PFAS in and from firefighting: Highlights from a reporting project that appeared in Maine Morning Star in December 2024

Health and ecological risks from PFAS, commonly called 'forever chemicals,' have prompted public concern and some policy responses, but few actions focus on workplace exposure. The fire service, heavily staffed by volunteers, faces particularly high exposure due to PFAS in some firefighting foams and in their protective jackets, pants and gloves.

Photo: Jessica Buckingham

Addressing PFAS risks is particularly hard for small-town fire departments, which often lack the resources to address PFAS contamination, acquire safer products, and follow protective protocols.

Aqueous film-forming foam (AFFF) containing PFAS, commonly used for decades to fight Class B (flammable fuel) fires, has left a wake of residual contamination. Where AFFF was used, septic systems/leach fields and "underground injection control" systems (designed to manage stormwater) at fire stations can release PFAS into surrounding soils, allowing the chemicals to migrate into aquifers.

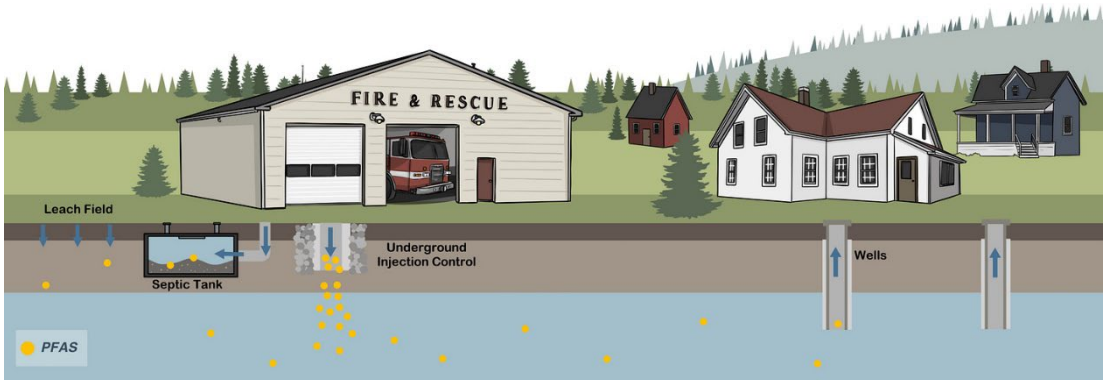

Illustration by Hanji Chang.

In 2019, states began to control use of AFFF, and Maine banned its manufacture, sale and distribution in 2021. However, stockpiles of foam concentrate remain at fire stations, airports, helipads, oil terminals, paper mills and former military bases—an estimated volume of more than 40,000 gallons statewide.

Even earlier, a PFAS Task Force appointed by Governor Janet Mills recommended that the state conduct an AFFF inventory and collect stocks of the foam concentrate, and that it test waters around fire stations and training areas. Those measures were never funded.

Photo: Brendan Bullock

Jim Graves, director of training at the Maine Fire Service Institute, shares perspectives on toxic exposure in the fire service in two short project videos.

“Everyone knows the fire stations are an issue,” observed Nicholas Noons, an environmental engineer with the state of Rhode Island. “The challenge is that without a responsible party, the environmental assessment and filtration costs can fall to municipalities.”

According to a survey done as part of this project, 80 percent of the responding departments on wells had not tested their water for PFAS because “it has not been discussed/suggested.” Subsequently, 20 geographically dispersed departments—few of which had used much AFFF historically—sampled water for PFAS as part of this project. Most samples tested below the state and federal standard for the limited PFAS that are regulated, but two-thirds had low levels of a PFAS compound not even measured in certified state tests.

Maine’s Legislature has adopted many measures to address PFAS risks, and it has established a $70 million fund to help farmers and residents affected by past spreading of PFAS-laden sludge. “It’s clear from our experience in Maine with farmers that having that safety net is critically important,” observed Tricia Rouleau, farm network director for the nonprofit Maine Farmland Trust. Yet five years after the PFAS Task Force underscored the need to ensure that fire departments and municipalities “are not financially burdened for environmental clean-up incidental to Class B AFFF….,” they have received no support.

Other states have made more headway than Maine inventorying AFFF stocks and taking back supplies, but there are still environmental and public health concerns associated with all current PFAS disposal options. Municipalities in Maine seeking to get rid of AFFF stocks have inadequate options and no informational clearinghouse to help guide them. If municipalities hire a waste contractor, the AFFF typically goes to either a hazardous waste landfill or incinerator, both of which can further spread PFAS through emissions and landfill leachate. Departments are left with no good options: “I don’t really know where it’s going,” observed Philip Selberg, South Portland’s fire chief. “So am I just sending it to some poor county in the middle of nowhere and making it their problem?”

Maine has not conducted a thorough AFFF inventory but the volume at locations statewide is estimated at more than 40,000 gallons. Photo: Brendan Bullock

Maine's de facto policy of storing AFFF "safely in place" drew renewed scrutiny last summer when 1,450 gallons of AFFF spilled from a hangar fire-suppression system at the

formal Naval Air Station in Brunswick. Three bill titles related to AFFF safety have been submitted for legislative consideration in the current session.

Like many other states, Maine has filed suit against chemical and foam manufacturers for damages done by AFFF, but the outcome remains uncertain. In settlements, said John Gardella, a trial attorney and shareholder at CMBG3 Law in Boston. states often “take a discount on what they truly need.”

Photo: Brendan Bullock