PFAS Legislation in Massachusetts: A Comparative Policy Analysis

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Background and objective: PFAS in public drinking water and firefighter gear are regulated in Massachusetts. There is less protection in place for other exposures. I reviewed regulations put into place by selected jurisdictions and identified recommendations to strengthen pending PFAS bills.
Methods: I analyzed five U.S. states, the EU, Canada and Japan across five categories and analyzed three other states for a sensitivity check. I reviewed legislation and agency reports and gathered published exposure research. I also assessed potential exposure reduction from measures adopted and execution challenges.
Results: Water can meet Massachusetts's 20-ppt PFAS6 sum limit while exceeding the federal 4-ppt limit for PFOA or PFOS. H.5598 addresses various exposure pathways such as packaging, consumer products, firefighting foam, agriculture and associated remediation funding. It would also include rules for reporting and reimbursement. I would want manufacturers to keep records showing they are following the packaging rules. I would also want money for sludge disposal and reports showing whether treatment is working. Several studies have documented that PFAS reaches people through water, food and occupational exposure. Health benefits of pending bills are uncertain. This analysis is not based on my irrigation study, since it is not peer reviewed.
Conclusion: I recommend that Massachusetts move forward with the consumer-product and farm measures with some amendments, provide funds to implement them, and conduct an independent review of water standards. This analysis does not rank states or forecast enactments. Legal-status cutoff: October 8, 2026.

Keywords: PFAS; Massachusetts; food packaging; biosolids; drinking water; comparative policy.

Introduction

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) are a diverse group of synthetic chemicals used in various consumer and industrial products and processes. Much of the strongest health evidence concerns two chemicals within this family, PFOA and PFOS. A prospective child cohort linked higher exposure to weaker vaccine antibody responses[1]. A large cross-sectional study associated PFOA and PFOS with higher cholesterol in children and adolescents[2]. The design of the study limited conclusions about cause and effect. A geographic analysis and a prospective nested case-control study linked higher PFOA exposure with kidney cancer[3,4]. Subsequently, a Multiethnic Cohort analysis found no overall PFOA association[5].

In 2020, Massachusetts adopted its PFAS6 drinking water standard. With the new law in 2024 for firefighter protective equipment, sellers must disclose to buyers starting January 2025. A prohibition on knowing sales of equipment with intentionally added PFAS begins in January 2027[6,7]. Additional pathways are being addressed through H.5598 and S.3034, while farms and sludge are being addressed through H.4853[8–10]. At the date of review, all three bills are pending.

Changing a food wrapper leaves PFAS already in soil or irrigation water in place. Packaging studies show that PFAS can migrate into food[11,12]. Plant studies show uptake from the surroundings[13]. This led me to compare how Massachusetts addresses and regulates different sources of exposure. Across five different categories, where do its laws and pending bills differ from the selected jurisdictions, and which amendments could reduce exposure and yet be practical to implement?

Methods

Search Strategy

I focused my analysis and comparison on five PFAS policy areas: public drinking water, food packaging and consumer products, firefighting foam and protective equipment, biosolids and agricultural land, and remediation finance. For each of these policy areas, I reviewed the official bills, their legislative histories and current statutes, and their agency implementation materials. I searched the web and Europe PMC for studies on PFAS, focusing on three areas. For health effects, I looked at vaccine response, cholesterol, and kidney cancer. For exposure, I examined Cape Cod drinking water wells, food packaging, crop uptake, and PFAS levels in fire-

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fighters' blood. I also looked into treatment costs and evidence of exposure changing after phase-outs. I read the studies that came up in my searches and used the DOI links to check the original papers.

Inclusion Criteria

I required each state to have enacted PFAS measures in at least two categories of my analysis and to have made official implementation materials available. I selected five states that met these selection criteria: Maine, Michigan, Minnesota, New York, and California. In order to bring international perspective to my analysis, I also selected the European Union due to its class-based packaging limits, Canada for its phased restrictions on substance groups, and Japan for its substance-specific water standards. Comparing and contrasting measures enacted in these jurisdictions allowed me to uncover gaps in the Massachusetts regulations and helped me develop my recommendations. I then tested my recommendations against Connecticut, Rhode Island, and Vermont. Connecticut and Rhode Island were the two states considered and excluded from the first selection. All three met the same inclusion rule and, as neighbors to Massachusetts, provided relevant comparison with different water standards, product restrictions, and biosolids controls. I analyzed the same five categories for these three states to evaluate any contradiction to my findings that required a recommendation to be changed or withdrawn. This sample is purposive and not a national ranking.

Data Extraction

I reviewed H.5598 (July 22, 2026) and then compared it clause-by-clause with both S.3034 and H.4853[8–10]. For each measure, I reviewed various attributes like legal status, products covered, dates, administering authority, and their implementation requirements. I then rechecked the texts and source records on October 8, 2026. The House referred H.4870 to Ways and Means on July 22, and the H.5598 amendment is pending[14]. Only peer-reviewed studies with original findings were used as scientific evidence to support my analysis, and I identified reviews and risk assessments separately. Additional state laws were reviewed as of October 8, 2026. I made the distinction between current regulations and laws that have been approved but will go into effect at a later date. Sources for additional states were accessed on October 10, 2026.

My radish and lettuce irrigation work helped motivate this study and is now publicly available as a ChemRxiv preprint, which has not been peer reviewed[15]. The preprint includes its own exposure calculation. I did not use those estimates in this policy analysis. I have based the crop-uptake conclusions on peer-reviewed published studies.

Ethical Considerations

For this policy analysis I used publicly available information and aggregated results that have been published. No participants were recruited for this study. No identifiable information was collected.

Synthesis Method

In Tables 1 and 2 I compare laws and bills for drinking water, consumer products and food packaging. In Table 3 I contrast potential impact with feasibility, and in Table 4 I compare each recommendation with existing bill clauses. Stakeholder interests as well as implementation concerns are discussed later in paragraph form. When evaluating potential impact I looked at exposure pathway coverage, frequency of exposure, concentration levels and what might decrease exposure, as well as uncertainty surrounding the evidence. To determine feasibility I looked at bill stage, administration, funding and ability to implement. This was based on my judgment of the evidence that was available.

Results

Drinking Water Standards

On February 9, 2024 MassDEP's bulletin reported 173 public water systems with at least one finished-water source historically above 20 ppt PFAS6. At that time, 86 systems were still above 20 ppt[16]. These numbers are as of February 2024 and should not be read as October 2026 violations.

The state of Massachusetts has established an MCL of 20 ppt for the sum of PFOA, PFOS, PFHxS, PFNA, PFHpA and PFDA in covered public water supply systems[6]. Table 1 lists Massachusetts and other jurisdictions. PFAS has been detected in public water supplies and private residential wells in small studies on Cape Cod[17,18]. Detections were linked to industrial and firefighting applications from national monitoring data[19]. One tapwater analysis looked at 716 locations including public water supply and private wells[20].

The 2024 federal rule established an MCL of 4 ppt for PFOA and PFOS along with other individual MCLs and a Hazard Index for mixtures. These rules require testing by 2027 and must be met by 2029[24]. If a sample had 5 ppt of PFOA and no other PFAS6 present, it would meet Massachusetts's sum limit but not the federal concentration for PFOA. This should not be read as the federal rules taking effect in 2024. In May 2026 EPA proposed to remove some of these additional MCLs and give systems until 2031 to meet the PFOA and PFOS MCLs. These are only proposals at this time based on the information provided[30,31]. MassDEP's primacy extension runs to April 26, 2028[32].

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Table 1 Selected drinking water approaches as checked October 8, 2026.

Jurisdiction	Standard or status
Massachusetts	20 ppt for the sum of six PFAS (PFAS6), in force since 2020[6].
Maine	Interim 20-ppt sum of six PFAS through April 26, 2027; federal standards adopted, with initial monitoring due in 2027 and compliance in 2029[21].
Michigan	State MCLs for seven PFAS; examples include PFOA 8 ppt, PFOS 16 ppt, and PFNA 6 ppt[22].
Minnesota	Health-based guidance values are distinct from enforceable MCLs. Federal PFAS MCLs apply to covered public systems[23,24].
New York	State MCLs of 10 ppt each for PFOA and PFOS, adopted in 2020[25].
California	State notification and response levels; these are not state MCLs. Monitoring orders can trigger treatment, source removal, or public notification duties[26].
European Union	Directive values of 0.10 μg/L for the sum of 20 PFAS and 0.50 μg/L for PFAS total; member states may use either or both parameters. Compliance required from January 12, 2026[27].
Canada	Federal objective of 30 ng/L for the sum of 25 PFAS; an objective, not a nationally enforceable MCL[28].
Japan	Binding PFOS plus PFOA standard of 50 ng/L since April 1, 2026, with required testing[29].

State entries describe state requirements or guidance in addition to the federal rule.

Table 2 Selected food-packaging and consumer-product approaches as checked October 8, 2026.

Jurisdiction	Enacted measure or pending design
Massachusetts	H.5598 and S.3034 remain pending; packaging, priority products, reporting, and unavoidable-use provisions are already included[8,9].
Maine	Phased category prohibitions, including further categories in 2026; a broader 2032 restriction with exemptions and a published currently unavoidable use process[36].
Minnesota	Food-packaging and foam restrictions from 2024; 11 product categories from 2025; broader 2032 prohibition subject to statutory exemptions and unavoidable-use determinations[37,38].
New York	PFAS restriction for specified paper-based food packaging since December 31, 2022; intentionally added PFAS in covered apparel prohibited since January 1, 2025[39,40].
California	AB 1817 restricts PFAS in textiles from 2025, with specific thresholds, exceptions, and compliance certificates. Broader SB 682 was vetoed in October 2025[41,42].
European Union	Food-contact packaging limits apply from August 12, 2026: 25 ppb for an individual targeted PFAS, 250 ppb for their sum, excluding polymers from those targeted measurements, and 50 ppm including polymeric PFAS[43].
Canada	The 2025 regulations, effective June 30, 2026, restrict specified PFAS groups and products containing them, with exemptions. These substance-based rules are not a blanket consumer-product class ban[44].
Japan	Included principally as a substance-specific drinking-water comparator (Table 1); no equivalent class-wide packaging measure was established by this extraction[29].

Descriptions are not national rankings.

While treatment is feasible, costs vary by location. Column experiments comparing activated carbon and ion exchange with varying chain length and contact time have been performed[33]. A life-cycle study with field pilot data showed that media replacement and waste disposal criteria can change the cost comparison[34]. Both studies highlight the need to look into cost and what to do with residuals, but neither provides a cost per household for the state of Massachusetts.

Consumer Products and Food Packaging

In 2024, the FDA announced that manufacturers had agreed to phase out PFAS chemicals used to make food packaging resistant to grease. The agency followed up in 2025 by declaring 35 related food-contact notifications no longer effective[35].

Massachusetts has considered similar restrictions, but I found no statewide food-packaging ban among the laws enacted by the date of my review. H.5598 proposes such a ban. Under §5T(b), added to chapter 111 through §5 of the bill, manufacturers would no longer be allowed to distribute food packaging with intentionally added PFAS starting January 1, 2028, as specified in §11. The bill also addresses nine groups of priority products under §5U. Reporting would begin in June 2028, with restrictions starting in January 2029. The department could identify additional products for restrictions beginning in January 2035[8]. S.3034 goes further in identifying who must comply with its packaging ban, naming manufacturers, distributors, wholesalers, and retailers. Its broader product restrictions would begin in January 2030[9]. I compared these differences in Table 4, while Table 2 includes examples from other jurisdictions.

Minnesota's law covers 11 product categories. These include carpets and rugs, cleaning products, cookware, cosmetics, dental floss, fabric treatments, juvenile products, menstruation products, textile furnishings, ski wax, and upholstered furniture[38].

I also looked at research on PFAS in food packaging. One study screened about 400 fast-food packaging samples collected across the United States for fluorine, then tested some of those samples for PFAS[45]. Other researchers tested whether PFAS could move from packaging into food. They found transfer into oils, food simulants, and actual foods, although the amounts depended on the packaging material, the particular chemical, temperature, and testing conditions[11,12]. Another study estimated how PFAS from packaging could enter waste streams[46]. Phelps and colleagues reviewed research on this subject, but I kept their evidence map separate from studies reporting original findings[47]. These studies show that food packaging can be a source of PFAS exposure that could be reduced. However, older packaging samples cannot show how common PFAS are in products sold today, especially after the recent phase-outs.

Minnesota's September 2026 report included results from food-packaging tests conducted three years apart. In 2023, the state found that 52 of the 90 products tested met its requirements, or 57.8%. By 2026, the figure was 35 out of 38 products, or 92.1%[48].

The higher percentage in 2026 is worth noting, but the two

groups of products were different. The state also tested far fewer products in 2026. During those same years, manufacturers across the country were reducing PFAS in packaging. I could not separate the effect of Minnesota's law from those other changes using the information in the report. The results came from state compliance testing, rather than a study that followed the same products or measured the law's impact directly.

I looked at national blood-monitoring data and a study observing women in California. Each showed decreases in blood concentrations of some PFAS after earlier production phase-outs, though the results differed by substance[49,50]. Neither study focused on the newer state packaging laws or measured health outcomes resulting from those laws.

Crop Uptake and Limits of Preliminary Research

Research I conducted on PFAS uptake in radish and lettuce from irrigation water has been made publicly available as a preprint (not peer-reviewed). The study included estimates of PFAS exposure, but I chose not to use these when developing the recommendations for this policy report[15]. Published studies have found varying amounts of PFAS taken up, depending on the crop and the PFAS chemical tested, by different crops such as radish and lettuce[13,51]. Research has been done with red chicory that was grown in solution to show why transfer factors from hydroponic experiments should not be used for crops grown in the ground[52]. A review found wide differences in PFAS accumulation between roots, leaves, and other plant tissues, as well as between individual PFAS chemicals[53].

There are many factors to consider when assessing dietary risk. Just because there are PFAS found in a vegetable does not mean that it is harmful to consume. EFSA has established a tolerable weekly intake of 4.4 ng/kg body weight/week for four PFAS combined: PFOA, PFNA, PFHxS, and PFOS[54]. This number refers to the combined amount of these chemicals considered tolerable over a week, based on a person's body weight. It is not a concentration limit for an individual vegetable.

I would have to know what levels were found for each PFAS in the edible portion of the crop before I could determine dietary exposure. Were they on a wet-weight or dry-weight basis? What were the detection limits? How were samples below the detection limit handled? The amount someone eats, how often they eat that crop, and their body weight would also affect the exposure estimate. I would also need to consider PFAS exposure from other foods and drinking water.

Firefighting Foam and Protective Equipment

Massachusetts treats PFAS in firefighting equipment separately from PFAS in firefighting foam. A law already passed by the state will begin phasing in restrictions on the sale of certain firefighting equipment containing PFAS in 2027[7]. Foam is addressed in two proposed bills, H.5598 §6 and S.3034 §7. These would restrict intentionally added PFAS in Class B foam used during training, testing, or emergency response. They would also require reporting of any discharge within 24 hours and include language referring to federal law[8,9]. There are many obstacles that fire departments would face when they change foams. They would have to find an alternative to use, safely dispose of current foams and decontaminate equipment that contains PFAS, as well as purchase new products and educate their firefighters on how to use them.

In Australia, firefighters with more years of aqueous film-forming foam (AFFF)-related work had higher blood concentrations of PFOS and PFHxS[55]. Among women in San Francisco, higher blood concentrations of certain PFAS were measured in firefighters than in office workers[56].

A separate study examined 193 aircraft-rescue firefighters from six U.S. airport fire departments. Some of the PFAS measured in their blood were elevated. Firefighters who reported changes in their workplace practices had lower combined PFAS concentrations[57]. However, the researchers only collected data once. This makes it difficult to say whether the changes in workplace practices were responsible for the lower levels.

Scientists also analyzed samples of current firefighting foams and found substantial amounts of PFAS precursors[58]. Testing for only a selected group of PFAS could miss some of these compounds.

Biosolids and Agricultural Land

H.4853 already calls for a statewide study of sewage sludge and a master plan by June 30, 2027 (§11). The bill would also ban the application of biosolids to land and ban products derived from sludge, beginning June 30, 2028 (§§7 and 15). It also covers financial relief for affected farmers, fertilizer certification, reimbursement to municipalities, public hearings, and specific deadlines and targets for state planning initiatives[10]. The deadlines are already written into the bill. The key remaining question is how the state will fund this work, measure progress against the goals, and ensure compliance. H.5598 takes a different approach by proposing to phase out sludge uses that lack site-specific approval, while leaving landfill disposal outside the phase-out. S.3034 includes a broader set of measures dealing with farms and sludge management[8,9].

Maine has already passed restrictions on applying biosolids to land, providing an example of how another state has approached the issue. But banning land application also means finding somewhere else for that waste to go[59]. Three farm sites in Minnesota were looked at by researchers after biosolids were applied to the soil. Soil was shown to have

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higher levels of PFAS and some crops showed uptake. Researchers were able to estimate exposure through diet and risk based on assumptions for each scenario[60]. Another experiment found that adding certain materials to biosolids could reduce the amount of some PFAS taken up by crops. Results varied, though, and the study did not establish that PFAS could be completely removed or destroyed under all conditions[61].

These highlight the need to control PFAS at its source and the need to continue monitoring contamination. They do not establish that any single method of sludge disposal is safe under all circumstances. H.4853 also mentions sludge studies conducted by MassDEP. I referred to what the bill says about those studies in my report, but did not independently analyze the underlying data[10].

Remediation Funding and Liability

H.5598 §1 and S.3034 §1 both include funding for PFAS cleanup. They also include grants and assistance to private-well owners, as well as mechanisms to recover cleanup costs. They contain reporting requirements and provisions to prevent double reimbursement[8,9]. H.5598 includes conditions requiring private-well assistance eligibility to be based partly on income, as well as the involvement of local boards of health. The level of participation of eligible homeowners in the program is uncertain.

Lastly, I followed the environmental bond bill through its different versions. It was first introduced as S.3050 before being reprinted as S.3064. Afterwards, the House proposed H.5518 as a substitute bill. According to the published conference notice, the Senate and House bills being considered were S.3064 and H.5518[62,63]. I treated these bills as proposed funding authorizations and not as proof that the money had already been spent. Neither bill establishes a recurring revenue source for future cleanup efforts.

Stakeholders and Implementation

I analyzed the PFAS bills to see who may be impacted and whether there are any issues that may occur when trying to enforce the provisions. I inferred these interests from the bills. I did not research whether certain groups support or oppose the bills.

Those who care about consumer exposure to PFAS would have an interest in the food packaging and product restrictions. Manufacturers and sellers of these products would need to find other materials to use and evaluate the price of those materials. They would also have to keep records and know whether there are any exemptions. Those who farm would have an interest in the biosolids provisions. Knowing whether crops are contaminated would be beneficial to farmers and those who live near the farms. There would also be wastewater facility operators and municipalities that would have to deal with the ban on applying sludge to land. They would need alternative disposal capacity and money to pay for it.

Consumers and water companies would have an interest in drinking-water standards. Consumers and public-health advocates would want to lower exposure to PFAS. Water companies would have to look at the price of treatment and filters that they would need to replace. Ratepayers may also have to pay for this depending on how utilities recover the cost.

Firefighters and public-health advocates would want to decrease exposure to PFAS. Fire departments and facility operators would need to ensure that new fire foam is effective and that personnel are trained.

Private-well owners and municipalities may be eligible for funds to help with PFAS remediation. They would still have to apply and fulfill requirements to receive these funds. Parties that are liable for PFAS contamination may have to reimburse some of these costs. I looked at the history of each bill to see what committees they were referred to and other actions that were taken. This allowed me to see how far along each bill is. I am not assuming that any of these bills will pass[10,14].

Sensitivity Check with Additional States

Including Connecticut, Rhode Island, and Vermont in my comparison did not alter my recommendations, but it did highlight some differences in state approaches. Rhode Island uses a 20-ppt drinking-water standard covering the same six PFAS as Massachusetts[64]. Connecticut specifies non-binding action levels for individual chemicals instead: 16 ppt for PFOA, 10 ppt for PFOS, 12 ppt for PFNA, and 49 ppt for PFHxS[65]. Vermont updated its regulations on January 1, 2026, to include 4-ppt standards for PFOA and PFOS, as well as a hazard index for PFAS mixtures. There, the previous standard of 20 ppt for five PFAS combined is no longer the current standard[66,67]. These differences support my recommendation that Massachusetts review its 20-ppt drinking-water standard on a compound-specific basis, particularly for PFOA and PFOS.

All three states have enacted restrictions on PFAS in food packaging, Class B firefighting foam, and other products. Some differences include phase-in dates, exemptions, and separate schedules for protective equipment[68–73]. I did not find reasons to revise my recommendations concerning the gaps in Massachusetts packaging and foam restrictions or the need to ensure funding is available for implementation.

Connecticut prohibited the use of PFAS-containing sludge in fertilizers or soil amendments[70]. Rhode Island requires biosolids testing before approval, as well as quarterly testing at approved operations[74]. Vermont went a separate route, focusing on testing and restrictions on biosolids land-application sites. Its Department of Environmental Conservation reported fewer active permits for land application following groundwa-

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ter testing. Additionally, its 2024 biosolids strategy requires testing, site selection safeguards, and reporting[75]. The Rhode Island and Vermont sources I reviewed did not establish an outright statewide ban on land application. These differences helped inform my consideration of biosolids policy options discussed below.

The three states have different methods of funding these policies as well. Connecticut has a PFAS account that retains unspent funds between years, while Rhode Island and Vermont offer grants targeted at emerging contaminants[64,70,76]. These programs could inform possible funding mechanisms, but they do not prove that cleanup costs are fully covered or that treatment methods have been successful.

Connecticut lists specific exemptions in its legislation but does not provide a general process for manufacturers to claim that PFAS use is currently unavoidable[70]. Vermont's Act 131 takes a different approach. Manufacturers can request a postponement of up to one year if they can demonstrate that meeting the requirements is not feasible. Any approved postponement must be publicly announced[77]. Neither approach has been proven superior in practice. Consequently, I maintained my recommendation to preserve H.5598's existing time limits and published reasons for exemptions, while requiring manufacturers seeking renewal to provide updated information about available alternatives.

Discussion

Regulatory Design and Evidence

In my comparison, I did not attempt to rank the states. I was more interested in seeing how each state's laws cover different sources of PFAS exposure, and where gaps persist. Drinking-water standards only limit concentrations at certain points in the water system. Product bans control what can be sold. Sludge restrictions control where sludge can be used. Grants help cover cleanup costs. Even after a law is passed, evidence is still needed to determine whether PFAS exposure has actually decreased.

Tracking the impact of Massachusetts's PFAS requirements will be important for determining whether they work. If the pending bills are enacted, the state should verify that covered products are compliant, test treated water for PFAS, monitor where restricted waste is taken, and see if people can access promised assistance. Massachusetts would then have to study whether these efforts actually reduce PFAS exposure. Minnesota has already conducted food-packaging compliance testing, providing an example of how the state could collect this type of data[48]. However, the limitations discussed above would still apply.

One other difference stood out when I reviewed the Massachusetts legislation. The current drinking-water standard and protective-equipment law each focus on a specific regulated category. The bills still pending would cover a wider range of products, suppliers, and waste facilities. I could see this difference in the legislative record, but I could not determine whether it had anything to do with why some measures progressed further than others[6–10].

Strengthening the Pending Consumer-Products Bill

One concern I had with H.5598 was the lack of an auditable record of food-packaging compliance that others in the supply chain could rely on. I would insert a manufacturer-signed certificate into H.5598's proposed §5T(b). The bill would have to specify who can rely on that certificate, how long records supporting it must be kept, and who can inspect them. There should also be proportionate consequences for false certifications. California's textile law provides a good example of a similar certification mechanism. I believe this should be used as a guide for documenting compliance with the law, not as proof of what may or may not be in food packaging or crops[41].

I would keep the current reporting and audit provisions from H.5598, as well as publishing why something was exempted and allowing no more than four years between exemption reviews. If a manufacturer wants to renew their exemption, they should provide new information on what alternatives may be available. I would also clarify the different effective dates[8].

The FDA actions discussed earlier will not address Massachusetts's ability to check whether companies are following its proposed packaging laws. Waiting for another federal law to pass will not give Massachusetts a timetable for when these requirements take effect. Labels can inform consumers but cannot replace sales restrictions or ensure records are kept on where these products come from. A certificate from the manufacturer can help with the current reporting that H.5598 requires, rather than duplicate it. But it should not be viewed as laboratory results that prove there are no PFAS in each product.

Making the Farm and Sludge Plan Actionable

H.4853 already includes a June 2027 deadline for the statewide sludge management plan and a proposed prohibition on biosolids land application beginning in June 2028. The bill also calls for an inventory of costs and measurable planning benchmarks[10]. I would keep these provisions. I would, however, want annual reporting to the public of how much sludge is sent to each disposal option, what residuals and emissions result from treatment and how much disposal capacity was actually assured each year. The state should specify what steps will be paid for between the two deadlines.

Absent sufficient disposal capacity, Massachusetts would need contingency plans to operate in compliance with the

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ban rather than have land application resume automatically. I would want new treatment technologies tested on a pilot scale before expanding their use. These trials should measure the full costs and account for where the PFAS ends up, including the PFAS mass balance. One important limitation is that reducing PFAS uptake by plants through soil amendments does not mean the chemicals have been destroyed[61].

Vermont has taken a different approach. Rather than implementing an outright ban, it permits some uses with testing requirements and limitations on where biosolids can be applied[75]. If I were crafting policy for Massachusetts, I would keep the ban proposed in H.4853. This is because it would stop additional PFAS from entering soil through this avenue instead of managing repeated testing and enforcement on a case-by-case basis. This is a proactive decision, not evidence that a ban is more effective than Vermont's regulatory scheme. Testing would likely continue to be needed through the transition and for tracking treatment residuals going forward. Massachusetts would need enough funds for alternative disposal capacity as well as a method for identifying where sludge ultimately ends up.

Reviewing Drinking Water Protections Independently

I would recommend that MassDEP complete a review of Massachusetts's PFAS drinking-water standards before its April 2028 primacy deadline. An assessment should take a compound-specific look at PFAS and account for the costs of compliance for small water systems and the long-term management of treatment residuals[32–34].

The federal limits for PFOA and PFOS provide a binding benchmark for future compliance. However, EPA has proposed removing the federal limits for certain other PFAS, leaving Massachusetts to decide whether to retain protections for those chemicals[24,30,31]. Maine has opted to adopt the federal standards into state rules, which is easier to administer. I would still want Massachusetts to consider whether there are reasons to retain its additional state-level protections[21]. Waiting until the April 2028 deadline would leave less time for public input and planning the necessary water-treatment infrastructure.

Vermont provides an example of why reviewing individual chemicals matters. It continues to maintain 10-ppt limits for PFHxS, PFNA, and HFPO-DA (GenX), even though EPA has proposed rescinding the corresponding federal limits[30,66,67].

Implementing the Pending Foam Restriction

I would retain the proposed ban on PFAS use in firefighting foam and the release reporting within 24 hours. There would also need to be money allotted for inventories, equipment decontamination, replacements, and firefighter training[8,9].

The one issue I saw with H.5598 was that the effective dates seem off. The firefighting foam language is located in §6. The agricultural conveyance tax is covered in "Section 7," which would be delayed by §19. S.3034 is much clearer. Its §24 states January 1, 2029 as the effective date for that bill's foam provision. The drafters would need to fix this discrepancy in H.5598 before setting a date for the transition. I also was unable to locate an official count of Massachusetts fire departments that currently use PFAS foam. Completing that inventory would therefore need to be part of implementing the law.

Financing Cleanup and Measuring Delivery

H.5598 already requires an annual report on the fund by October 1. It also allows deductions or repayments of monies obtained from elsewhere, and allows the state to pursue subrogation to recover money[8]. I would retain these provisions. However, I would also want to see information on the efficacy of treatment, how many households were helped, turnaround time on applications, and participation by local boards of health. The reports should also identify how many eligible requests for assistance remain unmet.

Before proposing a new industry assessment, I would want to know additional annual funding needs. The state's existing rights to recover costs should remain in place. I would also want monitoring of installed treatment systems. This would allow the state to understand whether they remain effective and how much it costs to replace filtration media.

Prioritization of Impact and Feasibility

In Table 3, I assigned high potential impact to proposals that would cover many products or many people, or address exposure that recurs daily, assuming they have some likelihood of success at reducing exposure. I assigned a moderate rating when coverage was narrower, or if it is contingent on future decisions. I looked at feasibility separately. Modifications to administrative requirements already contained in pending legislation were viewed as easier to accomplish than ideas that required new disposal capacity or significant new funding. Please note that these ratings are individual evaluations and should not be totaled. Additionally, I did not imply that risks were low just because there was no baseline data.

I would prioritize the consumer bill because it would prevent PFAS pollution before it occurs. But I would also want to see progress on the farm bill simultaneously, as it will take time to build up enough disposal capacity. The drinking-water review needs to take place concurrently with treatment funding. With firefighting foam, I would specify transition dates. I would also add grant reporting to track program effectiveness if it does not duplicate reporting in the bill. These are my own sequencing recommendations rather than predictions of

Table 3 Qualitative screening as checked October 8, 2026.

Measure	Coverage and evidence	Potential impact	Feasibility
Products and packaging	H.5598 names nine priority-product groupings plus separate packaging controls; actual dose reduction depends on compliance and substitutes [8].	High	Moderate
Biosolids and farms	Affected farms and receiving environments; uptake varies by crop, analyte, and site [51,60].	Moderate to high	Moderate; disposal capacity and funding
Drinking water	MassDEP's February 9, 2024 bulletin reported 173 public systems with historical finished-water detections above 20 ppt PFAS6 and 86 systems currently over 20 ppt at that time. These dated counts do not describe October 2026 conditions [16].	High	Moderate; treatment cost and capacity
Firefighting foam	Massachusetts department count unverified; U.S. airport study included 193 firefighters in six departments, not a state coverage estimate [57].	Moderate	Moderate; transition funding and dates
Cleanup grants	Eligible systems and private-well households; quantify applicants, awards, and untreated demand [8].	Moderate	Higher for reporting; lower for new revenue

Counts describe scope or dated evidence, not measured benefits of the proposals.

the bills that are ultimately enacted.

Clause-by-Clause Drafting Comparison

In Table 4, I identified what the bills already contain before suggesting any additions. I wanted to avoid recommending changes that duplicate existing requirements and identify differences that lawmakers would need to resolve. Although H.5598 and S.3034 address many of the same issues, I found that their specific provisions are not always the same. In particular, their effective dates and funding arrangements should not be treated as interchangeable [8,9].

I also found several issues with the dates in H.5598. Sections 10 and 18 give different start dates for §3. Section 12 sets January 2029 as the effective date for priority-product restrictions, but §20 refers to "Section 12" taking effect within 180 days. Another issue I have is that §17 does not create the public-health trust fund until 2035, but some of the reporting and audit requirements start earlier. I would want the funding timeline adjusted so that it would pay for administrative costs associated with those requirements. These are inconsistencies in the bill's wording or concerns about the timing of its provisions. I cannot assume what the lawmakers intended [8].

Limitations

I selected the states for this comparison based on specific reasons rather than through random sampling. However, the original selection was not documented as a plan made in advance. I later checked Connecticut, Rhode Island, and Vermont, and this did not change my recommendations. That does not mean the findings would hold across all states, or that the policies themselves have been proven effective. My legal comparison also cannot rank every state, determine statewide compliance rates, or predict which bills will eventually pass.

There are limitations in the scientific evidence as well. The studies I reviewed involved different populations, PFAS chemicals, exposure levels, and research methods. The majority were not intended to evaluate legislation per se. Product testing by states can show implementation but cannot determine whether a law led to decreased exposure or better health. Nor can historical monitoring data show current exposure within individual water systems.

My own irrigation study is publicly available as a preprint, but it has not yet been peer reviewed. Hence, I did not rely on the exposure estimates from this study for this analysis. Instead, my policy conclusions related to crops are based on published, peer-reviewed scientific studies. I also did not attempt to estimate the full costs of these proposals, predict legislative votes, or calculate the total disposal capacity that would be available. Finally, the bills and regulations discussed here may change after the date of my review.

Recommendation and Conclusion

Main findings: My review found that Massachusetts has addressed some sources of PFAS exposure more extensively than others. Its existing PFAS6 drinking-water standard predates the federal rule but is not aligned with federal limits on individual chemicals. I discovered that multiple bills already under consideration have much of what would be necessary to fill those gaps.

Theoretical and methodological contribution: Selecting specific states allowed me to assess legal approaches to different exposure pathways that the scientific evidence on PFAS had identified. Additionally, I scored impact and feasibility independently because high impact would not matter if the proposal were infeasible to implement. Published scientific research supports the need to address these exposure pathways, but it cannot show exactly how much future health benefit the proposed laws would produce.

Policy implications: I would focus on making specific improvements to the bills already under consideration. These include better compliance records for packaging, clearer effective dates and agency funding, measurable progress on sludge management, an independent review of drinking-water stan-

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Table 4 Existing clauses and incremental amendments as checked October 8, 2026.

Topic	Existing H.5598 clause and comparator	Incremental change
Food packaging	§5 → ch.111 §5T(b): manufacturer prohibition; §11: January 2028. S.3034 §11 expressly includes distributors, wholesalers, and retailers; §25 sets January 2028 [8,9].	Add packaging compliance certificate and retention/inspection rules; harmonize responsible parties.
Product restrictions and exemptions	§5 → §5U: nine priority groupings; January 2029 restriction; June 2028 reporting; exemptions $\leq$4 years and annual published reasons. Broader restrictions in 2035 versus S.3034's 2030 [8,9].	Resolve timing and funding; require an updated alternatives showing at renewal. Do not propose public reasons or expiry as new.
Agricultural research	§5 → §5T(c): external organization, quality-assurance plan, chain of custody, capable laboratories, public findings, and progress reporting within 365 days and by August 31, 2027 [8].	Specify analytes, detection limits, fresh/dry weight, nondetect handling, and dietary method; reconcile fixed and relative deadlines.
Sludge and farm support	§3: sludge phase-out without site-specific approval; landfill exclusions. §§7–8: farm tax relief. H.4853 §§1, 11: master plan by June 2027; §§7, 15: June 2028 ban [8,10].	Reconcile House approaches; fund annual capacity, tonnage, emissions, and residual reporting. Preserve existing planning benchmarks.
Water standards	No replacement PFAS6 drinking-water MCL in H.5598. §2 addresses discharge permits, not public-water MCLs [8].	Separate MassDEP MCL review from discharge-permit rules; pair review with treatment-funding analysis.
Class B foam	§6 → ch.22D §7: training, testing, emergency-use prohibition; 24-hour release notice; federal-law language. S.3034 §§7, 24 expressly links foam to January 2029 [8,9].	Correct H.5598 commencement cross-reference; add funded inventory, decontamination, procurement, and training.
Remediation and recovery	§1 → ch.10 §35UUU(d–g): no duplicate reimbursement; future repayments; subrogation; private-well aid; annual October 1 reporting [8].	Add water-quality outcomes, reach, processing times, and unmet demand to existing reports. Preserve recovery safeguards.

Section references are to the published bills, not enacted law.

dards, funding for the firefighting foam transition, and reporting on the results of cleanup grants. After enactment, I think the state should measure whether the mandates are effective instead of thinking that just because a bill was passed the issue no longer exists.

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