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Re: Risk Management Approach for PFAS

Submitted to: substances@ec.gc.ca

These comments are made on behalf of Environmental Defence, Ecojustice, Canadian Association of Physicians for the Environment, Breast Cancer Action Quebec, and the David Suzuki Foundation, regarding the State of Per- and Polyfluoroalkyl Substances Report (the "Report"), the Risk Management Approach for Per- and Polyfluoroalkyl Substances, Excluding Fluoropolymers ("RMA"), and the proposed *Order Adding a Toxic Substance to Part 2 of Schedule 1 of the Canadian Environmental Protection Act, 1999* (the "Proposed Order").

We seek to build upon our previously submitted comments on the May 2023 Draft State of PFAS Report ("2023 Draft Report") and Risk Management Scope ("RMS"), and on the July 2024 Updated Draft State of PFAS Report ("Updated Draft Report") and Revised Risk Management Scope ("Revised RMS").

Ecojustice is Canada's largest environmental law charity. Ecojustice uses the power of the law to defend nature, combat climate change, and fight for a healthy environment. Its strategic, public interest lawsuits and advocacy lead to precedent-setting court decisions and laws and policies that deliver lasting solutions to Canada's most urgent environmental problems.

The Canadian Association of Physicians for the Environment (CAPE) is a national physician-led organization working at the intersection of health and environment. CAPE encourages policymakers to adopt a planetary health lens in their decision-making.

Environmental Defence is a leading Canadian environmental advocacy organization that works with government, industry and individuals to defend clean water, a safe climate and healthy communities.

The David Suzuki Foundation is a leading Canadian environmental non-profit organization, founded in 1990. We collaborate with others to create a sustainable Canada through scientific research, traditional ecological knowledge, communications and public engagement, and innovative policy and legal solutions. Our mission is to protect nature's diversity and the wellbeing of all life, now and for the future.

Breast Cancer Action Quebec is a feminist health organization whose mission is the prevention of breast cancer. We are particularly concerned with eliminating toxic exposures that increase the risk of developing this and other diseases.

We fully support and agree with Canada's decision to list and regulate PFAS as a class under the Canadian Environmental Protection Act (CEPA). We were pleased that the final Report confirmed that PFAS, excluding fluoropolymers, met the criteria for listing on Schedule 1 specified in section 64 (a) and (c) of CEPA, and we commend the government for implementing a class based approach. We urge the government to act swiftly and to expedite the finalization of the order listing PFAS, excluding fluoropolymers, as a class under Schedule 1 of CEPA.

We also call on the government to build upon this crucial step by taking further ambitious and necessary action. In order to uphold the precautionary approach, to ensure that all PFAS are regulated, and to prevent needless further harm, the government must also take urgent steps to assess and regulate fluoropolymers, and to expedite the Risk Management Approach.

We appreciate the opportunity to submit the following recommendations regarding the Risk Management Approach. Please find our comments regarding the Proposed Order (CG1, March 08, 2025) enclosed as well.

Order Adding a Toxic Substance to Part 2 of Schedule 1 to the Canadian Environmental Protection Act, 1999

It is critical for the government to act urgently to finalize the order listing PFAS, in order to prevent needless long-term harm to both human and environmental health. The chemical structure of PFAS is one of the strongest bonds in organic chemistry, making them highly resistant to degradation. As a result, PFAS are easily transported and persistent, causing widespread contamination in the environment, including the most remote regions of the planet.[1]

[1] https://www.healthandenvironment.org/assets/images/Webinar%20Highlights%20Outside%20the%20Safe%20Operating%20Space%20of%20a%20PFAS%20Planetary%20Boundary.pdf

Every delay in listing and managing these chemicals worsens this crisis. We strongly urge the government to act swiftly on the following recommendations:

Recommendation 1: Expedite the finalization of the order listing PFAS (excluding fluoropolymers) as a class under Schedule 1 of CEPA by Fall 2025.

Recommendation 2: Expedite the new regulations (e.g., CMR and substances that pose the highest risk) and the updates to existing regulations (Persistence and Bioaccumulation) in order to update and strengthen the regulations that set out the requirements for mandatory listing on Part 1.

> ***Instrument choice***
> [...]
> Until regulations specifying criteria for the classification of substances that pose the highest risk or that are carcinogenic, mutagenic, or toxic to reproduction are developed, toxic substances that are determined to be persistent and bioaccumulative as per the criteria under the Persistence and Bioaccumulation Regulations are recommended for addition to Part 1 of Schedule 1 to the Act. [...] PFAS, excluding fluoropolymers, were determined to be persistent, but the **bioaccumulation potential of PFAS cannot be reasonably determined** according to the criteria in the Persistence and Bioaccumulation Regulations ("Proposed Order").
>
> The measure being proposed by the Ministers is recommending that the **class of PFAS, excluding fluoropolymers, be added to Part 2 of Schedule 1 to the Act** (emphasis added).[2]

The proposed Order recommends that the class of PFAS, excluding fluoropolymers, be added to Part 2 of Schedule 1 under CEPA. Part 1 substances are considered to be of higher concern, and are subject to more robust risk management actions. According to the proposed Order, the class should be added to Part 2 instead of Part 1 because it was found to be environmentally persistent, but not determined to be bioaccumulative, under the *Persistence and Bioaccumulation Regulations* of CEPA (Canada 2000).

However, the Report itself provides evidence and reasoning for the bioaccumulation potential of PFAS, and for the inadequacy of the existing persistence and bioaccumulation regulations for assessing PFAS. The Report describes three ways in which these outdated criteria underestimate the bioaccumulative potential of PFAS.

First, the test used to predict bioaccumulation potential assumes that a given substance is hydrophobic and lipophilic. The regulatory criteria in Canada are based on lipid testing of

[2] Canada Gazette, Part I, Volume 159, Number 10: Order Adding a Toxic Substance to Part 2 of Schedule 1 to the Canadian Environmental Protection Act, 1999. Accessed online: https://gazette.gc.ca/rp-pr/p1/2025/2025-03-08/html/reg2-eng.html

freshwater aquatic species. However, PFAS are notoriously hydrophobic and oleophobic - their resistance to both water and oils/fats is the exact quality which makes them so attractive for manufactured products, and so persistent in the environment.

As a result, the Report notes that some of these substances bind to proteins instead of to fat. It is true that "empirical BCF and BAF data alone cannot be used to reliably determine bioaccumulation potential," but the reason provided is that "results for typically tested model organisms (i.e., fish, daphnia, and algae) may *underestimate* bioaccumulation potential" (6.1; emphasis added).

Second, the Report notes that testing based on aquatic species underestimates bioaccumulation experienced by air-breathing organisms (e.g., terrestrial mammals, marine mammals, birds). Because certain PFAS (ionic PFAS, i.e. PFAA) are water soluble, they are more easily eliminated by gill exchange in fish. By contrast, these substances are not eliminated when breathing air. Accordingly, "higher levels of PFAA bioaccumulation may occur in air-breathing organisms" (6.1).

Finally, the Report finds that biomagnification occurs in the food chain, particularly for air-breathing mammals and birds. This biomagnification is not observed for aquatic species, again, because of the water solubility of PFAA, but a high degree of PFAA biomagnification was found in wildlife in the Canadian Arctic (6.1).

To cite two key passages:

> However, as these threshold criteria were based on historical experience with neutral, non-metabolized organic substances and many PFAS tend to preferentially bind to proteins, the regulatory paradigm based on low logK_{ow} value cannot be applied for this class of substances (EC, HC 2012). The application of BAF and BCF data is only one component of the overall weight of evidence in determining the potential of a substance to bioaccumulate in organisms. **Even if regulatory criteria are not met, a substance can still be deemed as having bioaccumulation potential** (6.1; emphasis added)**.**

> **Overall, the bioaccumulation potential of PFAS, as well as its persistence (section 3.2.2), indicate an increased potential for risk to the environment.** PFAS can remain in the environment for long periods as a result of their persistence, which can contribute to global presence and increase the likelihood of organism exposure. Moreover, some PFAS have been demonstrated to have the potential to bioaccumulate and biomagnify in food webs to a degree that could allow them to reach levels that can cause adverse effects in organisms. Ultimately, bioaccumulation could result in an increased potential for toxicity in organisms. ("Draft State" 6.1; emphasis added)

It is technically true that "the bioaccumulation potential of PFAS cannot be reasonably determined" under the existing regulations ("Proposed Order," *Instrument Choice*). But the Report provides ample evidence that the outdated regulations are not fit for purpose when evaluating PFAS, and in fact systematically underestimate PFAS bioaccumulation.

This challenge is discussed elsewhere. Previous studies of toxic substances have also discussed the challenge of assessing bioaccumulation under this outdated regulatory paradigm,[3] and a recent EPA study noted that modeling mammalian PFAS bioaccumulation based on testing in fish "may lead to ecological risk assessments with inherent uncertainties" due to metabolic differences.[4]

The fact that the existing regulatory criteria underestimate PFAS bioaccumulation is a reason to turn to the precautionary principle, not a reason to take weaker regulatory action.

Detailed Recommendation 1: Expedite the finalization of the order listing PFAS (excluding fluoropolymers) as a class under Schedule 1 of CEPA by Fall 2025.

Detailed Recommendation 2: The Report offers evidence that the outdated regulatory paradigm for persistence and bioaccumulation is inappropriate for evaluating the bioaccumulation of PFAS, and finds that these substances could have bioaccumulation potential. The Ministers should update the Persistence and Bioaccumulation Regulation and elevate the PFAS class to Schedule 1, Part 1 under CEPA, in accordance with the precautionary principle.

In addition, we recommend that the Ministers commit to an expedited timeline for issuing new regulations for substances which are carcinogenic, mutagenic, and toxic to reproduction (CMR), and substances that pose the highest risk.

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Recommendation 3: Regulate the entire class of PFAS by expediting the assessment and risk management of fluoropolymers.

Fluoropolymers are excluded from the class of PFAS which are considered in the Report and the Draft Order. The rationale for this exclusion is outlined in the Draft Order as follows:

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[3] Environment Canada (August 2010), Ecological State of the Science Report on Decabromodiphenyl Ether (decaBDE): Bioaccumulation and Transformation, accessed online: https://www.canada.ca/content/dam/eccc/migration/main/lcpe-cepa/documents/substances/decabde/ess_report_decabde-eng.pdf

[4] Kolanczyk, R., L. Roach, M. Saley, M. Tapper, S. Daley, AND J. Serrano. PFAS biotransformation pathways (v.3.3.1 and v.3.4.0) in MetaPath application (v.5.3.1.16). U.S. Environmental Protection Agency, Washington, DC, 2022. https://doi.org/10.23645/epacomptox.25122113

Fluoropolymers that meet the OECD definition of PFAS used in the State of PFAS Report, were excluded from consideration in the Report, as they may have significantly different exposure and hazard profiles when compared with other PFAS. Therefore, it was determined that additional work on fluoropolymers is warranted, and they are planned for consideration in a separate assessment.[5]

In terms of the evidence provided, we were previously concerned that the Updated Draft Report relied on unpublished industry data to support the claim that fluoropolymers were not mobile or bioaccumulative. The Report does not offer any new evidence, and once again the evidence provided does not support the exclusion of fluoropolymers. As before, the Report cites several studies which are authored by fluoropolymer manufacturers (Henry et al 2018, Buck et al. 2025, Korzeniowski et al. 2023 , Gangal and Brothers 2025), and which cite unpublished industry data.[6]

The continued reliance on industry data does not stand up to the expert consensus amongst researchers and scientists on PFAS[7] that there is no "scientific rationale for concluding that fluoropolymers are of low concern for environmental and human health. Given fluoropolymers' extreme persistence; emissions associated with their production, use, and disposal; and a high likelihood for human exposure to PFAS, their production and uses should be curtailed except in cases of essential uses."[8]

Internationally, peer jurisdictions have adopted a science-based definition of PFAS. In the United States, PFAS has been defined as "a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom," without exception for fluoropolymers, by:[9]

- At least 24 states, including AR, AZ, CA, CO, CT, GA, KY, HI, IL, IN, LA, MA, MD, ME, MN, NH, NV, NY, OH, OR, RI, VA, VT, and WA.
- Congress, through the National Defense Authorization Act in 2021, 2022, and 2023.

In addition, the French Assemblée Nationale recently passed legislation that implements a suite of protections against PFAS. Key provisions of the February 2025 bill include prohibitions

[5] Canada Gazette, Part I, Volume 159, Number 10: Order Adding a Toxic Substance to Part 2 of Schedule 1 to the Canadian Environmental Protection Act, 1999. Accessed online: https://gazette.gc.ca/rp-pr/p1/2025/2025-03-08/html/reg2-eng.html

[6] Environment and Climate Change Canada, Health Canada (March 2025), State of Per- and Polyfluoroalkyl Substances (PFAS) Report, accessed online: https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/state-per-polyfluoroalkyl-substances-report.html

[7] https://drive.google.com/file/d/1YLB2zvWG5Ez6VeMqqbw77LpVEj0JTj1H/view

[8] Lohman et al., "Are Fluoropolymers Really of Low Concern for Human and Environmental Health and Separate from Other PFAS?", *Environmental Science and Technology.* Oct. 2020; 54(10). Accessed online: https://pubs.acs.org/doi/10.1021/acs.est.0c03244

[9] Safer States, "Why a Strong PFAS Definition Matters" (March 2025), accessed online: https://www.saferstates.org/wp-content/uploads/PFAS-Definition-Factsheet.pdf

against PFAS in several consumer goods, including waxes, cosmetics, and textiles; provisions on drinking water protections; and increased fines for PFAS water pollution, which uphold the 'polluter pays' principle.[10] Notably, the legislation does not exclude fluoropolymers from the definition of PFAS, which is aligned with the European Chemicals Agency (ECHA) definition of PFAS. This action taken by a peer jurisdiction reflects the scientific reality that fluoropolymers are dangerous PFAS, and should not be subject to less urgent regulation.

Canada must not become an international laggard in regulating the entire class of PFAS, in accordance with international scientific expertise. The government must act swiftly on its commitment to assess and regulate fluoropolymers under the Proposed Plan of Priorities. Currently, the start date for assessing fluoropolymers under the Workplan for the Proposed Plan of Priorities is scheduled for Fall 2026,[11] and the government should expedite this timeline.

Detailed Recommendation 3: commit to an expedited timeline for assessing fluoropolymers under the Proposed Plan of Priorities. To uphold the precautionary principle, and to reduce needless harm to the environment and human health, the government should expedite the start date for assessment from Fall 2026 to Fall 2025.

Risk Management Approach for PFAS, excluding fluoropolymers

Phase 1 Recommendation: Accelerate the phase out of C6 Aqueous Film-Forming Foams (AFFF)

Phase 1 of the RMA focuses on PFAS (excluding fluoropolymers) in firefighting foams. There are three general categories of aqueous film-forming foams (AFFF), which are used to extinguish Class B fires. Two categories are already subject to regulation under CEPA: PFOS AFFF were phased out in Canada in 2013, and C8 AFFF were added to Schedule 1 of CEPA in 2013, with the timeline of a final phase out expected in Spring 2025. As a result, Phase 1 of the RMA concerns the third remaining category which is still in use, C6 AFFF.[12]

[10] LOI n° 2025-188 du 27 février 2025 visant à protéger la population des risques liés aux substances perfluoroalkylées et polyfluoroalkylées. JORF n°0050 du 28 février 2025. Adopté par l'Assemblée Nationale le 20 février 2025.Accessed online: https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000051260902

[11] https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/implementing-modernized-cepa/plan-of-priorities-landing-page/priority-substances.html

[12] Environment and Climate Change Canada, Health Canada (March 2025), Risk Management Approach for Per- and Polyfluoroalkyl Substances (PFAS), Excluding Fluropolymers; accessed online:https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/risk-management-approach-per-polyfluoroalkyl-substances.html

Considering that two of three categories of AFFF have already been phased out, and to prevent unnecessary further harm to both the environment and to highly-impacted groups, the government should take the logical and necessary step of expediting the consultation and phase out process for C6 AFFF.

Firefighters themselves are exposed to extremely high levels of PFAS, which is pervasive in both AFFF and in firefighter protective gear ('turnout gear'). Recently research has found that all three of the layers of fabric in turnout gear contain elevated levels of PFAS,[13] and firefighters are at an increased risk for eight cancers relative to the general population.[14][15]

In response to these severe health impacts, firefighters have called for strong and rapid measures to phase out the use of PFAS in their occupation. Starting in 2023, the International Association of Fire Fighters (IAFF) has retained counsel to change regulatory standards, and to seek compensation for firefighters and their families.[16] In 2024, IAFF Canada, alongside its British Columbia Affiliate, launched a campaign to petition Parliament regarding the occupational danger of PFAS. Their petition, submitted in November 2024, had over 1600 signatures. They called on the government to:

> (b) amend the Canada Labour Code to provide that an employer who employs firefighters must ensure that they are provided with personal protective equipment and fire suppression foam that do not contain any detectable levels of PFAS; [...]
>
> (d) work with provinces, territories, municipalities, Indigenous and community-based organizations to put into place a timeline and cost- sharing model to phase out firefighters' personal protective equipment and fire suppression foam that contain any detectable levels of PFAS.[17]

[13] Muensterman DJ et al. "Disposition of Fluorine on New Firefighter Turnout Gear." *Environmental Science and Technology*. 2022 Jan 18;56(2): 974-983. Accessed online: https://www.iaff.org/wp-content/uploads/Muensterman-27DEC21-Flourine-FF-gear-002.pdf

[14] LeMasters et al. "Cancer Risk Among Firefighters: A Review and Meta-analysis of 32 Studies," Journal of Occupational and Environmental Medicine 48(11):p 1189-1202, November 2006. Accessed online:https://journals.lww.com/joem/abstract/2006/11000/cancer_risk_among_firefighters__a_review_and.14.aspx.

[15] Peaslee et al. "Another Pathway for Firefighter Exposure to Per- and Polyfluoroalkyl Substances: Firefighter Textiles," *Environmental Science and Technology*. 2020 June;7(8) Accessed online: https://pubs.acs.org/doi/10.1021/acs.estlett.0c00410?ref=pdf

[16] International Association of Fire Fighters, "Resources: PFAS 'Forever Chemicals'", accessed online: https://www.iaff.org/pfas/#resources

[17] Petition No. 441-02843 (Employment and labour), Presented Nov. 6, 2024, Peter Julian, accessed online: https://www.ourcommons.ca/petitions/en/Petition/Details?Petition=441-02843

Firefighters are the stakeholder group which experiences the most direct harm from C6 AFFF, and they have clearly stated their opposition to PFAS in firefighting foams. There is no need for the government to engage in a protracted additional consultation process.

Furthermore, there is no market barrier to banning C6 AFFF. The government itself has noted that "There are now many alternatives to AFFF, including foam, such as fluorine-free firefighting foams (F3 or SFFF), and non-foam fire suppression systems, such as encapsulator agents."[18] Considering the government's guidance that "C6 AFFF will likely be subject to future restrictions,"[19] we urge the government to avoid any unnecessary delay, and to expedite the regulation timeline.

CEPA requires the Ministers to "consider available information on any vulnerable population or environment in relation to the substance" when "conducting and interpreting the results of an assessment or review".[20] In the case of C6 AFFF, firefighters themselves represent such a vulnerable population, and they have clearly communicated that there is an urgent need to eliminate PFAS in their protective gear and in firefighting foams. There is no need for a lengthy consultation process, especially considering that PFAS-free firefighting foams are already on the market.

Detailed Phase 1 Recommendation: commit to an expedited timeline for phasing out C6 AFFF, in order to prevent needless harm and avoidable delays.

- Consultation: Summer/Fall 2025
- Proposed Regulation: Spring 2026
- Publication of a final instrument: Fall 2026

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Phase 2 Recommendation: Accelerate the phase-out of PFAS in consumer applications

Phase 2 of the RMA addresses "[u]ses of PFAS (excluding fluoropolymers) not needed for the protection of health, safety or the environment, with a particular focus on consumer applications where alternatives are known to exist."[21] This group of consumer products includes cosmetics,

[18] Environment and Climate Change Canada, "Per- and polyfluoroalkyl substances and aqueous film-forming foam used in firefighting," accessed online: https://www.canada.ca/en/environment-climate-change/services/management-toxic-substances/list-canadian-environmental-protection-act/perfluorooctane-sulfonate/film-forming-foam-prohibition-toxic-substances.html#toc9

[19] Ibid.

[20] Canadian Environmental Protection Act, 1999 (S.C. 1999, c. 33), s76.1(2). Accessed online: https://laws-lois.justice.gc.ca/eng/acts/c-15.31/page-7.html#docCont

[21] Environment and Climate Change Canada, Health Canada (March 2025), Risk Management Approach for Per- and Polyfluoroalkyl Substances (PFAS), Excluding Fluropolymers; accessed online:https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/risk-management-approach-per-polyfluoroalkyl-substances.html

textile and ski waxes, building materials including paint and adhesives, and food packaging, among others. The proposed risk management timeline would begin consultation following the publication of Phase 1 Regulations in 2027.

In light of the precautionary principle, and the need to prevent needless harm, Canada cannot allow for unnecessary delays for enacting regulatory instruments. Several jurisdictions have already restricted PFAS in the consumer products listed in Phase 2, and numerous corporations have also adopted voluntary PFAS phase outs. Canada must not become an international laggard, in terms of regulatory action or market trends, and must commit to an expedited phase out of PFAS under Phase 2.

The French legislation adopted in February 2025 will prohibit the "manufacture, import, export, and placing on the market" of all cosmetics, wax products, and consumer textiles, as of January 1, 2026.[22] Canada should follow this lead, and expedite the phase out of consumer products under Phase 2.

Phase 2 includes textile uses, including firefighting turnout gear. A recent study conducted product testing on new, unused turnout gear produced by four different manufacturers. Researchers identified 24 different PFAS across these products, and found extensive PFAS in all three layers of fabric used to construct turnout gear - across all four manufacturers.[23] As discussed previously, firefighter associations have unambiguously called for the elimination of PFAS from turnout gear. Canada must act urgently to phase out the use of PFAS in Phase 2 consumer products, including in turnout gear, in accordance with both research and the need to protect disproportionately-impacted groups.

Sixteen US states have already enacted PFAS phaseouts and restrictions of consumer products, including but not limited to:[24]

- All products (authority to ban): ME, MN, and WA
- Apparel: CA, CO, CT, ME, NY, and VT
- Firefighting foam: AK, CA, CO, CT, HI, IL, ME, MD, MN, NH, NJ, NY, RI, VT, and WA
- Personal care products/cosmetics: CA, CO, CT, ME, MD, MN, OR, RI, VT, and WA

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[22] LOI n° 2025-188 du 27 février 2025 visant à protéger la population des risques liés aux substances perfluoroalkylées et polyfluoroalkylées. JORF n°0050 du 28 février 2025. Adopté par l'Assemblée Nationale le 20 février 2025.Accessed online: https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000051260902 A ban on PFAS in textiles used to manufacture PPE will take effect in 2030.

[23] Muensterman DJ et al. "Disposition of Fluorine on New Firefighter Turnout Gear." *Environmental Science and Technology*. 2022 Jan 18;56(2): 974-983. Accessed online: https://www.iaff.org/wp-content/uploads/Muensterman-27DEC21-Flourine-FF-gear-002.pdf

[24] Safer States (2024), Policies for Addressing PFAS; accessed online: https://www.saferstates.org/priorities/pfas

In 2025, at least 29 US states are expected to consider new policies to restrict and phaseout PFAS, including consumer products:[25]

- All unnecessary uses, specific product category phaseouts, and/or disclosure in all products: AK, CA, HI, IL, MA, MD, MI, MN, NM, NJ, NY, OR, PA, and WA
- Firefighting foam/turnout gear restrictions: AK, CT, IL, MA, MT, NJ, NY, OR, PA, RI, and SD
- Water testing, monitoring, and/or disclosure: CT, HI, IN, ME, MA, NJ, NY, amd VA
- PFAS in sludge: HI, IN, MD, MA, ME, MI, MN, MS, OK, OR, TX, and WA
- Drinking water, groundwater, and/or surface water standards, and/or effluent restrictions: AK, CA, IN, ME, NY, SC, and VA
- Policies/resources for PFAS cleanup: CT, MA, MN, NJ, RI, and WA

In addition to these state-level restrictions, numerous leading manufacturers and retailers are adopting voluntary market phase-outs of PFAS, alongside shareholder actions taken by investment managers. The failure to transition away from persistent chemicals including PFAS presents numerous business risks, including litigation risks, the costs associated with waste management and site remediation, the expense of belated regulatory compliance, and a failure to follow customer demand. Recent IIHC investor guidance notes that "on the basis of credible and legitimate research, [...] industry laggards who base their product portfolio on problematic chemicals and underinvest in developing safer alternatives risk becoming uncompetitive."[26]

Examples of the action taken by corporations and investment managers include:

- The Investor Initiative on Hazardous Chemicals (IIHC) involves 70+ investors, with $18 trillion under management or advice. The IIHC engages with major chemical manufacturers to push for disclosure and phase-out of PFAS, to mitigate the litigation risk related to environmental contamination, and to preemptively comply with forthcoming European Union regulations.[27]
- 3M (USA) has committed to exiting "all PFAS manufacture by the end of 2025," and has published a list of over 22,000 products containing PFAS that it has discontinued.
- Saudi Basic Industries Corporation (SABIC), a subsidiary of Saudi Aramco, stated in 2023 that they were "proactively seeking substitutes to phase PFAS out of operations,"[28]

[25] Safer States (Feb. 2025), "Phasing out PFAS Use: Insights and Predictions into 2025;" accessed online: https://www.saferstates.org/resource/2025-analysis-of-state-policy-addressing-toxic-chemicals-and-plastics/phasing-out-pfas-use/

[26] Investor Initiative on Hazardous Chemicals (Sept. 2024), "A Profitable Detox: Why Safer Chemistry Makes Financial Sense," accessed online: https://chemsec.org/app/uploads/2024/09/ChemSec_A-Profitable-Detox_241007.pdf

[27] https://chemsec.org/app/uploads/2024/09/ChemSec_A-Profitable-Detox_241007.pdf. Investment managers working independently have also secured improvements in corporate transparency by engaging with major chemical firms; see https://www.triodos-im.com/articles/2025/case-study-hazardous-chemicals-action-against-pfas.

[28] https://chemsec.org/app/uploads/2024/09/ChemSec_A-Profitable-Detox_241007.pdf

and as of 2024 had begun to disclose its full chemicals portfolio, including volume and location.[29]

- Major retailers have also taken voluntary measures to phase out PFAS. "Currently, 32 unique retail chains with more than 150,000 stores and more than $654 billion in sales have committed to eliminating or reducing PFAS in food packaging, textiles and/or other products." Examples of major retailers adopting voluntary phase outs include:[30]
    - Restaurant Brands International, which owns Burger King, Popeyes, and Tim Hortons has committed to banning added PFAS in food packaging by 2025.
    - In 2022, Chick-fil-A disclosed that it had eliminated PFAS in its food packaging supply chain.
    - McDonalds announced in 2021 that it would remove PFAS in food packaging by 2025.
    - Starbucks committed to eliminate PFAS in food packaging internationally by 2024.
    - In 2020, 7-Eleven disclosed that it had begun to eliminate PFAS in packaging.
    - The Home Depot "announced in September 2019 that the company will stop purchasing for distribution any carpets or rugs with PFAS by the end of 2019."
    - Patagonia has committed to eliminate all PFAS from its product line by 2024.
    - In 2021, Office Depot released a restricted substance list showing numerous restrictions on PFAS.

Canada is lagging behind these market trends. As a result of the voluntary market phase-outs listed above, the US FDA announced in 2024 that food packaging containing PFAS were no longer being sold in the US market.[31] By contrast, a 2023 study of eight products used to package fast food in Canada (e.g. burger wrappers) detected 4-15 individual PFAS in each product. The authors found that the "use of PFAS in food packaging such as 'compostable' bowls represents a regrettable substitution of single-use plastic food packaging."[32]

Canada must catch up to these durable market trends, follow the lead of peer jurisdictions, and listen to the clear demands of impacted groups like firefighters, by committing to an expedited phase out of PFAS in consumer products.

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[29] https://chemscore.chemsec.org/reports/sabic-2024-2/

[30] https://toxicfreefuture.org/mind-the-store/retailers-committing-to-phase-out-pfas-as-a-class-in-food-packaging-and-products/

[31] Food and Drug Administration (Feb. 28, 2024), FDA Announces PFAS Used in Grease-Proofing Agents for Food Packaging No Longer Being Sold in the U.S., accessed online: https://www.fda.gov/food/hfp-constituent-updates/fda-announces-pfas-used-grease-proofing-agents-food-packaging-no-longer-being-sold-us

[32] Schwartz-Narbonne et al, "Per- and Polyfluoroalkyl Substances in Canadian Fast Food Packaging," *Environmental Science & Technology* 10:4 (March 28, 2023), 343-349. Accessed online: https://pubs.acs.org/doi/epdf/10.1021/acs.estlett.2c00926?ref=article_openPDF

Federal research on chemical mixtures[33], and on PFAS mixtures in particular, is finding that landfill leachate is a significant source of PFAS contamination in the Canadian context that is impacting freshwater ecosystems, aquatic species and bird species. PFAS-laden products and their disposal are contributing to these point source releases, environmental and species harms, and disproportionate impacts on downstream Indigenous communities and their drinking water, food sovereignty and higher PFAS body burdens.[34] This federal research on leachate is just one example of government data that can and must be highlighted to support expedited phase outs of PFAS in consumer products to more quickly address the federal government's duty to prevent this pollution, address this disproportionate impact and uphold the right to healthy environment under CEPA.

Detailed Phase 2 Recommendation: commit to an expedited timeline for regulating and phasing out PFAS in consumer products, as listed under Phase 2, in order to prevent needless harm and to avoid lagging behind peer jurisdictions and the market.

- Consultation to follow the publication of proposed Phase 1 Regulations: Spring 2026
- Draft Regulations: Fall 2026
- Publication of a final instrument: Spring 2027

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Recommendation for Phase 3: Conduct the consultation and phase-out processes for PFAS listed under Phases 2 and 3 concurrently

Phase 3 of the RMA addresses "[u]ses of PFAS (excluding fluoropolymers) for which there may not be feasible alternatives and requiring further evaluation of the role of PFAS."[35] This group encompasses commercial and industrial uses of PFAS. The RMA proposes that consultation on Phase 3 would follow Phase 2 risk management at a time "[t]o be determined."[36]

Despite industry claims regarding the difficulty of phasing out these uses of PFAS, and the alleged unavailability of suitable replacements,[37] the government can and must take more

[33] Federal researchers under the Integrated Chemicals Mixtures Project have found significant PFAS mixtures in leachate and downstream from the Brantford landfill site, and are investigating the toxic effects of these mixtures on bird species and zebrafish, including metabolism, behaviour and neurodevelopment (ECCC Stakeholder Meeting presentations, April 22, 2025, virtual.)

[34] The State of PFAS Report (Figure 6) notes research that found Indigenous children have PFAS blood serum concentrations 7 to 21 times that of children in the general population of the Canadian Health Measures Survey.

[35] Environment and Climate Change Canada, Health Canada (March 2025), Risk Management Approach for Per- and Polyfluoroalkyl Substances (PFAS), Excluding Fluropolymers; accessed online:https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/risk-management-approach-per-polyfluoroalkyl-substances.html

[36] Ibid.

[37] Chemical Industry Association (March 05, 2025), CIAC Statement Releases Statement on PFAS Regulations, accessed online: https://canadianchemistry.ca/ciac-statement-releases-statement-on-pfas-regulations/

ambitious action to regulate these PFAS, and commit to a consultation and phase-out timeline in parallel to Phase 2.

Market substitutions already exist for many industrial and commercial uses of PFAS, and the process of regulating PFAS grouped in Phase 3 should not be treated as an insurmountable challenge with a vague timeline. EU research into the substitution potential of PFAS demonstrates that there are already feasible market alternatives for many applications:[38] [39]

Sector/topic under Phase 3 of the RMA	**Number of Applications**	**Phase-out status/alternative availability:**
Fluorinated gas applications	29	Phase-out currently possible: 4 Transition ongoing: 18
Prescription drugs	Not yet assessed	
Medical devices	21	Phase-out currently possible: 1 Transition ongoing: 4
Industrial food contact materials	4	Phase-out currently possible: 3
Petroleum/energy	17	Phase-out currently possible: 3 Transition ongoing: 3
Mining	8	Phase-out currently possible: 2 Transition ongoing: 1
Transport (military not included)	27	Phase-out currently possible: 1 Transition ongoing: 15

The government should also consider the risk management approaches underway in peer jurisdictions, in order to facilitate expedited regulation of PFAS listed under Phase 3. According to the RMA:

[38] Figuière et al, "An Overview of Potential Alternatives for the Multiple Uses of Per- and Polyfluoroalkyl Substances," *Environmental Science and Technology* 2025 Jan 24;59(4):2031–2042. Accessed online: https://pmc.ncbi.nlm.nih.gov/articles/PMC11800378/#notes3

[39] Figuière, R., Miaz, L., Savvidou, E., & Cousins, I. (2024). Database of alternatives to persistent, mobile and toxic (PMT) substances, and to per- and polyfluoroalkyl substances (PFAS). (Version 2) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.10852739

7.3 Risk management alignment
Actions taken in jurisdictions including the EU and the US are being taken into consideration in the development of risk management for PFAS in Canada, with the possibility of aligning, where appropriate.[40]

The relevant subcommittees of the ECHA are currently conducting their evaluation of the proposed EU-wide restriction on PFAS on a sectoral basis (the Committees for Risk Assessment, RAC, and for Socio-Economic Analysis, SEAC). The RAC and SEAC have developed provisional conclusions regarding numerous sectors considered under Phase 3.[41] Canada should align itself with these actions already underway in Europe, and commit to an expedited timeline for regulating commercial and industrial applications of PFAS.

Sector/topic under Phase 3 of the RMA	ECHA scientific committee for RAC	ECHA scientific committee for SEAC
Fluorinated gas applications	Discussion: March 2025 Provisional conclusions: March 2025	Discussion: March 2025 Provisional conclusions: March 2025
Prescription drugs	Not yet considered	Not yet considered
Medical devices	Discussion: tentatively scheduled for upcoming meeting in June 2025	Discussion: tentatively scheduled for upcoming meeting in June 2025
Industrial food contact materials	Discussion: September 2024, November 2024 Provisional conclusions: November 2024	Discussion: September 2024, November 2024 Provisional conclusions: November 2024
Petroleum and mining	Discussion: September 2024 Provisional conclusions: September 2024	Discussion: September 2024 Provisional conclusions: September 2024
Transport and military	Transport: Discussion: March 2025 Provisional conclusions: March 2025	Transport: Introductory discussion: March 2025 Discussion to be continued in June

[40] Environment and Climate Change Canada, Health Canada (March 2025), Risk Management Approach for Per- and Polyfluoroalkyl Substances (PFAS), Excluding Fluropolymers; accessed online:https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/risk-management-approach-per-polyfluoroalkyl-substances.html

[41] European Chemicals Agency (March 2025), Scientific evaluation of the proposal to restrict per- and polyfluoroalkyl substances (PFAS) – Current status; accessed online: https://echa.europa.eu/documents/10162/67348133/upfas_evaluation_state_of_play_en.pdf/d1ad6892-e726-84a7-d2dd-74bbf8fa09af?t=1727262011016

The RMA does not commit to a timeline for consultation or phase-out of PFAS used in a variety of commercial and industrial applications. While industry claims essential uses, and expresses concerns over the associated costs of developing PFAS alternatives and reformulating or redesigning PFAS-reliant processes and products, this is no different from the impacts that most regulations bring to bear on polluters who use, manufacture, and/or release toxic substances. Moreover, many industrial and commercial uses of PFAS already have feasible alternatives, and/or are already being evaluated by peer jurisdictions. Under these circumstances, it is not acceptable to move forward with an open-ended regulatory timeline, and there is no technical or regulatory justification for sequencing the Phase 3 phase-out after Phase 2.

Detailed Phase 3 Recommendation: conduct the regulatory and phase-out process for PFAS in commercial and industrial applications, as listed under Phase 3, concurrently with the timeline for Phase 2.

- Consultation to follow the publication of proposed Phase 1 Regulations: Spring 2026
- Draft Regulations: Fall 2026
- Publication of a final instrument: Spring 2027

Summary of Recommended Expedited RMA Timelines

Phase	Proposed Timeline	Recommended Timeline
Phase 1	Consultation: Summer/Fall 2025 Proposed Regulation: Spring 2027	Consultation: Summer/Fall 2025 Proposed Regulation: Spring 2026 Publication of a final instrument: Fall 2026
Phase 2	Consultation to follow the publication of proposed Phase 1 Regulations: 2027	Consultation to follow the publication of proposed Phase 1 Regulations: Spring 2026 Draft Regulations: Fall 2026 Publication of a final instrument: Spring 2027
Phase 3	Consultation to follow Phase 2 risk management: To be determined	Consultation conducted concurrently with Phase 2 risk management: Spring 2026 Draft Regulations: Fall 2026 Publication of a final instrument: Spring 2027

Thank you for the opportunity to provide comments. If you have any questions, please reach out to one of the undersigned.

Sincerely,

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