheet: Human Health Toxicity Assessment for GenX Chemicals, October 2021, archived at https://web.archive.org/web/20211025194029/https://www.epa.gov/system/files/documents/2021-10/genx-final-toxassessment-general_factsheet-2021.pdf.

[7] Arlene Blum et al., "The Madrid statement on poly- and perfluoroalkyl substances, (PFASs)," Environmental Health Perspectives, 123(5), 1 May 2015, DOI: https://doi.org/10.1289/ehp.1509934.

Many drinking water sources in Maryland are contaminated with PFAS. In late 2019, the Maryland Department of the Environment (MDE) tested for contamination from legacy PFAS at water treatment plants that provide drinking water to 70% of Maryland's population.[8]

- Approximately 75% of the samples had quantifiable levels of PFOA and PFOS.[9]
- The two highest readings were from Westminster and Hampstead, both in Carroll County.[10]
- Testing by the U.S. Department of Defense has found PFAS in drinking water at or near a dozen military facilities in Maryland[11]

PFAS also contaminate groundwater and seafood in Maryland. PFAS contamination at military sites in Maryland often is traceable to the use of firefighting foam.[12] PFAS from firefighting foam have leached into shallow groundwater, potentially flowing from there into nearby rivers and streams.

- PFAS contamination has been found in groundwater at eight military facilities in six counties in Maryland.[13]
- Testing found nine different types of PFAS in striped bass, crabs and oysters from the Potomac River and St. Inigoes Creek in southern Maryland.[14]
- MDE has detected PFAS in three species of fish from Piscataway Creek, a tributary of the Potomac River in Prince George's County, and has warned people to limit their intake of particular species caught in the creek.[15]

How PFAS enter our bodies

- **CONTAMINATED WATER:** Drinking water contaminated with PFAS is one of the most common exposure routes.[16]
- **WORKPLACE EXPOSURE:** Workers who make products with PFAS and military personnel or firefighters who work with firefighting foam may be particularly at risk for exposure.[17] For example, these individuals may inhale or swallow PFAS-contaminated dust.[18] They may also absorb PFAS through their skin.[19]

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[8] Maryland Department of the Environment, Understanding the Occurrence of Per- and Polyfluoroalkyl Substances (PFAS) in Maryland's Public Drinking Water Sources, accessed 7 September 2021, archived at http://web.archive.org/web/20210720143939/https://mde.maryland.gov/programs/Water/water_supply/Documents/PFAS_Public_Water_System_StudyPhase1Report.pdf.

[9] Ibid., p. 4.

[10] Ibid., p. 4.

[11] Environmental Work Group, PFAS Contamination Map, 6 January 2021, available at https:// www.ewg.org/interactive-maps/pfas_contamination/ map/.

[12] Naval Air Station Patuxent River Restoration Advisory Board, PFAS Update: Naval Air Station Patuxent River and Webster Outlying Field, 28 April 2021, available at https://www.navfac.navy.mil/content/dam/navfac/Environmental/PDFs/env_restoration/nas_patuxent_river/NAS_Patuxent_River_RAB_Presentation_202104.pdf, p. 9.

[13] Maryland Department of the Environment, Public Health: Maryland and PFAS, accessed 7 September 2021, archived at http://web.archive.org/web/20210815110952/https://mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx.

[14] Public Employees for Environmental Responsibility, More PFAS Found in Maryland Water and Seafood, 16 November 2020, archived at http://web.archive.org/web/20210812170801/https://www.peer. org/more-pfas-found-in-maryland-water-and-seafood/.

[15] Maryland Department of the Environment, Department of the Environment Issues First Fish Consumption Advisory for PFAS (press release), 15 October 2021, archived at https://web.archive.org/web/20211018005323/https://news.maryland.gov/mde/2021/10/15/department-of-the-environmentissues-first-fish-consumption-advisory-for-pfas/; Christine Condon, "Maryland issues first fish consumption advisory because of PFAS," Baltimore Sun, 17 October 2021, archived at https://web.archive.org/web/20211017170318/https://www.baltimoresun.com/news/environment/bs-md-pfas-fishconsumption-advisory-piscataway-creek-potomacriver-20211017-2lvrssyyfrggxjledgo3bl53me-story.html.

[16] Earth Justice, Breaking Down Toxic PFAS, 9 October 2020, archived at http://web.archive.org/web/20210904011701/https://earthjustice.org/features/breaking-down-toxic-pfas.

[17] Agency for Toxic Substances and Disease Registry, Per- and Polyfluoroalkyl Substances (PFAS) and Your Health, 24 June 2020, archived at http:// web.archive.org/web/20210904174204/https://www. atsdr.cdc.gov/pfas/health-effects/exposure.html.

[18] Ibid.

[19] .Somrutai Poothong et al., "Multiple pathways of human exposure to poly- and perfluoroalkyl substances (PFASs): From external exposure to human blood," Environment International, January 2020, DOI: https://doi. org/10.1016/j.envint.2019.105244.

- **CONSUMER PRODUCTS:** People can be exposed to PFAS through a variety of consumer products. PFAS migrate from consumer products, resulting in toxic exposure. As stain-resistant furniture and carpets and waterproof clothing break down, they produce dust that can be inhaled or swallowed.[20]
- **CONTAMINATED FOOD:** Food may be contaminated with PFAS if it is raised in contaminated soil, fertilized with contaminated sewage sludge, or irrigated with contaminated water.[21] PFAS have been found in fish, shellfish, meat, eggs, milk, fruits and vegetables.[22] Processing equipment and packaging that contain PFAS may also add PFAS to food.[23] One analysis of fast food packaging in the U.S. found that 46% of paper used to package food (for example, to wrap hamburgers) and 20% of paperboard (such as for french fry boxes) contained PFAS.[24]
- **EXPOSURE IN UTERO OR THROUGH BREASTMILK:** Babies can be exposed to PFAS before they are born, if the mother has been exposed to PFAS. Infants may be exposed to PFAS through their mother's breast milk.[25] For example, a 2021 study found PFAS in all breastmilk samples collected from 50 nursing mothers in the U.S.[26]

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Stop Toxic PFAS 2022 Factsheet (1).pdf
Uploaded by: Emily Scarr
Position: FAV

Stop Toxic PFAS: The George "Walter" Taylor Act

The threat of "forever chemicals"

A common class of chemicals, per-and polyfluoroalkyl substances, commonly known as PFAS, are used in a variety of products including rugs, food packaging, and non-stick pans. They are also used in some fire fighting foams and manufacturing to make things greaseproof and water resistant.

PFAS are often called 'forever chemicals' because they don't break down in our bodies or our environment, and they have been linked to negative health impacts. When PFAS end up in our food and water, it puts our health at risk. Elevated levels of PFAS in blood has been associated with health concerns, including:

- Cancer;
- Thyroid disruption; and,
- Reduced vaccine response

According to an August 2020 report from the nation and world's leading PFAS experts PFAS should be regulated as a class in order to protect health:

"Managing PFAS one-by-one is neither feasible nor cost-efficient. More comprehensive solutions are needed, given that traditional approaches have failed to control widespread exposures to PFAS and resulted in inadequate public health protection. We suggest class-based options to more comprehensively and efficiently reduce PFAS exposure."

PFAS in Maryland

The Maryland Department of Environment has found PFAS in 75% of the drinking water they have tested. There is known contamination in and around more than a dozen military sites and in seafood in Maryland. This fall, the Maryland Department of Environment issued their first fish consumption advisory for PFAS.

Firefighters, active military and their families, and children are most at risk of PFAS exposure, but everyone is at risk. This bill addresses:

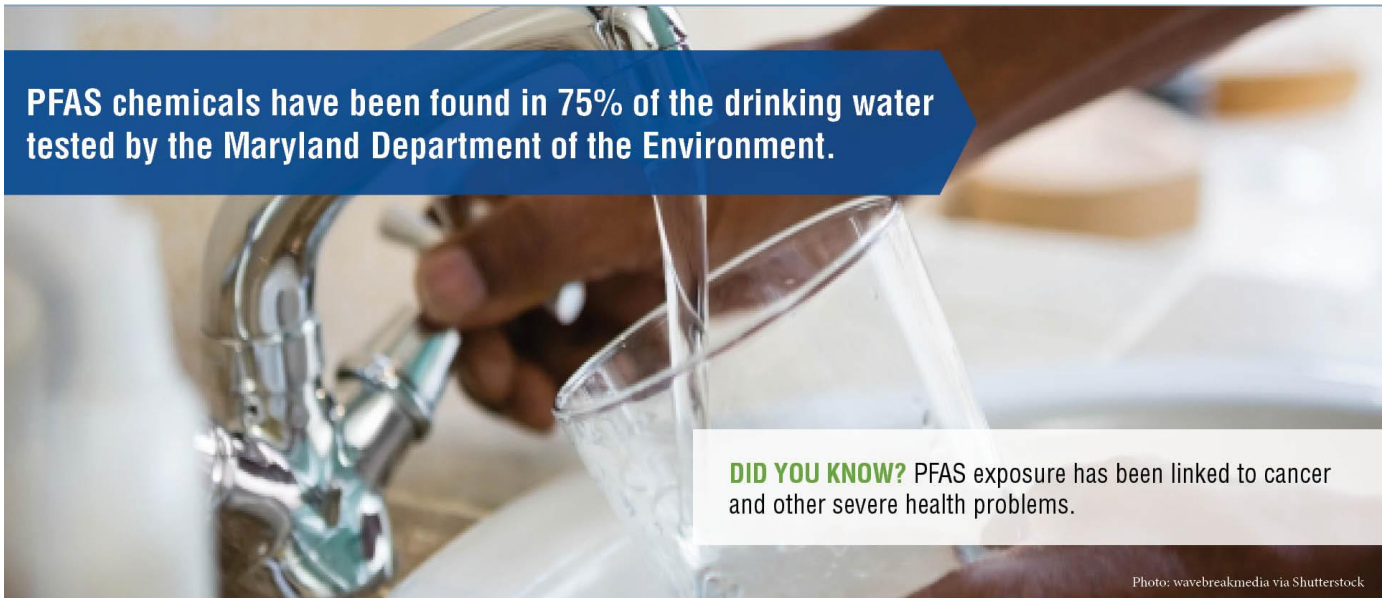
- Certain types of **firefighting foam** are a major source of PFAS contamination but safer PFAS-free foams exist and have been adopted around the U.S. and the world. CA, CO, CT, IL, ME, NH, NY, VT, and WA have all banned the use of firefighting foam containing PFAS.

- PFAS chemicals are sometimes used in **food packaging**. From hamburger wrappers to microwave popcorn bags, safer alternatives already exist. CA, CT, ME, MN, NY, VT, and WA have all banned food packaging containing PFAS.

- **Rugs and carpets** can be treated with PFAS. Manufacturing with PFAS poses environmental, public health, and worker safety concerns. The chemicals can also leach into household dust putting our families at risk. Home Depot and Lowes have stopped selling rugs and carpets with PFAS, and states are following suit, but not fast enough.

Contact: Emily Scarr, Maryland PIRG emily@marylandpirg.org

Stop Toxic PFAS: The George "Walter" Taylor Act



Senator Elfreth and Delegate Love
SB273/HB275

This bill protects Marylanders by restricting the use and disposal of PFAS chemicals.

- Stops the use of PFAS in:
  - Firefighting foam
  - Food packaging
  - Rugs and carpets.
- Requires notification for PFAS in firefighting gear.
- Prevents the mass disposal of PFAS chemicals by incineration and landfilling.

Supporting groups

Arundel Rivers Federation ✦ Audubon Naturalist Society ✦ Blue Water Baltimore ✦ CCAN Action Fund ✦ Chesapeake Bay Foundation ✦ Clean Water Action ✦ Climate Exchange ✦ Climate Law and Policy Center ✦ Consumer Reports ✦ Do the Most Good Montgomery County ✦ Environmental Working Group ✦ Episcopal Diocese of Maryland ✦ Environment Maryland ✦ Food and Water Watch ✦ Greenbelt Climate Action Network ✦ Interfaith Partners for the Chesapeake ✦ League of Women Voters of Maryland ✦ Maryland Campaign for Environmental Human Rights ✦ Maryland Conservation Council ✦ Maryland Climate Justice Wing ✦ Maryland League of Conservation Voters ✦ Maryland Legislative Coalition ✦ Maryland Pesticides Education Network ✦ Maryland Public Health Association ✦ Maryland United for Peace and Justice ✦ Maryland PIRG ✦ Maryland Professional Fire Fighters Association ✦ MOM's Organic Market ✦ Pro-Choice Maryland ✦ Natural Resources Defense Council ✦ Public Employees for Environmental Responsibility ✦ Shore Rivers ✦ Sierra Club Maryland Chapter ✦ St. Mary's River Watershed Association ✦ Strong Future Maryland ✦ Sunrise Movement ✦ Upper Potomac Riverkeeper ✦ Unitarian Universalist Legislative Ministry of Maryland ✦ Waterkeepers Chesapeake ✦ WISE

PFAS Bill Testimony SB 273 _ HB 275.pdf
Uploaded by: Gwen DuBois
Position: FAV

Committee: Education, Health and Environmental Affairs
Testimony on: SB0273 / HB0275 – Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)
Position: Favorable
Hearing Date: February 2, 2022

Chesapeake Physicians for Social Responsibility (CPSR) is a statewide evidence-based organization of over 940 physicians and other health professionals and supporters that addresses existential public health threats: nuclear weapons, the climate crisis, and the issues of pollution and toxic effects on health, as seen through the intersectional lens of environmental, social, and racial justice.

We strongly support SB273, which aims to prohibit the manufacturing, use, sale, and unsafe disposal of harmful per- or poly- fluoroalkyl (PFAS) chemical additives in firefighting foam, food packaging, rugs, and carpets. PFAS comprise thousands of man-made compounds that persist in the environment, contaminate water and soil, and bioaccumulate in humans and animals (Table 1).

Table 1. Sources of Human Exposure to PFAS[1]
• Surface, ground, public utility, and well water • Contaminated soil or dust—landfills, disposal sites • Food chain—seafood and livestock exposed to PFAS • Maternal to fetal transfer in utero, and breast milk and formula feeding in neonates and infants • Nonstick cookware • Cleaning and personal care products—shampoo, floss, cosmetics • PFAS-containing consumer food packaging—pizza boxes, fast food wrappers, microwaveable popcorn bags • PFAS-coated rugs, carpets, upholstery and fabrics • Workplace—Fire and Rescue, manufacturing and electroplating facilities

The continued manufacturing, use, incineration, and landfill disposal of these compounds pose an increasing threat to public and environmental health. It is a step in the right direction to address PFAS as a class of chemicals, rather than individually, as there are thousands of compounds in this class and their collective impact from exposure in-utero to adulthood likely causes the greatest harm. PFAS chemicals have been detected in blood, urine, breast milk, umbilical cord blood, lungs, kidney, liver, and brain tissue.[2] Although the toxicity and health effects of the vast majority of PFAS compounds have yet to be investigated or definitively identified, based on available research, there is reason to be concerned about the implications for short- and long-term human exposure to these chemicals (Table 2).

Table 2. Potential Effects of PFAS Compounds on Human Health[3]	
High Certainty	**Low Certainty**
Altered thyroid hormones	Inflammatory bowel disease
Increased total and LDL cholesterol levels	Low sperm count and mobility
Liver inflammation and fat deposition	Pregnancy-related high blood pressure
Kidney cancer	Decreased fecundity
Reduced response to vaccines	Obesity
Low birth weight	Accelerated puberty

In the paragraphs below, we highlight several areas in which research studies have noted concerning findings related to the human health effects of elevated PFAS serum levels.

Immune system dysfunction and infection susceptibility. The U.S National Toxicology Program, the Centers for Disease Control and Prevention, and the Agency for Toxic Substances and Disease Registry have all recognized that PFAS chemicals have the potential to adversely alter the human immune system and increase our risk of developing hypersensitivity disorders (e.g., asthma, eczema) and infectious diseases.[4] Relevant to the COVID-19 pandemic, a growing body of science has shown that high levels of PFAS exposure may decrease vaccine efficacy and increase susceptibility to infections in both adults and children. Furthermore, high levels of certain PFAS have been associated with a greater likelihood of hospitalization and progression to intensive care or death due to COVID-19.[5] As we attempt to prevent the spread and severity of COVID-19 as well as future pandemics, protecting the public from further exposure to harmful PFAS chemicals plays an important role.

Cancer susceptibility. PFAS chemicals, particularly perfluorooctanoic acid (PFOA), have been suggested to increase the risk of various cancers. The World Health Organization (WHO) International Agency for Research on Cancer (IARC) has classified PFOA as a possible human carcinogen. A review of multiple research studies found that the increase in cancer risk per 10 ng/mL serum PFOA was 16% for kidney cancer and 3% for testicular cancer.[6] Other studies of individuals with high exposures to PFOA, such as those living near chemical and manufacturing plants, have also found associations between PFOA and testicular, kidney, prostate, and ovarian cancers, as well as non-Hodgkin lymphoma.[7,8] The National Institutes of Health (NIH) is continuing to study the risks posed by PFAS on ovarian, endometrial, prostate, and thyroid cancers, and childhood leukemia.[9] Given the considerable potential for PFAS to be linked to mechanisms underlying the development of cancer, supported by numerous laboratory and epidemiological studies, it is crucial to minimize and ultimately eliminate our exposure to PFAS.

Health and development of the fetus, infant, newborn and children. Studies have consistently demonstrated that PFAS easily circulates from maternal blood through the placenta to the developing fetus.[10] Particularly concerning is the suggestion of PFAS-induced improper placental development and function, which could negatively impact maternal and fetal acute and latent health outcomes such as hypertensive disorders of pregnancy and low birth weight. In addition, children born to mothers with elevated umbilical cord blood PFAS levels were noted to be at increased risk for infectious diseases such as throat and airway infections and diarrheal illnesses.[11,12]

Effect on Firefighters and the Community. Firefighters are more likely to die from cancer than a fire, and exposure to high amounts of PFAS, such as those found in firefighting foam and uniforms, is associated with adverse health outcomes including cancers. Before starting medical school, I, Angela Geiger, volunteered at my small mountain town's fire department, which routinely deployed firefighting foam to extinguish regularly scheduled real fire training sessions. Because of the department's proximity to my house, foam that was used in these training sessions drained directly into the ground and ultimately the wells that supplied drinking water to my house, my neighbors' homes, and residents downstream. I am sure that I am not the only person who finds this very disturbing, and I am deeply saddened by the thought that my family, community, and the people I worked with are at increased risk of cancer and other adverse health outcomes due to chemicals in firefighting foam and firefighter's gear.

As members of the healthcare community, we strongly support and urge favorable action on the George "Walter" Taylor Act (SB0273/HB0275) which undertakes smart, common-sense actions to mitigate the wide-ranging health concerns associated with PFAS exposure. Passage of this bill will protect the health and well-being of all Marylanders, especially those at highest risk of harm: our first responders, the elderly, and pregnant women, newborns, infants, and children.

Respectfully submitted,

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SB 273 to EHEA support Limiting PFAS Chemicals.pdf
Uploaded by: Henry Bogdan
Position: FAV

MARYLAND NONPROFITS
marylandnonprofits.org

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February 2, 2022

Testimony on Senate Bill 273
Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)
Senate Education, Health, and Environmental Affairs Committee

Position: Favorable

Maryland Nonprofits is a statewide association of more than 1300 nonprofit organizations and institutions. We urge you to support Senate Bill 273 to prohibit use of PFAS chemicals firefighting foam, carpets, and food packaging.

Perfluoroalkyl and Polyfluoroalkyl chemicals (PFAs) are highly fluorinated industrial chemicals that have been linked to serious illnesses including: testicular, kidney, liver and pancreatic cancer; reproductive problems; and, low birth weights as well as weakened immunity amongst children. Furthermore, these chemicals remain in our bodies for years and rarely break down in the environment - which is why PFAs are often referred to as "forever chemicals."

Several states have enacted lower limits on the PFA amount allowed in water than is currently required by the EPA, banned PFAs in food packaging, or banned the use of fire-fighting foam that contains PFAs. Rugs and carpeting have been found to be sources of significant and widespread human and ecological PFAS exposures.

These types of pervasive environmental threats impact our whole population, but unfortunately they also tend to be disproportionately harmful to minorities and families with lower incomes, who because of systemic racism or other social inequities may have fewer choices in where they live, where they can shop, or the products they are able to afford.

We urge you to give Senate Bill 273 a favorable report.

SB273 - PFAS (2022 Session) - J. Buddle - Professi

Uploaded by: Jeffrey Buddle

Position: FAV

PROFESSIONAL FIRE FIGHTERS OF MARYLAND

CHARTER 1969

February 2, 2022

Senator Paul Pinsky, Chair
Senate Educational, Health & Environmental Affairs Committee
2 West, Senate Miller Office Building
Annapolis, Maryland 21401

Testimony Concerning SB 273, an Act concerning – Environment –PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act).

Submitted to the Educational, Health & Environmental Affairs Committee

Position: Support

On behalf of the International Association of Fire Fighters (IAFF), we submit this testimony in reference to Maryland Senate Bill 273, introduced by Senator Elfreth, Senator Beidle, Senator Lam, and Senator Bailey, An Act concerning – Environment –PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act).

The IAFF is an international union that represents over 326,000 professional fire fighters and emergency medical personnel in the United States and Canada and for over 100 years have been actively involved in improving the health and safety of fire fighters; a highly important activity for a workplace in which fatalities and early retirement due to work-related injuries and illnesses occur regularly. The IAFF is dedicated to reducing the number of occupational cancer occurrences in fire fighters.

We are pleased that the Maryland Senate Educational, Health & Environmental Affairs Committee is considering legislation to regulate fluorinated firefighting foam by banning the use, sale, and distribution of PFAS foams in Maryland, limiting fluorinated foam use and banning use in testing and training, and requiring the labeling of fire fighter personal protective equipment that contains PFAS chemicals. SB 273 takes important steps to help lower fire fighter exposure to harmful PFAS chemicals.

Once thought to be safe, we now know PFAS to be toxic. The Environmental Protection Agency has determined there is no safe level of PFAS within the human body. When PFAS enter the body, a single exposure can remain in the body for years after even if there are no additional exposures. The half- life of these chemicals ranges from 2- 9 years. The long half-life means that

chemicals can remain in the body and build up to concentrations that may cause various negative health effects as a result of exposure.

The American Cancer Society has determined that fluorinated chemicals are linked to forms of kidney, prostate, thyroid, bladder, and testicular cancers. The International Agency for Research on Cancer (IARC), classifies PFOA as group 2B – possibly carcinogenic to humans based on limited evidence of carcinogenicity in humans and limited evidence in lab animals. These Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFAS), are identified as hazardous to humans, are currently in use in Class – B firefighting foams.

Individuals are exposed to PFAS released into the air, water, and soil in areas where they are manufactured, stored, or used. Following their initial release, PFAS can be transported to other areas though windy conditions, movement of groundwater, flooding, or even food production. With their persistence in the environment, concentrations of PFAS accumulate in people, wildlife, food sources, soil, and drinking water. Most regularly, humans are exposed to PFAS through the ingestion of contaminated water or food. However, through exposure from PFAS-laden firefighting foam and personal protective equipment, fire fighters are repeatedly exposed to PFAS chemicals through inhalation and absorption thru the skin.

Due in large part to fire fighters' increased exposure to toxic chemicals, including PFAS, cancer is the largest health issue facing the firefighting profession. Fire fighters dying from occupational-related cancers now account for more than 70 percent of the line-of-duty deaths each year.

The State of Maryland recognizes the health hazards that these chemicals pose to fire fighters. In 2017, the state passed into law a workers' compensation benefit for fire fighters that presumes leukemia, prostate, rectal, throat, multiple myeloma, non-Hodgkin's lymphoma, brain, testicular, or breast cancer are occupationally related. In 2019, those provisions were expanded to include bladder, kidney, and renal cell cancers when Governor Larry Hogan signed into law HB 595. These added cancers have been linked to PFAS exposure in several health studies.

Banning the use, sale, and distribution of PFAS foams is achievable, and would protect Maryland's fire fighters and the environment from unnecessary toxic PFAS exposure. While PFAS-laden foams and PFAS-free foams do not perform identically to each other, application tactics can be adjusted to ensure non-PFAS foams are similarly effective at fire suppression in the same way that PFAS-laden foams suppress. Since alternative PFAS-free foams are already on the market used across the United States for firefighting activities and in use in other countries that have outright banned PFAS-laden foams, banning the use of PFA-laden foams for training and testing makes sense to limit PFAS exposure to fire fighters and the environment.

Knowing how toxic these foams are, and that there are effective alternatives on the market, a ban of PFAS foams is a commonsense solution to protect the health of fire fighters. Numerous other states have passed legislation to ban the use of PFAS foam outright. In December 2020, as part of the National Defense Authorization Act, Congress mandated the military phase out the use of PFAS-laden foams by 2024. Further, the federal government recently allowed airports to voluntarily opt out of using PFAS foams via the Federal Aviation Administration

Reauthorization Act of 2018. SB 273 is consistent with federal legislation and would bring Maryland to the safer and higher standards that other states have been able to achieve.

Fire fighters are also regularly exposed to toxic PFAS chemicals in their personal protective equipment (PPE). PFAS have been found to migrate while wearing the PPE and expose the fire fighter to these carcinogens. A recent study by Muensterman et al. (2021)[1] identified that in gear from 2008 and 2019, that all three layers of fire fighter turnout gear (outer layer, moisture barrier, and thermal layers) yielded measured concentrations of volatile and nonvolatile PFASs. In particular, the moisture barrier layer, a PTFE film, gave the highest individual nonvolatile (0.159 mg F/kg) and volatile PFAS (20.7 mg F/kg) as well as total fluorine (122,000 mg F/kg) concentrations. The outer and thermal layers comprised of aromatic polyamide-based fibers (aramid) treated with side-chain fluoropolymers had lower levels of individual nonvolatile and volatile PFASs. The IAFF is deeply concerned that the presence of any PFAS in PPE forces fire fighters to be exposed to carcinogens many times per shift.

PFAS-free PPE currently is undergoing testing and design, but is not yet available as a replacement for current PPE. Since there is no suitable substitute for PFAS-laden PPE, the labelling of gear and PPE is necessary. Until we can replace PFAS-laded PPE with safer alternatives, it is it critical to track when and where PFAS exposure occurs. This information will be essential to the health and safety of fire fighters. SB 273 requires that sellers and purchasers be notified and maintain records of gear and PPE that contain toxic PFAS.

Additionally, SB 273 bans the use of PFAS chemicals in food package, rugs, and carpets. While not directly linked to the fire service there is the concern that these consumer products are found in house fires and may be an additional exposure to fire fighters, therefore the IAFF supports any effort to ban or limit PFAS in these categories as well. Repeated exposure causes accumulation in the body, therefore any effort to decrease exposure to PFAS or ban their use is a positive step toward keeping the public and fire fighters safe. We support and believe Senate Bill 273 will help lessen the exposure of fire fighters to PFAS and better safeguard their health.

Thank you for your attention to this critical piece of legislation and the health impact of PFAS on fire fighters in our state.

Sincerely,

Jeffrey Buddle, President
Professional Fire Fighters of Maryland

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The Toxic Job of Being a Hero.pdf
Uploaded by: Jeffrey Buddle
Position: FAV

THE TOXIC JOB OF BEING A HERO

BY
DAVID FERRY

PHOTOGRAPHS BY
ALEX GAGNE

You're Back in the Office —Now What?

MANY PEOPLE may feel "a bit lost" and "unsettled" as they transition back to the office, says Darcy Gruttadaro, the director of the Center for Workplace Mental Health. But you've got this. And in case you have any doubt, *Men's Health* asked more than 100 *MH* MVPs—our term for the subscribers to our exclusive membership program, which provides access to premium videos and workouts and expert advice—for their own **return-to-work mantras.** (Read the rest of their answers on MensHealth.com.)

Here are three of the greatest to remember—and repeat as needed:

"I can do anything from anywhere."
Christopher Simone, Portland, OR

"Don't go back just to have things be as they were before; go for better."
Scott J. Clark, Oshawa, ON

"Stick to the schedule and leave 'work' at 'work.' "
Ken Conway, Shrewsbury, MA

There will still be new challenges. For those who are continuing to work from home part of the week, flipping back and forth between isolation and socialization can be jarring. But you've already proved you can evolve and adapt. In this case, clinical psychologist Carla Manly, Ph.D., recommends setting aside time during your morning routine to check in with how you're feeling, either by doing a mental exercise or by making a journal entry. If you're feeling more outgoing, it will be an easier day in the office. If not, you can mentally prepare, "knowing you're in a more sensitive space," she says.

And if anything does upset you, just remember: "Children throw tantrums; adults negotiate," says therapist Nick Bognar. "What that means is that children fixate on the problem and approach it with helplessness and victimhood." Before getting upset, **ask yourself three questions:**

1. **What are the parts of this that I can control?**

2. **What are the parts that I just have to deal with?**

3. **What's the best possible outcome for me here?**

Then focus on controlling only what you can, letting the rest go, and—whatever you do—taking a beat to make sure you're not putting too much energy into solving something that you can just as easily add to the let-it-go list. As your time at home has probably taught you, the one thing you can control most is . . . you.

CHEERS, AND WELCOME BACK

Bring your WFH happy-hour favorites to toast your return to the office.

BY SPENCER DUKOFF

VINO

UNDERWOOD PINOT GRIS *(13% ABV)* This crisp, crushable canned wine hails from Oregon, which has become a haven for small-scale wineries focused on craft and sustainability.

BEER

BREWDOG ELVIS AF NON-ALCOHOLIC GRAPEFRUIT IPA *(0.5% ABV)* Skeptical about near beer? We were, too, until we tried this hoppy, zesty NA alternative that won't make you miss the "real" thing.

COCKTAIL

DOGFISH HEAD DISTILLERY CHERRY BERGAMOT WHISKEY SOUR *(7% ABV)* Tart but not grimace inducing, this low-octane cocktail can be its own adventurous conversation starter.

DON'T PRETEND YOU DIDN'T MISS THIS

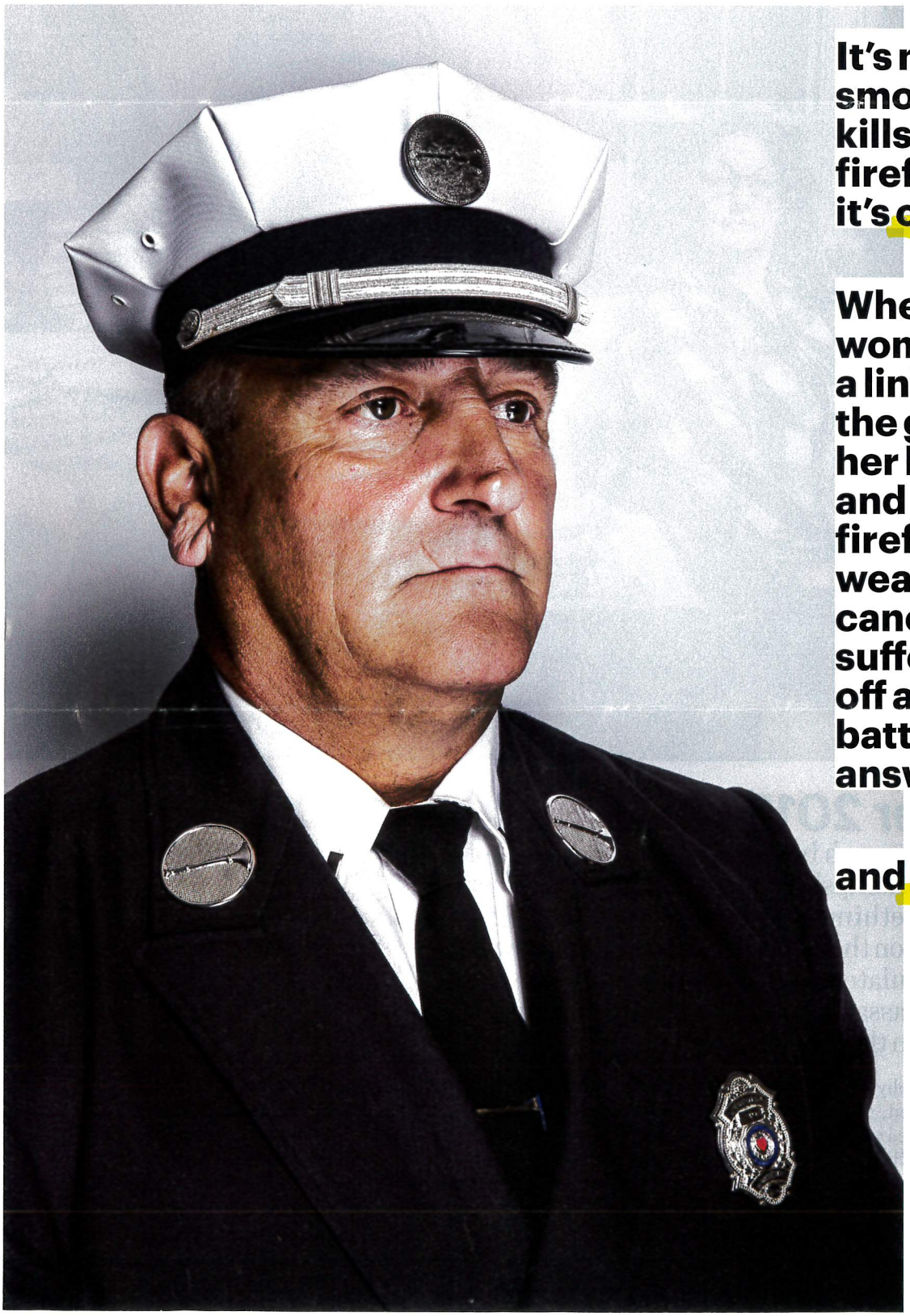
What We Missed the Most "Having a structured 'lunch hour' is much better for my diet than an 'I'll eat something in the afternoon when I'm hungry' approach." Michael Walsh, Avon Lake, OH

What We'll Happily Leave Behind "Constantly riding the mute and video-off buttons to keep a screaming naked baby from interrupting my call." Joseph Juhnke, Chicago, IL

The Best Part of Work-Life Separation "Home will feel more like home." Keith Johnson, Lipan, TX

For additional answers to these questions and more, head to MensHealth.com.

Getty Images (nuts). Courtesy brands (cans).



It's not smoke that kills most firefighters; it's cancer.

When one woman found a link between the gear her husband and other firefighters wear and the cancers they suffer, it set off a six-year battle to find answers—

and justice.

PAUL COTTER's cancer diagnosis in 2014 cut short his beloved career as a firefighter.

It was winter 2015, and Diane Cotter was in the cellar, tearing through boxes. Upstairs, the inside of the tidy southern New Hampshire home she shares with her husband, Paul, is something of a shrine to firefighting—Paul's commendations on the armoire, photos, boxes of swag and mementos accumulated from a lifetime on the rescue truck in Worcester, Massachusetts. But Paul's firefighting gear was packed away in the cellar. It was too hard to look at.

Even at 55, Paul was in top physical shape. Thick and barrel shaped, with close-cropped hair, he is a bear of a man. At his peak, he could deadlift 495 pounds, and he liked to boast, in his heavy Worcester accent, that he was one of only two guys in the firehouse who could climb *up* the three-story fire pole. His diagnosis—prostate cancer, aggressive—on November 20, 2014, was shattering. Overnight, his life became medicalized. The tumor scored a seven out of ten on the Gleason scale, whatever the hell that was. Bad, but could be worse, the oncologist explained. They could excise the tumor, the hotshot surgeon in Boston said to them. Nobody mentioned the eventual side effects—the incontinence, the impotence, the weakness—but none of that matters when you start measuring your life expectancy in five-year chunks. The rhythms of Paul's life changed from shifts and calls to regular blood draws, post-op meetings, and fears of relapse.

In the cellar, Diane muscled Paul's fire-resistant trousers out of the box. She was no firefighter, but Diane knew her way around what the squad called "turnout gear." For almost 40 years, since he had

Paul and his wife, Diane, turned her craft room into a war room where they fought to get to the truth about what was killing firefighters.

first flashed a smile at her from his baby-blue Cadillac during her junior year of high school, Diane had been by Paul's side. Although she raised two kids and worked half a dozen jobs over the years, her home was always open to hundreds of firefighters from Local 1009 and their families whenever somebody made captain or didn't come home from a shift. She was terrified for Paul's safety, but she knew he lived for the job. Plus, she couldn't deny she loved the smell of smoke that clung to him when he walked in the door.

The diagnosis had forced Paul into a retirement he wasn't ready for and sunk him into depression, but it had thrust Diane toward a new obsession: finding the culprit, the reason why Paul was the only man in his large family to be diagnosed with a cancer known to run in families. Why was it that cancer had torn a hole in nearly every firefighting family they knew, all across America?

Late one night on the Internet, she discovered that the lining that was part of all firefighting gear might be a cause. It wasn't until two years later that she found out more: that it contained man-made chemicals called perfluoroalkyl and polyfluoroalkyl substances, or PFASs. This is a ubiquitous class of chemicals, the stuff that makes Teflon slick and Scotchgard stain-resistant—but, she would soon learn, it also includes widespread environmental toxicants and substances that interfere with the body's hormonal functions. It's linked to various adverse health effects, including cancer. She stopped the Googling and picked up Paul's gear. She shined his old field flashlight at the high-tech lining, and light poured through several holes near the groin. The chemical-laden lining was degrading. She wondered if that was the trouble. If so, Paul had been vulnerable, day after day, week after week, for a decade.

It was the beginning of a six-year odyssey, a quest to protect firefighters from the gear that was supposed to save them, an undertaking that would, to the Cotters' devastating surprise, alienate friends and pit them against their union and some of the most powerful corporations on earth. Given that PFASs are also in all kinds of common household products, was it possible that firefighters were the canaries in the coal mine?

Diane felt ill.

PAUL READS

NAMES FROM A LIST in the Cotters' makeshift war room—a former crafting room with a listless Internet connection, no cell service, and a lot of yarn—while Diane practices a speech for a conference on toxic chemicals and activism. It's a late-May morning earlier this year, and Paul has just gotten over the mild symptoms of his second Covid shot. His list, stored on an aging yellow notepad, is up to 32 neatly written names. Each is a firefighter who has reached out to him, and beside each entry is a letter—*P* for prostate, *T* for testicular, *B* for brain, and so on. "When I came home after my surgery, I started getting calls," he says. "I was getting one a month. I still get calls."

There are many ways to die in the fire service, and firefighters train to avoid the most gruesome. But today, most active-duty firefighters do not die from falling beams or back drafts—they die from cancer. Cancer is now the number-one killer in the fire service. Firefighters have a 9 percent higher risk of cancer, and a 14 percent higher risk of dying from cancer, than the rest of the population. "Every firehouse is a cancer cluster," Diane likes to say, and she's right. A firefighter is twice as likely as a civilian to get testicular cancer, 53 percent more likely to contract non-Hodgkin's lymphoma, and 28 percent more likely to develop prostate cancer, like Paul.

Paul doesn't like to talk about what cancer took from him, but he talks to all the firefighters who call, for as long as they want, about treatments, disability, the things nobody tells you—the anxiety, the depression that comes from having a job you loved, a purpose, torn from you too soon. Paul says he's one of the lucky ones. Doctors say he's cancer-free now, though treatment left its scars, both physical and mental.

Most firefighters assume their cancers come solely from carcinogens in the smoke they inhale. But for the better part of a decade, Paul and Diane have been out to prove that not all cancer in the fire service is directly related to the fires they fight. Some of firefighting's most common cancers, like testicular and prostate, may not be tied to breathing in smoke at all and instead could be more closely related to four letters that have come to dominate the Cotters' lives: PFAS. "These people don't know they're being poisoned," Paul says.

To understand the problem, you need to go all the way back to April 6, 1938, to a New Jersey laboratory owned by the chemical giant DuPont. That fateful day, an experiment went awry. Instead of making a refrigerant, a young chemist accidentally created a brand-new substance, one of the slipperiest materials on earth. The molecules that defined this new class of chemicals formed a profoundly strong carbon-fluorine bond. Substances coated in it not only repelled water and resisted stains; they could handle extreme temperatures and insulate electrical wires. DuPont patented Teflon, and by 1956 the first nonstick pans were on the market. Soon after, companies began developing new, related PFASs that would appear in products like Scotchgard and Gore-Tex. Today, PFAS compounds—there are thousands of them—are popularly known as forever chemicals because of their strong bond and refusal to degrade. A better

name might be everywhere chemicals: They've become a mainstay in engines and electronics, carpeting and couches, stain-resistant pants and wrinkle-free shirts, shampoo and floss. And, of course, an integral part of firefighting gear.

"YOU WANNA SEE 'THE RABBIT hole'?" Diane asks, opening up her AOL account on the Cotters' desktop PC. She calls herself a fat little housewife, which is untrue except for her diminutive stature, and she speaks with the thick accent of her native Worcester (or "Woosta," as she puts it). If Paul is the counselor to firefighters everywhere, Diane is the advocate. And the rabbit hole is the AOL folder where she files all the emails she's sent in her search for the truth about PFASs and firefighters. On this May day, it's at 15,000-plus. She is a prolific emailer, and her missives are something to behold: Formatting is rough and capitalization a bit random, the sender line has no name (emails just arrive from "d"), and the recipients include union bosses, heads of environmental groups, and senators. It can all seem like the ravings of a crank, except Diane has meaningful correspondence with these people. "It's easier for people to give me what I want than to have to keep putting up with me," she laughs.

At home, it's different. Diane met Paul in 1977, when he, a high school senior, pulled up next to her at a stoplight in downtown Worcester. Diane saw stars—literally, she insists—and five years later they married in Paul's Armenian church on the hottest day of the year, everyone drunk on the incense and the humidity. But as they were courting and Teflon was taking over the world, scientists at the companies that manufactured PFAS compounds had already made some disturbing discoveries. As early as the 1950s, researchers found that PFASs attached themselves to proteins in human blood—and they persisted in the body. Throughout the 1960s and '70s, DuPont and 3M conducted animal studies that showed that PFAS exposure was toxic to animals and led to kidney and liver issues. In 1981, a study of DuPont's own pregnant employees found elevated PFAS levels in their blood; among eight children born, two had birth defects. At both 3M and DuPont, a material-safety data sheet—a document required by OSHA that outlines the hazards of chemicals and how they should be handled—clearly stated the carcinogenic potential of PFAS exposure for workers. Regardless, both companies continued to market their wonder chemicals.

Early on, Diane knew none of this. And she had no idea that some firefighters are exposed to still other sources of PFASs aside from their gear. For decades, PFASs were a component of the firefighting foam employed at airports and military bases. Firefighters who used the foam, called AFFF (aqueous film-forming foam), had higher PFAS levels in their blood than the general public. But Paul, like most firefighters, never handled AFFF. Something he did handle all the time, though, was his gear. When he joined the fire service in 1988, he says, guys wore rubber waterproof coats and knee-high boots—old-school gear. But the development of new materials drove the modernization of turnout gear.

The National Fire Protection Association (NFPA), a nonprofit, nongovernmental agency that sets the standards for firefighting gear, mandated that all turnout gear include a composite of three layers: a tough outer shell, a thermal insulator to keep heat out, and, sandwiched between, a moisture barrier to keep the firefighters dry. What miracle material could do all this? Over the course of his career, Paul would be wearing it—multiple times a day. As the gear sheds chemicals, firefighters likely breathe it in and absorb it through their skin.

Although PFAS exposure is rampant—studies estimate that about 95 percent of Americans have measurable amounts of the compounds in their blood—firefighters have significantly higher levels. There are currently moves to ban PFASs in food packaging and some other products. Scientists don't know what a safe amount of PFAS exposure is. The quantity you consume when you apply a single coating of PFAS-laden lip balm may be negligible, but scientists worry that the successive exposures add up. We are all part of an unprecedented experiment, and Paul and Diane wanted to see it stop.

"This is a global problem," says Rob Bilott, the crusading attorney who put PFAS exposure on the map and DuPont in the spotlight—the man portrayed by Mark Ruffalo in the 2019 film *Dark Waters*. "We have these firefighters, the ones we ask to help us, to save us, to put their lives at risk for us—we need to know what they're being exposed to." Diane vowed to find out. But she didn't count on the fact that, because of a tight culture and potentially tainted dealings, not all firefighters wanted to know what poison might be lurking in their gear.

SOME TOXICANTS, WHEN THEY ENTER your body, make their presence obvious, breaking membranes and causing cells to explode. PFASs are stealthier. They appear to mimic the fatty acids you get from your diet, the run-of-the-mill residents that ensure all sorts of healthy cellular function. Under this guise and unbothered by your body's defenses, PFASs glom on to protein molecules, and once they do, things go haywire.

"We have a growing amount of research that clearly shows this class of chemicals is associated with a whole range of adverse health effects," says Linda Birnbaum, Ph.D., who, as director of the National Institute of Environmental Health Sciences, was the country's top toxicologist until she retired in 2019. It's very difficult to prove, medically or legally, that a person's cancer came from any one contaminant. Yet that doesn't rule out a relationship between them. "These chemicals have long been associated with cancers," Birnbaum says. Research has shown an increased risk

People didn't take it kindly: Airing dirty laundry isn't something done in a brotherhood.

When Paul was fighting fires (above, 2008), he had no idea that PFAS compounds were in the gear he wore (right). Scientists later found sky-high levels in the materials that were supposed to protect firefighters. But nobody wanted to hear about it.

of various types of cancer (including kidney, liver, and prostate) in connection to PFAS exposure.

"PFAS is insidious; it's one of the most persistent chemicals ever made," says Graham Peaslee, Ph.D., a professor at Notre Dame and one of the world's leading PFAS researchers. Peaslee, an experimental nuclear physicist, invented a way to uncover where PFASs are lurking and measure how much of the chemicals is on an object. That's why, in 2017, Diane came calling. "I get this email," Peaslee says. "It's five pages long—a short letter for Diane, I know now. She's frustrated. All she's asking is someone to test some gear."

Although she had found an article discussing the presence of certain PFASs in turnout gear, the gear manufacturers said it was minimal—"trace amounts," she kept hearing. She had emailed regulators and Congress members, talked to the health and safety folks at the firefighters' union, and nobody seemed to give a damn. They took the manufacturers at their word. She was at her wits' end. But Diane poked, prodded, and harangued. "I barely graduated high school," she says. "I felt so intimidated writing to Graham." Peaslee, like so many before and after him, relented to her pressure.

She sent Peaslee samples taken from a brand-new set of gear she'd purchased, one that wouldn't be contaminated with ash from burning buildings. Paul, who at this point had recovered from surgery but was nervously awaiting results from the blood work doctors carried out every 90 days to hunt for cancer, made the trek out to Notre Dame, too.

When Peaslee got the results from this initial test, the readings were shocking. "It was bigger than anything I'd ever seen in a textile," he says. Later research found that the gear was likely shedding PFASs everywhere. High PFAS levels were found in firehouses, in trucks, even on lab assistants' hands after they had handled the gear. Peaslee, who, like most folks, had always liked firefighters, gained a new respect for the profession as he met more and more of them. He was horrified to learn that firefighters wore their gear constantly, on routine calls, to the grocery store—that they wrapped their newborns in it for photos. "PFAS exposure pertains to all of society," Peaslee says. "The firefighters are just out in front, like they always are."

PAUL AND DIANE

KNEW THEY WERE ruffling feathers. But they didn't know the extent of it until September 2019. They were in Boston, at the Massachusetts State House, standing beneath the golden dome and central colonnade, to testify at a hearing about PFAS exposure. Inside the hearing room, lugging a heavy set of turnout gear as a prop, Diane saw union officials and firefighters from across the state, people the Cotters had known for years. But no one looked happy to see them.

Since 2017, the word on PFASs in gear had gotten around—almost wholly thanks to Diane. She became prolific on social media and wrote an article for a trade publication, summarizing her own investigation, that quickly went viral within the firefighting world. She finagled funding from a Boston foundation for Peaslee to conduct a preliminary study of turnout gear—one that would determine the full extent of exposure. But she also began criticizing the gear manufacturers and, critically, the union—the International Association of Fire Fighters (IAFF)—for its inaction.

People didn't take it kindly: Airing dirty laundry isn't something done in a brotherhood. Commenters online attacked her. Old friends didn't return calls. Her assertiveness rubbed people the wrong way. But it wasn't because Paul and Diane were wrong. Larger forces—like the

Alan J. Brackett (Cotter). Alex Gagne (coat).

union these men had belonged to their whole careers, the one that fought for their benefits and raises—had smothered this kind of dissent before.

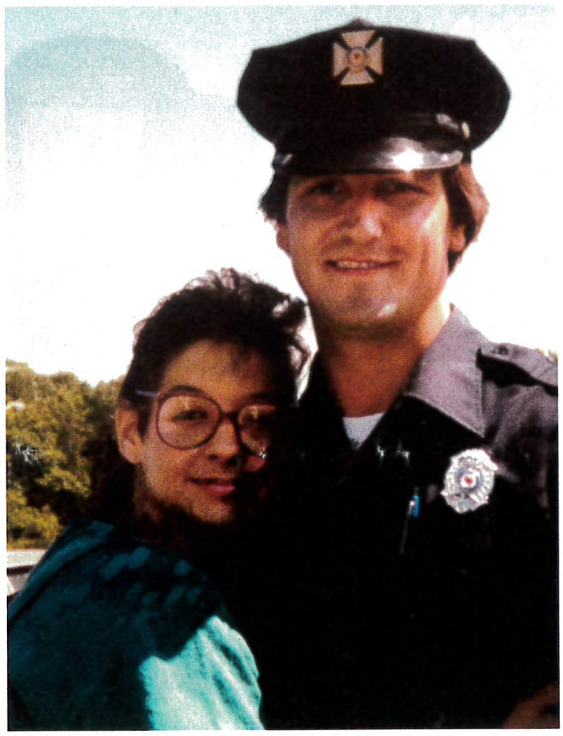
Outside of the union, other folks who were supposed to protect firefighters—the gear manufacturers—were also quick to placate and obfuscate. One gear company, Lion, funded its own study, carried out by Exponent, Inc., a firm known for producing scientific research for the tobacco industry that downplayed smoking's health impact. Its testing found there were very few to no detectable PFASs in samples of the company's gear, even though Peaslee's research had shown the opposite.

A letter to the publication *FirefighterNation* from Paul Chrostowski, Ph.D., an environmental-health scientist who was a consultant to Lion, called the alarms about PFASs in gear causing cancer "misleading and unsupported" and said "it would be irresponsible to dissuade firefighters from using their protective gear out of fear of cancer." Lion's crisis consultant told *Men's Health,* "Dr. Chrostowski's report says it all for Lion." Other manufacturers contacted for this story did not respond.

Companies denied the presence of certain PFAS compounds in their gear—ones that had been proven to be toxic and that the chemical companies had phased out years earlier. But there was a catch to most of their denials. New PFASs, says Birnbaum, the former top governmental toxicologist, "are being intentionally made or inadvertently produced all the time." So while firefighting gear didn't contain a few of the most notorious PFAS compounds, Peaslee's study found other, lesser-known types still lurking in the gear.

This switcheroo was all perfectly legal. "We assume chemicals are innocent until proven guilty," says Jamie DeWitt, Ph.D., a toxicologist at East Carolina University. In other words, in the U. S., hypothetically, you can release a new PFAS into the world every day, if you like, and you don't have to prove it's safe before it's used.

The union and the gear industry were close, too, which likely didn't encourage transparency on the issue. At the time Diane was making her findings known, the IAFF was the fiefdom of its president, Harold Schaitberger, a charismatic powerbroker in D. C. known to squash internal dissent. During his 20-year tenure, gear manufacturers loaded up the union's magazine with ads for new kit, manned booths at annual conferences, and even sponsored the IAFF symposium on firefighter cancer. Union health and safety officers repeated rhetoric from gear manufacturers, infuriating Diane. "When a firefighter wants to know what time it is, they call their local union president," Paul says. "When they want to know about turnout gear and cancer, they go to the union. And when the union says they're crazy, don't worry about it…" He trails off.



When Paul was inducted into the Worcester Fire Department in 1988, he and Diane had no idea how risky the job would really be.

Schaitberger became a frequent target of Diane's. In October of 2018, she tweeted a link to a blog post that was sharply critical of him. "Harold Schaitberger's IAFF long ago gave up its once premier role in protecting us," it said, praising Diane for her efforts to uncover PFASs in turnout gear. Almost immediately, the Cotters were ostracized. Friends told Diane they weren't supposed to speak with her. A local union legislative agent bashed her and Peaslee on Twitter.

There were other, more systemic roadblocks, too—like the National Fire Protection Association, the obscure nonprofit on the outskirts of Boston where industry employees, gear manufacturers, and firefighters meet to hash out the rules that regulate the field of firefighting. There, the committee in charge of turnout-gear standards includes a mix of gear manufacturers, labor reps, lawyers, and firefighters. It aims for a balance of interests, yet in 2007, this committee decided that one component of turnout gear, an internal moisture barrier, must pass a UV-light test. But the moisture barrier, something inside the trousers, never sees the sun. There was only one class of materials that could reliably both block water and withstand UV light: materials containing PFASs. The light test was proposed by a professor with ties to the gear industry, according to reporting from *E&E News*, and it sailed through the NFPA committee. With this rule in place, Peaslee says, firefighting gear could not be PFAS-free.

For the Cotters, "the shunning," as they call it, which began in 2018, was devastating. The union had been an integral part of their lives for three decades, the guys Paul hunted and fished with. "People were uncomfortable with her relentlessness," a local union official told me. "And she uncovers more information, and that's uncomfortable. And she starts questioning who in the union has known what and when. Is this a scandal? Nobody wants to be a part of that."

Diane and Paul retreated to the darkest place they'd been since Paul's diagnosis, but their message was being heard. The IAFF, folks realized, wasn't doing its job. "Under Harold Schaitberger, the IAFF traded our safety for sponsorship," says Frank Ricci, a retired union president and battalion chief in New Haven, Connecticut. More and more firefighters were realizing the dangers of PFASs, and they wanted change. (Schaitberger is currently being investigated by the FBI, the U. S. Attorney's Office, and the Department of Labor for potential financial improprieties when he led the union.)

FOUR HOURS

AND A UNIVERSE AWAY from Worcester, Captain Nate Barber of the Nantucket Fire Department bounces his flatbed truck over cobblestone roads toward the town dump. Barber beeps his horn twice at everyone he knows along the route—which is a lot of beeps, since he's one of those rare Nantucket creatures, a native. His connec-

Courtesy subjects

tion to the island, and his wife and two kids, made the frequent stints in Boston for cancer treatment even harder. "Any news on the PFAS yet?" he asks the dump attendant as he pulls up. She demurs.

The landfill is loaded with old furniture and appliances and garbage, the sea breeze is light, and the dump has views over the Atlantic. Somehow, like most of Nantucket, it is postcard pretty. "Yeah, but it's on fire, like, every year," Barber says. "And when it catches fire, we just dump tens of thousands of gallons of water on it. I've been here, like, six times for that." Barber is convinced that PFASs from the dump will be found in the groundwater here—and eventually everywhere—like they were in drinking-water wells near the airport, where toxic foam was used for training.

Barber is part of the next generation of firefighters fighting PFASs, the result of a sea change taking place within the service, thanks to rising awareness of the chemicals' toxic presence in firefighters' lives—and thanks to Diane Cotter, whose Facebook posts alerted him to the presence of PFASs in his gear in the first place.

"When I got cancer, I just thought it's something that people get," says Barber, who found out he had testicular cancer in 2019, when he was 38. "But then I learned one of the main cancers PFAS causes is testicular." He wondered if a bad fire had exposed him to something toxic, then dismissed it. "No firefighter wants to say this, but we don't fight that many fires," he says. There are plenty of calls, of course, but mostly they're false alarms or traffic accidents. Actual exposure to burning couches or cancer-causing fires? That's infrequent in a small-town fire department. "Most nights we sit around and watch *Game of Thrones*." Any PFAS exposure, he figured, would have come from years of using AFFF and from his gear. It was the kind of sentiment Diane and Paul Cotter had been trying to cultivate for years—and one Barber discussed with them on Zoom calls last year.

Last summer, things started to change and fast. In June, Peaslee's bombshell gear study, the one Diane helped to secure funding for, was finally published. He found large amounts of PFASs in turnout gear—not just in the lining, but in the outer layer as well. And the chemicals were in everything the gear and the guys who wore it came into contact with. The firefighting world took notice. One candidate to replace the union president campaigned on PFASs and chatted with Diane regularly. Diane says she even got a call from a union mediator last summer who said she would be forgiven if she apologized to the union. (She declined.) In early 2021, a union official and coworker of Nate Barber's at the Nantucket Fire Department, Captain Sean Mitchell, wrote a union resolution that would ban the IAFF from taking money from gear manufacturers. It passed easily. "We should all be asking the question of whether firefighter safety took a back seat to corporate interests," says Ed Kelly, the new head of the IAFF. When it comes to how the tide turned, "you gotta give Diane credit," he says.

Armed with Peaslee's gear study, a firefighter-turned-lawyer in California has filed several lawsuits against makers of gear, foam, and PFASs for damages sustained by firefighters that they allege are related to PFAS exposure. It's part of a huge, nationwide suite of suits involving PFASs.

After years of denials and being hounded as kooks, it's bittersweet vindication for the Cotters. The research they helped birth is evidence that PFASs are in gear; firefighters across America care and are taking action; even the union is changing. "Nothing would have happened without Diane," Paul says with a pride tinged by the bitterness that this was foisted upon her. But Diane doesn't feel triumphant. She still hasn't forgiven the union. And she wants congressional hearings to investigate the manufacturers and the fire-service institutions. "I have mixed emotions," she says from their backyard. "It took too much out of our life. There have been hundreds of small victories, but we haven't won the war." She's still so deep in the fight that, in many ways, she can't grasp the scale of her success.

Earlier this year, gear manufacturers began developing PFAS-free equipment. It will be slow going, since current NFPA standards still require a moisture barrier that withstands UV-light testing, which means it contains PFASs. But on Nantucket, a familiar story is playing out.

After Nate Barber's diagnosis, his wife, Ayesha Kahn, was radicalized. She's talked to the Cotters and is helping to lead the charge to get the NFPA requirements changed, convincing firefighters to sign on, and aiming to see that the Nantucket Fire Department gets the first fully PFAS-free gear available and the island becomes the first PFAS-free locale in America.

Back in southern New Hampshire, Paul is still adding names to his yellow notepad. A young firefighter, a "hell of a guy" named Bryan Goodman, 36, from Virginia, called in the spring to tell Paul about the high level of PFASs in his blood and his infertility. The work Paul and Diane have done inspired him, and Goodman says he's not going to sit back. He's going public and advocating for his brothers and sisters in the service. "As firefighters," Goodman says, "we are in the business of saving lives, but sometimes we have to pause and save ourselves." ■

HOW TO LOWER YOUR DAILY PFAS DOSE

PFASs are everywhere—an estimated 95 percent of Americans have measurable amounts in their blood. Here are some basic ways that three top toxicologists changed their habits to lessen their daily exposure.

STOPPED MICROWAVING ALL PLASTIC. Heating certain food containers and wrappers is a great way to leach PFASs right into your food, says Linda Birnbaum, a retired U.S. government toxicologist. She also brings glass containers to restaurants for takeout.

FILTER ALL THEIR WATER AT HOME. Up to 110 million Americans may have PFAS-contaminated water, but filtering helps. Reverse osmosis systems are best at removing these contaminants, but some pitchers with a charcoal filter can also be effective. Ask your municipal water district for PFAS test results, suggests the University of Arizona's Jeff Burgess, M.D., so you know what you're dealing with.

STOPPED BUYING WATERPROOF CLOTHES. Totally water-repellent clothes contain higher amounts of PFASs. Look for "water resistant" instead, Birnbaum says, or apply wax-based waterproofing to your boots the way your grandpa did.

CHECKED OR CHUCKED PERSONAL-CARE PRODUCTS. Applying PFAS-loaded balm to your lips or waterproof mascara near your tear ducts increases the risk of ingestion or absorption. Jamie DeWitt, Ph.D., of East Carolina University, recommends finding PFAS-free versions of the products you use most, such as floss and sunscreen.

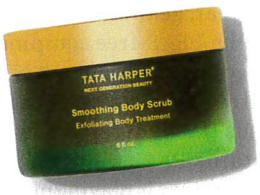
DAVID FERRY is a reporter in Los Angeles who has written for *Outside*, *Wired*, and *The Atlantic*.

MH SIX PACK

THE STUFF WE CAN'T LIVE WITHOUT

1. Wilde Chicken Chips

▲ **"These chips are made from chicken breast and they actually taste good,** and a whole bag has 20 grams of protein." **$5 per bag; wildebrands.com**



2. Tata Harper Smoothing Body Scrub

▲ "I sweat a lot after cardio, and I used to get back breakouts. **I needed to exfoliate.** After using this stuff, things cleared up." **$90; tataharperskincare.com**

3. Aarke Carbonator

◀ *It's an easy-to-use system to make sparkling water at home. "I'm trying to use less plastic and metal. I always keep two containers of this stuff in the fridge so it's cold."* **From $220; williams-sonoma.com**

4. J.Q. Dickinson Salt-Works

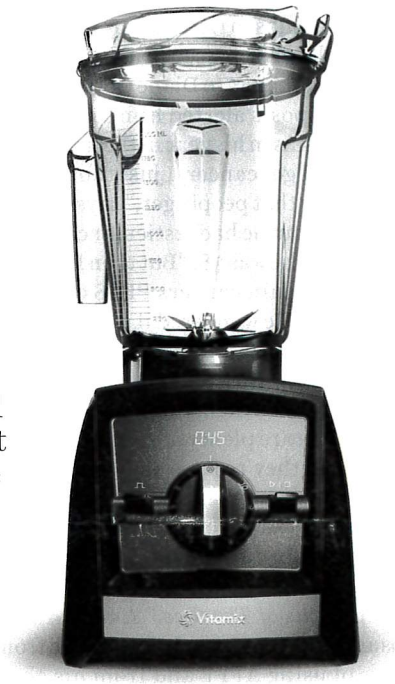
▲ Small batch, big flavor. "It's gritty and has a bit of a sandy texture, like fleur de sel but grainier. **I like to put it on seared snapper or a grilled-peach-and-tomato salad."** **$6; jqdappalachianmercantile.com**

6. Olly Sleep

▲ ***"I take these with chamomile tea as part of my bedtime routine."*** *These melatonin-enhanced gummies are NSF certified, which means they're tested for contaminants.* **$14; olly.com**

ANTONI POROWSKI

Last year was busy for Porowski: He was promoting season 5 of *Queer Eye* while writing *Antoni: Let's Do Dinner* (out now) and holding on to hope during Covid. "I spent a lot of time working on what I could control. There's so much I *can't* control, but I can control my rituals," he says. Here are six essentials the self-taught chef uses to fuel his days (and nights). **BY PAUL KITA**



5. Vitamix Blender

▲ "I'm team Vitamix all the way. **They're so powerful—I've had one ever since I moved into my own place."** Alongside scrambled eggs, Porowski has a breakfast shake that includes pistachio milk, almond butter, cinnamon, banana, and a scoop of plant-based protein powder. **From $449; vitamix.com**

Jesse Dittmar/Redux (Porowski). Courtesy brands (products).

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BaltimoreCounty_FAV_SB0273.pdf
Uploaded by: Joel Beller
Position: FAV

JOHN A. OLSZEWSKI, JR.
County Executive

JOEL N. BELLER
Acting Director of Government Affairs

JOSHUA M. GREENBERG
Associate Director of Government Affairs

MIA R. GOGEL
Associate Director of Government Affairs

BILL NO.: **SB 273**

TITLE: Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)

SPONSOR: Senator Elfreth

COMMITTEE: Education, Health, and Environmental Affairs

POSITION: **SUPPORT**

DATE: February 2nd, 2022

Baltimore County **SUPPORTS** Senate Bill 273 – Environment - PFAS Chemicals - Prohibitions and Requirements (George "Walter" Taylor Act). This legislation would prohibit a person from using, manufacturing, or knowingly selling certain products that contain added PFAS chemicals in the State.

According to the CDC, exposure to PFAS may interfere with the body's natural hormones, increase cholesterol levels, affect the immune system and increase the risk of some cancers. As it currently stands, a majority of Americans have PFAS in their bloodstream. Firefighting foams are known to contain PFAS. When used, the foams introduce PFAS into underground or nearby water systems, contaminating our environment and poisoning our residents. By restricting the use of these foams, we can limit their introduction into the State's ecosystem.

Last session, Baltimore County strongly advocated for tighter regulation of PFAS usage. The County was proud to see this legislation pass and lead the way for additional measures this session. SB 273 would restrict the use of firefighting foam, rugs and carpets, and food packing that contain PFAS. Prohibiting the use, manufacturing and sale of these items will help keep Maryland's waterways clean and safe for all residents.

Accordingly, Baltimore County requests a **FAVORABLE** report on SB 273. For more information, please contact Joel Beller, Acting Director of Government Affairs at jbeller@baltimorecountymd.gov.

SB273_MDSierraClub_fav 2Feb2022.pdf
Uploaded by: Josh Tulkin
Position: FAV

P.O. Box 278
Riverdale, MD 20738

Committee: Education, Health, and Environmental Affairs

Testimony on: SB273 "Environment – PFAS Chemicals – Prohibitions and Requirements (George 'Walter' Taylor Act)"

Position: Support

Hearing Date: February 2, 2022

The Maryland Chapter of the Sierra Club supports SB 273, which, beginning in 2023, would prohibit use, manufacturing, and distribution of certain fire-fighting foam that contains intentionally added PFAS chemicals, as well as manufacture or sales of rugs, carpet, and certain food packaging that contain these chemicals. PFASs, per- or polyfluoroalkyl substances, are bioaccumulating, environmentally mobile, and environmentally persistent. Many of the compounds in this group of chemicals have been proved to be toxic to people and they threaten our bay and other waters, and the productive fisheries, tourism, and recreation they support.

The restrictions in the bill are practical steps to protect public and environmental health and are consistent with actions in other states and nations. States with enforceable drinking water standards include Massachusetts, Michigan, New Hampshire, New Jersey, New York, Vermont, and Maine; and states with proposed standards include Arizona, Iowa, Kentucky, and Rhode Island. Other states have adopted guidance and/or notification levels for PFAS in drinking water. These states include Alaska, California, Colorado, Connecticut, Delaware, Illinois, Minnesota, North Carolina, New Mexico, and Ohio. Abroad, the Stockholm Convention on Persistent Organic Pollutants added two well-studied PFAS compounds (PFOA and PFOS) to annex A elimination and annex B restriction, respectively.[1]

PFAS have been investigated for adverse immune, metabolic, carcinogenic, and developmental effects. PFAS compounds have characteristics under the United Nations Globally Harmonized System (GHS) of Classification and Labelling of Chemicals[2] that include: "suspected of causing cancer," "may damage the unborn child," "may damage fertility or the unborn child," "causes damage to organs through prolonged or repeated exposure," " toxic to aquatic life with long-lasting effects," and "toxic if swallowed."

Fire-fighting foams. Aqueous film-forming foams (AFFF) used in firefighting have moved from predominately long-chained PFAS to short-chained PFASs in an effort to reduce pollution and

[1] PFAS are a group of manmade substances, PFOA and PFOS are part of this group of substances and have been studied extensively See also https://www.epa.gov/ground-water-and-drinking-water/drinking-water-healthadvisories-pfoa-and-pfos

[2] The GHS of Classification and Labelling of Chemicals is the industry standard for communication on hazardous chemicals

toxicity. However, continuing research has found that both long and short-chained PFAS display toxic effects. The National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2020 implemented a phase-out of AFFF in firefighting foams at military instillations by 2024.[3]

Rugs and carpets. Consumer products treated with PFAS, such as rugs or carpets, can produce polluted dust that can be ingested or inhaled. Upon entering the body, PFAS will accumulate. Major retailers Home Depot and Lowes banned PFAS from rug sales in 2019 and 2020, respectively.

Food packaging. PFAS are often added to food packaging and "can migrate from fluorochemical-treated food contact papers into food-simulants such as butter, water, vinegar, and water/ethanol mixtures, indicating a direct exposure route to humans."[4] Fast food industry leaders such as McDonald's have made commitments to phase out PFAS food packaging,[5] though its 2025 goal will fall short in states with bans on PFAS in food containers that will be implemented in 2022. Many other food retailers and grocery suppliers have made similar pledges, and the trend is expected to continue as public concern continues.[6]

PFAS mass waste. Disposal of PFAS-treated items leads to further concerns over expensive systems that should be maintained and monitored at taxpayer expense to prevent further pollution. Landfills are required to adhere to strict standards that include expensive leaching contamination liners, monitoring, and maintenance. Alternatively, incineration produces an extremely hazardous product – toxic gaseous hydrogen fluoride.

Though industry is taking steps due to consumer concerns and action on the federal level is hopefully on the horizon, Maryland should join other states in a leadership role and ensure reasonable protections are established. The Maryland Chapter of the Sierra Club urges a favorable report on this bill for its potential to reduce risks to human and environmental health. We request a favorable report.

Jessica Gebase
Volunteer, Natural Places Committee
jaygebase@gmail.com

Josh Tulkin
Chapter Director
Josh.Tulkin@MDSierra.org

[3] Public Law 116-92, Section 322. See also "Congress Confronts PFAS in National Defense Authorization Act – What You Need to Know," Bloomberg Law, Jeffrey Dintzer, Gregory Berlin. The NDAA has several provisions that address PFAS, including requirements to promote monitoring of water supplies adjacent to military facilities for PFAS (Section 322)

[4] A Review of the Pathways of Human Exposure to Poly and Perfluoroalkyl Substances (PFAS) and Present Understanding of Health Effects. Elsie Sunderland et al. November 23, 2018. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/

[5] McDonald's announces global ban of toxic chemicals in food packing, Safer Chemicals, Healthy Families, Stephanie Stohler January 13, 2021

[6] The NDAA for FY 2020 bans use of PFAS in packaging of meals ready-to-eat packaging by October 1, 2021.

MOS SB0273 PFAS.pdf
Uploaded by: Kurt Schwarz
Position: FAV

MARYLAND ORNITHOLOGICAL SOCIETY

January 31, 2022

SB0273: PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)

Position: Support: SB0273

The Maryland Ornithological Society (MOS) asks that the Senate Education, Health, and Environmental Affairs Committee give a favorable report of SB0273 and move it to the full Senate.

This bill would put meaningful restrictions on the use of PFAS, ultimately prohibiting PFAS use in fire-fighting foam, rugs and carpets, and food packaging for direct food contact.

Because of the strong fluorine-carbon bonds, many of these substances are recalcitrant in the environment and persist for years. Additionally, many (e.g., PFOA and PFOS) bioaccumulate in the tissues of wildlife, some to levels that could cause overt toxicity. In fact, levels of these substances have been found in the tissues of marine mammals in the Arctic and in many species of birds. These substances have been in the eggs, blood, and livers of birds across the globe, with concentrations especially pronounced in industrial areas in North America, Europe, and east Asia.[1] PFAS have been shown to reduce hatching success in species of birds such as Double-crested Cormorant[2], and Little Ringed Plover[3]. PFAS has been found in blood of Northern Cardinal in Hawaii, [4] Snow Buntings in Svalbard[5], and American Flamingos on the island of Bonaire in the

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[1] Bonisoli-Alquati, Andrea, PFAS concentrations in birds. https://www.bonisolialquatilab.com/pfas-concentrations-in-birds.html

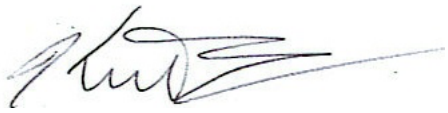
[2] Sedlak, Meg, et al, Per and Polyfluoroalkyl Substances (PFASs) in San Francisco Bay: Synthesis and Strategy, June 2018, https://www.sfei.org/sites/default/files/biblio_files/PFAS%20Synthesis%20and%20Strategy.pdf

[3] Yoo, Hoon, et al Perfluoroalkyl acids in the egg yolk of birds from Lake Shihwa, Korea. August 2008, https://pubmed.ncbi.nlm.nih.gov/18754515/

[4] Russell, Marie C. et al, Per- and polyfluoroalkyl substances in two different populations of northern cardinals, May 2019, https://pubmed.ncbi.nlm.nih.gov/30710759/

[5] Warner, Nicolas, et al, Snow Buntings (Plectrophenax nivealis) as bioindicators for exposure difference in legacy and emerging persistent organic pollutants from the Arctic terrestrial environment on Svalvard, February 2019, https://pubmed.ncbi.nlm.nih.gov/30833262/

Caribbean[6], showing how pervasive PFAS is in our environment. That these substances are found in wildlife they are also found in seafood and livestock. PFAS have also been found in the tissues of over 96% of humans[7]. Named "forever chemicals" for their persistence and ability to bioaccumulate, we strongly urge legislators act to protect our health and that of the environment by supporting SB0273.



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https://www.audubon.org/magazine/summer-2019/birds-are-living-proof-forever-chemicals-pollute

[6] de Vries, Pepijn, et al, The toxic exposure of flamingos to per- and polyfluoroalkyl substances (PFAS) from firefighting foam applications in Bonaire, November 2017, https://www.sciencedirect.com/science/article/abs/pii/S0025326X17305982

[7] NHANES (on-line), National Health and Nutrition Examination Survey, Center for Disease Control, Atlanta, GA. https://www.cdc.gov/nchs/nhanes/index.htm

SB 273 testimony pfas 2022 pdf.pdf
Uploaded by: Linda Boyd
Position: FAV

THE EPISCOPAL DIOCESE OF MARYLAND

SUPPORT
SB 273
Environment – PFAS Chemicals – Prohibitions and Requirements
Health, Education and Environmental Affairs Committee

Good afternoon Chair Pinsky, Vice-Chair Kagan, and members of the Health, Education and Environmental Affairs Committee, my name is Linda Boyd and today, I represent the Maryland Episcopal Diocese that represents 108 parishes and over 45,000 parishioners stretching from Western Maryland to Calvert County. We support SB 273.

This bill addresses the use of harmful chemicals known as PFAS. They are also known as "forever chemicals" because they do not break down in the environment. PFAs are dangerous to human health because their presence is linked to cancer, reproductive and developmental harms, and reduced effectiveness of vaccines. PFAS are used in non-stick cookware like pans, fabric stain-protective coatings, fast-food packaging, etc. PFAs have been found in the tap water of 49 states across the U.S.

This bill stops the use of PFAS in food packaging (following the lead of NY, WA, ME), as well as in rugs and carpets (like VT). It holds polluters accountable by ensuring that chemical manufacturers are legally and financially responsible for contamination of our waterways from PFAS. This bill also protects our air and water by banning the mass disposal of these chemicals by incineration (following NY lead).

We respectfully request a favorable report.

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SB273 PFAS Chemicals-EHEA-GCAN-FAV.docx.pdf
Uploaded by: Maureen Fine
Position: FAV

Committee: Education, Health, and Environmental Affairs
Testimony on: SB273 PFAS Chemicals-Prohibitions and Requirements (George "Walter" Taylor Act)
Organization: Greenbelt Climate Action Network
Submitting: Maureen Fine
Position: Favorable
Hearing Date: Wed, Feb 2, 2022

Dear Chairman and Committee Members:

The Greenbelt Climate Action Network (GCAN) is writing in support of SB273 PFAS Chemicals-Prohibitions and Requirements (George "Walter" Taylor Act).

GCAN's mission is to educate residents about climate change, "systemic" solutions, how they can change their behaviors to be more sustainable, and take personal, local, systemic, and political action.

Per-and polyfluoroalkyl substances (PFAS) have terrifying health effects, including liver damage, immune system damage, low infant birth rate, and even cancer. 95% of Americans have measurable concentrations of these "forever chemicals" in their blood. While we're all exposed to some degree, those most at risk from being harmed by PFAS are communities of color and low-income communities. The Union of Concerned Scientists notes that these communities "bear the economic and biological burden" of the government's lack of responsiveness to concerns about this toxic class of chemicals. Getting PFAS chemicals out of products would be a first step to decreasing exposure.

PFAS chemicals are everywhere, and they are really bad for us. Since Climate Change affects all issues, Climate Change could make the PFAS crisis even worse. Floods and hurricanes spread contaminants. Increased forest fires increase the use of PFAS containing fire fighting foam. According to Risk and Insurance, storms spurred by Climate Change could move PFAS around the globe. They also add that PFAS exposure is setting up to be the next asbestos in terms of liability.

So not only are people putting toxic chemicals directly into their bodies when they eat food from PFAS-coated wrappers, especially hot and greasy foods like french fries, which make it more likely PFAS will be transferred from the wrapper to the food they consumed. But data from the Environmental Protection Agency has revealed that PFAS chemicals are contributing to the climate crisis as their production involves the emission of potent greenhouse gasses. According to Toxic Free Future, PFAS utilized in the manufacture of food packaging leads to the release of GHGs, specifically HCFC-21, or R 22. HCFC-22 emissions are banned worldwide under the Montreal Protocol, a 1987 international environmental treaty, because the chemical is so destructive to the ozone layer. An article in The Guardian says "The plant of the PFAS manufacturer Daikin in Decatur, Alabama, released about 240,000

pounds of HCFC-22 in 2019 – the equivalent of more than 1bn pounds of carbon dioxide, or what would be released from driving 125,000 cars every day for a year. Many of the nation's top 50 HCFC-22 polluters are 'forever chemical' manufacturers. A loophole in the Montreal treaty allows companies to release HCFC-22 when it's used as an intermediate in production of another chemical, such as PFAS."

The Maryland Department of the Environment found PFAS in 75% of the drinking water it tested. We also know of contamination in and around more than a dozen military sites in the state and in some seafood. Anglers who fish Piscataway Creek off the Potomac River have been warned **to limit their consumption of what they catch** after Maryland regulators discovered elevated levels of PFAS in fish downstream of Joint Base Andrews. And we know this is just the tip of the iceberg.

We hope Maryland will join 10 other states in taking clear action to restrict PFAS, and that in the future, you will build on this first step by restricting disposal of PFAS chemicals in Maryland. The Greenbelt Climate Action Network recommends a FAVORABLE report for SB273, the George "Walter" Taylor Act.

Sincerely,
Maureen Fine-Volunteer
Greenbelt Climate Action Network
2509 Knighthill Lane
Bowie, MD 20715

Balt Sust Comm'n SB273 PFAS.pdf
Uploaded by: Miriam Avins
Position: FAV

BALTIMORE COMMISSION ON SUSTAINABILITY

People ♦ Planet ♦ Prosperity

January 31, 2022

Senator and Committee Chair Paul Pinsky
Members of the Senate Education, Health, and Environmental Affairs Committee

RE: **Support** for SB273, Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)

Dear Chair Pinsky and Members of the Senate,

We are writing in support of SB273, the George "Walter" Taylor Act.

The Baltimore Commission on Sustainability is a body appointed by the Mayor to oversee the creation and implementation of the Baltimore Sustainability Plan. The 2019 Baltimore Sustainability Plan addresses a wide range of social, economic and environmental goals for the City, and it does so through an equity lens.

The Baltimore Commission on Sustainability has a strong interest in the success of SB273. PFAS, also known as "forever chemicals" contaminate our water, and from there get into our food system. This bill is important for equity in Baltimore – because those with the least resources have the least access to reliable medical care to deal with the ways that PFAS can harm health, including including liver damage, thyroid disease, decreased fertility, high cholesterol, obesity, hormone suppression and cancer. While PFAS are being phased out in many areas, legislation is needed to speed this up.

We urge the Committee to support SB273.

Sincerely,

Miriam Avins
Mia Blom
Co-chairs, Commission on Sustainability

Cc: Senator Elfreth

BALTIMORE COMMISSION ON SUSTAINABILITY
417 E Fayette Street, 8th Floor
Baltimore MD 21202

BALTIMORE COMMISSION ON SUSTAINABILITY

People ♦ Planet ♦ Prosperity

BALTIMORE COMMISSION ON SUSTAINABILITY
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MD PFAS.pdf
Uploaded by: nanci Wilkinson
Position: FAV

Commi027ttee: Senate Education, Health and Environmental Affairs
Legislation: SB0273/HB 0275 Senator Elfreth/Delegate Love
Environment - PFAS Chemicals - Prohibitions and Requirements (George 'Walter' Taylor Act)
Organizatiion: Environmental Justice Ministry Cedar Lane Unitarian Universalist Church
Position: Favorable
Hearing: February 2, 2022 and February 9, House

Dear Chairperson and Committee Members:

PFAS chemicals are 'forever chemicals'. They never break down. They are used in firefighting foam, food packaging, rugs and carpets. They are polluting our drinking water and are accumulating in our bodies. They have been linked to cancer and other serious illnesses. This bill, if passed, would prevent the mass incineration or landfilling of PFAS chemicals. It would also prohibit the manufacture, sale or distribution of products containing PFAS chemicals, such as rugs and carpets, food packaging and firefighting foam.

Please vote favorably on SB0273. Our lives depend on it.

Nanci Wilkinson
Environmental Justice Ministry
Cedar Lane Unitarian Universalist Church

SB0273-FAV-DTMG-2-2-22.pdf
Uploaded by: Olivia Bartlett
Position: FAV

Olivia Bartlett, Co-Lead, DoTheMostGood Maryland Team

Committee: Education, Health, and Environmental Affairs

Testimony on: SB0273 - Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)

Position: Favorable

Hearing Date: February 2, 2022

Bill Contact: Senator Sarah Elfreth

DoTheMostGood (DTMG) is a progressive grass-roots organization with more than 3000 members who live in all districts in Montgomery County and in several neighboring jurisdictions. DTMG supports legislation and activities that keep all the members of our communities healthy and safe in a clean environment. DTMG strongly supports SB0273 because PFAS "forever" chemicals in food packaging, rugs and carpets, and firefighting foam pollute our environment and are harmful to human health.

PFAS substances are a family of potentially thousands of synthetic perfluoroalky and polyfluoroalkyl chemicals. PFAS are known as "forever chemicals" because they are extremely persistent in the environment and in our bodies. PFAS chemicals have been used extensively in various industries because of their ability to repel oil and water. They can be found in Teflon nonstick products, stains and water repellants, paints, cleaning products, food packaging, and firefighting foams. PFAS chemicals can easily migrate into the air, dust, food, soil and water. People can also be exposed to them through food packaging and industrial exposure.

A growing body of science has shown that PFAS chemicals build up in our bodies and that very small doses of PFAS can cause liver damage, thyroid disease, decreased fertility, high cholesterol, obesity, hormone suppression, and several forms of cancer. Nearly all Americans, including newborn babies, have PFAS in their blood. Studies by the Environmental Working Group found PFAS contamination on at least 11 military bases in Maryland and in several drinking water sources. Several original forms of "long chain" PFAS chemicals were phased out, but recent studies by Auburn University of newer "short chain" replacements show that they may be even more dangerous, supporting scientists' growing agreement that the entire class of PFAS chemicals is hazardous to human health.

SB0273 will protect all Maryland residents from these dangerous chemicals by prohibiting the use, manufacture, or sale of Class B fire–fighting foam, carpets and rugs, and food packaging that contain PFAS chemicals. In cases where fire-fighting foam containing PFAS is required by federal law, SB0273 will require that its use be documented and that it not be released to the environment through runoff and that it cannot be disposed by any method, such as incineration, landfills, or

other means that could release the PFAS to the environment or contaminate water supplies. Therefore, passage of SB0273 will prevent exposure of Maryland residents for further exposure to PFAS from three of the main sources of PFAS in our lives.

The federal Environmental Protection Agency (EPA) and the Food and Drug Administration have been slow to act on limiting dangerous PFAS chemicals. Other states have already proposed or enacted limits on PFAS. Michigan, New Jersey, Pennsylvania and other states have already proposed or enacted limits on PFAS in drinking water that are significantly lower than the EPA's advisory level. Washington and Maine have banned PFAS in food packaging and at least five states have restricted use of PFAS-based fire-fighting foam. California was the first state to require utilities to test tap water for PFAS and inform their customers.

SB0273 is a sound, science-based approach to limiting exposure of Maryland residents to this dangerous class of chemicals. Therefore, DTMG strongly supports SB0273 and urges a **FAVORABLE** report on this bill.

Respectfully submitted,

Olivia Bartlett
Co-lead, DoTheMostGood Maryland Team
oliviabartlett@verizon.net
240-751-5599

MdPHA-SB273-support-2022.pdf
Uploaded by: Raimee Eck
Position: FAV

Mission: *To improve public health in Maryland through education and advocacy* ***Vision:*** *Healthy Marylanders living in Healthy Communities*

SB 273 – Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)

Hearing Date: 2/2/2022
Committee: Education, Health, and Environmental Affairs
Position: SUPPORT

Chairperson Pinsky and members of the Education, Health, and Environmental Affairs Committee: The Maryland Public Health Association would like to express support for SB 273, sponsored by Senator Elfreth. This bill will restrict the use and disposal of PFAS chemicals in Maryland.

In 2016, the American Public Health Association (APHA) published the policy statement, Reducing Human Exposure to Highly Fluorinated Chemicals to Protect Public Health."

"All PFASs share problematic properties with legacy long-chain PFOA and PFOS and could be considered 'regrettable substitutions.' Manufacturers and purchasers should instead select non-PFAS technologies whenever possible."

The policy statement also details several health outcomes linked with exposure to chemicals in the PFAS category including high cholesterol, ulcerative colitis, developmental toxicity, thyroid disease, testicular and kidney cancers, and pregnancy-related hypertension.

SB 273 stops the use of PFAS in:

- Firefighting foam
- Food packaging
- Rugs and carpets.

- Requires notification for PFAS in firefighting gear.
- Prevents the mass disposal of PFAS chemicals by incineration and landfilling.

These measures will make significant progress in limiting exposures of PFAS to Marylanders.

The Maryland Department of the Environment (MDE) found PFAS in 75% of the drinking water it has tested. The APHA statement discusses drinking water contamination: "PFAS

Maryland Public Health Association (MdPHA)
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contamination exceeds the EPA's advisory level in the drinking water of an estimated 6 million, and likely many more, American residents. Drinking water contamination has been linked to firefighting foams used at military sites and airports, industrial sites (including PFAS manufacturers and companies that use PFASs in their products), and wastewater treatment plants. Such sources of contamination are often located in low-income communities, in some cases with few environmental controls, which creates an environmental justice issue." Eliminating PFAS in firefighting foams that this bill establishes will reduce drinking water contamination. This provision will also be a protective step for firefighters, whose leading cause of death is cancer.

The provisions in this bill will also protect another population of concern, children, through the elimination of PFAS in rugs and carpets. Young children crawl on and inhale dust from carpets, and because of their increased inhalation rates, children often ingest disproportionately higher doses of PFASs than adults, which can have detrimental impacts on their developing organ systems.

As a state, it is our duty to ensure the strongest protections against toxic exposures across the entire population where we live, work, and play. One of the strongest interventions we can take to prevent environmentally caused diseases like cancer are preventing or eliminating exposures to contaminants. Ten states have already taken strong action to stop using PFAS in food packaging, rugs and carpets, or firefighting foam. It is time for Maryland to join them.

Thank you for your consideration. We urge a favorable report on SB 273.

The Maryland Public Health Association (MdPHA) is a nonprofit, statewide organization of public health professionals dedicated to improving the lives of all Marylanders through education, advocacy, and collaboration. We support public policies consistent with our vision of healthy Marylanders living in healthy, equitable, communities. MdPHA is the state affiliate of the American Public Health Association, a nearly 145-year-old professional organization dedicated to improving population health and reducing the health disparities that plague our state and our nation.

Maryland Public Health Association (MdPHA)
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Testimony In Support of SB 273 - HB 275 - Final -
Uploaded by: Rich Ceruolo
Position: FAV

January 28, 2022

Maryland Senate
11 Bladen St.
Annapolis, MD. 21401

<u>In Support of SB 273:</u> Environment – PFAS – Prohibitions and Reqs. – George Taylor Act.

Good day members of the Education, Health and Environmental Affairs Committee.

We are an organization of military and non-military families with over 1300 members and fully support we am writing to you today as parents and lovers of the environment and to offer our support for SB 273 reducing or eliminating the use of PFAS across the state of Maryland.

PFAS is a chemical commonly used for many household items already in our homes. This group of chemicals is used in the production of a range of products including; lifejackets, non-stick pans, carpeting and firefighting foam chemicals. They do also exist in personal care products like sunscreens, shaving creams and cosmetics like mascara.

PFAS are problematic because they are toxic to humans due to their very slow rate of decay and can remain in the planets ecosystem for decades before they begin to decompose in any way. Studies have shown that these chemicals have already entered the drinking supplies of major cities across the country including New York, and Chicago according to the Centers for Disease Control and many environmental watchdog groups.

Please support this legislation so that we can start the long process of removing this toxic substance from our everyday lives and hopefully work to remove it from our drinking water, waterways and our local ecosystem. Patchwork solutions seldom work well. We need policy that is bold, wide reaching, and can make a positive impact across the state. And maybe help to influence our regional / DELMARVA neighbors, and positively impact their environmental policies.

Please support SB 273 / HB 275 and return a favorable report. Thank you for your time, and for considering our testimony today.

Mr. Richard Ceruolo | richceruolo@gmail.com
Parent, Lead Advocate and Director of Public Policy
Parent Advocacy Consortium | https://www.facebook.com/groups/ParentAdvocacyConsortium

Elfreth_FAV_SB273.pdf
Uploaded by: Sarah Elfreth
Position: FAV

SENATOR SARAH ELFRETH
Legislative District 30
Anne Arundel County

Budget and Taxation Committee

Subcommittees

Education, Business and Administration

Chair, Pensions

Senate Chair
Joint Committee on Administrative, Executive, and Legislative Review

Joint Committee on the Chesapeake and Atlantic Coastal Bays Critical Area

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Sarah.Elfreth@senate.state.md.us

February 2, 2022

Testimony in Favor of SB 0273
Environment - PFAS Chemicals - Prohibitions and Requirements (George "Walter" Taylor Act)

Chairman Pinsky, Vice-Chair Kagan, and members of the Education, Health, and Environmental Affairs Committee,

I respectfully request a favorable report of Senate Bill 0273 - a bill to ensure that Maryland, like other leading States, takes the necessary actions to protect Marylanders and our environment from exposure to toxic PFAs chemicals. This legislation will focus on three mechanisms that pose the highest risk of exposure for Marylanders to these chemicals: firefighting foam, carpets, and food packaging.

Perfluoroalkyl and Polyfluoroalkyl chemicals (PFAs) are a class of highly fluorinated industrial chemicals that have been linked to serious illnesses including: testicular, kidney, liver and pancreatic cancer; reproductive problems; elevated cholesterol; thyroid dysfunction; and, low birth weights as well as weakened immunity amongst children[1]. The Maryland Department of the Environment (MDE) measured quantifiable amounts of PFAs in 75% of drinking water tested in 2021[2]. Furthermore, these chemicals remain in our bodies for years and rarely break down in the environment - which is why PFAs are often referred to as "forever chemicals."

In response to this nationwide crisis, many states are taking action to protect citizens from these "forever chemicals". Several states have enacted lower limits on the acceptable amount of PFAS allowed in municipal drinking water than is currently required by the EPA. States such as Washington, New York, and Maine have banned PFAs foams and food packaging entirely. At least fifteen states have banned the use of fire-fighting foam that contains PFAs. California is the first state to require utilities to test tap water for PFA. Within the past year, Maine has passed comprehensive bipartisan legislation that will ban all PFAs-laden products and chemicals in the state by 2030. The Federal Government has also begun the process of addressing this problem by administering a phase out of PFAs at airports and military bases. Most recently, the implementation of the FY21 National Defense Authorization Act made major strides in protecting the environment around military installations.

[1] The Environmental Working Group (https://www.ewg.org/pfaschemicals/)
[2] The Maryland Department of the Environment (MDE) (https://mde.maryland.gov/PublicHealth/Documents/PFAS%20Public%20Water%20System%20Study_Phase1Report.pdf)

Regarding firefighting foam: this legislation will prohibit PFAs-based foam after January 2023, and require stringent oversight for instances where the use of this foam is required under federal law. This Committee is no stranger to this specific issue, as illustrated with the passage of Senate Bill 420 in the 2020 legislative session to begin the process of ensuring that firefighting foam containing PFAs chemicals was not used for training purposes. The bill will also ensure that this harmful foam is not disposed of in a landfill or through incineration, thus further ensuring the protection of our environment.

Regarding rugs and carpets: this legislation will prohibit the sale or manufacturing of rugs that contain PFAS chemicals. The 2018 California Environmental Protection Agency (EPA) report summarizes the prevalence of PFAs in carpets, stating that: "carpets and rugs [are] sources of significant and widespread human and ecological PFAs exposures. Carpets and rugs constitute nearly half of all floor coverings in U.S. homes and workplaces. A large percentage of the PFASs produced worldwide are used to treat carpets, rugs, and other home textiles to confer stain-, soil-, oil- or water-resistance.[3]"

Regarding food packaging: this legislation will prohibit the sale or manufacturing of food packaging that contain intentionally added PFA chemicals after January, 2023. The use of PFAs in food packaging is wide-spread; for instance, one could find PFAs on the inside of canned goods, within microwave popcorn bags, and - in many instances - fast food packaging.

The market is reacting positively to the progress other states have achieved and many retailers have taken action to protect consumers from exposure to PFAs, including:

- Giant, Whole Foods, Trader Joe's, Food Lion, Stop and Shop, Amazon, and Hannafords have all committed to eliminating PFAS from their packaging.
- McDonald's, Chipotle, Taco Bell, Panera, Cava, and Sweetgreen have all made commitments to phase out PFAS food packaging.
- Home Depot and Lowes have announced their commitment to end sales of carpeting treated with PFAS and Staples has announced a policy to eliminate PFAs from stores.

Lastly, this legislation also includes uncodified language to require the Maryland Department of the Environment (MDE) to report on the work they are doing on this important issue as it relates to testing and remediation, as well as requiring MDE and MDH to develop an action plan to ensure that there is a plan moving forward to minimize exposure.

In the past, this Committee has heard testimony regarding the limitation and needed regulation of PFAS chemicals throughout Maryland communities. Once again, I respectfully request a favorable report of Senate Bill 0273 to ensure that Marylanders and our environment are protected from exposure to toxic, "forever" PFAs chemicals.

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[3] Department of Toxic Substances Control (DTSC) https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/10/Product-Chemical-Profile-PFAS-Carpets-and-Rugs.pdf

SB0273-EHE_MACo_SWA.pdf
Uploaded by: Dominic Butchko
Position: FWA

Senate Bill 273

Environment – PFAS Chemicals – Prohibitions and Requirements
(George "Walter" Taylor Act)

MACo Position: **SUPPORT WITH AMENDMENTS**

To: Education, Health, & Environmental Affairs Committee

Date: February 2, 2022

From: Dominic J. Butchko

The Maryland Association of Counties (MACo) **SUPPORTS** SB 273 **WITH AMENDMENTS**. The bill provides increased restrictions on the sale and use of class B fire–fighting foam that contains intentionally added per- and poly-fluoroalkyl substances ("PFAS chemicals"). MACo supports additional action to limit the spread of PFAS into the environment but believes that there are more sensible policy solutions as Maryland transitions to "green" firefighting foam.

SB 273 prohibits the sale or use of PFAS foam after January 1, 2023, and outlines stricter disposal requirements. MACo is informed by local firefighting departments that the cost of foam without PFAS is becoming increasingly cost-competitive compared to foam with added PFAS chemicals. However, some firefighting departments have an existing stock of previously purchased foam that may not be used up prior to the implementation of the ban. One firefighting truck alone could currently house upwards of $20,000 worth of foam. If properly maintained, that foam could last for several years.

MACo has been working to identify amendments which would effectively ban PFAS foams going forward while recognizing the current limitations of local fire departments. Two possible solutions were identified which seem to strike that balance. First, amending the bill to allow for the PFAS foams after the ban. This would allow local fire departments to more reasonably transition to PFAS-free alternatives.

The second possible solution would be to establish a buyback program that would go into effect in tandem with the ban. This would give local fire departments the ability to adequately dispose of any remaining PFAS foam, while not subjecting them to an unfunded mandate.

Counties agree that it is time to transition away from the use of PFAS chemicals, but that transition should be done in a safe and sensible manner. Accordingly, MACo urges the Committee to issue a report of **FAVORABLE WITH AMENDMENTS** for SB 273.

MD PFAS SB 273 final letter 1-31-22.pdf
Uploaded by: Elizabeth Olds
Position: UNF

LEGISLATIVE POSITION: UNFAVORABLE
Senate Bill 273
Environment – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)
Senate Committee on Education, Health, and Environmental Affairs
February 2, 2022

The Honorable Paul Pinsky, Chair, Senate Committee on Education, Health, and Environmental Affairs
The Honorable Cheryl Kagan, Vice Chair, Senate Committee on Education, Health, and Environmental Affairs

Dear Chair Pinsky, Vice Chair Wilson, and Members of the Committee:

The American Forest & Paper Association[i] (AF&PA) appreciates the opportunity to share our perspective on Senate Bill 273 on behalf of our members and their employees who are an integral part of the circular economy. In Maryland, the forest products industry employs nearly 6,000 individuals in facilities that produce packaging, sales displays, corrugated boxes and other products with an annual payroll of over $374 million.[ii]

Senate Bill 273 seeks to ban food packaging that contains any amount or type of intentionally-added PFAS. AF&PA would like to weigh-in specifically on the food packaging language; we do not offer a position on the firefighting foam or floor coverings sections of the bill. During the previous session, our industry offered several amendments to similar pieces of PFAS legislation (SB 195 and HB 22). Unfortunately, it appears some of our constructive language regarding compliance time extension and the definitions of "intentionally-added" and "food packaging" was not incorporated into this bill. Therefore, we must oppose SB 273.

Please find attached to this letter our previous amendment language regarding the following issues outlined in greater detail below:

1. Extend the compliance time

2. Amend the definition of "intentionally-added" for consistency with other state and federal standards and set a de minimis amount for clarity

3. Amend the definition of food package to not include the food or beverage product but just the food packaging itself

AF&PA Members' Commitment to Safe Chemistry

AF&PA members are committed to ensuring the safety of their products, including the safety of chemicals used in their manufacturing processes. AF&PA believes chemical and product-related legislation and regulations should be protective of health, cost-effective and based on the best available science.

AF&PA member companies use only modern short-chain PFAS chemistries that have been reviewed and approved by the U.S. Food and Drug Administration (FDA) as safe for use in food packaging through the food contact notification process. These chemistries do not have toxicity profiles of the PFAS of concern -- PFOA and PFOS, which the FDA banned in 2016. Based on our knowledge of our members' practices, intentional use of FDA-approved PFAS in limited applications for grease and moisture resistance is nominal compared with the total production of paper products. Even for these remaining limited uses, there are ongoing efforts to find alternatives to PFAS.

1. Extend the compliance time.

AF&PA encourages extending the compliance period in SB 273 to January 1, 2024, to accommodate our industry's ongoing voluntary phase-out programs.

2. Amend the definition of "intentionally-added" for consistency with other state and federal standards and set a de minimis amount for clarity.

AF&PA encourages states to avoid duplicative and sometimes conflicting regulatory efforts. Chemicals in products should be regulated at the federal, not the state level. It is essential that products moving in interstate commerce be subject to uniform standards. The FDA is the proper agency to develop standards and ensure food packaging is safe.

3. Amend the definition of food package to include only the food packaging designed for direct food contact, and not the food or beverage product.

While the definition of food packaging in SB 273 covers packaging for direct food contact, it also includes overly broad language for food packaging that does not have direct food contact, including food and beverage products contained within a food package to which an additional food package is applied. We believe only packaging designed for direct food contact should be regulated under SB 273.

Conclusion

We encourage the Committee to avoid measures that would result in unintended consequences and penalize paper-based packaging. We look forward to continuing our work with the State of Maryland. For further information, please feel free to contact Stewart Holm, Chief Scientist, AF&PA at Stewart_Holm@afandpa.org or Elizabeth Olds, Manager, Government Affairs at Elizabeth_Olds@afandpa.org.

Attachment: AF&PA Proposed Amendments to MD HB 22 and SB 195 (2021 Session)

Recommended Amendments for MD HB 22 and SB 195

Bill text: https://mgaleg.maryland.gov/2021RS/bills/hb/hb0022F.pdf

Extend the compliance time

Page 9 lines 13-16

13 (D) ON OR AFTER January 1, 2024, A MANUFACTURER OR DISTRIBUTOR

14 MAY NOT MANUFACTURE, SELL, OFFER FOR SALE, OR DISTRIBUTE FOR SALE OR USE

15 IN THE STATE A FOOD PACKAGE OR ANY PRODUCT IN A FOOD PACKAGE TO WHICH

16 PFAS CHEMICALS WERE INTENTIONALLY ADDED.

Refine the definition of "Intentionally added"

Page 8 Lines 3-6

3 (D) "INTENTIONALLY ADDED" MEANS THE ACT OF DELIBERATELY USING A

4 CHEMICAL in any amount greater than an incidental presence IN THE FORMATION OF A PACKAGE OR PACKAGING COMPONENT WHEN

5 ITS CONTINUED PRESENCE IS DESIRED IN THE FINAL PACKAGE OR PACKAGING

6 COMPONENT TO PROVIDE A SPECIFIC CHARACTERISTIC.

Amend the language to not include food in the definition of food packaging

Page 7 Lines 23- Page 8 Line 2

23 (C) "FOOD PACKAGE" MEANS A PACKAGE OR PACKAGING COMPONENT

24 THAT IS DESIGNED FOR DIRECT FOOD CONTACT, INCLUDING:

~~25 (1) A FOOD OR BEVERAGE PRODUCT THAT IS CONTAINED IN A FOOD~~

~~26 PACKAGE OR TO WHICH A FOOD PACKAGE IS APPLIED;~~

27 (2) A PACKAGING COMPONENT OF A FOOD PACKAGE; AND

1 (3) PLASTIC DISPOSABLE GLOVES USED IN COMMERCIAL OR

2 INSTITUTIONAL FOOD SERVICE.

[i] The American Forest & Paper Association (AF&PA) serves to advance U.S. paper and wood products manufacturers through fact-based public policy and marketplace advocacy. The forest products industry is circular by nature. AF&PA member companies make essential products from renewable and recycle resources, generate renewable bioenergy and are committed to continuous improvement through the industry's sustainability initiative — *Better Practices, Better Planet 2030: Sustainable Products for a Sustainable Future.* The forest products industry accounts for approximately four percent of the total U.S. manufacturing GDP, manufactures nearly $300 billion in products annually and employs approximately 950,000 people. The industry meets a payroll of approximately $60 billion annually and is among the top 10 manufacturing sector employers in 45 states.

[ii] Data sources: U.S. government, AF&PA, and RISI. Figures are the most recent available as of December 2020.

SB 273 Environment PFAS Chemicals Cecil County C
Uploaded by: Katie Lewis
Position: UNF

Government Relations Committee Meeting

Cecil County Chamber of Commerce
Elkton, Maryland

LEGISLATIVE POSITION:
OPPOSE

Senate Bill 273
Environment-PFAS Chemicals-Prohibitions and Requirements
Senate Education, Health and Environmental Affairs Committee

February 1, 2022

Dear Chairman Pinsky and Members of the Committee:

On behalf of the four hundred and fifty Cecil County Chamber members who represent over fifteen thousand employees we are writing to you to express our strong opposition to SB 273 which would prohibit the use, manufacturing, or knowing sale or distribution of products, including fire-fighting foam, carpet/rugs and food packaging, that contain intentionally added PFAS chemicals. The bill would require this prohibition to take effect on January 1, 2023, or what amounts to less than one year after its potential enactment.

Fluorinated chemicals, otherwise known as per-and polyfluoroalkyl substances (PFAS), are a large and diverse family of chemistry that make possible the use of products that are central to our everyday lives including, but certainly not limited to: electronics, aircraft, alternative energy, medical devices and building/construction materials.

However, not all PFAS are created equal. Each individual chemistry has its own unique properties and uses. Fluoropolymers, for example, are a distinct class within the broad PFAS group. High molecular weight fluoropolymers are highly stable, too large to be bioavailable, and do not have the potential to become widespread in the environment. Data shows that the properties of fluoropolymers present low health and environmental hazards, and the scientific community considers these materials to be inert.

Unfortunately, the definition of PFAS as drafted in Senate Bill 273 is extremely broad and amounts to an all-out ban, without considering the differences in chemical classes, some of which have been widely recognized as having low health and environmental risk. Product bans often result in a myriad of unintended consequences that should be further explored.

The legislation would take effect on January 1, 2023, less than one year after its potential enactment. It proposes to do this without an established regulatory process and timeline. As a result, it would be unrealistic to assume that manufacturers, distributors, and retailers will have the alternatives and tools required to comply with the law, particularly in such a short period of time. As well, in the absence of regulatory assessment on the performance of PFAS alternatives, there is no way to demonstrate that their replacement would represent an improvement over the current product.

W. L. Gore & Associates is the largest private sector employer in Cecil County with approximately 2,900 Associates working in Cecil County. Gore uses a type of PFAS, fluoropolymers such as polytetrafluoroethylene (PTFE), to make a variety of products of societal value including implantable medical devices, waterproof and breathable membranes, fuel cell components, filtration and venting products used in emission controls and products used in the pharmaceutical industry. Because the definition of PFAS contained in the legislation is extremely broad, there is the potential for untended restriction of these useful fluoropolymers.

For these reasons, the Chamber respectfully requests an **unfavorable report** on Senate Bill 273.

Do not hesitate to contact us if we can be of further service to you on this critically important proposed legislation.
Thank you for your attention and consideration.

Members of Cecil County Chamber Government Relations Committee
dbrown@cecilchamber.com
410-392-3833

SB 273_MDCC_Environment - PFAS Chemicals _ Prohibi
Uploaded by: Maddy Voytek
Position: UNF

MARYLAND
Chamber of Commerce

LEGISLATIVE POSITION:
Unfavorable
Senate Bill 273
Environment-PFAS Chemicals-Prohibitions and Requirements
Senate Education, Health and Environmental Affairs Committee

Wednesday, February 2, 2022

Dear Chairman Pinsky and Members of the Committee:

Founded in 1968, the Maryland Chamber of Commerce is the leading voice for business in Maryland. We are a statewide coalition of more than 5,500 members and federated partners working to develop and promote strong public policy that ensures sustained economic recovery and growth for Maryland businesses, employees, and families.

If passed, SB 273 would prohibit the use, manufacturing, or knowing sale or distribution of products, including fire-fighting foam, carpet/rugs and food packaging, that contain intentionally added PFAS chemicals. The bill would require this prohibition to take effect on January 1, 2023.

Fluorinated chemicals, otherwise known as per-and polyfluoroalkyl substances (PFAS), are a diverse family of chemistry that make possible the use of products that are central to our everyday lives such as: electronics, alternative energy, medical devices and building materials.

However, not all PFAS are created equal. Each individual chemistry has its own unique properties and uses. Fluoropolymers, for example, are a distinct class within the broad PFAS group. High molecular weight fluoropolymers are highly stable, too large to be bioavailable, and do not have the potential to become widespread in the environment. Data shows that the properties of fluoropolymers present low health and environmental hazards.

Unfortunately, the definition of PFAS as drafted in Senate Bill 273 is extremely broad and amounts to an all-out ban, without considering the differences in chemical classes, some of which have been widely recognized as having low health and environmental risk. Product bans often result in a myriad of unintended consequences that should be further explored.

This legislation would take effect on January 1, 2023, less than one year after its potential enactment. It proposes to do this without an established regulatory process and timeline. As a result, it would be unrealistic to assume that manufacturers, distributors, and retailers will have the alternatives and tools required to comply with the law, particularly in such a short period of time. Additionally, in the absence of regulatory assessment on the performance of PFAS alternatives, there is no way to demonstrate that their replacement would be an improvement over the current product.

For these reasons, the Chamber respectfully requests an **unfavorable report** on Senate Bill 273.

Maryland SB 273.pdf
Uploaded by: Michael Ratchford
Position: UNF

Together, improving life

Legislative Position: Oppose

Maryland SB 273

Environment – PFAS Chemicals – Prohibitions and Requirements

Senate Education, Health and Environmental Affairs Committee

Wednesday February 2, 2022

Dear Chairman Pinsky and Members of the Committee

We wish to express our opposition to SB 273 for the following reasons:

- The definition of PFAS (per- and poly-fluoroalkyl substances) is overly broad and includes high molecular weight fluoropolymer such as polytetrafluoroethylene (PTFE), which are highly stable, too large to be bioavailable, and do not have the potential to become widespread in the environment.
- The procedures and timeline for transitioning certain retail products, January 1, 2023, is unrealistic and does not allow adequate time to develop a regulatory process to evaluate chemistries used in consumer products.
- The proposed definition of food package found in 9-1901 is very broad and could be interpreted to cover a wide range of durable food processing equipment, such as tubing, refrigerators, ovens and refrigerated rail cars.

W. L. Gore & Associates – A Maryland Manufacturer

W. L. Gore & Associates is a privately held company employing more than 2,900 people working in 13 manufacturing facilities in Cecil County Maryland. Gore has been a presence in Maryland since 1973 and we are the largest private sector employer in Cecil County. We use high molecular weight fluoropolymers such as polytetrafluoroethylene ("PTFE") to manufacture a wide variety of products of high societal value including implantable medical devices, GORETEX membranes, filtration and venting used in emission controls, fuel cell components, products used in the pharmaceutical industry, and aerospace cables and aircraft sealing.

PFAS (per- and poly-fluoro alkyl substances) Definition

The PFAS group includes thousands of different substances with very different properties, and different PFAS are used in a wide variety of products. While we do not make or sell firefighting foam, carpet, or food packaging, we are concerned about the potential for unintended restriction of fluoropolymers associated with legislation based on broad definitions of PFAS.

Fluoropolymers are a distinct class within the broad PFAS group. High molecular weight fluoropolymers like PTFE are highly stable, too large to be bioavailable, and do not have the potential to become widespread in the environment. While these fluoropolymers do contain one or more fully fluorinated carbon atoms, data show that their properties present low health and environmental hazards. [i] The scientific community

considers these materials to be inert. The inertness of PTFE has already been recognized in the Maryland regulations:

"Fluoropolymer material (FPM) means an inert fluorinated chemical that includes polytetrafluoroethylene or similar materials and is processed with other materials to produce products that are temperature resistant, chemically inert, and weather durable." COMAR 26.11.19.30B(5)

We have observed that many groups who are working to address important health and environmental topics use the broad term PFAS, when they are most interested in a distinct sub-group of PFAS (e.g., perfluoroalkyl acids such as PFOA). Many of the issues raised focus on specific properties such as: water solubility (mobility), toxicity, the potential for a substance to bioaccumulate, and the propensity for a substance to degrade into other substances of concern.

Because they are large, immobile, and inert materials, fluoropolymers like PTFE are different from the PFAS that are the source of potential environmental concern. The current legislative definition of "PFAS Chemicals" in 6-1601 is not overbroad, because it is limited to a small number of PFAS used in fire-fighting foam. The proposed amendment, however, would broaden the definition of PFAS Chemicals to cover all PFAS, including fluoropolymers. We suggest that the definition of "PFAS Chemicals" exclude high molecular weight fluoropolymers such as PTFE, or that it be narrowed to cover the classes of PFAS typically used in carpet treatments and food packaging treatments.

To exclude fluoropolymers, the definition of PFAS Chemical in 16-160(D) and 19-1901(H) could be drafted as follows:

"PFAS means non-polymeric per- and polyfluoroalkyl substances that are a group of man-made chemicals that contain at least two fluorinated carbon atoms, excluding gases and volatile liquids. PFAS include PFOA and PFOS.

Procedures and Timelines for Transitioning Retail Products

We note that for rugs and carpets (6-1604.1(B)) and for food packaging (9-1902(D)), the legislation is proposed to go into effect on January 1, 2023. In the absence of a regulatory assessment on the performance of alternatives, there is no means to demonstrate that any replacements for the restricted PFAS will provide the necessary performance or represent an improvement over the current product. Also, without regulatory guidance on how to establish compliance (e.g. appropriate analytical methods), manufacturers, distributors and retailers will lack the tools that they need to demonstrate compliance, especially in such a short time frame. If the intention is to improve the environmental profile of certain consumer products, Gore believes a better approach would be to develop legislation that establishes a regulatory process to evaluate chemistries used in consumer products. One recent example of such a regulatory program is "Safer Products for Washington" established in 2019 by the "Pollution Prevention for Healthy People and Puget Sound Act." https://ecology.wa.gov/Waste-Toxics/Reducing-toxic-chemicals/Safer-products

Food Packaging Definition

The proposed definition of food package found in 9-1901 is very broad and could be interpreted to cover a wide range of durable food processing equipment, such as tubing, refrigerators, ovens and refrigerated rail cars. Because of their inertness and purity, fluoropolymers such as PTFE are authorized for use in articles intended to come into contact with food. 21 CFR 177.1550.

It is our understanding that the PFAS typically used in single use consumer food packaging (e.g. microwave popcorn bags, fast food wrappers) are not fluoropolymers. As discussed above, due to the complexity of this topic, we believe the legislation should seek to establish a regulatory program rather than effect a legislative ban. In addition to narrowing the definition of PFAS, we suggest that the food package definition be narrowed to focus on high volume food packaging that is typically thrown away after a single short-term use. We are not experts in this area, but think the language could be modified along the following lines to achieve the distinction between disposable packaging and durable products:

9-1901(c) "Disposable or Single Use Food Package" means a package or packaging component that is designed for a single short term direct food contact use, such as food wrappers and bags, bottles, straws, disposable cups, and lids, disposable cutlery, plates and takeaway containers, including: . . ."

Summary

Our concerns with SB 273 include:

1. Not all PFAS are the same and the definition of PFAS in these bills is overly broad and could lead to unintended consequences.
2. Gore has 2,900 Associates working in 13 plants in Cecil County manufacturing products of high-societal value using a type of fluoropolymers (e.g., ePTFE/PTFE) that are considered to present low health and environmental hazards.
3. The bills' procedures and timelines for transitioning retail products are unrealistic. In the absence of a regulatory assessment on the performance of alternatives, there is no means to demonstrate that any replacements for the PFAS that will be an improvement over the current product. Also, without regulatory guidance on how to establish and demonstrate compliance, manufacturers, distributors, and retailers will lack the tools they need to comply, especially in a short time frame.
4. The proposed definition of food packaging found in 9-1901 is very broad and could be interpreted to cover a wide range of durable food processing equipment such as tubing, refrigerators, ovens and refrigerated rail cars.

[i] Henry BJ et al., 2018. A Critical Review of the Application of Polymer of Low Concern and Regulatory Criteria to Fluoropolymers. Integrated Environmental Assessment and Management Volume 14, Number 3, pp. 316-334.

Unfavorable Testimony

Uploaded by: Mitch Hubert

Position: UNF

January 31, 2022

Subject: Testimony to Maryland Education, Health and Environmental Affairs Committee on Senate Bill # 0273 (HB 0275)

Honorable Chairman Pinsky and Members of this Committee:

My name is Mitch Hubert. Thank you for the opportunity to address your committee today.

I hold degrees in both Biology and Chemistry and have been working in the Firefighting Foam industry for more than 40 years as a formulation chemist and fire fighter.

I am here today representing the Fire Fighting Foam Coalition (FFFC) to urge you to reconsider Senate Bill 0273. Our coalition is made up of foam manufacturers from throughout the world who fully support efforts to reduce the use of PFAS foams and are working feverishly to develop and improve non-fluorinated alternatives. All of the foam manufacturers that are members of FFFC make fluorine-free foams and fully support a timely transition to these products wherever possible.

Unfortunately, there are still fire scenarios and industry segments where the current technology utilized in fluorine-free foams falls short of providing the type of performance that can assure that large catastrophic fires can be successfully fought and extinguished, and which provide a measure of safety for firefighters and other first responders. As such the proposed legislation could hamper and possibly prevent firefighting efforts in these high hazard applications.

Sadly, we are faced with legacy issues of fluorinated surfactants that were released to the environment from firefighting foams largely through testing and fire training, much of which was mandated through laws and standards. What is important at this juncture is to minimize any additional discharges. Banning the use of fluorinated foams for testing and training can largely accomplish this goal.

While we continue to make advances in fluorine-free foam technology, we are still not at the point where those products can be considered as drop-in replacements. This is substantiated by a recent study conducted by the National Fire Protection Association Research Foundation in a rather extensive testing program on the effectiveness of fluorine-free foams. The conclusion of

that report, which is published and can be made available, is that there is more work to do with these products in some fire scenarios.

The proposed legislation would require most foam users in the state to have transitioned to fluorine-free foams by January 2023, which we consider to be extremely challenging. Recently proposed foam regulations in the European Union and New Zealand provide for a 5-year transition period.

We urge you to reconsider this bill and allow the continued use and sale of fluorinated firefighting foams for areas where we simply do not have drop-in replacements. These very specific exemptions would include refineries, chemical facilities, bulk fuel loading terminals and fixed foam suppression systems. Meanwhile we in the foam industry and within government research grants will continue the task of improving firefighting foams that do not contain PFAS chemicals.

Respectfully submitted,

Mitch Hubert
Technical Director
Fire Fighting Foam Coalition (FFFC)

Unfavorable Testimony

Uploaded by: Shawn Swearingen
Position: UNF

Alliance for Telomer
Chemistry Stewardship

February 2, 2022

To Senate Education, Health & Environmental Affairs Committee:

The Alliance for Telomer Chemistry Stewardship (ATCS), a group of the American Chemistry Council (ACC) is submitting this written testimony to you as members of this Committee to underscore the overreaching and unintended consequences that SB 273 creates as written. While the author of the legislation intends to regulate PFAS, what is clearly not understood is how vast and wide ranging these chemicals and their uses are. As an example, the broad definition of PFAS contained in SB 273 will have widespread unintended consequences, and as written the definition includes hundreds, if not thousands, of DIFFERENT chemistries. The definition should focus on the specific chemistries of concern. SB 273 is an overly broad set of legislation that creates a patch work of regulations that negatively impact the people of Maryland and the businesses that rely on these products

ATCS is a global organization that advocates on behalf of C6 fluorotelomer-based products. Our members are leading manufacturers of fluorotelomer based products in North America, Europe, and Japan. Our mission is to promote the responsible production, use, and management of fluorotelomer based products, while also advocating for a sound science- and risk-based approach to regulation. Fluorotelomer-based products are versatile chemistries with wetting and spreading features, as well as unique properties that repel water, oil and stains. These unique characteristics make fluorotelomers a critical component of first responder gear, medical garments, paints and coatings, upholstery, class B firefighting foam, among other uses that families and businesses across the world rely on.

Of particular concern, SB 273 rewrites a fluorinated firefighting foam bill that was just passed in the last session. This legislation already created many protections for Marylanders and for our environment, creating standards for treatment and containment as well as bans on certain usage. Fluorinated firefighting foams are the most effective suppressant for flammable liquid fires occurring in many military, industrial, and aviation situations. Limiting use to emergency situations addresses the vast majority of pollution concerns and will save lives in the rare instances where fluorinated foams are necessary.

As it relates to the disposal of fluorinated foams in SB 273, the EPA is currently reviewing disposal guidelines for fluorinated foams and is planning to release guidance later this year. Maryland's own study would be duplicative and costly to the state. Incineration (high-temperature thermal destruction) is a recognized best-available technology for treating and disposing of certain chemicals and wastes. The Department of Defense recently testified to the House Subcommittee on Readiness that a ban on incineration would cause the Department to cease current cleanup and that incineration is recognized as best available technology for managing and safely destroying the specific Department material. This language would prevent utilizing best available technology to manage and remediate priority PFAS substances – essentially undermining all existing clean-up efforts.

To underscore how broad SB 273 is, the legislation also seeks to undertake further regulation of food packaging materials when industry is already phasing out use of PFAS in food packaging by the end of 2023. Because of recent increased attention to the family of PFAS and the use of certain PFAS chemistries in food packaging, FDA has undertaken a reassessment of these applications (see https://www.fda.gov/food/chemicals/and-polyfluoroalkyl-substances-pfas). In connection with this reassessment, manufacturers of the majority of PFAS products used in fiber-based food packaging agreed to a voluntary phase-out leading to the discontinuation of sales these products for use in food packaging as of January 1, 2024. Creating a potentially redundant, duplicative, or differing patchwork of regulation is unnecessarily costly and confusing for Maryland businesses and consumers.

As reflected in its announcement of this agreement, FDA concluded that this phase-out period is needed to avoid unnecessary food supply chain and market disruptions. Recently, the McDonald's Corporation has even further announced that it will cease food sales with packaging containing PFAS by the end of 2025. Shifting the time table from what is outlined by the FDA on not only manufacturers in Maryland but as well as the numerous restaurants in the state would be unnecessary.

As ATCS, we would recommend:

- A clear definition of PFAS while underling the different class of chemistries within it,
- Restoring the bi-partisan fluorinated firefighting foam regulations put in place two legislative sessions ago while allowing use in emergency Class B fire situations,
- Allow destruction of AFFF using pollution control measures, and
- Aligning the food packaging sunset timeline with the FDA, to end December 31st, 2023.

We look forward to the opportunity to provide much needed scientific input on these critical issues and chemistries within SB 273. As written, this legislation creates an unnecessary patchwork of regulation and timetables that would misalign Maryland, causing unintended consequences for families across the state.

Sincerely,

Shawn Swearingen
Director, Alliance for Telomer Chemistry Stewardship

Unfavorable Testimony

Uploaded by: Shawn Swearingen
Position: UNF

To Senate Education, Health, and Environmental Affairs Committee:

We are writing to underscore the overreaching and unintended consequences that SB 273/HB 275 will have in its current form. We urge the Committee to work with stakeholders to consider targeted amendments that would ensure strong regulation of PFAS chemicals while ensuring overall public safety and avoiding these unintended consequences.

Key points to consider regarding this legislation include:

- While the current bill intends to regulate PFAS, what is clearly not understood is how vast and wide ranging this chemistry is and the range of critical applications that it supports. PFAS are a diverse universe of chemistries that makes possible the products that power our lives -- the cellphones, tablets and telecommunications we use every day to connect with our friends and family; the aircrafts that power the U.S. military; alternative energy sources critical to sustainability efforts; and medical devices that help keep us healthy. In fact, right now, PFAS are being used to support COVID-19 testing equipment and to provide lifesaving protection in medical garments – both uses that are helping save lives around the world in the midst of this pandemic. However, all PFAS are not the same. Each individual chemistry has its own unique properties and uses, as well as environmental and health profiles, so it is not scientifically accurate or appropriate to group all these chemistries together. SB 273/HB 275 in its current form, would restrict a number of applications that are critical for public safety and public health and should be refined to focus on the specific chemistries of concern.

- SB 273/HB 275 is one of the broadest pieces of legislation that we have seen on this topic. As noted above, this overly broad approach will have widespread unintended consequences for certain products, but also for the Maryland citizens, government, businesses, and industries. This overly broad approach could undermine Maryland from focusing on most it's most pressing environmental, health and safety issues and will create a patchwork of conflicting and inconsistent state and federal regulations impacting Maryland manufacturers, retailers and small businesses.

- Maryland enacted legislation that recently went into effect in October of 2020 and would address some of the key issues that are reportedly the rationale for SB 273/HB 275.

We look forward to working with the Committee to address these concerns, advance chemical safety and ensure overall public safety. If you have any questions or if I may be of further service, please feel free to contact Josh Young, ACC's Senior Director, Mid-Atlantic Region at (202) 249-6223 or Josh_Young@AmericanChemistry.com

Sincerely,

SB0273 LOI .docx.pdf
Uploaded by: Tyler Abbott
Position: INFO

Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

February 2, 2022

The Honorable Paul Pinsky, Chair
Senate Education, Health, and Environmental Affairs Committee
Miller Senate Office Building, 2W
Annapolis, Maryland 21401

Re: Senate Bill 273 – PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act)

Dear Chair Pinsky and Committee Members:

The Maryland Department of the Environment (MDE or Department) has reviewed SB 273, *PFAS Chemicals – Prohibitions and Requirements (George "Walter" Taylor Act),* and would like to provide some information about this legislation.

The bill would ban the use, manufacture, sale, or distribution of Class B fire-fighting foam, except as authorized under federal law, that contains intentionally added per-and polyfluoroalkyl substances (PFAS) chemical on or after January 1, 2023. The bill eliminates the current statutory exemption for fire-fighting foams used at the Baltimore Washington International Airport. A person who sells personal protective equipment (PPE) that contain PFAS chemicals worn by fire-fighting personnel in the performance of fire and rescue activities would be required to provide written notice to the purchaser that includes a statement that the PPE contains PFAS chemicals, and the reason why, and both the seller and purchaser must keep the notice for at least 3 years after the date of sale. Additionally, the bill would ban the use, manufacture, sale, or distribution of carpets or rugs and food packaging or any product in a food package that contains "intentionally added" PFAS chemicals on or after January 1, 2023. Persons subject to these product bans would be required to establish a certificate of compliance demonstrating compliance with the ban and must provide the certificate of compliance to MDE within 30 days of a request.

The bill would also ban the disposal of Class B fire-fighting foam with "intentionally added" PFAS through incineration or in a landfill. In late 2020, the U.S. Environmental Protection Agency (EPA) published interim guidance on the destruction and disposal of PFAS and materials containing PFAS. In the guidance, EPA evaluated thermal treatment, landfilling, and underground injection, identified data gaps and uncertainties with the destruction and disposal alternatives. EPA did not make direct recommendations on the PFAS destruction and disposal alternatives that should be used, but provided information so managers of PFAS or PFAS-containing materials can make informed decisions in the evaluation of existing destruction and disposal options. The document is available on EPA's website at epa.gov/pfas/interim-guidance-destroying-and-disposing-certain-pfas-and-pfas-containing-materials-are-not.

Under SB 273, a person authorized to use Class B fire-fighting foam with PFAS would be prohibited from releasing the foam directly to the environment and must fully contain all releases, implement containment measures, dispose of all waste, report the release to MDE, and maintain documentation on these measures. Failure of a person to meet these requirements does not preclude the use of foam if the failure to not release or

contain the foam was a result of factors beyond the control of the person. MDE, the Maryland Attorney General, a State's Attorney, county attorney or city attorney would be authorized to request documentation from any person required to maintain documentation verifying their compliance, and the person to whom the request is made must provide the documentation upon request. The bill would authorize MDE to develop regulations to enforce the ban on Class B fire-fighting foam, fire-fighting PPE, and carpets or rugs that contain intentionally added PFAS chemicals, and the release and containment requirements for persons authorized to use Class B fire-fighting foam with "intentionally added" PFAS chemicals. (MDE already has the authority to adopt regulations to enforce the proposed ban on a food package with intentionally added PFAS chemicals under existing §9-1907 of the Environment Article.) The bill contains penalty provisions for violators of the bill's requirements.

Further, SB 273 would establish two new reporting requirements for MDE. On or before December 31, 2022, MDE would be required to report to the General Assembly on the results of any testing for PFAS chemicals conducted in waters of the state, any plan for further testing for PFAS chemicals in waters of the state, and any plan for remediation and public education in areas where the water has been found to be contaminated by PFAS chemicals. Since the information required to be included in this report will need to be compiled from different programs within MDE, it would be difficult, if not impossible, to complete the report in the 5-month period provided.

Lastly, MDE and the Maryland Department of Health would be required to coordinate with other relevant state agencies, the federal government, local governments, and the public to prepare and submit by December 31, 2023 a PFAS Action Plan to the General Assembly that identifies strategies, actions, and funding alternatives for, among other things, minimizing public and environmental exposures to PFAS and cleaning up historical releases of PFAS. It would take a significant amount of effort to coordinate with and identify various relevant stakeholders and to conduct literature review of PFAS research, which is constantly evolving.

MDE has been sampling PFAS in public water systems starting in 2020, and continuing through 2022. MDE is also sampling fish and shellfish tissue to determine the levels of bioaccumulation. MDE works with the EPA to ensure that the U.S. Department of Defense sites in Maryland are assessed, remediated and monitored wherever PFAS are present. More information regarding MDE's PFAS-related activities can be found online at mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx.

According to the U.S. Food and Drug Administration, there are nearly 5,000 different PFAS compounds. SB 273 would ban any Class B fire-fighting foam, carpet or rug, and food packaging and place notification requirements on fire-fighting PPE that contains one of 5,000 different chemicals. MDE would need to establish a new regulatory program to enforce these provisions for several products not currently regulated by the Department. This bill would increase MDE workload by creating the following new responsibilities: conducting research to identify brands and the manufacturers, distributors, retailers, or industry users of Class B fire-fighting foam, carpet or rug, food packaging, and fire-fighting PPE; adopting regulations to implement the bill's provisions; overseeing persons with unused Class B firefighting foam to ensure the product is stored in an environmentally safe manner; and conducting targeted inspection and other enforcement actions as needed.

MDE currently has adequate and sufficient staff and resources to conduct its mission effectively and efficiently. Any additional legislatively-mandated program or regulation, such as this, will likely hamper our efficiency, force us to divert resources away from current core competencies and likely disrupt customer service and/or diminish services.

Thank you for your consideration. We will continue to monitor SB 273 during the committee's deliberations, and I am available to answer any questions you may have. Please feel free to contact me at 410-260-6301 or tyler.abbott@maryland.gov.

Sincerely,

Tyler Abbott

cc: Lee Currey, MDE, Director, Water and Science Administration