Plan for Administration of the Fund to Address PFAS Contamination

Adopted by the PFAS Fund Advisory Committee on July 10, 2023

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MAINE DEPARTMENT OF AGRICULTURE CONSERVATION & FORESTRY

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Statement from Commissioner Beal

Developing a statewide framework to assist Maine farms impacted by per- and polyfluoroalkyl substance (PFAS) contamination has been a priority for the Department of Agriculture, Conservation and Forestry (DACF) since the beginning of the Mills Administration. With ongoing bipartisan support, the Legislature has allocated significant resources allowing DACF to create a first-in-the-nation technical and financial assistance program, working directly with impacted farmers to navigate the uncertainties of PFAS contamination. Our work in this area has been groundbreaking and it continues to grow as we gain more experience and understanding. DACF is dedicated to helping farmers through this uncharted territory, with the overarching goals of protecting human health and maintaining farm viability.

Beginning with the establishment of a PFAS Task Force in 2019, the State of Maine has mobilized to provide a coordinated and expanding suite of programs to identify the extent of PFAS contamination and to provide financial and other support to impacted communities. The Fund to Address PFAS Contamination ("PFAS Fund") was established in April 2022 by Governor Mills with bipartisan legislative support. The PFAS Fund is the latest effort to provide wraparound support to commercial farmers, as well as health care support to individuals whose residential drinking water wells were contaminated by the land application of biosolids. The PFAS Fund will also support critically needed research specific to agriculture and PFAS.

Based on DACF's experience to date, we know that, with support, many PFAS-impacted farms have been able to continue operating – often with some management and/or structural adjustments – after the discovery of PFAS on their property. Toward this end, the PFAS Fund will augment existing financial assistance to support commercial farms while they investigate and then implement recovery strategies. These resources include income replacement payments and payments to cover the cost of new infrastructure that will enable the farm to pivot to a new form or type of production. In addition, the PFAS Fund will support a "navigator" to help farmers understand and take advantage of all their options; connect farmers with technical experts to, for example, develop a new business plan that will guide their return to profitability; assist with public relations and marketing; and pay costs associated with obtaining loans.

In some cases, the extent of contamination will be too great to overcome. In these instances, the PFAS Fund will have the ability to purchase PFAS-impacted property at the fair market value as if there was no PFAS contamination. For landowners who do not want to sell, the PFAS Fund will explore the possibility of other types of compensation for farmers with contaminated land.

One parcel of land purchased by the PFAS Fund may be used as a dedicated research station. The PFAS Fund will also establish a competitive research grant program to fund research that will help farmers to determine their best options for maintaining and enhancing viability despite the presence of PFAS on their property, and explore pathways for mitigation over time. Potential research topics are likely to include investigations of the extent to which various crops take up PFAS, transfer rates from soil or irrigation water to farm products, and the use of biochar as a PFAS immobilizer.

Finally, the PFAS Fund will support access to healthcare for impacted commercial farm families, farm workers, and people whose residential drinking water wells were contaminated by PFAS because of the land application of biosolids from wastewater treatment plants. For eligible individuals, the PFAS Fund proposes covering costs not otherwise covered by insurance for blood testing and mental health care. It

also proposes paying for costs not otherwise covered by insurance for medical monitoring for eligible individuals whose blood serum levels of PFAS exceed that of the general population. Furthermore, the PFAS Fund will support a clinical trial of PFAS body burden reduction treatments, e.g., therapeutic phlebotomy. It will also support a study to determine routes and magnitude of soil-related PFAS exposure to help inform guidance to reduce in-field exposure.

The discovery of PFAS on a commercial farm is devastating. It is not insurmountable, however. With existing support from the Department's Bureau of Agriculture, Food and Rural Resources, we have witnessed multiple farms emerge from the crisis with thriving farm businesses that produce safe, wholesome food. With the additional support provided by the PFAS Fund, Maine will continue to lead the nation in helping commercial farmers to overcome the challenges presented by PFAS contamination.

In sharing this Plan for administering the PFAS Fund, I would like to thank the many people who had a hand in developing it, from the Advisory Committee and its co-chairs, Senator Stacy Brenner and Representative Jessica Fay, to the subcommittee members, and the public members and stakeholder groups that offered feedback on earlier drafts through the public comment period and public hearings. I also want to express our deep gratitude to the farmers who gave their time and expertise in shaping this plan, those impacted directly by PFAS contamination, and those who haven't been affected directly but feel the impacts as members of the agricultural community. And finally, a thank you to Beth Valentine, DACF's Director of the PFAS Fund who has done a tremendous amount of work to steer us to complete this Plan in keeping with the statutory requirements laid out in the legislation that established it. Also, an expression of gratitude to DACF Deputy Commissioner, Nancy McBrady, for her critical work standing up the PFAS response program in the Bureau of Agriculture, Food and Rural Resources which has been the foundation for our Department's work to help impacted farmers and upon which the Fund can build.

Amanda E. Beal, Commissioner
Maine Department of Agriculture, Conservation and Forestry

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Foreword

Creation of the Fund to Address PFAS Consideration

The Fund to Address PFAS Contamination ("PFAS Fund") was established in April 2022 by Governor Mills with bipartisan legislative support. It was created in response to the discovery of so-called forever chemicals in soil, water, and certain farm animals, agricultural products, and the bodies of farm families in Maine. Farmers are certainly not the only community impacted by per- and polyfluoroalkyl substances (PFAS). Their position at the nexus of environmental contamination and our food supply, however, necessitated a robust response from Augusta.

Per- and polyfluoroalkyl substances are a class of thousands of man-made chemicals that are characterized by their ability to repel oil, grease, water, and heat. Because of these attributes, they have been widely used for decades in household products such as non-stick cookware, stain-resistant carpets and furniture, wrinkle- and water-resistant clothing, and food packaging. They are also used in industrial settings and in firefighting foams and gear. PFAS do not readily breakdown. Nor are they removed from waste streams with standard treatments. Additionally, they tend to bioaccumulate in plant and animal tissue, including in humans.

As a result of the wide-spread use of PFAS and their persistence, 98 percent of Americans have PFAS in their blood.[1] Most carry low levels. Higher levels of PFAS and prolonged exposure, however, have been linked to decreased antibody response to vaccines, dyslipidemia (high cholesterol), decreased fetal and infant growth, thyroid disease, liver enzyme alterations, ulcerative colitis, pregnancy-induced hypertension, and kidney, testicular, and breast cancer.

Farmers routinely add organic matter to their fields to improve soil health and, thereby, increase productivity. Since the late 1970s, the land application of sludge from wastewater treatment plants has been commonly practiced in the United States and was encouraged by the U.S. Environmental Protection Agency's biosolids program. In Maine, the Department of Environmental Protection (DEP) licensed the application of sludge until land application was prohibited by the Legislature in 2022. (The practice continues throughout the rest of the country). Some of this sludge contained PFAS that entered the wastewater treatment system from residential, commercial, and industrial sources. In turn, contaminated sludge was unwittingly spread on certain agricultural lands where it was taken up to varying degrees by plants and, subsequently, by animals that ate those plants. Over the years, some of the chemicals migrated into groundwater and, thus, into drinking water. In many instances, current landowners had no knowledge that sludge was spread on their property decades ago, before they were the owners or managers of their farms.

PFAS was first identified at a dairy farm in southern Maine in 2016 after the local water utility voluntarily participated in a program to test for chemicals of concern that are not yet regulated. The discovery of PFAS in the public drinking water system led to the subsequent discovery of PFAS in that farm's livestock, milk, manure, soils, hay, and the landowners' blood. A second dairy farm with high levels of PFAS was identified in 2020 as a result of retail milk testing conducted by the Department of Agriculture, Conservation and Forestry (DACF). Both dairies have ceased operations.

[1] STEEP – Sources, Transport, Exposure & Effects of PFAS (uri.edu); Forever Chemicals and Agriculture Case Study | IATP

In October 2021, pursuant to Public Law 2021, Chapter 478: An Act to Investigate PFAS Substance Contamination of Land and Groundwater, the Maine DEP began testing soil and groundwater to identify contamination linked to licensed land applications of sludge and septage.[2] The DEP anticipates testing over 1,000 sludge application sites by the end of 2025 using a tiered approach that prioritizes testing based on likely risk of contamination. This ongoing process, as well as self-testing, has revealed PFAS contamination at dozens of additional farms.

The discovery of PFAS at impacted farms is devastating. Products often must be pulled from the market. Plans and expectations are dashed. Market share and reputation are, at least temporarily, diminished. And health concerns are paramount.

As DACF was working through State procedures to develop its current programs within the Bureau of Agriculture, Food and Rural Resources (BAFRR) to support farmers, an initial safety net was quickly set up by the private sector in collaboration with State agencies. In February 2022, Maine Farmland Trust (MFT) and the Maine Organic Farmers and Gardeners Association (MOFGA) established a PFAS Emergency Relief Fund to 1) help pay for initial PFAS testing on farms that choose to do their own testing, 2) provide short-term income replacements for farms that DACF identified as having high test results, 3) reduce emotional impact of the PFAS crisis by funding wellness costs and supporting access to mental health services for impacted farmers, and 4) invest in infrastructure adaptations to help PFAS impacted farms remain viable.

Through the multiple avenues of support established by BAFRR to date, staff assist impacted farms by conducting comprehensive testing to determine sources of exposure and the levels of PFAS in soil, water, forage, compost, manure, milk, and vegetative and animal tissue. Working with the Maine Center for Disease Control and Prevention (Maine CDC), staff also assess the results and work with impacted farmers to create mitigation plans to reduce contamination at the farm level, produce safe products, and enable farms to remain viable.

For financial support, BAFRR has reimbursed producers who self-tested or contracted with a third-party to test soil, farm water, and other media. BAFRR has also paid for new water filtration systems on farm wells when the water tested at 20 ppt or higher. In those instances, BAFRR covers costs for yearly maintenance, testing, and replacement parts. Furthermore, BAFRR has invested in infrastructure to assist farms that need help shifting to new systems to maintain viability. Examples of support include providing clean feed, well-drilling, providing equipment to switch to new crops, and paying for fencing new fields that are appropriate for grazing. BAFRR has also provided income replacement for farms with PFAS contamination that caused them to cease or slow production. Finally, BAFRR has provided livestock indemnification in the form of compensation for the value of animals contaminated by PFAS at levels where depuration was unlikely to be feasible due to time, financial costs, or farm capacity.

The Fund to Address PFAS Contamination will augment and expand upon these existing resources.

Purpose of the Fund to Address PFAS Contamination

The overarching purpose of the PFAS Fund is to keep farmers farming. According to the statute establishing the PFAS Fund (7 MRSA § 320-K(4)), funds may be used for an array of supports including,

[2] Sludge refers to biosolids from a wastewater treatment plant. Septage is residue from a septic tank.

direct assistance to farmers, purchases of contaminated land, research, and medical testing and monitoring. See Table 1.

Table 1. A non-exhaustive list of permissible uses of the Fund to Address PFAS Contamination.

Plain English	Statutory text	Citation
Support to Farmers		
Relocation	Relocating a commercial farm when the agricultural land of the farm is found to be contaminated by PFAS	7 MRSA § 320-K(4)(C)
Buy and sell land	Buying and selling agricultural land found to be contaminated by PFAS	7 MRSA § 320-K(4)(D)
Equipment, facilities, and infrastructure	Investing in equipment, facilities and infrastructure to ensure that a commercial farm with land found to be contaminated by PFAS maintains profitability while the commercial farm transitions to an alternative cropping system or implements remediation strategies, technological adaptations, solar development or other modifications to its operations in response to PFAS contamination	7 MRSA § 320-K(4)(E)
Enterprise budgets/business plans	Assisting a commercial farm with land found to be contaminated by PFAS with developing enterprise budgets for alternative cropping systems, remediation strategies or technological adaptations or transitioning to alternative revenue streams, including but not limited to land use systems combining agricultural use of the land with solar energy production	7 MRSA § 320-K(4)(F)
Income replacement and mortgage payments	Providing short-term assistance to a person whose commercial farm is found to be contaminated by PFAS, including but not limited to income replacement and mortgage payment	7 MRSA § 320-K(4)(G)
Health Care		
Medical monitoring	Monitoring the health of a person, and members of that person's household, whose agricultural land is found to be contaminated by PFAS	7 MRSA § 320-K(4)(A)
Medical care	Providing medical care to a person found to have blood levels of PFAS greater than the general population or health effects associated with exposure to PFAS	7 MRSA § 320-K(4)(B)
Research		
Evaluate PFAS testing and data management capacity	Evaluating the capacity of PFAS testing and data management in the State	7 MRSA § 320-K(4)(H)
Research that supports decision making	Conducting research that supports short-term farm management decisions and assesses future options for viable uses of agricultural land that has been contaminated with PFAS	7 MRSA § 320-K(4)(I)
Research that quantifies the impact of PFAS	Conducting research that quantifies the impact of PFAS on commercial farms and agricultural communities in the State	7 MRSA § 320-K(4)(J)
Research on soil and water remediation systems	Conducting research on soil and water remediation systems and the viability of those systems for commercial farms	7 MRSA § 320-K(4)(K)

Research on alternative cropping systems, PFAS uptake, livestock systems for mitigation and remediation, food safety criteria	Conducting research on alternative cropping systems, PFAS uptake of different crops, the use of livestock systems to mitigate exposure to and for remediation of PFAS and food safety criteria for food products	7 MRSA § 320-K(4)(L)
Long-term monitoring	Long-term monitoring of PFAS contaminated sites and establishing a corresponding centralized data repository	7 MRSA § 320-K(4)(N)
Other		
Educational programs	Developing and implementing educational programs for landowners, including but not limited to determining best practices for informing residents about the potential of being near or on a site on which sludge or septage application was licensed or permitted by the State prior to 2019, and providing information and guidance on buying or selling agricultural lands that have had sludge or septage applied	7 MRSA § 320-K(4)(M)
Establish food safety criteria	Establishing food safety criteria and guidance for farm products	7 MRSA § 320-K(4)(O)
Marketing	Assisting commercial farms and others in the agricultural sector not directly affected by PFAS contamination with marketing efforts whose branding and marketing may be affected by public perception of PFAS contamination in the State	7 MRSA § 320-K(4)(P)
Regional planning	Regional planning with other states and the Federal Government to protect food supply and farmers in the State from out-of-state PFAS contamination	7 MRSA § 320-K(4)(Q)

Development of the Plan for Administration of the Fund to Address PFAS Contamination

The legislation creating the Fund directed DACF to develop and implement a plan that prioritizes funding and implementation of a program to provide short-term assistance to persons whose commercial farms have been found to be contaminated by PFAS. The statute further advises that DACF may 1) establish a program to fund long-term assistance for commercial farms contaminated by PFAS and 2) may also establish, in coordination with Maine CDC, a PFAS blood testing and medical monitoring program for persons whose drinking water or agricultural lands is found to be contaminated by PFAS.

Furthermore, the Legislature directed that an advisory committee be established to make recommendations regarding administration of the PFAS Fund. The PFAS Fund Advisory Committee was formed in September 2022:

1. Senator Stacy Brenner, co-chair (appointed by the President of the Senate)
2. Senator Richard Bennett (appointed by the President of the Senate)
3. Representative Jessica Fay, co-chair (appointed by the Speaker of the House of Representatives)
4. Representative Randall Hall (appointed by the Speaker of the House of Representatives)
5. Department of Agriculture, Conservation and Forestry Commissioner Amanda Beal (ex officio)
6. Department of Environmental Protection Commissioner Melanie Loyzim (ex officio)
7. Maine CDC Deputy Director Nancy Beardsley (DHHS Commissioner Lambrew's designee)
8. Dean Diane Rowland (appointed by the President of the University of Maine)
9. Farm Service Agency State Director Sherry Hamel (expert in agricultural finance and lending; appointed by Commissioner Beal)

10. James Buckle (farmer; appointed by Commissioner Beal)
11. Steven Crane (farmer; appointed by Commissioner Beal)
12. Jenni Tilton Flood (farmer; appointed by Commissioner Beal)
13. Katia Holmes (farmer; appointed by Commissioner Beal)
14. Adrienne Lee (farmer; appointed by Commissioner Beal)
15. Rebecca Boulos, MPH, PhD (expert in public health; appointed by Commissioner Beal)

In turn, the Advisory Committee established four subcommittees to develop, analyze, and recommend implementation strategies:

Financial and Business Support Subcommittee

1. Nancy McBrady, DACF, co-chair
2. Adrienne Lee, New Beat Farm, co-chair
3. Jed Beach, FarmSmart
4. Lucia Brown, United States Department of Agriculture (USDA) Farm Service Agency
5. Jim Buckle, The Buckle Farm
6. Steve Crane, Crane Bros. Farms
7. Jason Harkins, University of Maine Business School
8. Katia Holmes, Misty Brook Farm
9. Tricia Rouleau, MFT
10. Fred Stone, Stoneridge Farms
11. Mariam Taleb, MOFGA
12. Jenni Tilton-Flood, Flood Brothers Farm

Land Transfers Subcommittee

1. Alex Redfield, DACF, co-chair
2. Sherry Hamel, USDA Farm Service Agency, co-chair
3. Jeff Baron, Farm Credit East
4. Steve Crane, Crane Bros. Farm
5. Sarah Demers / Jason Bulay, Land for Maine's Future
6. Emma Enoch, Coastal Enterprises Institute (CEI)
7. Nick Hodgkins, Maine DEP
8. Adam Nordell, Defend Our Health & Songbird Farm
9. Nancy Smith, GrowSmart
10. Brett Sykes, MFT

Research Subcommittee

1. Amanda Beal, DACF, co-chair
2. Diane Rowland, University of Maine, co-chair
3. Gail Carlson, Colby College
4. Andrew Carpenter, Northern Tilth
5. Hannah Carter, University of Maine
6. Ellen Griswold, MFT
7. Caleb Goossen, MOFGA
8. Katia Holmes, Misty Brook Farm
9. Tim MacMillan, Maine DEP
10. Nancy McBrady, DACF
11. Charles Rolsky, Shaw Institute

12. Andy Smith, Maine CDC
13. Jenni Tilton-Flood, Flood Brothers Farm

Health Subcommittee

1. Isaac Benowitz, MD, Maine CDC, co-chair
2. Rebecca Boulos, MPH, PhD, Maine Public Health Association, co-chair
3. Demetri Blanas, MD, Maine Mobile Health
4. Stacy Brenner, RN, State Senator, Broadturn Farm
5. Rachel Criswell, MD, MS, Skowhegan Family Medicine, Redington-Fairview General Hospital
6. Abby Fleisch, MD, MaineHealth
7. Adam Nordell, BA, Defend Our Health, Songbird Farm
8. Andy Smith, SM, ScD, Maine CDC
9. Leslie Walleigh, MD, MPH, Maine CDC

Additionally, certain members of the Health Subcommittee consulted with individuals currently engaged in providing mental health support to farm communities: Bo Dennis, MOFGA; Leslie A. Forstadt, U-Maine Cooperative Extension; Izzy Ruffin, Maine Farm and Ranch Stress Assistance Network (FRSAN); Polly Shyka, contractor to Maine FRSAN, U-Maine Cooperative Extension, and Cultivemos.

All subcommittees met between January and April 2023 to develop their recommendations. DACF commends them for their deliberative, thoughtful approach.

DACF was required to seek public comment on the draft PFAS Fund Implementation Plan before final adoption. A public meeting was held in Augusta on June 12, 2023. Additionally, the PFAS Fund accepted written comments and invited the public to complete an online survey through June 19, 2023.

The subcommittees met in late June to consider the public comments and to make their final recommendations to the PFAS Fund Advisory Committee. The Advisory Committee adopted this current version of the *Plan for Administration of the Fund to Address PFAS Contamination* on July 10, 2023.

I. Direct Support to Farmers

The strategies recommended in this section are intended to support commercial farmers as they investigate and then adopt changes to their operations that will allow them to remain viable businesses despite the presence of PFAS.

A successful return to production is based on many factors, including the extent and type of PFAS contamination. The source of contamination could be water, soil, and/or feed at the farm and other contaminated inputs brought onto the farm. Remedies include water filtration systems and sourcing clean feed. In some cases, farmers will need to grow different crops. Existing research and DACF's experience show that some crops can be grown in contaminated soils and be safe for consumption (e.g., grains, potatoes, garlic, asparagus). Making a major change in production, however, requires time, planning, and support.

The following tables present recommendations for:

A. Income replacement
B. A roster of readily available experts
C. PFAS response navigators
D. Compensation for time spent on PFAS response
E. Infrastructure investments
F. Loan assistance
G. Public relations and marketing
H. PFAS response kit

Eligibility

A person whose commercial farm is found to be contaminated by PFAS will be eligible for Strategies I.A-G. The farm may be located on owned or leased land. The PFAS Response Kit (Strategy I.H) will be available to impacted farmers, as well as to other interested parties.

More specifically, commercial farmers[3] will be deemed eligible if they have a water test result exceeding current State or Federal drinking water standards for wells servicing their farm and/or fields; and/or soil test results exceeding Maine CDC's current crop-specific soil screening levels;[4] and/or one or more samples of farm products[5] showing PFAS at levels deemed of concern by the Maine CDC:

- At present, Maine CDC has established Action Thresholds for milk (210 ppt) and beef (3.4 ppb). These thresholds are subject to change.
- Maine CDC is testing and assessing PFAS levels for a range of additional farm products. In the absence of established thresholds for these other products, DACF will request that Maine CDC

[3] A commercial farm is defined in 7 MRSA § 320-K (the statute establishing the PFAS Fund) as "a farm that produces any farm product with the intent that the farm product be sold or otherwise disposed of to generate income." Consistent with current DACF/BAFRR practices, the PFAS Fund will use $2,000 in gross annual farming income as the threshold for eligibility. Acreage will not be a factor. See 7 MRSA § 52(4).

[4] See Maine-PFAS-Screening-Levels-Rev-6.28.21.pdf

[5] "Farm product" means those plants and animals useful to humans and includes, but is not limited to, forages and sod crops, grains and food crops, dairy products, poultry and poultry products, bees, livestock and livestock products and fruits, berries, vegetables, flowers, seeds, grasses, Christmas trees and other similar products. 7 MRSA § 52(3-A).

review the farm product sample(s) result(s) and advise whether the test result(s) are deemed of concern in its professional opinion.

Budget

The projected budget for direct support to farmers for Fiscal Years 2024 – 2028 is $30,328,517.

	FY'24	FY'25	FY'26	FY'27	FY'28	
Strategy	**7/1/23-6/30/24**	**7/1/24-6/30/25**	**7/1/25-6/30/26**	**7/1/26-6/30/27**	**7/1/27-6/30/28**	**TOTAL**
Direct Support						
I.A Income replacement	$ 1,000,000	$ 4,000,000	$ 3,000,000	$ 3,000,000	$ 2,000,000	$ 13,000,000
I.B Roster of experts	$ 240,000	$ 240,000	$ 240,000	$ 240,000	$ 240,000	$ 1,200,000
I.C Navigator - salary	$ 47,112	$ 48,525	$ 49,981	$ 51,481	$ 53,025	$ 250,124
1C Navigator - health & dental	$ 10,826	$ 11,151	$ 11,485	$ 11,830	$ 12,185	$ 57,476
I.C Navigator - retirement	$ 6,200	$ 6,386	$ 6,578	$ 6,775	$ 6,978	$ 32,916
I.D Compensation for time spent on PFAS response	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 500,000
I.E Infrastructure	$ 1,000,000	$ 3,500,000	$ 3,500,000	$ 3,000,000	$ 3,000,000	$ 14,000,000
I.F Loan Assistance - FSA guaranteed loans	$ 10,800	$ 10,800	$ 10,800	$ 10,800	$ 10,800	$ 54,000
I.F Loan Assistance - FAME commercial loan insurance	$ 210,000	$ 210,000	$ 210,000	$ 210,000	$ 210,000	$ 1,050,000
I.F Loan Assistance - Environmental Site Assessments	$ 10,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 110,000
I.G Public relations and marketing	$ 25,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 65,000
I.H PFAS Response Kit (design & printing)	$ 5,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 9,000
Subtotal						**$ 30,328,517**

Strategy I.A: Income Replacement

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Providing short-term assistance to a person whose commercial farm is found to be contaminated by PFAS, including but not limited to income replacement and mortgage payments. 7 MRSA 320-K(4)(G).

Describe the strategy:

The PFAS Fund will provide replacement income to impacted farmers. It will replace and be modeled on the Bureau of Agriculture, Food, and Rural Resources' (BAFRR's) existing income replacement program with some modifications:

- The amount will be based on the prior year's gross income or the average of the 3 highest grossing of the past 5 years;
- Once the PFAS Fund receives an application, a committee of DACF & outside reviewers will assess the application;
- The PFAS Fund will provide income for up to <u>two</u> years for farms that are trying to remain in business. Farmers that decide to halt production will be eligible for a lump sum payment equivalent to one year's income;
- The PFAS Fund must rely on documented losses as reflected in profit & loss statements;
- The PFAS Fund will be clear in its communications with farmers, e.g., you will hear from DACF within 2 weeks of submitting an application; within X weeks, DACF will make a determination; etc.
- The PFAS Fund will coordinate with the MFT/MOFGA Emergency Relief Fund to ensure a seamless transition for impacted farmers transitioning from the Emergency Relief Fund's to the PFAS Fund's income replacement program.

A question arose about the interplay between income replacement payments and payments from USDA's Dairy Indemnity Payment Program (DIPP). DIPP provides payments to dairy producers when a public regulatory agency directs them to remove their raw milk from the commercial market because it has been contaminated by pesticides, nuclear radiation or fallout or toxic substances and harmful chemical residues thereof. DIPP also provides cow indemnification to dairy producers when a public regulatory agency directs them to remove their raw milk from the commercial market because milk and dairy cows have been permanently contaminated. These milk and dairy cows are no longer eligible to be commercially marketed due to contamination caused by PFAS.

DIPP payments for milk are based on the producer's average daily production during a specified base period (the calendar month immediately before the month the milk is removed from the commercial market). DIPP cow indemnity payments will be paid on 100% of fair market value according to the Livestock Indemnity Program pay rate for the application claim year.

DIPP payments need to be approved at the national level. USDA strives to make payments within 30-45 days of receiving a completed application.

The PFAS Fund should consider DIPP payments for milk and for cows separately:

- Milk indemnity payments are income. The PFAS Fund could provide income replacement payments while the DIPP milk payments are pending with the understanding that 1) the farm would need to reimburse the State for income replacement payments once the DIPP payment is

received or 2) future income replacement payments to the farm will be reduced until the amount of the DIPP payment is recouped.

- Cow indemnity payments are also income. As with the milk indemnity payments, 1) the farm would need to reimburse the State for income replacement payments once the DIPP payment is received or 2) future income replacement payments to the farm will be reduced until the amount of the DIPP payment is recouped.

Who will benefit? How?

- Income replacement will enable impacted farmers to remain afloat while they investigate how to move forward.
- Farmers who decide to walk away from farming will have the equivalent of a year's income to support their transition to a new beginning.

Will anyone be disadvantaged?

Income replacement payments are taxed as income. However, farms have fewer expenses during the period in which they are trying to figure out next steps, resulting in a significant tax burden. This situation is not necessarily a disadvantage but does highlight the need for tax advice and planning at the point when financial assistance is first provided to the farm.

Is there a model for this, either in or outside of Maine?

Yes, DACF's existing income replacement program managed by the BAFRR. This program will shift to the PFAS Fund.

Do we need additional research or data?

The PFAS Fund does not need additional research or data. As noted above, however, farmers should seek advice from a tax professional regarding the implications of receiving income replacement and DIPP payments, all of which are considered taxable income. See Strategy I.B, Roster of Experts.

How will recipients be selected?

Income replacement will be available to any impacted farmer that meets the eligibility criteria described above.

What documentation is needed?

Preliminary list of documentation that will be needed:

- Test results: water, soil, and/or agricultural product(s)
- Tax returns and profit and loss statements.
- DIPP documentation (if applicable)
- Documentation of other insurance payments (if applicable)

What sort of controls should be in place?

- Need documentation of prior income and current profits and losses.
- If the PFAS Fund makes income replacement payments to a landowner who no longer leases their land due to PFAS contamination, the Fund will need assurances that the land is not re-leased during the period when the landowner is receiving income replacement payments.
- Presently, there are no/few action levels for produce. As such, the question of when products should be returned to market is a judgment call and the PFAS Fund will take this into account when processing requests for income replacement.

What is the timeframe for implementation?
As soon as practical.

Should there be a time limit?
Income replacement will be limited to 2 years from the date of discovery of elevated levels of PFAS. Payments may taper over time as the farm recovers.

The date of discovery corresponds to the date that PFAS is confirmed in farm products and a stop sale request is issued by BAFRR. Where there are no established Action Thresholds, the date that the farm voluntarily withdraws its products from the market is the trigger date.

How might the strategy address issues of equity?
The program will be open to farmers who own their property as well as to farmers who operate on leased property.

The PFAS Fund will allow income replacement to lessors and lessees for up to two years with supporting documentation.

What is the anticipated budget? Budget considerations?

- Estimate $1 million for the fiscal year starting July 1, 2023, for 10-14 farms.
- Estimate $3-4 million thereafter until the numbers begin to taper based on the conclusion of DEP's tiered testing program anticipated for December 2025. Assuming some of the last properties will require step out testing, all farms should be identified by spring 2026. The need for income replacement should tail off around June 2028.

Strategy I.B: Roster of Experts

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Providing short-term assistance to a person whose commercial farm is found to be contaminated by PFAS, including but not limited to income replacement and mortgage payments. 7 MRSA 320-K(4)(G).
- Assisting a commercial farm with land found to be contaminated by PFAS with developing enterprise budgets for alternative cropping systems, remediation strategies or technological adaptations or transitioning to alternative revenue streams, including but not limited to land use systems combining agricultural use of the land with solar energy production. 7 MRSA 320-K(4)(F).

Describe the strategy:

The PFAS Fund will develop a roster of experts readily available to provide no-cost technical assistance to impacted farmers as they navigate how to remain viable despite the presence of PFAS. Areas of expertise may include accountants, financial planners, business advisors, agricultural production specialists, lawyers, marketing/public relations specialists, and grant writers. The PFAS Fund will need to develop a list of the types of discrete services that will be covered. For example, the cost of a business plan or a few hours of attorney time to review a contract.

There are two potential models. The PFAS Fund may adopt one or both.

1. The PFAS Fund will provide the impacted farmer with a pre-approved vendor list of specialists that will provide services to the farmer, free of charge (see Strategy I.H, PFAS Response Kit). The PFAS Fund will pay the service providers directly.
2. A farmer could seek advice from a specialist with which they currently have a relationship. The PFAS Fund could reimburse expenses.

The PFAS Fund will not pay for "routine" services, such as preparing annual tax returns. Rather the Fund will pay for costs directly related to the farm's response to PFAS.

The PFAS Fund will develop a system to pre-approve these services. Also, the PFAS Fund will develop an application process and internal evaluation procedures. The application process should be simple (e.g., a written request explaining why the service is needed and how it relates to the farm's recovery process).

Who will benefit? How?

Impacted farmers will have access to technical assistance to help support decision-making.

Will anyone be disadvantaged?

N/A

Is there a model for this, either in or outside of Maine?

There are numerous examples of technical assistance grants available to farmers through organizations such as American Farmland Trust, MFT, and MOFGA. Also, DACF provides planning grants through its Farms for the Future program. Information about these programs will be included in the PFAS Response Kit (Strategy I.H). Farmers are free to select the program(s) that best fit their needs.

Do we need additional research or data?

How will recipients be selected?
The PFAS Fund will develop an application and selection process for individuals who meet the eligibility criteria described above.

What documentation is needed?
As part of its application process, the PFAS Fund will request information such as:

- A description of pre-PFAS operations
- A description of the extent of PFAS contamination and how it impacts operations
- A statement of how this service will help address PFAS issues on the farm
- A statement describing expected outcomes

What sort of controls should be in place?
The PFAS Fund will need to establish a vetting process for service providers (e.g., professional credentials: CPA, licensed attorney, etc.).

When the PFAS Fund contracts with providers, it will need to include benchmarks. For instance, providers will commit to responding to inquiries from farmers within 48 hours (even if just to say they have received the message). Also, providers will commit to a timeframe for completing work.

What is the timeframe for implementation?
The PFAS Fund will begin contracting with experts as soon as practical, hopefully during the summer of 2023.

Should there be a time limit?
This service will be available to eligible farmers as soon as it is established. There will not be a hard deadline for when farmers will no longer be eligible because needs are likely to evolve over time.

How might the strategy address issues of equity?

What is the anticipated budget?
The PFAS Fund will allocate $240,000 per year to ensure access to experts in a timely manner.

Strategy I.C: PFAS Response Navigator(s)

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Assisting a commercial farm with land found to be contaminated by PFAS with developing enterprise budgets for alternative cropping systems, remediation strategies or technological adaptations or transitioning to alternative revenue streams, including but not limited to land use systems combining agricultural use of the land with solar energy production. 7 MRSA 320-K(4)(F).
- Providing short-term assistance to a person whose commercial farm is found to be contaminated by PFAS, including but not limited to income replacement and mortgage payments. 7 MRSA 320-K(4)(G).

Describe the strategy:

Understandably, farmers may feel overwhelmed when they learn their farm is contaminated by PFAS. They may be further daunted by the thought of figuring out on their own how to move forward. Therefore, DACF and/or nonprofits will hire or contract with staff to serve as navigators to guide impacted farmers through the recovery process. Navigators will be familiar with the full gamut of available supports: direct financial assistance, technical assistance providers, medical testing, mental health resources, research findings, etc.

Vision for this role:

- Navigators will start from the point of view that the farmer is going through a traumatic experience.
- Navigators will be familiar with the full gamut of available supports, i.e., direct financial assistance, technical assistance providers, medical testing, mental health resources, research findings, etc.
- Navigators will have a great "rolodex" and know who to call.
- Navigators will connect individual farms with resources based on the farm's particular needs.
- Farmers who are preparing to test should know about the navigator before they test. Also, commodity groups and other organizations that farmers typically work with should be aware of this service.
- Navigators should be part of the team that delivers news of a positive test result.
- Navigators should proactively reach out to farmers periodically.
- Navigators could make introductions and triage issues with the farmer (e.g., how to make payroll? How to keep the lights on?)
- Navigators will advocate for farmers; they will help each farm have its specific issues addressed by DACF or relevant service providers.
- Navigators will help gather information and complete paperwork.
- Navigators are not technical experts; they are facilitators. They serve as an intermediary between the farm, the State, and other service providers.
- Navigators will advocate to buyers, as well. For example, navigators will help buyers to understand the meaning of test results.
- Navigators are not in a regulatory role; a navigator's role is to help farmers succeed.

Establish a navigator position(s) within DACF?

- Pro: DACF's mission is to support agriculture. The PFAS Fund will be paying for much of the support to impacted farmers.

- Con: May be perceived as biased toward agency/State; mistrust because the State authorized the spreading of biosolids; staff can't advocate individually for a farmer; DACF has regulatory responsibilities; takes a long time for the State to hire, navigators are needed now.
- Concerns could be alleviated by having a clear policy regarding confidentiality; need to be clear about whom the navigator reports to.

Establish a navigator position(s) at MFT and/or MOFGA?

- MFT is currently developing new positions that could fill this role. MOFGA wants to expand to do this sort of work too.
- Pro: They already work with farmers, can respond quickly.
- Con: Some farmers are reluctant to engage with private organizations.

Have a pool of navigators, some working for the State and some for nonprofits?

- In addition to MFT & MOFGA, does Cooperative Extension have the capacity to take this on?
- Con: Could result in inconsistent messaging. Also potential for pay disparities.

Another option is to explore working with Community Health Workers through Medical Care Development. The Maine Community Health Worker Initiative (MeCHWI) aims to provide training and technical assistance including education, skill building, and access to resources. See https://www.mcd.org/focus-areas/featured-projects/community-health-workers

In the short-term, modify the role of Agricultural Compliance Officers (ACO):

- DACF employees previously classified as Agricultural Compliance Officers (ACOs) have been instrumental to the Department's support of impacted farmers to date. Among other responsibilities, they work with farms to understand current farm practices, collect extensive on-farm samples (e.g., water, soil, feed, animal and plant tissue), assess and convey test results in consultation with Maine CDC, and suggest recommended on-farm modifications to alleviate PFAS contamination.
- As of May 2023, ACOs are now known as Agricultural PFAS Specialists (APSs), better reflecting their job duties and expertise.
- Develop a binder of PFAS response resources (see Strategy I.H, PFAS Response Kit). Ensure APSs are familiar with the contents. Leave copies with impacted farmers. (All information will also be available on the internet).
- Additional training on "soft" skills?
- Have a clear process for elevating concerns raised by farmers within DACF. Communicate to the farmer what the process is and when they can expect a response.

Who will benefit? How?

Impacted farmers will be guided by a navigator who is knowledgeable about the full range of services available to support impacted farmers.

Will anyone be disadvantaged?

Farmers have varying levels of comfort working with the State and with private organizations. Depending on where these positions are housed, some people may be reluctant to take advantage of the services.

The navigator should make a minimum number of attempts to contact the farmer (2 or 3?). If the farmer is not responsive, the navigator will simply let the farmer know they are available should the farmer need their assistance.
Is there a model for this, either in or outside of Maine? BAFRR currently has 3 Agricultural Compliance Officers (now Agricultural PFAS Specialists). They conduct ongoing PFAS sampling and suggest mitigation strategies. They currently share information about available resources, although there is not a systematic method to share consistent/complete information. Their current duties do not include making phone calls or completing paperwork on behalf of impacted farmers.
Do we need additional research or data?
How will recipients be selected? Navigators will be available to any impacted farmer that meets the eligibility criteria described above.
What documentation is needed?
What sort of controls should be in place?
What is the timeframe for implementation? Modifications to Agricultural PFAS Specialists' roles has already begun. Compilation of a PFAS Response Kit is underway and will evolve over time as new programs come online. DACF needs to determine a timeline for hiring a new staff position or contracting with a third-party.
Should there be a time limit? This service will be available to impacted farmers as soon as it is established. There is no hard deadline for when farmers will no longer be eligible because needs are likely to evolve over time.
How might the strategy address issues of equity? There is the potential for language and identity barriers.
What is the anticipated budget? Budget considerations? DACF could potentially hire a "navigator" as either an ACO or Advocate. The salary range for either is $43,201.60 - $57,969.60 annually. Health and dental insurance are approximately $10,826 annually. The state contributes 13.16 percent of salary to the Maine Public Employees Retirement System (MainePERS). Note: Additional funding will be needed to support a navigator once the PFAS Fund is exhausted.

Strategy I.D: Compensation for Time Spent on PFAS Response

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Providing short-term assistance to a person whose commercial farm is found to be contaminated by PFAS, including but not limited to income replacement and mortgage payments. 7 MRSA 320-K(4)(G).

Describe the strategy:

Once PFAS contamination has been verified at a farm, the farmer needs to devote time to figuring out how to proceed. This is separate from time spent on routine operation of the farm. Accordingly, the PFAS Fund will explore ways to compensate commercial farmers for their time spent responding to PFAS.

The amount could be calculated by multiplying hours spent on PFAS response (e.g., time spent with an Agricultural PFAS Specialist) by an hourly rate for managerial work. See budget section below. A Navigator (Strategy I.C) could assist farmers with documentation.

Who will benefit? How?

Impacted farmers will have financial support as they develop strategies to transition to new production models.

Will anyone be disadvantaged?

Is there a model for this, either in or outside of Maine?

BAFRR's Income Replacement and Farm Viability programs.

Do we need additional research or data?

How will recipients be selected?

The PFAS Fund will need to develop an application process in coordination with BAFRR.

What documentation is needed?

The PFAS Fund will need to develop criteria and methods for farmers to use when recording time spent on PFAS response.

What sort of controls should be in place?

DACF will need to implement systems to guard against double payments if a farm is receiving any combination of direct financial support (e.g., income replacement, farm viability payments).

What is the timeframe for implementation?

Should there be a time limit?

How might the strategy address issues of equity?

- DACF will need to be clear about all options available to impacted farmers so that everyone has a level playing field
- Provide consistent information to all producers

- Be conscientious about different types of farmers and communities (e.g., BIPOC, New Mainers)
- Avoid restrictive terminology
- Partner with trusted messengers

What is the anticipated budget? Budget considerations?

The PFAS Fund will allocate $100,000 per year for compensation for time spent on PFAS response. Time spent managing a farm's response to PFAS could be compensated at an hourly rate (based, for example, on salary information for farm managers gathered from the U.S. Department of Labor, Bureau of Labor Statistics) or per diem. Compensation could vary based on where a farm is on its recovery journey (e.g., discovery phase versus action phase).

Strategy I.E: Infrastructure

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Investing in equipment, facilities, and infrastructure to ensure that a commercial farm with land found to be contaminated by PFAS maintains profitability while the commercial farm transitions to an alternative cropping system or implements remediation strategies, technological adaptations, solar development, or other modifications to its operations in response to PFAS contamination. 7 MRSA 320-K(4)(E).

Describe the strategy:

Eligible farmers will be able to apply for infrastructure investments that help them transition to new production methods or new types of production.

DACF's BAFRR currently administers a Farm Viability Fund that pays for clean feed, equipment, infrastructure (up to a cost of $150,000 per project), and debt service assistance. "Infrastructure" refers to physical assets and structures that are generally considered permanent (e.g., a greenhouse or barn). BAFRR would like to retain the Farm Viability Fund but turn over consideration of infrastructure projects valued greater than $150,000 to the PFAS Fund. There should be a common application to DACF.

Who will benefit? How?

Investment in infrastructure will allow farmers to transition to new methods or types of agricultural production.

Will anyone be disadvantaged?

Requests from farmers operating on leased land will need to be looked at especially critically before the PFAS Fund can make a $150,000+ investment in infrastructure. For instance, what is the term of the lease? At the end of the lease, who will own the infrastructure?

Is there a model for this, either in or outside of Maine?

Yes, DACF BAFRR's existing Farm Viability Fund. BAFRR and the PFAS Fund will need to figure out a system to coordinate incoming applications. Also, there needs to be clear communication coming out of DACF so that applicants have clear expectations about how decisions will be made within DACF and by whom.

Do we need additional research or data?

For each funding decision, the PFAS Fund will need to consider the factors listed below.

How will recipients be selected?

Any impacted farmer that meets the eligibility criteria described above could apply for infrastructure funding. Applications will be reviewed by a review panel. Proposed membership of review panel: BAFRR, lawyer, accountant, farmer within the same industry, case-specific expert (e.g., a hydrogeologist). Review panel members who are not paid by an employer to participate should be compensated by the State for their time.

Factors to consider:

- Extent of contamination: soil v. water, percent of property, degree of contamination
- Timeline of remediation

- Source of contamination; is it onsite or brought in with feed/inputs?
- Is the farmer in for the long term? How do we document/assure this?
- Return on investment
- Is there a business plan? (Build in support from Roster of Experts, Strategy I.B)

What documentation is needed?

- Test results: water, soil and/or agricultural product(s)
- Track record of working with DACF
- Cost estimates, building plans, etc.
- Explanation of how this project is essential to the viability of the farm
- Indicators suggesting the project will help the farmer successfully rebound

What sort of controls should be in place?

There will need to be a signed contract between DACF and the farmer that, among other things, includes the following provisions:

- Farmer agrees not to sell the infrastructure (or the farm) within a certain amount of time.
- DACF will conduct an annual inspection of the project for a set term of years.
- Farmer will submit profit and loss statements at the end of the season.
- Expectation that the farmer and DACF will maintain open communication.

What is the timeframe for implementation?

As soon as practical.

Should there be a time limit?

No set time limit.

How might the strategy address issues of equity?

- DACF will need to be clear about all options available to impacted farmers so that everyone has a level playing field
- Provide consistent information to all producers
- Be conscientious about different types of farmers and communities (e.g., BIPOC, New Mainers)
- Avoid restrictive terminology
- Partner with trusted messengers

What is the anticipated budget? Budget considerations?

The PFAS Fund will allocate $1,000,000 for Fiscal Year 2024, $3,500,000 each for Fiscal Years 2025 and 2026, and $3,000,000 each for Fiscal Years 2027 and 2028 for infrastructure investments.

Strategy I.F: Loan Assistance

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Providing short-term assistance to a person whose commercial farm is found to be contaminated by PFAS, including but not limited to income replacement and mortgage payments. 7 MRSA 320-K(4)(G).

Describe the strategy:

The presence of PFAS on a farm may hinder that farm's ability to obtain or refinance loans. To alleviate this concern, the PFAS Fund could work with partners to reduce lenders' liability and to bear some of the costs associated with obtaining loans:

Farm Service Agency (FSA)

The Farm Service Agency (FSA) has Guaranteed Farm Loan Programs that help family farmers and ranchers to obtain loans from USDA-approved commercial lenders at reasonable terms to buy farmland or finance agricultural production. FSA will guarantee farm loans through a commercial lender up to $2,037,000. Financial institutions receive additional loan business as well as benefit from the safety net the FSA provides by guaranteeing farm loans up to 95 percent against possible financial loss of principal and interest. The PFAS Fund could pay costs associated with obtaining an FSA Guaranteed Farm Loan. The fee is 1.5 percent of the guaranteed amount. There is no annual fee and no requirement for the PFAS Fund to place funds in a reserve account.

Finance Authority of Maine (FAME)

The Finance Authority of Maine (FAME) has a commercial loan insurance program that was created to help participating financial institutions make business loans by reducing their risk. See Commercial Loan Insurance - FAME Maine. The PFAS Fund could work through FAME to provide 100 percent loan guarantees to lenders willing to loan to PFAS-impacted farmers.

Typically, FAME charges a bank for the cost of commercial loan insurance and then the bank passes that cost along to the borrower. Here, the PFAS Fund could be directly billed for the initial commitment fee (1 percent of the loan) and the annual fee (1.25 percent of the loan). Furthermore, the PFAS Fund could set aside funds in a reserve account to cover potential losses. Initially, the PFAS Fund would contribute 35-50 percent of the total loan amount to the reserve fund.

Due Diligence Costs

FSA has not yet been asked to make a real estate mortgage on PFAS-impacted property. It anticipates, however, that it will require Phase I and Phase II environmental site assessments (ESAs) on any such requests that it receives. It is reasonable to assume that other lenders may also request environmental site assessments.

A Phase I ESA is a report that identifies potential or existing environmental contamination. It involves a visual inspection and a review of the historical and current land uses of the property. If the Phase I ESA reveals a likelihood of contamination, a Phase II ESA is typically ordered to collect samples of soil, groundwater or building materials to analyze for quantitative values of various contaminants (e.g., petroleum hydrocarbons, heavy metals, pesticides, solvents, asbestos).

Notably, the PFAS Fund will be working exclusively with farms with known PFAS contamination of their soil and/or water. Sample results collected by DACF and DEP will be available to the environmental consultants preparing Phase I and II ESAs.

The PFAS Fund will pay for the cost of a Phase I study when a lender needs this information to make a lending decision. The PFAS Fund may pay for a Phase II study when the PFAS soil and groundwater samples collected by the State are insufficient for the lenders' purposes. The PFAS Fund will not pay for costs associated with the investigation of contaminants other than PFAS, however.

Educational Material

The PFAS Fund will develop a bulletin for lenders explaining that the presence of PFAS is not a death knell for farming; that farms are likely to recover. Also, once a mechanism for providing a loan guarantee is developed, the PFAS Fund will share that information with impacted farmers (e.g., via a PFAS Response Navigator (Strategy I.C) or the PFAS Response Kit (Strategy I.H)).

Who will benefit? How?

PFAS-impacted farmers will benefit by having access to credit to enable them to adjust their operations. Lenders will benefit from lower risk loans.

Will anyone be disadvantaged?

Is there a model for this, either in or outside of Maine?

The PFAS Fund will work with FSA's and FAME's existing loan programs to make credit available to impacted farmers.

Do we need additional research or data?

How will recipients be selected?

The PFAS Fund will need to develop an application process.

What documentation is needed?

What sort of documentation will lenders need to document that a farm has recovered?

- Documentation from DACF that a stop sale order has been lifted
- Letter stating that products are not impacted

What sort of controls should be in place?

What is the timeframe for implementation?

Should there be a time limit?

The PFAS Fund has a finite amount of money. It will need to ensure that it retains enough money to cover annual fees for commercial loan insurance obtained through FAME for the duration of the loans.

How might the strategy address issues of equity?

- DACF will need to be clear about all options available to impacted farmers so that everyone has a level playing field
- Provide consistent information to all producers

- Be conscientious about different types of farmers and communities (e.g., BIPOC, New Mainers)
- Avoid restrictive terminology
- Partner with trusted messengers

What is the anticipated budget? Budget considerations?

The PFAS Fund will allocate $10,800 annually to cover the cost of $800,000 in FSA guaranteed funds.

The PFAS Fund will allocate $210,000 annually for commercial loan insurance through FAME (commitment fees, annual fees, and reserve deposit). This allows for approximately $400,000 in insured commercial loans.

The PFAS Fund will allocate $10,000 for environmental site assessments in Fiscal Year 2024. It will allocate $25,000 in subsequent years.

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Assumptions:

The cost of an FSA guaranteed loan is $1,350 per $100,000 guaranteed at 90%, ($100,000 x .9) x 1.5%.

A reserve deposit of $200,000 allows for $400,000 to $571,429 in FAME loans (50% reserve allocation v. 35% reserve allocation). The commitment fee would be $4,000 - $5,714.

A Phase I environmental site assessment typically costs less than $3,500. So, 2 or 3 studies in the first year and about 7 thereafter (could be Phase I or II).

Strategy I.G: Public Relations and Marketing

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Assisting commercial farms and others in the agricultural sector not directly affected by PFAS contamination with marketing efforts whose branding and marketing may be affected by public perception of PFAS contamination in the State. 7 MRSA 320K(4)(P).

Describe the strategy:

Multiple types of marketing assistance are needed:

Crisis Communication

When PFAS is first discovered on a farm, the farm family is understandably concerned about an array of issues, including their own health and that of their customers, their ability to pay their bills, and their ability to maintain their reputation and place in the marketplace.

The impact of PFAS on any particular business will vary based on the degree of contamination and the type of operation. Some will need to pause all sales while others may be able to continue to sell some products. In either case, it will be important for the farm to clearly communicate what is known and as-yet-unknown, and what steps are being taken to respond to the discovery of PFAS.

The PFAS Fund will develop a public relations tool kit and include it in the PFAS Response Kit (Strategy I.H). It will provide guidance on developing a media kit, sample talking points, and tips for speaking with reporters, buyers, and the public. It will also encourage impacted farmers to identify who will take phone calls and post updates on social media.

Some farmers may prefer to delegate communications to a third-party. Toward this end, DACF staff can offer to contact a relevant commodity group (e.g., Maine Dairy Promotion Board) or nonprofit (e.g., MOFGA) to ask for their assistance. These groups generally have existing media protocols and may be willing to be the point of contact for press inquiries about an impacted farm or to otherwise assist with communications.

Emerging from the Crisis

It is expected that most PFAS-impacted farms will, with assistance, be able to make changes that will allow them to produce and market safe products. As these farms re-enter the marketplace, they may face stigma. DACF can help to address this stigma by providing statements (to buyers, for example) describing the steps farms have taken to manage PFAS and summarizing test results revealing that products meet safety standards.

Farms that make major pivots (e.g., from dairy to beef or from produce to grains), may want to rebrand. In such cases, a marketing plan is expected to be part of the new business plan. The PFAS Fund can assist farmers to develop and then implement new business plans. See Strategy I.B, Roster of Experts, and I.E, Infrastructure. Related expenses, such as the cost of designing a new logo, could be covered by the PFAS Fund.

Anytime

In its communications, DACF should emphasize that Maine is a leader in efforts to confront PFAS in agriculture and, as a result, consumers can have confidence that local food is safe food. Unlike other states, Maine acknowledged there was a problem and responded. It is testing for PFAS and taking steps

to remove contaminated products from the marketplace. Highlight Maine farms that have successfully emerged. Underscore that Maine farmers are resilient and strong and that there is reason for hope. DACF should consider regular press releases to communicate positive news about Maine's response to PFAS in agriculture.

DACF should develop bulletins for buyers and other audiences that explain the basics of what PFAS are and how they show up in food. Explain measures that are being taken to minimize risk and how to read test results. Also, include messages to share with customers and reasons to celebrate farms that have emerged from the crisis.

DACF can also amplify and support the work of organizations such as Cultivemos, which are developing educational materials for farmers and consumers (e.g., What Farm Customers Need to Know [About PFAS]).

Who will benefit? How?
Farms that are directly impacted will have support for both public relations and marketing. All Maine farms can benefit from messages promoting the safety and resilience of Maine agriculture.

Will anyone be disadvantaged?

Is there a model for this, either in or outside of Maine?
DACF's Agricultural Resource Development (ARD) unit manages Real Maine, Specialty Crop Grants, Hunters for the Hungry, etc. ARD's focus is on promoting Maine agriculture. Messages about PFAS could potentially be incorporated into Real Maine materials. Also, the PFAS Fund can utilize DACF's existing website, communications office, and listservs to reach various audiences.

Do we need additional research or data?
DACF will need to reach out to commodity groups and other entities to gauge their willingness to serve as a communications resource for PFAS-impacted farms.

How will recipients be selected?
Open to all PFAS-impacted farms.

What documentation is needed?
Soil, water, and/or product test results

What sort of controls should be in place?

What is the timeframe for implementation?
Statements about the resiliency of Maine farms will be included in press releases related to the rollout of the PFAS Fund Implementation Plan. Development of the PFAS Response Kit will begin in the summer of 2023.

Should there be a time limit?
No. Marketing support should be provided for as long as it is needed, and the Fund persists.

How might the strategy address issues of equity?

- DACF will need to be clear about all options available to impacted farmers so that everyone has a level playing field
- Provide consistent information to all producers
- Be conscientious about different types of farmers and communities (e.g., BIPOC, New Mainers)
- Avoid restrictive terminology
- Partner with trusted messengers

What is the anticipated budget? Budget considerations?

Existing resources will cover most of the costs associated with marketing and messaging. A budget of about $25,000 for the first year and $10,000 per year after that should be adequate to cover costs associated production of educational materials by third parties and new branding for impacted farmers.

Strategy I.H: PFAS Response Kit

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.
The PFAS Response Kit will be a repository for information about all the programs supported by the PFAS Fund. Thus, it advances all the purposes outlined in 7 MRSA c. 10-D.

Describe the strategy:
The PFAS Fund will develop a PFAS Response Kit. It will be a binder with information about all the resources supported by the PFAS Fund, as well as information about other resources available to farmers impacted by PFAS contamination. A copy will be given to every farm with known PFAS contamination.

The print version will be updated on a regular basis, maybe semi-annually. Revised pages will be shared with impacted farmers. The information will also be posted on the PFAS Fund's section of DACF's website.

A preliminary outline follows:

Front pocket: business cards for DACF staff members who work directly with farms

Onboarding information:

- An introduction to working with DACF. Include descriptions of the PFAS Fund and the BAFRR.
- Specific contact information for people, including APSs/BAFRR, PFAS Fund, DEP, Maine CDC, MFT, MOFGA, UMaine, navigator (eventually), LCSW (eventually), etc.
- Description of the Agricultural PFAS Specialists' role.
- If a navigator position can be established, explain what further assistance they could provide, e.g., make introductions to technical experts; help gather information and complete paperwork; facilitate communication between farmers, agencies, buyers; etc.
- Who is eligible for what?

Direct Assistance Available from the State of Maine

- DEP's tiered-testing program
- Testing reimbursement (BAFRR)
- Farm Viability Fund (BAFRR)
- Depopulation payments (BAFRR)
- Water treatment systems payments (BAFRR and DEP)
- Income replacement (PFAS Fund)
- Infrastructure investments (BAFRR or PFAS Fund depending on amount)
- Roster of experts to provide technical assistance at no cost to the farmer (PFAS Fund)
- Compensation for time spent on PFAS response (PFAS Fund)
- Loan assistance (PFAS Fund)
- Public relations and marketing (PFAS Fund)
- Farms for the Future Phase I planning grants (ARD)
- DHHS (see "Health" below)

Direct Assistance Available from Other Resources

- Summary of resources available from MFT

- Summary of resources available from MOFGA
- Summary of resources available from Cooperative Extension
- Summary of resources available from Cultivemos

Federal Programs
- USDA Dairy Indemnity Payment Program (DIPP)
- Farm Service Agency (FSA) Guaranteed Farm Loan Programs, Guaranteed Farm Loans (usda.gov)
- FSA Direct Farm Loans
- FSA Conservation Reserve Program (CRP), especially if it is expanded to include PFAS

Production Guidance
- Guidance on forage
- Action levels
- Recommended crops to grow based on a mix of scientific and market research

Land Purchases
- Explain the process the Fund will follow to purchase PFAS-impacted property.
- List information farmer will need to provide, e.g., deed, recent title search if available, evidence of farm income, documentation of encumbrances and other investments (e.g., EQIP)
- Also, highlight pros and cons.
    - Pros: no closing costs to seller; FMV as if there was no PFAS
    - Cons: may take longer than a sale on the open market where the buyer does not undertake the same degree of due diligence that the PFAS Fund is contemplating
- Rental payments for conservation

Health
- Information about when blood testing is recommended
- Information about how to obtain blood testing
- Information about medical monitoring recommendations based on blood serum levels
    - Materials for medical providers
    - Materials for impacted populations
- Mental health resources
- Clinical trial: include description, invite participation
- Public health study: include description, invite participation

Research
- Information about research programs established by the PFAS Fund. Note that a list of funded research will eventually be housed on DACF's website along with links to data collected as part of the research projects.
- Sample agreement between a farmer and a researcher setting out the terms for the researcher to conduct research on the farmer's land. At a minimum, include a list of terms to address (e.g., farmer compensation, access to the property, who is responsible for what, prohibited activities).

Educational Materials
- PFAS 101 Bulletin
    - Basic description of PFAS chemicals
    - Vocabulary

- Water filtration options
- Soil considerations
- Create different versions for different audiences, e.g., lenders, realtors, appraisers, buyers, consumers

- Public relations tool kit. Guidance on developing a media kit, sample talking points, and tips for speaking with reporters.
- Contact information for various commodity groups (e.g., Maine Dairy Promotion Board) and similar associations that could potentially assist impacted farmers by handling press inquiries or drafting talking points.
- Include or reference materials being developed by other organizations, including Cultivemos ("What Farm Customers Need to Know").

Back pocket: DACF access agreement, intake form, financial assistance applications with instructions, vendor authorization form

Who will be eligible?
All commercial farms found to be contaminated by PFAS will receive a copy of the PFAS Response Kit. It will also be made available to other interested parties.

Who will benefit? How?
The PFAS Response Kit will be an easy-to-use reference guide that consolidates information about multiple resources in a single document that will be updated regularly.

Will anyone be disadvantaged?

Is there a model for this, either in or outside of Maine?

Do we need additional research or data?

How will recipients be selected?

What documentation is needed?

What sort of controls should be in place?

What is the timeframe for implementation?

Should there be a time limit?

How might the strategy address issues of equity?

What is the anticipated budget? Budget considerations?
The PFAS Response Kit will be developed and routinely updated by existing staff. Additional costs will be for design, printing, binders, and postage, approximately $5,000 for the first year and $1,000 thereafter for updates.

II. Land

Some PFAS-impacted farmers may determine that staying on their land is simply no longer feasible. Once a farmer has made this difficult decision, the PFAS Fund can purchase the property. The Department will then be responsible for management and future use of the land.

The following tables present recommendations for:

A. Purchasing property
B. Holding and managing property
C. Making payments in exchange for the implementation of conservation practices
D. Providing guidance on real estate transactions involving PFAS-impacted property

Eligibility

The statute creating the PFAS Fund specifies that the Fund may be used to relocate a commercial farm when the agricultural land of the farm is found to be contaminated by PFAS and may also be used to buy and sell agricultural land found to be contaminated by PFAS. 7 MRSA §§ 320-K(4)(C-D). Thus, properties meeting the statutory definitions of "commercial farms" or "agricultural land" meet the initial eligibility criteria for purchase by the PFAS Fund.[6] DACF will develop policies and rules to further prioritize and guide its purchase and sale of agricultural land found to be contaminated by PFAS.

Budget

The projected budget for land acquisition and management for Fiscal Years 2024 – 2028 is $21,452,500.

	FY'24	FY'25	FY'26	FY'27	FY'28	
Strategy	**7/1/23-6/30/24**	**7/1/24-6/30/25**	**7/1/25-6/30/26**	**7/1/26-6/30/27**	**7/1/27-6/30/28**	**TOTAL**
Land						
II.Ai Land purchases - cost of land	$ 1,500,000	$ 5,000,000	$ 5,000,000	$ 3,000000	$ 2,000,000	$ 16,500,000
II.Aii Land purchases - ancillary expenses (appraisal, survey, etc.), ~30,000 each	$ 60,000	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 780,000
II.Bi DACF holds and manages property (stewardship/maintenance)	$ 50,000	$ 200,000	$ 300,000	$ 300,000	$ 300,000	$ 1,150,000
II.Bi DACF holds and manages property (legal fees)	$ 2,500	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 22,500
II.C Rental payments for stewardship		$ 1,500,000	$ 1,500,000			$ 3,000,000
II.D Guidance on land transactions, e.g., to realtors, appraisers	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal						**$ 21,452,500**

[6] A commercial farm means "a farm that produces any farm product with the intent that the farm product be sold or otherwise disposed of to generate income." 7 MRSA §320-K(1)(C). Agricultural land means "any land in Maine which is used or capable of use without substantial modification for production of agriculturally related products including, but not limited to, crops, livestock, poultry, dairy products, and sod." 7 MRSA §32(A).

Strategy II.A: Land Purchases

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Relocating a commercial farm when the agricultural land of the farm is found to be contaminated by PFAS. 7 MRSA § 320-K(4)(C).
- Buying and selling agricultural land found to be contaminated by PFAS. 7 MRSA § 320-K(4)(D).

Who will be eligible?

Properties meeting the statutory definitions of "commercial farms" or "agricultural land" meet the initial eligibility criteria for Strategies II.A and B. A commercial farm means "a farm that produces any farm product with the intent that the farm product be sold or otherwise disposed of to generate income." 7 MRSA §320-K(1)(C). Agricultural land means "any land in Maine which is used or capable of use without substantial modification for production of agriculturally related products including, but not limited to, crops, livestock, poultry, dairy products, and sod." 7 MRSA §32(A).

DACF will develop policies and rules to further prioritize and guide its purchase and sale of agricultural land found to be contaminated by PFAS.

Describe the strategy:

Keeping in mind that the goal of the PFAS Fund is to keep as many farms as possible in production, the PFAS Fund will purchase agricultural land found to be contaminated by PFAS from landowners that want to sell their property.

1. Through a confirmed self-test or DEP's or DACF's testing program, a landowner learns that soil and/or water exceed current screening levels.

2. Landowner determines they want to sell all or part of their property. Landowner notifies DACF with a letter of intent.
    a. DACF needs to develop a procedure for landowners to follow when they want the State to purchase their property (e.g., an application form).
    b. Advise the seller to seek legal counsel and provide a list of potential resources (e.g., information about the Legal Food Hub and the PFAS Fund's roster of experts).

3. Landowner provides DACF with relevant information, including:
    a. Property description - Where is it located? How many acres? Soil types? Existing structures? Cemetery? Will all the property be sold or just a portion? Is there any infrastructure on the property owned by someone other than the landowner(s)? List all landowners.
    b. Extent and type of PFAS contamination. How does this impact their operation?
    c. Narrative: when did they purchase the property and how has the farm been used under their stewardship?
    d. When was PFAS discovered?
    e. Discussion of whether the farmer has considered other options (e.g., sell on open market, lease for solar development)?
    f. Deed and any surveys if available
    g. Recent title search, if available
    h. Information about encumbrances on the property (EQIP investments, conservation easement, liens)

i. Evidence of farm income (tax return Schedule F)

4. DACF conducts a preliminary internal review. Does this property meet the criteria for purchase? Should State money be spent to investigate further?
    a. Who should be on the review panel? Consider including BAFRR, Land for Maine's Future, Bureau of Public Lands, FSA, Maine IF&W, DEP, farmer, and a representative of Indigenous communities in Maine. Review panel members who are not paid by an employer to participate should be compensated by the State for their time.
    b. Do we agree with the farmer's assessment of whole versus partial? Considerations for partial sales include an assessment of whether the land to be purchased is viable for agriculture. Also, is there access to the proposed parcel?
    c. Consider how infrastructure is tied to agricultural viability. Will we purchase infrastructure that is independently viable?
    d. Review panel to have initial discussion about what to do with the property.
    e. At the conclusion of the initial review, DACF will provide the potential seller with a preliminary determination about whether the PFAS Fund is willing to purchase the property. This letter should also explain the review panel's initial assessment of what DACF may do with the property, e.g., hold as conservation land, lease for some sort of agricultural production, lease for solar development, establish a green burial site, sell. The PFAS Fund must clearly communicate that, once sold to the State, the seller cannot dictate future use of the land.

5. Appraisal
    a. The PFAS Fund will contract with a certified general appraiser with agricultural experience in Maine. (Note, the PFAS Fund will pay for one appraisal. If the seller wants a second opinion, they can get one at their own cost.)
    b. The PFAS Fund will request an appraisal of the fair market value for the highest and best use of the property as if there were no PFAS. Further, the PFAS Fund will request that the appraisal Include the value of any infrastructure that is expected to be a part of the sale.
    c. Anticipate ~90 days for an appraisal.

6. Sign purchase and sale agreement. Provide an estimated purchase price contingent on completion of due diligence. Have all parties sign. Include an option for either party to withdraw pending results of due diligence (and specify who bears what costs).

7. Commence due diligence
    a. The PFAS Fund will contract with a private real estate attorney through Maine Department of Transportation (DOT) to conduct title work. Is there clean title?
    b. The PFAS Fund will order a boundary survey. At a minimum, request a "light" survey to ensure boundaries are marked. Full surveys will be needed if a portion of a larger property is being sold (and in some other circumstances).
    c. The PFAS Fund may request a review appraisal if necessary (model on Land For Maine's Future's procedure). Did the initial appraiser use accepted industry standards? Did the initial appraiser make reasonable assumptions?
    d. The PFAS Fund will order a Phase I environmental study (DEP has a list of prequalified vendors). Are there issues other than PFAS? Findings may trigger additional sampling (Phase II).

i. Coordinate with VRAP program to draft restrictive covenants to be recorded in Registry of Deeds.

8. The seller and DACF will agree to the purchase price. Involve the internal review committee.

9. Work with the contract attorney on closing documents, including:
    a. VRAP covenants
    b. Look at examples of Land for Maine's Future's (LMF) recorded Project Agreements (these agreements note that the subject property will remain undeveloped and used for specified purposes). Should the PFAS Fund do something similar?
    c. Record a baseline document describing the current condition of the property. Would this be duplicative of the VRAP covenant?

10. Closing

DACF will need to develop:

- Policies and rules to prioritize and govern purchases and sales. Look at 7 MRSA 164 for potential guidance (selection criteria for land purchases by the Maine Working Farmland Access and Protection Program (WFAPP)). These criteria include the percentage of soils classified by the USDA as prime farmland, unique farmland, farmland of statewide importance and farmland of local importance; economic viability of the working farmland property in terms of current and potential future commercial agricultural activities in local, regional and statewide markets; and the multiple natural resources values associated with the working farmland property, including open space land, forested land and wetlands, riparian buffers, and wildlife habitat. See also LMF's scoring rubric for WFAPP: https://www.maine.gov/dacf/lmf/docs/wfapp/2023-wfapp-workbook.pdf, p. 10. Look at 01-669 c. 24 Boundary Paint Marking Standards.
- Determine how applications will be processed (e.g., first come, first served? Considered on a quarterly basis?) Staff capacity is a limiting factor.
- Internal process to facilitate contracting with third parties for due diligence assistance (see, for example, LMF's negotiated process with Procurement for contracting w/ appraisers)
- Application form and checklist for applicants
- Appraisal standards (see example from LMF)
- Boundary standards (see example from Inland Fisheries & Wildlife)
- A review panel to advise on both purchasing and selling property. Consider using the same panel to make recommendations related to management of properties retained by DACF (Strategy II.B).

Who will benefit? How?
Impacted farmers will have cash and the ability to walk away from contaminated property.

Will anyone be disadvantaged?
Some farms raise products that are not sold commercially. For example, some Indigenous growers may raise products for barter and a nonprofit farm may grow produce for donation to a food pantry. These types of enterprises do not meet the definition of a commercial farm and, therefore, may be disadvantaged. These properties likely meet the definition of agricultural land, however (any land in Maine which is used or capable of use without substantial modification for production of agriculturally

related products including, but not limited to, crops, livestock, poultry, dairy products, and sod). Therefore, they are potentially eligible for purchase by the PFAS Fund.

The PFAS Fund will not purchase non-agricultural land. More specifically, the PFAS Fund will not purchase strictly residential property (although it will purchase a homestead that is part of a farm).

Is there a model for this, either in or outside of Maine?
LMF, VRAP, etc.

Do we need additional research or data?

How will recipients be selected?
Farmers will initially self-select. After that, the PFAS Fund will proceed with purchases and sales consistent with its to-be-developed policies and rules.

What documentation is needed?
Test results confirming PFAS above screening thresholds in soil and/or water.

What sort of controls should be in place?
The review panel should be mindful of when subject properties were purchased in relation to the discovery of PFAS. We want to guard against flipping. Also, as part of the purchase and sales agreement, we need to be clear about what can and cannot be done while the sale is pending, e.g., no harvesting of timber while sale is pending.

What is the timeframe for implementation?
As soon as practical. The development of policies and rules can begin in the summer of 2023.

Should there be a time limit?
Should be flexible to allow farmers time to see whether they can continue to operate despite PFAS.

How might the strategy address issues of equity?
The rollout of this program is open to all eligible farm owners. Recognizing that farm ownership is a privilege almost exclusively held by white farmers in Maine, with very few BIPOC or socially disadvantaged farm owners in Maine, the land acquisition program doesn't factor in racial equity considerations as designed. In the early days of program development, when funding or staff capacity is a limiting factor, priority could be assigned to eligible socially disadvantaged farm owners to recognize the historic failure of State and Federal agencies in providing equitable assistance and opportunity.

Anticipated budget; budget considerations
The PFAS Fund will purchase PFAS-impacted agricultural property at the fair market value as if there were no PFAS contamination. It is difficult to estimate how many farmers will want to sell their property. The Land Subcommittee proposes setting aside a total of $16,500,000 to purchase PFAS-contaminated property through Fiscal Year 2028.

The first year of the program (Fiscal Year 2024) will be considered a pilot program. The PFAS Fund expects it will purchase a limited number of properties in Fiscal Year '24 as it establishes policies and procedures. Future purchases should be able to be accomplished more efficiently. Therefore, the PFAS Fund will be able to acquire more properties more quickly in subsequent years.

Additionally, the PFAS Fund will be responsible for approximately $20,000-40,000 in additional costs per transaction. These additional costs include fees for appraisals, title searches, attorney time, boundary surveys, environmental studies, recording fees, etc.

The seller will pay to cure any title defects, liens on the property, and taxes.

The PFAS Fund anticipates hiring a Public Service Coordinator I (PSC-I) during the fall of 2023 to oversee land acquisition and management. The PSC-I position will be paid for with General Funds. Additional staff may be needed in the future to monitor/steward the properties and/or to identify and manage contracting responsibilities.

Strategy II.B: DACF holds and manages land purchased by the PFAS Fund.

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Relocating a commercial farm when the agricultural land of the farm is found to be contaminated by PFAS. 7 MRSA § 320-K(4)(C).
- Buying and selling agricultural land found to be contaminated by PFAS. 7 MRSA § 320-K(4)(D).

Who will be eligible?

Properties meeting the statutory definitions of "commercial farms" or "agricultural land" meet the initial eligibility criteria for Strategies II.A and B. A commercial farm means "a farm that produces any farm product with the intent that the farm product be sold or otherwise disposed of to generate income." 7 MRSA §320-K(1)(C). Agricultural land means "any land in Maine which is used or capable of use without substantial modification for production of agriculturally related products including, but not limited to, crops, livestock, poultry, dairy products, and sod." 7 MRSA §32(A).

Describe the strategy:

The PFAS Fund will purchase agricultural property with known PFAS contamination from willing sellers. The intention is to eventually return the land to agricultural production. The length of time DACF holds land will vary depending on the unique characteristics of each property.

The intention of the PFAS Fund is not to make money but to support impacted farmers and, to the extent possible, to return impacted land to agricultural use.

<u>Experiment Station</u>

One option is to make the property available as an experiment station. Refer to Strategy III.B for recommendations from the Research Subcommittee regarding the establishment and management of a research station.

<u>DACF Holds the Land</u>

Another option is for DACF to hold the land. Use and management options will vary based on the character of the property. Each property will be unique and must be evaluated accordingly.

- DACF will need to develop management plans for any property it holds. For instance, will fields and pastures be permitted to revert to woods? Who will have access to the site? Should it be posted? Can it be leased? For what purposes?
    - It will be important for DACF to consider the best future use of the property. What would produce the greatest public good? Refer to the criteria used to evaluate and characterize the property prior to purchase (Strategy II.A).
    - DACF will also need to identify prohibited uses. For instance, State-owned properties will not be used for activities that risk contamination of the food supply or risk increased contamination of the site. Also, uses that disadvantage abutters should be avoided.
    - The PFAS Fund will strive to understand and convey risk to property users. For instance, it will seek up-to-date guidance from CDC and other authoritative sources on risk mitigation to incorporate into contracts with third-party maintenance contractors.
- Maine IF&W can provide technical assistance related to management of property for wildlife habitat.
- Look to DACF's Bureau of Public Lands (BPL) for examples of management plans.
- DACF should consider whether to sell structures. It will need to balance the cost of ongoing maintenance versus whether the structure is integral to a future best use of the property.

- DACF should pay an in lieu of fee to replace property taxes.

DACF could lease property that it retains title to:

- Leasing relieves DACF of management responsibility and will generate some income that could augment the PFAS Fund.
- Look to DACF's Bureau of Public Lands for examples of leases.
- What fee should be charged? Market value? A nominal fee? Published value? DACF anticipates that a new agricultural lease rate survey will be available in the Fall of 2023.
- Lease for agricultural production. Need to stipulate what can and cannot be produced, testing requirements, etc.
- If property is leased as a residence, DACF will need to order an assessment of the building envelope to determine whether PFAS presents a health risk to potential tenants.
- Lease for solar development:
    - If the property is suitable for solar, this should be discussed with the impacted landowner before the property is sold to DACF.
    - Any solar development must be consistent with DACF's technical guidance, as amended from time to time: Microsoft Word – Final DACF Solar Guidance 1-8-21 (maine.gov)
    - See also best practices for low impact solar: Solar-Nat.-Resource_Ag-BPs.pdf

DACF should consider a Review Panel to assist with property management. Should this be the same one that advises on acquisitions and sales? Should the panel be expanded to include members who can speak to public benefits beyond agricultural uses (e.g., climate change mitigation, economic development)? Review panel members who are not paid by an employer to participate should be compensated by the State for their time.

- The panel should revisit properties on a regular basis (e.g., at least every 3-5 years). Does it still make sense to continue to hold this property? Should it be sold? For what purposes? Should an existing lease be renewed?

DACF should also maintain open communication with the municipalities where State-owned land is located and with abutters.

When DACF Sells the Land

The PFAS Fund will need to develop internal policies for the sale of property acquired by the PFAS Fund.

- How will price be set? Look at examples from LUPC and municipalities that acquire property through delinquent tax liens. What procedures do they use to sell property? Auction? Maine DOT and DHHS may be able to offer guidance.
- Should any groups have priority when land is sold? For instance, should the prior owner or members of the prior owner's family be given the right of first refusal?
- If appropriate, place an agricultural easement on the property when it is sold.
    - Maine Farmland Trust could be the easement holder.
    - Consider including affordability covenants in the easement allowing the easement holder the option to purchase at agricultural value (OPAV). DACF will need to explore concerns about OPAV with the Maine Attorney General's office.
    - Recall that there should already be a VRAP covenant on the deed. DEP can advise on risk of exposure and provide guidance on mitigation measures.

Who will benefit? How?

Multiple benefits, including preserved open space, wildlife habitat, the potential for recreational use, and carbon storage.
Will anyone be disadvantaged?
Is there a model for this, either in or outside of Maine?
Do we need additional research or data? The PFAS Fund needs to determine how the State handles property insurance.
How will recipients be selected?
What documentation is needed?
What sort of controls should be in place?
What is the timeframe for implementation? Management planning will begin while sales are pending.
Should there be a time limit? No. DACF could hold some properties indefinitely.
How might the strategy address issues of equity?
Anticipated budget; budget considerations: Funding will be needed for maintenance and stewardship costs (other than personnel costs). An estimate of $50,000/year/property is included simply as a placeholder. Until properties are identified, any figure for maintenance costs is purely speculative. As DACF acquires properties, it can use tools such as The Nature Conservancy's Long-Term Stewardship Calculator to estimate costs. See Stewardship Calculator and Handbook (conservationgateway.org). It should be noted that maintenance costs for contaminated property may be greater than maintenance costs for similar, non-impacted properties. Also, the budget includes attorney time to draft and review lease agreements. The estimated cost for the first year is $2,500. This will increase to about $5,000 thereafter. Budget estimates for an experiment station are included in Strategy III.B, $250,000 annually. The PFAS Fund may realize income from leased properties. It is too soon to estimate a dollar value. **Note: DACF will need dedicated long-term funding to maintain properties.**

Strategy II.C: Conservation Payments

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Investing in equipment, facilities and infrastructure to ensure that a commercial farm with land found to be contaminated by PFAS maintains profitability while the commercial farm transitions to an alternative cropping system or implements remediation strategies, technological adaptations, solar development or other modifications to its operations in response to PFAS contamination. 7 MRSA 320-K(4)(E).

Who will be eligible?

A person whose commercial farm[7] is found to be contaminated by PFAS will be eligible. More specifically, commercial farmers will be deemed eligible if they have a water test result exceeding current State of Federal drinking water standards for wells servicing their farm and/or fields; and/or soil test results exceeding Maine CDC's current crop specific soil screening levels[8]; and/or one or more samples of farm products[9] showing PFAS at levels deemed of concern by the Maine CDC:

- At present, Maine CDC has established Action Thresholds for milk (210 ppt) and beef (3.4 ppb). These thresholds are subject to change.
- Maine CDC is testing and assessing PFAS levels for a range of additional farm products. In the absence of established thresholds for these new products, DACF will request that Maine CDC review the farm product sample(s) result(s) and advise whether the test result(s) are deemed of concern in its professional opinion.

Describe the strategy:

As an alternative to purchasing property, the PFAS Fund could make payments to commercial farmers who take PFAS-impacted land out of production and agree to manage it in a manner that achieves conservation or other policy goals (e.g., for wildlife habitat or carbon sequestration).

The PFAS Fund could pay a baseline rate, potentially equivalent to the value of the current annual property tax of the subject property. Additional payments could be modeled on FSA's menu of conservation practices for its Conservation Reserve Program (CRP). For example, a farm could be paid $X to follow migratory bird haying practices, $Y to plant pollinator habitat, and $Z to plant perennial cover crop. The PFAS Fund will need to consider whether it is prudent to attract threatened wildlife to contaminated property. It may be better to emphasize carbon sequestration over wildlife habitat.

As with the property it manages (Strategy II.B), the PFAS Fund and landowner will seek technical assistance from organizations such as the Bureau of Public Lands, Maine IF&W, University of Maine Cooperative Extension, and USDA's Farm Service Agency and Natural Resources Conservation Service.

[7] A commercial farm is defined in 7 MRSA § 320-K (the statute establishing the Fund) as "a farm that produces any farm product with the intent that the farm product be sold or otherwise disposed of to generate income." Consistent with current DACF/BAFRR practices, the PFAS Fund will use $2,000 in gross annual farming income as the threshold for eligibility. Acreage will not be a factor. See 7 MRSA § 52(4).

[8] See Maine-PFAS-Screening-Levels-Rev-6.28.21.pdf

[9] "Farm product" means those plants and animals useful to humans and includes, but is not limited to, forages and sod crops, grains and food crops, dairy products, poultry and poultry products, bees, livestock and livestock products and fruits, berries, vegetables, flowers, seeds, grasses, Christmas trees and other similar products. 7 MRSA § 52(3-A).

The initial term of a contract for payments in exchange for conservation practices would be five years, with an option to renew for additional five-year increments if additional funding can be secured.

There is a potential that farms enrolled in this conservation program would lose their tax advantage under the State's Farm and Open Space Tax Law. If farms no longer qualify, the PFAS Fund could pay the difference between the farmland tax rate and the "just value" tax rate. The PFAS Fund could also pay any recapture penalty.

A major concern with this proposal is that the PFAS Fund's initial allocation is expected to be expended by the end of Fiscal Year 2028 (June 2028), if not sooner.

Policy considerations/recommendations:

Owners of PFAS-impacted property are paying property taxes on land that they cannot use to generate income. A member of the public recommended that the PFAS Fund pursue property tax abatement. Changes to tax laws and assessments would need to be made by the Legislature and municipalities. The PFAS Fund can achieve the same result for impacted farmers enrolled in its land conservation program by setting the baseline of conservation payments to be consistent with the land's current property tax bill. The Land Subcommittee recommends that the Legislature explore statutory changes to ensure that any diminution in value due to the presence of PFAS in residential well water or soils is reflected in tax assessments.

The Land Subcommittee further recommends that the Farm and Open Space Tax Law (36 MRSA §§ 1101-1121) be revised. The Farmland program allows the valuation of farmland based on its current use as farmland, rather than based on its just value for other potential uses. This reduced land value results in lower property tax bills for owners of farmland. Under the current law, if an impacted property is no longer suitable for farming or if the producer is unable to generate a minimum gross income of $2,000 per year, the local assessor may determine that the property no longer qualifies for the Farmland program. The landowner would no longer be eligible for the reduced tax rate and would have to pay a recapture penalty. The Land Subcommittee recommends that land that is enrolled in the PFAS Fund's conservation program be treated like farmland for the purposes of the Farm and Open Space Tax Law.

Finally, the Land Subcommittee recommends that DACF secure long-term funding – from State, Federal, or private sources – to enable PFAS-impacted farmland owners to enter into long-term contracts to receive payment in exchange for adopting management practices that advance conservation or climate goals.

Who will benefit? How?

Farmers will benefit by being able to remain on their land. This option may be especially attractive to farmers with a mix of clean and contaminated property.

DACF would be relieved of the cost of purchasing the land and of ongoing maintenance obligations.

The public benefits from having a significant new land base managed with conservation and stewardship as the primary goal.

Will anyone be disadvantaged?

Is there a model for this, either in or outside of Maine?
This proposed program would be similar to FSA's Conservation Reserve Program (CRP). In exchange for a yearly rental payment, farmers enrolled in the CRP program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality. Here, contaminated land would be removed from agricultural production and managed to achieve conservation goals.

Vermont has two relevant programs that could help in development:

- Payment for Ecosystem Services: Pays farmers to manage their land with water quality improvements as the central management priority. See Payment for Ecosystem Services and Soil Health Working Group | Agency of Agriculture Food and Markets (vermont.gov)
- Conservation Reserve Enhancement Program: A voluntary program designed to reduce sediment runoff and improve water quality by removing land from agricultural production and establishing vegetative buffers. State and federal funds are used to compensate landowners for the loss of productive agricultural land through upfront incentive payments and annual rental payments based on the total acreage dedicated to vegetated filter strips, forested buffers, or grassed waterways. See Conservation Reserve Enhancement Program (CREP) | Agency of Agriculture Food and Markets (vermont.gov)

Do we need additional research or data?
Better information on rental rates. BAFRR is tasked with publishing rental rates every two years to inform valuations under the Farmland Current Use tax program. The most recent data were released in 2018, though data collection efforts are now underway for a more accurate look at the rental and lease market for Maine farms.

How will recipients be selected?
DACF will need to develop policies and criteria for land that would be eligible for payments in exchange for adoption of stewardship measures. Additionally, provisions will need to be made for staff to periodically visit the property to ensure that conservation measures are being maintained.

What documentation is needed?
A signed contract between the parties. Among other provisions, the contract should describe the conditions under which the contract can be terminated and provisions for a periodic (annual?) review.

What sort of controls should be in place?
The PFAS Fund will need to conduct a cost benefit analysis before entering into any rental agreement.

If a decision needs to be made between payments for conservation and an outright purchase, farmer preference should be respected.

What is the timeframe for implementation?
Implementation could begin in the summer of 2024.

The PFAS Fund will make income replacement payments to farmers for up to two years from the time that PFAS is discovered on a farm. During that time, the PFAS Fund and other units within DACF will work closely with impacted farmers to navigate a path forward. If an economically viable use of the property cannot be identified, rental payments in exchange for implementation of stewardship practices ought to be contemplated, as well as an outright purchase of the property.

Should there be a time limit? The PFAS Fund will not be able to make rental payments indefinitely unless the Fund is replenished on an ongoing basis.
How might the strategy address issues of equity?
Anticipated budget; budget considerations: The PFAS Fund will allocate $3,000,000 for conservation payments. As noted above, the PFAS Fund's initial allocation is expected to be expended by the end of Fiscal Year 2028 (June 2028). This proposal, therefore, is time limited. Once a farm is accepted into the program, that farm's full allocation will be reserved so that it can be paid out over a five-year period. **The PFAS Fund should explore long-term funding opportunities.**

Strategy II.D: Guidance on Land Transactions

Identify which purpose(s) listed in 7 MRSA c. 10-D, if any, that this strategy addresses.

- Developing and implementing educational programs for landowners, including but not limited to determining best practices for informing residents about the potential of being near or on a site on which sludge or septage application was licensed or permitted by the State prior to 2019, and providing information and guidance on buying or selling agricultural lands that have had sludge or septage applied. 7 MRSA § 320-K(4)(M).

Who will be eligible?

DEP presently "inform[s] residents about the potential of being near or on a site on which sludge or septage application was licensed or permitted by the State prior to 2019." Prior to taking soil and water samples, DEP contacts municipalities and then property owners. It subsequently reports test results back to the property owners and, if necessary, provides clean water (bottled water initially and then a water filtration system).

The PFAS Fund will focus its attention on the second element of this statute, "providing information and guidance on buying or selling agricultural lands that have had sludge or septage applied."

Describe the strategy:

The PFAS Fund can produce and distribute informational materials to professionals involved in real estate transactions and to municipal offices. For instance, the PFAS Fund could reach appraisers, realtors, lenders, and other licensed professionals through the Maine Department of Professional and Financial Regulation. It could also make presentations to professional organizations. Relatedly, Maine DEP presented "PFAS in Maine" to the Maine Association of Realtors in February 2023.

Information about buying and selling PFAS-impacted agricultural land will also be included in the PFAS Response Kit that will be developed by the PFAS Fund and distributed to all farmers with known PFAS contamination. It will also be available online. See Strategy I.H.

Key points to include are:

- Basic information about PFAS compounds: what they are, where they are found, why they are concerning, how they can be managed (e.g., with water filters)
- A link to DEP's PFAS investigation map: Maine DEP PFAS Investigation (Formerly the "Septage and Sludge Map") (arcgis.com)
- Contact information for Maine DHHS's Drinking Water Program: Maine Drinking Water Program Home Page
- Information about required residential property disclosures. Under 33 MRSA § 173, if the property has a private water supply, the seller is supposed to disclose "[w]hether the seller has experienced a problem such as an unsatisfactory water test or a water test with notations." A bill is presently pending in the Legislature that would explicitly require disclosure of PFAS (LD 1488).
- A summary of the process that the PFAS Fund will follow when purchasing agricultural land with known PFAS contamination.
- Information about Maine Farm Link and other resources to help people find new properties.
- Information about the roster of service providers who can assist farmers with land acquisitions. See Strategy I.B.

• General information about like-kind exchanges under Internal Revenue Code Section 1031 (allowing business owners to minimize capital gains taxes). See Like-Kind Exchanges – Real Estate Tax Tips | Internal Revenue Service (irs.gov). • A recommendation to appraisers that they do not use State-purchased properties as comparable sales when they are appraising the value of other agricultural properties.
Who will benefit? How? All parties to a sale will be able to make informed decisions.
Will anyone be disadvantaged?
Is there a model for this, either in or outside of Maine? State agencies routinely produce bulletins and other outreach materials.
Do we need additional research or data? Additional information may be needed so that messages can be tailored to specific audiences.
How will recipients be selected? As the PFAS Fund enters the implementation phase, it can reach out to realtors, lenders, and appraisers to further refine what sort of information and materials would be most helpful.
What documentation is needed? N/A
What sort of controls should be in place? N/A
What is the timeframe for implementation? Development of the PFAS Response Kit will begin in the summer of 2023. Other materials will be produced on demand.
Should there be a time limit? N/A
How might the strategy address issues of equity?
Anticipated budget; budget considerations The cost of developing and delivering educational materials by existing DACF staff will be minimal.

III. Research

The strategies recommended in this section are intended to advance and share research that will help farmers to determine their best options for maintaining and enhancing viability despite the presence of PFAS on their property.

The following tables present recommendations to:

A. Establish competitive research program
B. Establish a research station
C. Compile and share scientific information

Eligibility

Criteria for grant funding will be further refined as DACF develops policies and rules for granting awards. In general, however, any qualified researcher will be eligible to apply for funding.

Budget

The projected budget for research for Fiscal Years 2024 – 2028 is $11,200,610.

	FY'24	**FY'25**	**FY'26**	**FY'27**	**FY'28**	
Strategy	**7/1/23-6/30/24**	**7/1/24-6/30/25**	**7/1/25-6/30/26**	**7/1/26-6/30/27**	**7/1/27-6/30/28**	**TOTAL**
Research						
III.A Competitive research grants (cap of $500,000/project)	$ 3,500,000	$ 3,500,000	$ 1,500,000	$ 1,500,000	$ -	$ 10,000,000
III.A Public service coordinator	$ 84,874	$ 87,421	$ 90,043	$ 92,745	$ 95,527	$ 450,610
III.B Experiment station	$ -	$ -	$ 250,000	$ 250,000	$ 250,000	$ 750,000
III.C Research database	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal						**$ 11,200,610**

Strategy III.A: Competitive Research Grants

Identify which purpose(s) listed in 7 MRSA 320-K(4), if any, that this strategy addresses.
This strategy addresses 7 MRSA 320-K(4)(H-L):

- Evaluating the capacity of PFAS testing and data management in the State;
- Conducting research that supports short-term farm management decisions and assesses future options for viable uses of agricultural land that has been contaminated with PFAS;
- Conducting research that quantifies the impact of PFAS on commercial farms and agricultural communities in the State;
- Conducting research on soil and water remediation systems and the viability of those systems for commercial farms; and
- Conducting research on alternative cropping systems, PFAS uptake of different crops, the use of livestock systems to mitigate exposure to and for remediation of PFAS and food safety criteria for food products.

Describe the strategy:
The PFAS Fund will establish competitive research grant programs to support scientific research to inform on-farm management decisions. Grants of up to $500,000 will be available for multi-year studies. Additionally, smaller grants will be available for research projects that are smaller in scope and scale.

The intent is to fund research that will help farmers to determine their best options for maintaining and enhancing viability despite the presence of PFAS on their property. Toward that end, preference will be given to proposals that are likely to produce results that can guide practical on-farm practices.

The PFAS Fund will entertain proposals for research on the following topics. This is not an exhaustive list.

Crop-related studies:

- To what extent do various crops take up PFAS and where in the plants are they found? Look at vegetables (roots, leaf/stem, fruit), fruits (soft fruits and tree fruits), forage crops (grasses, legumes, broadleaf, annuals, hay v. silage), grain crops (corn, cereals, beans/peas, specialty (buckwheat, amaranth, millet, sorghum, etc.))

Livestock-related studies:

- What is the transfer factor from soil to milk? Soil to beef? Soil to lamb? Soil to pork? Soil to chicken? Soil to egg?
- What is the correlation between levels of PFAS in blood and levels in meat? Between milk and meat? Between milk and cheese?
- Elimination kinetics (how long does it take to depurate an animal)?
- Production of wool and other animal fibers on PFAS-impacted land*

Soil-related studies:

- How are PFAS soil levels changing over time? In different soils? In response to different management?
- Which PFAS sticks to the soil & which fractions of soil?
- Transport of PFAS through soils
- Biochar as a PFAS immobilizer
- Soil remediation

Water-related studies:

- Irrigation pathways*
- Leaching from soil to groundwater

Other:

- Where in milk do PFAS accumulate, e.g., throughout, or just in the cream?
- Use of biomass from impacted fields for construction purpose (e.g., silt barriers)
- Models or sensors to quickly evaluate where PFAS are in the landscape and to determine whether they change over time
- Development of decision support tools (e.g., to help determine when it is safe to return farm products to the market)
- Whether there are PFAS exposure pathways unique to farmers (e.g., dust inhalation) (see Strategy IV.H, Farmer/Farm Worker Soil Exposure Study)*
- Clinical trial of PFAS reduction modalities) (see Strategy IV.E, Clinical Trial)**

Methodology-related studies:

Note that while research into methodologies is critical, it is a lower priority for the PFAS Fund as compared to the other topics listed above, in part, because EPA and the U.S. Food and Drug Administration (FDA) are currently working at the national level to identify standards.

- Farm field testing strategies (e.g., number of samples)
- Sample handling (e.g., plant material; fresh weight vs. dry weight on same scale)
- Interlaboratory validation methods

DACF will develop internal policies and rules for administration of grant funding. It will subsequently issue Requests for Proposals (RFPs) to solicit research grant applications. The RFPs will request proposals that follow typical standards for scientific research (e.g., hypothesis, methodology, schedule, key personnel, deliverables, budget).

The rules and/or RFPs will stipulate that as a condition of receiving funding from the PFAS Fund, researchers will share their data with the PFAS Fund. The PFAS Fund will require that data be delivered in an open exchange format (e.g., Comma Separated Values (CSV) for tabular data).

The rules and/or RFPs will also require that researchers share any resulting publications with the PFAS Fund. The PFAS Fund will encourage researchers to publish in open access journals by allowing publishing costs as a budget item.

The PFAS Fund expects that any proposal that includes a farmer partner will include compensation for that farmer. Therefore, expenses such as plot rental and plot maintenance will be allowable budget items. Likewise, costs associated with maintaining livestock for research purposes will be eligible for funding.

Relatedly, DACF can serve as a matchmaker between farms that are willing to serve as research sites and scientists who are looking for a place to conduct their research. DACF will appoint and publicize a primary point of contact for this service.

* Research topics marked by an asterisk were suggested during a public hearing held on January 11, 2023.

** Recommended by the Health Subcommittee.

Who will be eligible?
Any researcher with the appropriate expertise.

Who will benefit? How?
Farmers, DACF, and the broader agricultural community will have information to help guide management decisions.

Will anyone be disadvantaged?
An impacted farmer without existing connections to a research institution or a researcher may be disadvantaged. To alleviate this problem, the PFAS Fund could incentivize and facilitate collaboration between impacted farmers and researchers.

Is there a model for this, either in or outside of Maine?
There are many competitive research grant programs, including several administered by DACF.

Do we need additional research or data?
No

How will recipients be selected?
DACF will solicit ideas for research topics at the annual Agricultural Trades Show with the intention of identifying research that leads to relevant answers.

DACF and the PFAS Fund will establish an interdisciplinary advisory panel to help select proposals for funding. Potential members could include representatives from USDA's Agricultural Research Service, FDA's Center for Veterinary Science, academic researchers, and a person representing agricultural producers. Review panel members who are not paid by an employer to participate should be compensated by the State for their time.

What documentation is needed?
The PFAS Fund will need to develop rules and application procedures. As an example, see DACF's rules governing the Agricultural Development Grant Fund (01-001, Chp. 33).

As part of crafting the Request for Proposals, the PFAS Fund will need to determine what metadata standards researchers will be required to follow. As an example, EPA has a Data Dictionary for Environmental Media Sampling Data, see
https://echo.epa.gov/system/files/PFASAnalyticToolsPUBLICMetadata7-13-2022.508_0.pdf

What sort of controls should be in place?
Controls will be built into the rules/RFP for project proposals, management, and reporting.

What is the timeframe for implementation?
Development of rules can begin the in summer of 2023. The PFAS Fund will strive to solicit the first round of proposals in winter 2023/2024.

Should there be a time limit?

There is no specific time limit as the need for information about PFAS in agriculture will be ongoing. Funding for research may taper down if funding for an experiment station builds, however. See Strategy III.B, Experiment Station.

How might the strategy address issues of equity?
Rules and scoring criteria can be crafted, for example, to prioritize proposals that include multiple institutions. Also, the PFAS Fund should be intentionally inclusive when it announces the availability of grant opportunities.

What is the anticipated budget?
There will be two grant categories:

1. **Multi-year Projects.** Multi-year projects will be capped at $500,000 per project and will be expected to last two to three years. Grants for multi-year projects will likely be awarded on an annual basis.

2. **Small-scale Projects.** These grants are intended to support research that is smaller in scale and scope and may also be time-sensitive (e.g., needs to be conducted during calving season). There will be no minimum dollar amount set for these grants. The expectation is that proposals will generally not exceed $250,000. Higher amounts will be considered based on project complexity and duration. In all cases, funding requests should align with project duration, scope, and complexity. Grants for small-scale projects could be awarded quarterly or semi-annually.

An annual budget of $3.5 million for Fiscal Years 2024 and 2025 would allow for up to six multi-year projects and numerous smaller awards to be granted each year. The proposed grant budget tapers down in subsequent years in anticipation of directing more funding toward the establishment of an experiment station (Strategy III.B).

Additionally, funding is needed for a Public Service Coordinator to develop and manage the competitive grant program and, potentially, to oversee the establishment of an experiment station.

Strategy III.B: Experiment Station

Identify which purpose(s) listed in 7 MRSA 320-K(4), if any, that this strategy addresses.
This strategy addresses 7 MRSA 320-K(4)(H-L):

- Evaluating the capacity of PFAS testing and data management in the State;
- Conducting research that supports short-term farm management decisions and assesses future options for viable uses of agricultural land that has been contaminated with PFAS;
- Conducting research that quantifies the impact of PFAS on commercial farms and agricultural communities in the State;
- Conducting research on soil and water remediation systems and the viability of those systems for commercial farms; and
- Conducting research on alternative cropping systems, PFAS uptake of different crops, the use of livestock systems to mitigate exposure to and for remediation of PFAS and food safety criteria for food products.

Describe the strategy:
A farm purchased by the PFAS Fund from a willing seller could be used as an experiment station.

There are multiple benefits of a dedicated PFAS research site. For instance, it would be a closed system that could be increasingly characterized over time. Having a deep understanding of the property could reduce costs of future work and may lead to new hypotheses and projects. Additionally, researchers could be confident in their ability to conduct multi-year research and there is the potential for synergy among researchers working at the same location. Access to an experiment station would make researchers more competitive when seeking funding. Additionally, an experiment station may draw researchers to Maine. Furthermore, an experiment station could be a foundation for Cooperative Extension outreach programs that would benefit farmers and the public.

Notably, PFAS research cannot be conducted at U-Maine's existing experiment stations; it would be unwise to bring PFAS onto these properties.

DACF will need to determine whether the experiment station would be a strictly DACF operation, or whether it would be operated in partnership, for example, with U-Maine or USDA's Agricultural Research Service (ARS).

DACF could contract with a manager to operate the farm. Depending on the property, the manager could live on or off site. The manager and/or staff could also have a role in identifying and conducting research.

The PFAS Fund can look to U-Maine's existing research stations as examples. For instance, outside researchers can use Darling Marine Center for a fee. The director makes space available on a first come, first served basis. Here, we would want to consider factors such as,

- Whether the proposed research is related to a research priority, and
- Whether priority should be given to Maine-based researchers.

Also, as a requirement of using the site, researchers will be obligated to share data in a form that can be used and analyzed by other researchers and will be asked to share any publications with the PFAS Fund.

Who will be eligible?
The experiment station would be available to researchers who have funding to support use of the site and whose research is related to a priority identified by the PFAS Fund.

Who will benefit? How?
See above.

Will anyone be disadvantaged?

- Researchers living/working a long distance away would have less access to the site.
- Would the presence of a PFAS experiment station impact the value of adjacent properties? Would it be any different from having a PFAS-impacted commercial farm as a neighbor?
- Once the State purchases property, the municipality loses property tax income. The State can pay an in lieu of fee, though.
- Some farms who wanted to make their property available as a research site for a fee may lose the opportunity to do so.
- Producers of niche products may not see useful results from an experiment station that is focused on priority research topics.
- Research focused on production agriculture may not be directly relatable to Indigenous food systems, foragers, or hunters. Maine IF&W may have appropriate resources, though.

Is there a model for this, either in or outside of Maine?
UMaine has six existing agricultural research sites: Aroostook Farm (potatoes), Blueberry Hill Farm (blueberries), Greenhouse/Gardens (vegetables, potatoes), Highmoor Farm (vegetables, fruits), Witter Farm (dairy), and Rogers Farm (vegetable, grains)

DACF used to maintain a farm in Florida that grew potatoes for certification.

Do we need additional research or data?

How will recipients be selected?
Once the PFAS Fund begins purchasing land, a review panel will be asked to weigh in on the desirability of particular properties for use as an experiment station. Review panel members who are not paid by an employer to participate should be compensated by the State for their time.

Factors to consider include:

- Whether the site meshes with research priorities
- Whether the site is representative of a Maine farm
- Levels and distribution of PFAS in soils
- Whether groundwater is contaminated; contaminated water could be used for irrigation studies
- Existing crops
- Existing infrastructure (e.g., greenhouse, facilities for animals (dairy, beef, sheep, goats))
- Whether additional investments would be needed (e.g., fencing)
- Potential for establishing distinct areas for short-term (2-3 years) and long-term research
- Location and ease of accessibility

What documentation is needed?

- Farm budget
- Data management protocols. How will data be made available to other researchers?

- Safety protocols (e.g., for handling soils, plants, animals, equipment)
- Liability considerations
- Communications plan: be sensitive to farm families and the profound human impacts they have suffered

What sort of controls should be in place?

- Keep an inventory of research that is being conducted and of products that may contain PFAS that are used at the site
- Written protocols for segregating sites, as well as rules regarding what can and cannot be done at specific sites
- Conflict of interest disclosures

What is the timeframe for implementation?

If we assume the PFAS Fund will begin purchasing property in FY '24, the process of standing up a research station could begin soon thereafter, but likely not before the summer of 2025.

Should there be a time limit?

An experiment station should continue indefinitely.

How might the strategy address issues of equity?

- Consider a culturally responsible recruitment and retainment strategy
- Consider what type of language/communications are most effective for different audiences
- Make sure all stakeholders have access to the process. Note that there is a diverse array of farmers in Maine
- It is important to acknowledge what is not being addressed

What is the anticipated budget? Budget considerations?

The PFAS Fund will purchase PFAS-contaminated property from willing sellers at the fair market value as if there was no PFAS. See Strategy II.A.

The PFAS Fund will allocate $250,000 per year to staff and operate an experiment station. Additional funding will likely be needed in the early years to purchase equipment, etc.

Note: Maintenance of an experiment station will require dedicated long-term funding.

Strategy III.C: Compile and Share Scientific Information

Identify which purpose(s) listed in 7 MRSA 320-K(4), if any, that this strategy addresses.
7 MRSA 320-K(4)(H-L) indicates that the PFAS Fund can be used to evaluate the capacity of PFAS testing and data management in Maine, and to support research on an array of topics.

Describe the strategy:
The Research Subcommittee recognizes the need to compile and share scientific information. As noted in Strategy III.A, Competitive Research Grants, all data collected through studies funded by the PFAS Fund must be shared with DACF in an open exchange format.

Data Portal
DACF will need to determine how best to make this data available to other researchers. It anticipates including a data portal on its website. Ideally, the data will be accessible from other websites, as well.

One option is to work with the Maine State Library's Digital Maine Repository. The repository is based on an academic publishing tool and is capable of research data management. For instance, it has version controls and can offer a mix of public and restricted access. It can also host a map or publication and the underlying raw data. For example, see "Surficial geology of the Old Speck Mountain quadrangle, Maine" by Lindsay J. Theis (digitalmaine.com).

Additionally, the Digital Maine Repository can set up a portal for DACF's website. For example, see Maine Geological Survey's search tool: Maine Geological Survey: Maine ACF. Also, Maps, Publications and Online Data: Maine Geological Survey: Maine ACF and mgs-data (arcgis.com).

Alternatively, DACF will explore whether it makes sense to store research data in a new or existing State database. For instance, a multi-agency PFAS database is currently being developed. Also, Maine DEP has an existing database, Environmental and Geographic Analysis Database (EGAD) (formerly known as the Environmental and Groundwater Analysis Database). Other options include,

- Maine Tracking Network, Home | Maine Tracking Network (mainepublichealth.gov)
- Maine GeoLibrary, Data Catalog (maine.gov)
- Information Resources of Maine, InforME: Information Resource Network (maine.gov)
- Maine Open Data Portal, [presently throwing a 403 error]

Potential templates for a portal are available from the Kellogg Biological Station (https://lter.kbs.msu.edu/data/) and Arizona State University (Data | Central Arizona–Phoenix Long-Term Ecological Research (asu.edu).

Bibliography/Literature Repository
Additionally, the PFAS Fund anticipates that it will eventually include a bibliography on its website of research papers that result from the research it has funded. Where possible, links to articles will be included (e.g., to open access journals).

The PFAS Fund's website may include information about where and how to access other PFAS-related articles. For example,

- The University of Maine at Orono has developed an annotated bibliography of PFAS-related research to help guide its own research.

- The Shaw Institute began compiling a database about 15 years ago focused on marine mammals and fluorinated compounds. It contains over 200 papers in multiple categories.
- AGRICOLA | National Agricultural Library (usda.gov)
- The National Institutes of Environmental Health Sciences maintains a database of NIEHS-funded studies: NIEHS-supported Publications on Per- and Polyfluoroalkyl Substances (PFAS) (nih.gov)
- PFAS-Tox Database: https://pfastoxdatabase.org/

Who will be eligible?
Data and publications (or at least citations to publications) resulting from research funded by the PFAS Fund will be hosted online and will be accessible to anyone with an internet connection.

Who will benefit? How?
Ready access to information will help guide future research and enable farmers to make informed decisions.

Will anyone be disadvantaged?

Is there a model for this, either in or outside of Maine?
Yes

Do we need additional research or data?
DACF needs to explore options for hosting State-funded research results.

How will recipients be selected?
N/A

What documentation is needed?
N/A

What sort of controls should be in place?

What is the timeframe for implementation?
There will be lag time between when research is funded and when data and publications can be shared.

Should there be a time limit?
No. As long as the data and publications are relevant, they should be available. The Maine State Library has been working since 1837 to retain information used to make public policy decisions. This is a factor that weighs in favor of working with the Maine State Library.

How might the strategy address issues of equity?
Not everyone has access to the internet. Therefore, general information about the PFAS Fund's research programs will be included in the PFAS Response Kit (Strategy I.H) and other print materials.

What is the anticipated budget?
There will be minimal cost to DACF to work with the Maine State Library or other State agencies to host data and research papers online.

IV. Health

The scope of the Health Subcommittee's work was broader than that of the other subcommittees, all of which focused on impacted commercial farmers. In addition to supporting farmers, the Health Subcommittee's recommendations are intended to support the health needs of residents whose drinking water wells were contaminated by the land application of biosolids.

The Health Subcommittee's work was guided by Public Law 2021, Chapter 635, Sec. XX-3(3):

> The [Department of Agriculture, Conservation, and Forestry] may establish, in coordination with the Department of Health and Human Services, Maine Center for Disease Control and Prevention, a PFAS medical monitoring and blood levels of PFAS testing program for persons whose drinking water[10] or agricultural land is found to be contaminated by PFAS. If the department establishes a program under this subsection, the department may not require a person to show a present injury or disease to qualify for the program.
>
> A. In accordance with rules adopted by the department under Title 7, section 320-K, subsection 6, the program may include payment by the department for annual testing of blood levels of PFAS and related services and diagnostic evaluations for an affected person who does not have sufficient health coverage for testing under this paragraph and related services. The program must allow the drawing of blood for the testing in a health care provider's office or by a laboratory. The program must allow a blood sample taken by a health care provider or laboratory to test for blood levels of PFAS to be sent to a facility approved by the Department of Health and Human Services.
>
> B. The department may develop criteria for funding medical monitoring and health care for persons found to have blood levels of PFAS greater than the general population and when it is medically relevant to undergo periodic medical examination and health care.

Also, the PFAS Fund is authorized to monitor the health of a person, and members of that person's household, whose agricultural land is found to be contaminated by PFAS and to provide medical care to a person found to have blood levels of PFAS greater than the general population or health effects associated with exposure to PFAS. 7 MRSA § 320-K(4)(A-B).

The Health Subcommittee was led by co-chairs Isaac Benowitz, MD, State Epidemiologist and Chief Medical Officer, Maine CDC, and Rebecca Boulos, MPH, PhD, Executive Director, Maine Public Health Association. Members are Demetri Blanas, MD, Maine Mobile Health; Stacy Brenner, RN, State Senator, Broadturn Farm; Rachel Criswell, MD, MS, Skowhegan Family Medicine, Redington-Fairview General Hospital; Abby Fleisch, MD, MaineHealth; Adam Nordell, BA, Defend Our Health, Songbird Farm; Andy Smith, SM, ScD, State Toxicologist, Maine CDC; and Leslie Walleigh, MD, MPH, Environmental and Occupational Health Consultant, Maine CDC. This group includes leaders in public health, the State's

[10] Given that contamination of farmland resulting from the land application of biosolids was the impetus for the PFAS Fund and based on a subcommittee member's recollection of the testimony and work sessions that led to the passage of Public Law 2021, Chapter 635, Sec. XX-3, "drinking water" refers to residential well water contaminated by the land application of biosolids and not to all drinking water within the State of Maine. The precursor bill to PL 2021, Ch. 635, Sec. XX-3 was LD 2013. Testimony on LD 2013 to the Joint Standing Committee on Agriculture, Conservation and Forestry can be found here: Committee Testimony - Maine Legislature (March 15, 2022). A work session was held on March 17, 2022.

foremost clinical experts working with patients with high levels of PFAS in their blood, and a PFAS-impacted farmer.

Additionally, certain members of the Health Subcommittee consulted with individuals currently engaged in providing mental health support to farm communities: Bo Dennis, MOFGA; Leslie A. Forstadt, U-Maine Cooperative Extension; Izzy Ruffin, Maine FRSAN; and Polly Shyka, contractor to Maine FRSAN, U-Maine Cooperative Extension, and Cultivemos.

The Health Subcommittee's work was guided by a report published in July 2022 by the National Academies of Sciences, Engineering, and Medicine (NASEM), *Guidance on PFAS Exposure, Testing, and Clinical Follow-Up*.[11] The report recommends that the Agency for Toxic Substances and Disease Registry (ATSDR) update its clinical guidance to advise clinicians to offer PFAS blood testing to patients who are likely to have a history of elevated exposure. It further recommends that if testing reveals PFAS levels associated with an increased risk of adverse effects, patients should receive regular screenings and monitoring for these and other health impacts. ATSDR will provide clinical guidance based on these recommendations in the coming months.

The following tables present recommendations for:

A. Blood testing
B. Public health oversight of blood testing
C. Medical monitoring
D. Medical treatment
E. PFAS body burden reduction clinical trial
F. Mental health care
G. Educational resources
H. Farmer/farm worker soil exposure study

Eligibility

Initially, individuals whose exposure to PFAS resulted from the land application of biosolids will be eligible for blood testing and mental health support provided by the PFAS Fund. More specifically:

1. Commercial farmers who live on farms with a water test result of 20 ppt or higher for wells servicing their home, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
2. Family members living on farms with a water test result of 20 ppt or higher for wells servicing their home, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
3. Individuals who work on farms with a water test result of 20 ppt or higher for wells servicing the residence, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
4. Households identified through DEP's tiered testing process whose residential wells have a water test result of 20 ppt or higher

Persons whose blood serum PFAS levels equal or exceed 20 nanograms per milliliter (ng/mL) will be eligible for medical monitoring and, potentially, medical treatment. This same population may also be eligible to participate in a clinical trial and/or a soil exposure study.

[11] Available here: Guidance on PFAS Exposure, Testing, and Clinical Follow-Up |The National Academies Press.

Budget

The projected budget for health-related supports for Fiscal Years 2024 – 2028 is $7,278,500.

	FY'24	FY'25	FY'26	FY'27	FY'28	
Strategy	**7/1/23-6/30/24**	**7/1/24-6/30/25**	**7/1/25-6/30/26**	**7/1/26-6/30/27**	**7/1/27-6/30/28**	**TOTAL**
Health						
IV.A Blood testing	$ 425,000	$ 425,000	$ 425,000	$ -	$ -	$ 1,275,000
IV.B Public health oversight - toxicologist (4.H too)	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 625,000
IV.B Public health oversight - clinician	$ 17,700	$ 17,700	$ 17,700	$ 17,700	$ 17,700	$ 88,500
IV.B Public health oversight - educator (4.G too)	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000
IV.C Medical monitoring	$ -	$ 850,000	$ 850,000	$ 850,000	$ 850,000	$ 3,400,000
IV.D Medical treatment	$ -	$ -	$ -	$ -	$ -	$ -
IV.E Clinical trial	$ -	$ 200,000	$ 500,000	$ -	$ -	$ 700,000
IV.F Mental health care	$ 130,000	$ 130,000	$ 130,000	$ 130,000	$ 130,000	$ 650,000
IV.G Develop educational resources	$ 7,000	$ 7,000	$ 7,000	$ 7,000	$ 7,000	$ 35,000
IV.H Farmer soil exposure study	$ 190,000	$ 190,000	$ -	$ -	$ -	$ 380,000
Subtotal						**$ 7,278,500**

Strategy IV.A: Blood Testing

Identify which purpose(s) listed in Public Law 2021, chapter 635, if any, that this strategy addresses.

- Monitoring the health of a person, and members of that person's household, whose agricultural land is found to be contaminated by PFAS. 7 MRSA § 320-K(4)(A).
- Providing medical care to a person found to have blood levels of PFAS greater than the general population or health effects associated with exposure to PFAS. 7 MRSA § 320-K(4)(B).
- The department may establish, in coordination with the Department of Health and Human Services, Maine Center for Disease Control and Prevention, a PFAS medical monitoring and blood levels of PFAS testing program for persons whose drinking water or agricultural land is found to be contaminated by PFAS . . . (Public Law 2021, c. 635 § XX-3(3)).

Describe the strategy:

In July 2022 the National Academies of Sciences, Engineering, and Medicine (NASEM) published Guidance on PFAS Exposure, Testing, and Clinical Follow-Up.[12] The purpose of the report was to help the Agency for Toxic Substances and Disease Registry (ATSDR) develop guidance on when clinicians should test patients for PFAS, how to interpret the results, and what clinical follow-up based on PFAS exposure might look like. Guidance from ATSDR is pending. Nonetheless, the NASEM report clearly states that "clinicians should offer PFAS blood testing to patients who are likely to have a history of elevated exposure to PFAS." Furthermore, NASEM reported potential adverse health effects, especially in sensitive populations, in persons with PFAS blood levels between 2 and 20 nanograms per milliliter (ng/mL), and an increased risk of adverse effects at PFAS blood levels over 20 ng/mL. NASEM also offered guidance for patient follow-up (see Strategy IV.C, Medical Monitoring).

Clinical Recommendations

If water and/or soil test results exceed screening thresholds, residents will be advised to consult with a clinician (such as a physician, physician assistant, nurse practitioner, advanced practice registered nurse, or nurse midwife) to have their blood tested. The clinical recommendations should be created by Maine CDC and could be delivered by Maine CDC, DEP, or DACF. The agencies should jointly decide how best to convey testing recommendations.

- Individuals with concerns about PFAS exposure are more likely to seek medical attention if they have health insurance. For that reason, communications regarding blood testing should also include information about how to access health insurance. For example, CoverMe.gov is Maine's state-based health insurance marketplace for affordable health coverage. Additionally, community public health agencies (e.g., Consumers for Affordable Health Care, CAP agencies) can help people enroll in MaineCare.

The patient should schedule an appointment with their clinician to discuss their source(s) of exposure and to request a PFAS blood test. The clinician can also screen for mental health impacts (e.g., stress, anxiety, depression).[13] During this clinical encounter, the clinician will screen the patient to determine a need to offer PFAS testing. Testing is a shared decision between the patient and their provider, and not everyone will get tested.

Patients who get tested for blood PFAS level should have a follow up appointment with the same clinician who ordered the blood test to review test results. If the test reveals excessively high levels of

[12] Ibid.

[13] Strategy IV.G, Educational Resources, describes resources for clinicians including information about the physical health and mental health needs of persons exposed to PFAS.

PFAS, the patient may be referred to a clinician with special expertise in PFAS, who could be a primary care provider (e.g., family medicine, internal medicine, or pediatrics) or a specialist (e.g., endocrinology), or their regular clinician could confer with a clinician with special expertise in PFAS.

- The National Academies of Sciences, Engineering, and Medicine (NASEM) issued guidance on medical monitoring based on blood serum levels of PFAS. The usual standard of care is recommended for individuals with levels of PFAS below 2 ng/mL. A more robust, but still routine, standard of care is recommended for individuals with levels of PFAS from 2 to <20 ng/mL. This level of care can be managed through a primary care provider.
- NASEM recommends a higher level of care for those with levels of PFAS at or above 20 ng/mL. Some individuals in Maine whose PFAS exposures are related to land application of biosolids have blood serum levels in excess of 1,000 ng/mL.
- Clinicians should consider referring a patient to a clinician with further expertise in PFAS health monitoring and PFAS exposure reduction when that patient has a particularly elevated PFAS level (e.g., >20 ng/mL PFOS, >30 ng/mL PFOA, or >100 ng/mL total PFAS) or when the patient has concerns that the primary care clinician is unable to address (e.g., questions related to pregnancy, lactation, or co-existing medical conditions). Maine CDC will continue to develop this guidance to encompass any specific clinical recommendations to implement for certain PFAS levels or certain populations.

Access to specialists

- Maine CDC will provide materials to educate clinicians about PFAS and will convene clinicians interested in learning about PFAS to engage with the state's leading PFAS experts and with each other. There are currently a limited number of clinicians in Maine with robust expertise in treating patients with very high PFAS levels. These clinicians do not have the capacity to field inquiries from every other clinician in Maine who may be seeking guidance on treating PFAS-impacted patients. Refer to Strategy IV.G, Education Resources, for further discussion of how to support clinicians working with PFAS-impacted patients.
- Telehealth may be an option for patient consultations, but it does not allow for a physical examination which is a valuable component of the clinical encounter. Also, many patients appreciate in-person care.
- Maine CDC may explore options for working with the large healthcare systems in Maine to streamline access to care.

State Agency Actions

- Through its tiered testing program, DEP samples soil and water and notifies residents of the results. DACF also conducts sampling of soil, water, and other media.
- Maine CDC will draft guidance for individuals exposed to PFAS through land application of biosolids and for clinicians caring for those persons. See Strategy IV.G., Educational Resources.
- The PFAS Fund will contract with commercial labs to pay for blood testing costs not otherwise covered by insurance for eligible individuals.
- Maine CDC may explore the feasibility of public health nurses providing limited clinical care, such as screening for exposure, ordering a PFAS blood test, interpreting blood test results to help determine medical monitoring, and screening for mental health concerns. This type of care is best delivered by an individual's primary care provider or other clinician; Maine CDC resources might be helpful for patients with no primary care provider and no insurance.

Who will be eligible?
Initially, individuals whose exposure to PFAS resulted from the land application of biosolids will be eligible. More specifically:

1. Commercial farmers who live on farms with a water test result of 20 ppt or higher for wells servicing their home, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
2. Family members living on farms with a water test result of 20 ppt or higher for wells servicing their home, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
3. Individuals who work on farms with a water test result of 20 ppt or higher for wells servicing the residence, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
4. Households identified through DEP's tiered testing process whose residential wells have a water test result of 20 ppt or higher.*

* The PFAS Fund is not presently including households outside of areas with known biosolid applications or households served by public water systems.

Who will benefit? How?
Eligible individuals will learn their blood serum PFAS levels. This information will inform follow-up measures, including medical monitoring.

Will anyone be disadvantaged?
The PFAS Fund will limit blood testing, medical monitoring, and mental health care to people living and working on agricultural land contaminated by PFAS and persons identified through DEP's PFAS groundwater investigation of sludge and septage land application sites whose private drinking water wells are found to have PFAS levels above 20 ppt.

Notably, this approach leaves out people exposed to PFAS through public water systems, some of which may have been impacted by land application of biosolids.

Additionally, people exposed to PFAS through land application of "Class A" materials (compost derived from sewage sludge) cannot be readily identified because compost facilities are not required to track to whom they sell compost, the quantity sold, or where it is spread. Therefore, people potentially exposed to PFAS via compost are not eligible for blood testing or medical monitoring through the PFAS Fund, at this time.

Populations exposed to PFAS primarily through other means, such as firefighters, military service members and veterans, people living adjacent to military installations or airports, and people working in factories that use PFAS are not eligible for PFAS blood testing, medical monitoring or mental health support through the PFAS Fund, at this time. Likewise, people who ate products from PFAS-impacted farms or ate PFAS-contaminated game or fish are not presently eligible for support from the PFAS Fund.

Is there a model for this, either in or outside of Maine?
Tuberculosis clinical care is a potential model for shared public health program involvement across a disease-focused program area, public health nursing, and health system/clinical partners.

Do we need additional research or data?
More complete information about insurance coverage for PFAS blood testing would be helpful. See the budget section below for assumptions.

How will recipients be identified?
Through verified water and soil testing by DEP and/or DACF.

What documentation is needed?
Verified water and/or soil test results from Maine DEP or DACF.

What sort of controls should be in place?
The PFAS Fund will need to be clear in its contracts with commercial labs that it will pay only for the portion of costs not covered by eligible individuals' insurance. This will require a mechanism to determine eligibility, such as verified soil or well water test results. Also, the PFAS Fund will not cover testing costs for individuals whose primary exposure to PFAS is not linked to land application of biosolids.

What is the timeframe for implementation?
Contracting with commercial labs will be initiated during the summer or fall of 2023.

Should there be a time limit?
Initial testing should be conducted within six months of the conclusion of DEP's soil and groundwater testing program (anticipated to be concluded by December 2025). The frequency of subsequent testing should be based on guidance from Maine CDC.

How might the strategy address issues of equity?
This strategy clearly does not fully meet the needs of all individuals with potentially high exposures to PFAS.

Farm workers are often overlooked in policymaking. Here, however, employees of impacted farms are eligible for blood testing through the PFAS Fund.

What is the anticipated budget?
Based on DEP's projection of the total number of wells it will test (approximately 10,600) and U.S. census data, we estimate that as many as 5,000 people could be advised to have their PFAS blood levels tested based on DEP finding that their well water exceeds Maine's current interim drinking water standard of 20 ppt for a sum of 6 PFAS compounds. Of these, an estimated 1,215 people will be covered by public insurance such as MaineCare, 465 people will have no insurance, and 3,320 will have private insurance.[14]

The cost of a PFAS blood test, including the cost of the blood draw by a phlebotomist, is approximately $600. MaineCare, Medicare, and the Veterans Administration cover the cost of PFAS blood testing and there is no additional amount charged to the tested individual. Assuming that the PFAS Fund will cover the full cost for uninsured individuals and half of the cost for people with private insurance, the total

[14] Insurance coverage estimates are based on data from the U.S. Census Bureau, the Kaiser Family Foundation, and the Maine Bureau of Insurance.

cost to the PFAS Fund will be approximately $1,275,00 through Fiscal Year 2026 (when DEP expects to complete its tiered testing program).

Strategy IV.B: Public Health Oversight

Identify which purpose(s) listed in Public Law 2021, chapter 635, if any, that this strategy addresses.

- Monitoring the health of a person, and members of that person's household, whose agricultural land is found to be contaminated by PFAS. 7 MRSA § 320-K(4)(A).
- Providing medical care to a person found to have blood levels of PFAS greater than the general population or health effects associated with exposure to PFAS. 7 MRSA § 320-K(4)(B). The department may establish, in coordination with the Department of Health and Human Services, Maine Center for Disease Control and Prevention, a PFAS medical monitoring and blood levels of PFAS testing program for persons whose drinking water or agricultural land is found to be contaminated by PFAS . . . (Public Law 2021, c. 635 § XX-3(3)).

Describe the strategy:

The National Academies of Sciences, Engineering, and Medicine (NASEM) recent report on PFAS blood testing and health monitoring recommends that laboratories conducting PFAS testing of serum or plasma should report the results to state public health authorities, following the respective states' statutes and reporting regulations (NASEM Recommendation 8-1). NASEM stated such reporting would improve PFAS exposure surveillance.

Maine CDC anticipates that it will initiate rulemaking to make PFAS blood test results reportable under the Notifiable Disease Reporting Rule or designate PFAS test results reportable as an emergency condition in the summer of2023.

Once the rule is in place, commercial laboratories will be obligated to share all PFAS blood test results of any person tested in Maine with Maine CDC. In addition to the test results, Maine CDC will receive basic demographic information about patients that was provided to the laboratory. Maine CDC will never share personally identifiable information.

Maine CDC will perform follow-up surveys of patients with elevated blood serum levels of PFAS to gather additional information, with a focus on exposure assessment to determine if exposures are known and are being mitigated. This follow-up allows Maine CDC to share information about health risks and medical monitoring with patients and with their healthcare providers, as well as provide information to make blood test results more understandable (a model has already been developed and tested for communicating PFAS blood test results). Patients can elect not to respond to Maine CDC's survey requests and are not required to share additional information with Maine CDC.

Who will be eligible?

Maine CDC will be responsible for developing and managing a program to track and respond to PFAS blood test results. Any person in Maine who has their blood tested for PFAS would have the results shared with the state electronically by the commercial laboratory. No patient action is needed to report each result.

Who will benefit? How?

Having the results of PFAS blood tests will enable Maine CDC to:

1. Identify ongoing elevated exposures and provide consults on ways to reduce exposure;

2. Perform exposure surveys to investigate and understand exposures that are non-biosolids related (e.g., fish and game consumption, occupation, home gardening, soil pathways, water contamination unrelated to biosolids);
3. Provide education for those exposed and their providers while working on improving provider education on blood testing and health monitoring; and
4. Gain a better understanding of the breadth of exposure across populations.

Will anyone be disadvantaged?
Some individuals may decide not to get tested because they do not want their results shared with Maine CDC.

Is there a model for this, either in or outside of Maine?
Pediatric lead testing is a potential model for public health oversight of environmental exposures.

Also, carbon monoxide (CO) poisoning, an environmental disease, has been a Notifiable Condition in Maine for over a decade. The reporting is mostly from medical laboratories and mostly of a blood biomarker for carbon monoxide exposure (carboxyhemoglobin levels ≥5%). As part of CO case follow-up, Maine CDC obtains and reviews medical records. It currently relies on obtaining information through the Health Information Network because CO poisoning visits often occur in emergency departments and the needed information is already included in the patient's medical record. However, this approach might not work well for tests performed following a provider office visit. Maine CDC has experience performing case interviews to obtain information about CO exposure sources and presence of CO detectors and has used this information to inform education and outreach and evaluate the efficacy of CO detectors.

Do we need additional research or data?
Some individuals might obtain PFAS testing through a direct-to-consumer laboratory service provider (e.g., EmpowerDX home finger-prick testing). These tests are not as reliable as blood serum tests. Maine CDC will need to determine whether it wants to receive the results of these at-home tests and, if so, whether it has the authority to require labs to provide these data. Additionally, Maine CDC will need to determine whether to allow individuals with prior blood testing results to submit data to the Maine CDC, either directly or through their healthcare provider.

How will recipients be identified?
Medical laboratories report the results of PFAS blood tests to the ordering healthcare provider. If test results are reportable, laboratories could also electronically transmit the results directly to Maine CDC.

What documentation is needed?
Maine CDC will develop documentation and tracking protocols.

What sort of controls should be in place?
Maine CDC will develop documentation and tracking protocols.

What is the timeframe for implementation?
Maine CDC anticipates initiating the Notifiable Disease rulemaking process in the summer of 2023.

Should there be a time limit?

No. Reporting will be ongoing.

How might the strategy address issues of equity?

Making PFAS blood test results notifiable means Maine CDC will be able to develop a comprehensive picture of where elevated PFAS serum levels are found and identify pathways of exposure.

What is the anticipated budget?

Maine CDC presently has funding for an environmental epidemiologist that can perform case follow-up and data analyses. They are seeking support from the PFAS Fund for:

- Staff (Toxicologist*) to manage the reporting system and develop exposure assessment surveys ($125,000 annually);
- Contracted Clinical Staff (Public Health Physician) with expertise in environmental and occupational medicine to provide consultative services ($17,700 annually); and
- Staff (Public Health Educator III**) to assist with developing, updating and evaluating health communication/education materials, $20,000–30,000 annually.

* See Strategy IV.H, Farmer/Farm Worker Soil Exposure Study. The same staff person could work on both efforts.

** See Strategy IV.G, Education Resources. The same staff person could work on both efforts.

Strategy IV.C: Medical Monitoring

Identify which purpose(s) listed in Public Law 2021, chapter 635, if any, that this strategy addresses.

- Monitoring the health of a person, and members of that person's household, whose agricultural land is found to be contaminated by PFAS. 7 MRSA § 320-K(4)(A).
- Providing medical care to a person found to have blood levels of PFAS greater than the general population or health effects associated with exposure to PFAS. 7 MRSA § 320-K(4)(B). The department may establish, in coordination with the Department of Health and Human Services, Maine Center for Disease Control and Prevention, a PFAS medical monitoring and blood levels of PFAS testing program for persons whose drinking water or agricultural land is found to be contaminated by PFAS . . . (Public Law 2021, c. 635 § XX-3(3)).

Describe the strategy:

Maine CDC recommends that all persons with PFAS identified in blood obtain medical monitoring (Table 2). The PFAS Fund should cover the cost of medical monitoring when such monitoring is not already covered by existing health care insurance, in eligible persons whose PFAS blood level is greater than the general population, defined as ≥20 ng/mL (using NASEM guidelines for summing results[15]). The PFAS Fund should also pay for follow-up testing when an initial screening test is abnormal and additional evaluation is required to determine whether an associated medical condition exists (Table 3).

The NASEM guidelines provide a roadmap for most of the components of monitoring in persons whose PFAS blood serum level is <2, ≥2 to <20, and ≥20 ng/mL. However, the NASEM committee acknowledged that "most studies reviewed by the committee were not conducted among people known to have high exposures to PFAS. As a result, there is a gap in understanding of the effects of PFAS among those highly exposed, and the evidence presented in this report may therefore underestimate the effects of PFAS." Enhanced monitoring may be indicated for the most highly exposed individuals, although there is no general agreement on how to define "highly exposed". Most studies looked at PFOS levels greater than 20 ng/mL and PFOA levels greater than 30 ng/mL.[16]

Generally, primary care providers can manage medical monitoring for individuals with elevated PFAS blood levels. Clinicians should consider referring a patient to a clinician with further expertise in PFAS health monitoring and PFAS exposure reduction when that patient has a particularly elevated PFAS level (e.g., >20 ng/mL PFOS, >30 ng/mL PFOA, or >100 ng/mL total PFAS) or when the patient has concerns

[15] NASEM's guidance is based on the simple additive sum of MeFOSAA, PFHxS, PFOA (linear and branched isomers), PFDA, PFUnDA, PFOS (linear and branched isomers), and PFNA in serum or plasma. At present, the commercial test available in Maine through NMS Laboratories does not test for the panel recommended by NASEM, although the test is currently being updated to reflect the NASEM guidelines. Until the NMS test is updated, it is recommended that clinicians use the sum of the six PFAS species that the NMS test quantifies (PFHpA, PFOA, PFNA, PFBuS, PFHxS, and PFOS) to approximate the NASEM "sum of seven."

[16] *See* Xu Y, Nielsen C, Li Y, Hammarstrand S, Andersson EM, Li H, Olsson DS, Engström K, Pineda D, Lindh CH, Fletcher T, Jakobsson K. Serum perfluoroalkyl substances in residents following long-term drinking water contamination from firefighting foam in Ronneby, Sweden. *Environ Int*. 2021 Feb;147:106333. PMID: 33360412; Frisbee SJ, Brooks AP, Maher A, Flensborg P, Arnold S, Fletcher T, Steenland K, Shankar A, Knox SS, Pollard C, Halverson JA, Vieira VM, Jin C, Leyden KM, Ducatman AM. The C8 health project: design methods, and participants. *Environ Health Perspect*. 2009 Dec;117(12):1873–1882. PMCID: PMC2799461; Rosen EM, Kotlarz N, Knappe DRU, Lea CS, Collier DN, Richardson DB, Hoppin JA. Drinking Water-Associated PFAS and Fluoroethers and Lipid Outcomes in the GenX Exposure Study. *Environ Health Perspect*. 2022 Sep;130(9):97002. PMCID: PMC9450637.

that the primary care clinician is unable to address (e.g., questions related to pregnancy, lactation, or co-existing medical conditions).

Table 2. Recommended medical monitoring based on blood level of PFAS.

PFAS Blood Level*	Screening Recommendations	Guideline source	Age range (years)	Gender	Exam or procedure	Frequency	Notes, Comments
<2 ng/mL	Routine Care						
2 to <20 ng/mL	Screen for: (Prioritize within Standard of Care)						
	Dyslipidemia	American Academy of Pediatrics	0-21	Both	Lipid panel	once at 9 to 11, then at 17 and 21	
	Dyslipidemia	American Heart Association	≥20	Both	Lipid Panel	Every 4-6 years	
	Hypertensive Disorders of Pregnancy	ACOG	Reproductive Age	Female	Blood pressure	Every in-office prenatal visit	Standard historical visit frequency
	Breast cancer	USPSTF	40-74	Female	Mammogram	Biennial	American College of Radiology recommends yearly mammograms beginning at age 40.
≥20 ng/mL	Screen for:						
	PFAS burden**				PFAS level	Yearly, at least until <20ng/mL	Evaluate exposure reduction efforts
	Hypertensive Disorders of Pregnancy	ACOG, AAFP	Reproductive Age	Female	Blood pressure In addition to routine baseline prenatal labs: LFT's, platelets, creatinine, 12-24-hour urine for protein and creatinine**	BP (Every in-office prenatal visit)	Recommend consideration for low dose ASA after 12 weeks
	Dyslipidemia	AAP High Risk Children	>2	Both	Fasting Lipid Panel	Once each at 1-4y, 5-9y, 9-11y, 12-17y, 18-21y	
	Liver abnormalities**	***	>2**	Both	Liver function tests	For adults, at each well visit (yearly); for pediatric patients, do in conjunction with lipid panel	
	Testicular cancer		>15	Male	Signs (Physical Exam) Symptoms (History)	At each well visit (yearly)	

	Ulcerative colitis		>15	Both	Signs (Physical Exam) Symptoms (History)	At each well visit (yearly)	
	Thyroid function		>18	Both	Thyroid Stimulating Hormone (TSH)	At each well visit (yearly)	
	Dyslipidemia	AHA High Risk Adults	≥20	Both	Lipid Panel	Yearly	
	Kidney cancer		>45	Both	Signs (Physical Exam) Symptoms (History) Urinalysis (UA)	At each well visit (yearly)	
	Breast cancer	USPSTF	40-74	Female	Mammogram	Biennial	American College of Radiology recommends yearly mammograms beginning at age 40.

*NASEM's guidance is based on the simple additive sum of MeFOSAA, PFHxS, PFOA (linear and branched isomers), PFDA, PFUnDA, PFOS (linear and branched isomers), and PFNA in serum or plasma. At present, the commercial test available in Maine through NMS Laboratories does not test for the panel recommended by NASEM, although the test is currently being updated to reflect the NASEM guidelines. Until the NMS test is updated, it is recommended that clinicians use the sum of the six PFAS species that the NMS test quantifies (PFHpA, PFOA, PFNA, PFBuS, PFHxS, and PFOS) to approximate the NASEM "sum of seven."

**Proposed Maine CDC recommendations that exceed NASEM guidelines.

*** Ducatman A, Fenton SE. Invited Perspective: PFAS and Liver Disease: Bringing All the Evidence Together. Environ Health Perspect. 2022 Apr;130(4):41303. doi: 10.1289/EHP11149. Epub 2022 Apr 27. Erratum in: Environ Health Perspect. 2022 Jun;130(6):69001. PMID: 35475651; PMCID: PMC9044975.

Table 3. Representative follow-up evaluations that may be recommended based on screening patients with serum PFAS ≥20 ng/mL.

Condition screened	**Screening test or evaluation**	**Representative follow-up evaluation if initial screening test positive**
All	Annual well visit (adult and pediatric)	
PFAS burden	PFAS test	
Breast cancer	Mammogram	Needle breast biopsy
Dyslipidemia	Lipid Panel	
Thyroid function	Thyroid stimulating hormone	Thyroxine (Free T4), Thyroid Peroxidase (TPO), and antithyroglobulin (anti-TG)
Kidney cancer	(History and exam*), Urinalysis	Abdominal CT scan
Testicular cancer	(History and exam*)	Testicular Ultrasound
Ulcerative colitis	(History and exam*)	Colonoscopy
Liver dysfunction	Liver function tests	Hepatitis serology, liver ultrasound
Gestational hypertension or preeclampsia	Blood pressure	CMP, CBC with platelets, 24-hour urine, non-stress test

Eligibility:
The guidance for medical monitoring contained in Table 2 is applicable to anyone with PFAS exposure. The Health Subcommittee recommends that the PFAS Fund pay for medical monitoring costs that are not covered by insurance for eligible persons whose PFAS blood level is greater than the general population, defined as ≥20 ng/mL (using NASEM guidelines for summing results).

These individuals will be a subset of the population that is eligible for blood testing supported by the PFAS Fund:

1. Commercial farmers who live on farms with a water test result of 20 ppt or higher for wells servicing their home, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
2. Family members living on farms with a water test result of 20 ppt or higher for wells servicing their home, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
3. Individuals who work on farms with a water test result of 20 ppt or higher for wells servicing the residence, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
4. Households identified through DEP's tiered testing process whose residential wells have a water test result of 20 ppt or higher.[17]

The NASEM guidelines only pertain to current blood levels. A person might also be considered eligible for medical monitoring (including coverage from the PFAS Fund) if their past blood level or a predicted blood PFAS level in the past, based on the extent of their known exposure resulting from land application of biosolids, was sufficient to have qualified them for coverage and no test was obtained at that time, even if their current blood level does not meet criteria.

Who will benefit? How?
Eligible individuals will receive medical monitoring so that health conditions associated with elevated levels of PFAS blood levels can be identified and treated early.

Will anyone be disadvantaged?
The PFAS Fund will limit blood testing and medical monitoring to people living and working on agricultural land contaminated by PFAS and persons identified through DEP's PFAS groundwater investigation of sludge and septage land application sites whose private drinking water wells are found to have PFAS levels above 20 ppt.

Notably, this approach leaves out people exposed to PFAS through public water systems, some of which may have been impacted by land application of biosolids.

Additionally, people exposed to PFAS through land application of "Class A" materials (compost derived from sewage sludge) cannot be readily identified because compost facilities are not required to track to whom they sell compost, the quantity sold, or where it is spread. Therefore, people potentially exposed to PFAS via compost are not eligible for blood testing or medical monitoring through the PFAS Fund, at this time.

[17] The PFAS Fund is not presently including households outside of areas with known biosolid applications or households served by public water systems.

Populations exposed to PFAS primarily through other means, such as firefighters, military service members and veterans, people living adjacent to military installations or airports, and people working in factories that use PFAS are not eligible for PFAS blood testing, medical monitoring or mental health support through the PFAS Fund, at this time. Likewise, people who ate products from PFAS-impacted farms or ate PFAS-contaminated game or fish are not presently eligible for support from the PFAS Fund.

Is there a model for this, either in or outside of Maine?
Yes. Multiple legal settlements against manufacturers of PFAS chemicals have included medical monitoring programs. See, for example, http://www.c-8medicalmonitoringprogram.com/faq.

Do we need additional research or data?
More complete information about insurance coverage would be helpful.

How will recipients be identified?
Through verified water and soil testing by DEP and/or DACF, and a blood serum level above 20 ng/mL.

What documentation is needed?
Verified water and/or soil test results from Maine DEP or DACF.
Blood serum test results.

What sort of controls should be in place?
The PFAS Fund will need to be clear in its contracts that it will pay only for the portion of costs not covered by eligible individuals' insurance. Also, the PFAS Fund will not cover monitoring costs for individuals whose primary exposure to PFAS is not linked to land application of biosolids.

Blood test results are considered protected health information. The PFAS Fund will need to develop a system to verify eligibility for monitoring without unnecessarily accessing protected information. For instance, the PFAS Fund could rely on an attestation from the individual or their clinician stating that the individual's serum level equals or exceeds 20 ng/mL. Or, if PFAS blood test results become reportable under the Notifiable Disease Reporting Rule, the PFAS Fund could verify eligibility with Maine CDC (see Strategy IV.B).

What is the timeframe for implementation?
Starting in Fiscal Year 2025

Should there be a time limit?
Medical monitoring should continue for as long as it is deemed necessary by a treating clinician.

How might the strategy address issues of equity?
This strategy clearly does not fully meet the needs of all individuals with potentially high exposures to PFAS.

What is the anticipated budget? Budget considerations?
For eligible individuals who are uninsured or whose insurance does not fully cover the cost of health screenings, the PFAS Fund should pay for the recommended health monitoring (Table 2), as well as the visits required to perform that screening.

The cost of an office visit for an uninsured individual ranges from $100-$300. People with PFAS blood serum levels of 2 – <20 ng/mL are advised to have a lipid panel every 4-6 years (~$38) and, for women over 40, a mammogram biennially (~$650).

Additional testing is recommended for individuals with PFAS blood serum levels ≥20 ng/mL: PFAS blood test yearly ($600-700), liver function test yearly (~$23), Thyroid Stimulating Hormone (TSH) test yearly (~$47), and urinalysis yearly (~$9-21). Thus, an exam for an uninsured woman over 40 with PFAS blood levels at or above 20 ng/mL could cost as much as $1,779.

The PFAS Fund should also pay for follow-up testing when an initial screening test is abnormal and additional evaluation is required to determine whether an associated medical condition exists. For instance, if screening reveals signs of ulcerative colitis, a clinician may order a colonoscopy. Table 3 includes a summary of likely tests. A testicular or liver ultrasound costs over $600, an abdominal CT scan with contrast ranges from about $1,500 to $3,500, a needle breast biopsy is around $6,000, and a colonoscopy can cost upwards of $6,000.

As noted elsewhere in this document, we estimate that as many as 5,000 people could be advised to have their PFAS blood levels tested based on a finding by DEP that their well water exceeds Maine's current interim drinking water standard of 20 ppt for a sum of 6 PFAS compounds. Some of these individuals will have serum levels of PFAS in the 2 – <20 ng/mL range, consistent with the general population. It is likely that a smaller subset will have PFAS blood levels ≥20 ng/mL. Presently, it is not possible to estimate how many people will fall within each category.

As compared to the estimate for blood testing (Strategy IV.A), we anticipate fewer people needing enhanced medical monitoring but higher costs per person. Accordingly, the PFAS Fund will allocate an amount equal to two times the cost of blood testing for medical monitoring, starting in Fiscal Year 2025 (i.e., $850,000 annually).

Strategy IV.D: Medical Treatment

Identify which purpose(s) listed in Public Law 2021, chapter 635, if any, that this strategy addresses.

- Providing medical care to a person found to have blood levels of PFAS greater than the general population or health effects associated with exposure to PFAS. 7 MRSA § 320-K(4)(B).
- The department may develop criteria for funding medical monitoring and health care for persons found to have blood levels of PFAS greater than the general population and when it is medically relevant to undergo periodic medical examination and health care. (Public Law 2021, c. 635 § XX-3(3)(B)).

Describe the strategy:

Medical treatment encompasses treatment of medical conditions associated with PFAS exposure and treatment to remove PFAS from the human body. The latter is addressed in Strategy IV.E, PFAS Body Burden Reduction Clinical Trial.

The Health Subcommittee acknowledges the likely need to treat medical conditions associated with PFAS exposure for some individuals exposed to PFAS through land application of biosolids. These conditions include dyslipidemia, kidney cancer, breast cancer, testicular cancer, liver disease, pregnancy-induced hypertension, thyroid disease and dysfunction, and ulcerative colitis. This list is expected to grow as further research studies provide further evidence to establish clearer links to other medical conditions. These medical conditions are more likely to develop in persons exposed to PFAS than in the general population. However, these conditions will not all develop in all exposed persons.

It is not possible to conclusively link a particular occurrence of disease to the spreading of PFAS-contaminated biosolids. There are many other potential causes of the diseases listed above and conditions may take years (even decades) to develop. Still, in cases where a PFAS-associated disease develops in a person who currently or previously had elevated PFAS blood levels and who lives or lived, or works or worked, on property where biosolids were spread, the Health Subcommittee recommends that those occurrences of disease be presumed to have been caused by PFAS exposure. Similar presumptions are common in other contexts. For instance, development of cancer in firefighters is presumed to be linked to their occupation.[18] Likewise, the Veterans Administration presumes that certain conditions (e.g., bladder cancer, prostate cancer, Diabetes Mellitus Type 2, and Parkinson's disease) are related to exposure to Agent Orange or other herbicides during service in Vietnam.

The Health Subcommittee, therefore, recommends that the State explore options to provide medical care for certain PFAS-associated conditions for individuals with elevated blood levels of PFAS and who were exposed to PFAS through the land application of biosolids. Options to consider are:

- Providing eligible individuals with lifetime access to MaineCare;
- Enrolling eligible individuals in the Maine State employees' health plan; and
- If the Attorney General succeeds in the lawsuit filed in April 2023 against PFAS manufacturers, setting aside some of the settlement money for medical care for people with conditions linked to PFAS exposure.

[18] See World Health Organization International Agency for Research on Cancer. Evaluate the Carcinogenicity of Occupational Exposure as a Firefighter. IARC Monographs, Meeting 132, available at https://www.iarc.who.int/faq/iarc-monographs-evaluate-the-carcinogenicity-of-occupational-exposure-as-a-firefighter/

Notably, during the public comment phase of the development of this PFAS Fund Implementation Plan, access to Maine Care for impacted individuals was repeatedly raised as a priority issue.
Who will benefit? How? By providing access to health insurance, eligible individuals can have peace of mind knowing that if they develop a PFAS-related medical condition they will have access to appropriate medical care, and their financial costs will be minimized.
Will anyone be disadvantaged? People with other exposures to PFAS that are not covered by the current parameters of the PFAS Fund will be disadvantaged.
Is there a model for this, either in or outside of Maine? There are models of paying for medical care associated with state-supported environmental health exposures (e.g., Agent Orange).
Do we need additional research or data? Which PFAS-associated health conditions will/not be covered by the PFAS Fund? It will be informative to monitor how many PFAS-exposed individuals develop chronic illnesses, in comparison to the occurrence of such conditions in other people who do not have a history of PFAS exposure from any source, and the associated care costs and management strategies.
How will recipients be identified? Through verified water and soil testing by DEP and/or DACF. Elevated PFAS blood test.
What documentation is needed? Verified water and/or soil test results from Maine DEP or DACF. Elevated PFAS blood test. Documentation of selected PFAS-related disease.
What sort of controls should be in place? While there are multiple potential risk factors for these chronic conditions, if an individual was PFAS-exposed through the land application of biosolids, and they develop an associated chronic illness, their healthcare needs should be covered through the PFAS Fund.
What is the timeframe for implementation?
Should there be a time limit? Unknown. It may depend on whether we start to see population levels of high serum PFAS start to decline.
How might the strategy address issues of equity? This strategy clearly does not fully meet the needs of all individuals with potentially high exposures to PFAS. It does help address the financial toll that long-term care management has on individuals and families.

What is the anticipated budget? Budget concerns? Until blood testing (Strategy IV.A and IV.B) and medical monitoring (Strategy IV.C) become more routine, it is not possible to know how many people may be eligible for long-term health care supported by the State. Any budget estimate for long-term treatment of PFAS-related chronic illness for eligible individuals would be speculative. The cost can be assumed to be significant. However, no funds are being allocated from the PFAS Fund at this time.

Strategy IV.E: PFAS Body Burden Reduction Clinical Trial

Identify which purpose(s) listed in Public Law 2021, chapter 635, if any, that this strategy addresses.

- Providing medical care to a person found to have blood levels of PFAS greater than the general population or health effects associated with exposure to PFAS. 7 MRSA § 320-K(4)(B).
- The department may develop criteria for funding medical monitoring and health care for persons found to have blood levels of PFAS greater than the general population and when it is medically relevant to undergo periodic medical examination and health care. (Public Law 2021, c. 635 § XX-3(3)(B)).

Describe the strategy:

Paying for treatment to remove PFAS from blood – and therefore potentially reducing the risk of developing PFAS-associated diseases – would be an appropriate use of the PFAS Fund if there were any treatments approved for mainstream use. In the absence of approved treatments, the PFAS Fund could support a clinical trial to help advance the science of PFAS reduction modalities.

Studies have explored the use of medications like cholestyramine to accelerate the excretion of PFAS.[19] A cross-sectional study of participants in the C8 Health Study showed that individuals taking cholestyramine had significantly lower levels of PFAS – particularly PFOS and PFHxS – than individuals not taking cholestryramine. These findings were duplicated in a series of case studies among highly exposed individuals in Canada.[20]

Another avenue of research is serial phlebotomy. Treatment to reduce serum PFAS levels using therapeutic phlebotomy has been described in a single published study to date.[21] Firefighters with baseline PFOS levels of 5 ng/mL or more and an average serum PFOS level at baseline of 11 ng/mL were randomly assigned to one of three conditions: 1) donate plasma every 6 weeks for 12 months, 2) donate blood every 12 weeks for 12 months, or 3) be observed only. Two-hundred eighty-five firefighters were randomized; 97.9% of the study population was male and the mean age was 53 years. Both the blood and plasma donations arms demonstrated significantly lower PFAS levels than observation alone. Plasma donation was the most effective intervention, reducing mean serum PFOS levels by 2.9 ng/mL, compared with a 1.1 ng/mL reduction in the blood donation arm, a significant difference. Similar changes were seen with other PFAS. These results may be proportional to the serum levels in an individual's blood.[22]

[19] See Ducatman A, Luster M, Fletcher T. Perfluoroalkyl substance excretion: Effects of organic anion-inhibiting and resin-binding drugs in a community setting. Environ Toxicol Pharmacol. 2021 Jul;85:103650. doi: 10.1016/j.etap.2021.103650. Epub 2021 Apr 2. PMID: 33819618;

[20] Genuis SJ, Birkholz D, Ralitsch M, Thibault N. Human detoxification of perfluorinated compounds. Public Health. 2010;124(7):367–375. https://doi.org/10.1016/j.puhe.2010.03.002

Genuis SJ, Curtis L, Birkholz D. ISRN Toxicology. 2013. Gastrointestinal elimination of perfluorinated compounds using cholestyramine and chlorella pyrenoidosa; p. 657849. https://doi.org/10.1155/2013/657849

[21] Gasiorowski R, Forbes MK, Silver G, et al. Effect of Plasma and Blood Donations on Levels of Perfluoroalkyl and Polyfluoroalkyl Substances in Firefighters in Australia: A Randomized Clinical Trial. *JAMA Netw Open.* 2022;5(4):e226257. doi:10.1001/jamanetworkopen.2022.6257.

[22] Personal communication, Gasiorowski, 2022.

Another randomized controlled trial, also of firefighters, is underway in Arizona.[23] The intention of this study is to build on the Gasiorowski et al. study to determine whether blood and plasma donations result in sustained reductions in blood PFAS level.

Theoretical discussions have raised the idea that plasmapheresis, a medical procedure that removes plasma from a person's blood and replaces it with donor plasma, may be another alternative for PFAS body burden reduction, given the success of plasma donation in reducing levels.

The PFAS Fund could support a randomized controlled trial to further investigate cholestyramine, plasmapheresis, therapeutic phlebotomy, or other modalities as they emerge to reduce PFAS body burden.

A Maine study would extend previously reported findings because it would diversify participant gender and age, and would enroll participants with much higher body burdens of PFAS of different species (e.g., PFOS, PFOA, PFHxS, and PFNA). Significantly, a clinical trial would offer some impacted Mainers access to a possible means to reduce their PFAS body burden. Anecdotal evidence suggests that many PFAS-impacted individuals would be interested in participating in a clinical trial.

Conducting a randomized clinical trial is a substantial undertaking and would likely require the State to contract with a vendor to design a study, develop the request for proposals (RFP), arrange for critical review of responses, and help to identify the awardee. The same vendor may also be asked to manage the study for the State.

A clinical trial may, therefore, require two phases of contracting. First, the PFAS Fund will need to issue an RFP for a vendor to design a clinical trial of PFAS-reduction modalities Next, the PFAS Fund will work in conjunction with the selected vendor and Maine CDC to issue an RFP for the clinical trial itself.

Who will benefit? How?

A randomized controlled trial would help to identify a safe and effective method of lowering PFAS body burden for a more diverse population with higher blood serum levels and a different mix of PFAS, as compared to previous studies.

Some participants (i.e., those not in the control group) may realize health benefits by lowering their body burden of PFAS.

Once appropriate treatments have been established, exposed individuals will have options for actively reducing their total body burden of PFAS (in addition to waiting for levels to fall over time).

Will anyone be disadvantaged?

A randomized controlled trial means some participants would be randomly assigned to the observation (control) group and, thus, not receive the PFAS reduction treatment (although it may be possible to have graduated enrollment allowing the control group, for example, to receive the intervention after the first year of the study). The control group would still benefit from the knowledge gained from the study and would still receive blood testing of PFAS serum levels.

[23] Burgess J. Interventions to Reduce Firefighter Cancer and Cardiovascular Risks in Response to Arizona Fire Chiefs Opportunity Statement #1 on Firefighter and General Public Health, available at trif_proposal_reducefirefightercancer_proof1.pdf (azregents.edu).

Is there a model for this, either in or outside of Maine? Yes, multiple studies, including the Australian and Arizona phlebotomy studies and the other studies cited above.
Do we need additional research or data?
How will recipients be identified? Standard study participant recruitment methods.
What documentation is needed? Risks/benefits of study participation
What sort of controls should be in place? As a human study, it will be necessary for the final study protocol to receive review by a human subjects institutional review board (IRB) prior to commencement of the study. Due to the high serum levels of some potential study participants, it will be necessary to consider the need for appropriate disposal of whole blood or plasma obtained from the phlebotomy or plasmapheresis treatment (if either is the chosen modality). For example, it may have to be disposed of as medical waste. It should not be used for transfusions or to make blood products.
What is the timeframe for implementation? An RFP for a vendor to develop and manage a clinical trial would likely not be issued before the summer of 2024. A trial could conceivably begin the following year.
Should there be a time limit? A clinical trial would take about 2 years, longer if it includes a disease monitoring component.
How might the strategy address issues of equity?
What is the anticipated budget? Budget concerns? The cost to hire a vendor to design and oversee a clinical trial is estimated to be $200,000. The actual clinical trial is anticipated to cost about $500,000 if it only looks at a reduction in blood PFAS levels and does not look at health outcomes. A longer clinical trial looking at a possible reduction in health outcomes, which is more valuable, could cost $4 million over a longer period of time (e.g., 3-5 years).

Strategy IV.F: Mental Health Support

Identify which purpose(s) listed in Public Law 2021, chapter 635, if any, that this strategy addresses.

- Providing medical care to a person found to have blood levels of PFAS greater than the general population or health effects associated with exposure to PFAS. 7 MRSA § 320-K(4)(B).

Describe the strategy:

Farming is generally recognized as a high-stress profession. The rate of suicide among farmers is three and a half times higher than among the general population, according to the National Rural Health Association.[24] Knowledge of PFAS exposure and concerns about health effects, financial stability, and an uncertain future can amplify existing feelings of stress and anxiety.

The mental health impacts associated with PFAS exposure are not restricted to farm families. Many of the individuals affected by biosolids application are middle- to low-income homeowners who, likewise, feel the impacts of this "hidden" environmental disaster. Unlike more common disaster scenarios such as floods, there are no obvious or immediate physical effects. Also, there is no defined beginning or end. Rather, PFAS compounds are silent, invisible, and odorless. They can accumulate over decades and health impacts may not be known for years to come. People experience a range of emotions including a sense of loss of control over their present and future, anger over a lost sense of security, and social stigma.[25]

With resources from the PFAS Fund, we aim to support the health and well-being of farmers and residents of Maine who have been adversely impacted by PFAS contamination. A goal of the PFAS Fund is to ameliorate the conditions that result in PFAS-induced stress. In addition to the other strategies contained herein, specific mental health support is needed. These supports will be available to commercial farmers, their families, and farm workers when the farm's soil or water tests above screening thresholds. They will also be available to households identified through DEP's tiered testing process whose residential wells have a water test result of 20 ppt or higher.

Effective coping strategies in response to stress and anxiety come in a variety of forms. Accordingly, the PFAS Fund's efforts to support the mental health needs of people exposed to PFAS through the land application of biosolids must be flexible. That is, applicants should be able to select from a menu of services.

The PFAS Fund acknowledges that there are existing programs to support farmers' mental health and well-being. For example, the PFAS Wellness Fund managed by the Maine Organic Farmers and Gardeners Association (MOFGA) holistically supports farmers and farm workers impacted by PFAS contamination. It is funded partially through one-time funds from COVID-19 relief monies, and also

[24] Rosalie Eisenreich, BS and Carolyn Pollari, MHA, Addressing Higher Risk of Suicide Among Farmers in Rural America, National Rural Health Association Policy Brief, available at NRHA-Policy-Brief-Increases-in-Suicide-Rates-Among-Farmers-in-Rural-America.pdf (ruralhealth.us).

[25] Tanis Hernandez, MSW, and Laura Sedler, BSW, Addressing the Psychosocial Elements of Slow Motion Technical Disasters, Center for Asbestos Related Disease (2003), available at Addressing the Psychosocial Elements of Slow Motion Technological Disasters | Resources | Community Stress Resource Center | ATSDR (cdc.gov).

through fundraising and philanthropic giving.[26] The fund provides up to $500 per person to pay for wellness expenses. The PFAS Wellness Fund can be used for a wide range of stress-reducing supports, including therapy, childcare, acupuncture, gift cards to purchase uncontaminated food and/or water, massages, and traditional healers. The PFAS Wellness Fund is open to all commercial farms and Indigenous producers of food and/or medicine. Residential property owners impacted by land application of biosolids are currently ineligible.

Cultivemos (formerly known as FRSAN-NE, the Farm and Ranch Stress Assistance Network Northeast) is another regional resource currently funded through the Farm Bill. It aims to improve behavioral health awareness, literacy, access, and outcomes for farmers, ranchers, and farmworkers in the Northeast by developing a service provider network that can assist and meet the unique needs of agricultural workers. Educational resources about PFAS have been developed for farmers and farm workers.

The PFAS Fund can augment these and other services by seeding the establishment of a permanent State-funded program modeled, for example, on existing programs in Vermont and Minnesota.

Vermont Farm First is modeled on an employee assistance program (EAP), a benefit many workplaces provide for their employees. Farm First has a full-time clinician (social worker) and an agricultural resource specialist, as well as access to an extensive network of farm-informed counselors. Farm First provides resources and professional and personal support to address a wide range of issues, including labor and management issues, financial concerns, alcohol or drug problems, injury, illness or adaptive equipment needs, legal issues, family stress, depression, and much more. There is no cost for farmers to participate in these programs. For more information, see http://agriculture.vermont.gov/farm-first-resources-support-farmers.

The Minnesota Department of Agriculture maintains a Farm and Rural Helpline and supports two experienced agricultural-focused mental health providers who provide no-cost counseling services to farm individuals, couples, and/or families anywhere in the state, either in person, via Zoom, or over the phone. For more information, see https://www.mda.state.mn.us/about/minfarmerstress/copingstress.

The initial focus of a Maine program will be farmers (including family members and farm workers) and residential property owners impacted by the land application of biosolids containing PFAS. Over time, the program will be accessible to all members of Maine's agricultural community.

The PFAS Fund will consult with agricultural service providers, State agencies, and other organizations to help identify priority needs and proposed implementation models. The PFAS Fund will seek input from organizations such as Cultivating Community, Cultivemos, Eastern Woodlands Rematriation Collective, Maine Cooperative Extension, Maine Department of Health and Human Services, Maine Farmland Trust, Maine Mobile Health, Maine Organic Farmers and Gardeners Association, Maine Public Health Association, Mano en Mano, Northeast Farmers of Color, and the Somali Bantu Community Association.

[26] The PFAS Wellness Fund began as a project of the Maine Farm and Ranch Stress Assistance Network (Maine FRSAN) and is funded through 1) a National Institute of Food and Agriculture (NIFA) grant awarded to the Maine Department of Agriculture, Conservation and Forestry (DACF) and managed by the University of Maine Cooperative Extension (UMCE); and 2) the PFAS Emergency Fund co-administered by MOFGA and Maine Farmland Trust (MFT). The NIFA grant funding is expected to be fully expended by the end of summer 2023.

Additionally, the PFAS Fund could:

1. Fund a series of conversations with impacted individuals to learn about the types of peer-to-peer support that would be beneficial and then implement those recommendations (e.g., a drop-in space with a clinician available for one-on-one conversations, facilitated group discussions led either by a clinician or a peer, or a shared meal to build community);
2. Fund the development of training materials for therapists and other behavioral health providers to help them better help patients who are farmers;
3. Provide financial support for the PFAS Wellness Fund, allowing its work to continue; and
4. Provide existing support resources, such as 2-1-1, Help Me Grow (Maine), and StrengthenME, with information about the PFAS Fund so it can be shared by these programs with impacted communities.

Who will be eligible?

Initially, individuals whose exposure to PFAS resulted from the land application of biosolids will be eligible. More specifically:

1. Commercial farmers who live on farms with a water test result of 20 ppt or higher for wells servicing their home, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
2. Family members living on farms with a water test result of 20 ppt or higher for wells servicing their home, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
3. Individuals who work on farms with a water test result of 20 ppt or higher for wells servicing the residence, farm and/or fields; and/or soil test results exceeding any of Maine CDC's current crop-specific soil screening levels;
4. Households identified through DEP's tiered testing process whose residential wells have a water test result of 20 ppt or higher.*

* The PFAS Fund is not presently including households outside of areas with known biosolid applications or households served by public water systems.

Who will benefit? How?

Impacted farmers and their families, farm workers, and residents identified through DEP's groundwater testing program will benefit through access to no-cost or low-cost counseling and other mental health supports. They will have autonomy in choosing which supports best fit their needs.

Will anyone be disadvantaged?

The PFAS Fund will limit mental health support to people living and working on agricultural land contaminated by PFAS and persons identified through DEP's PFAS groundwater investigation of sludge and septage land application sites whose private drinking water wells are found to have PFAS levels above 20 ppt.

Notably, this approach leaves out people exposed to PFAS through public water systems, some of which may have been impacted by land application of biosolids.

Additionally, people exposed to PFAS through land application of "Class A" materials (compost derived from sewage sludge) cannot be readily identified because compost facilities are not required to track to whom they sell compost, the quantity sold, or where it is spread. Therefore, people potentially exposed

to PFAS via compost are not eligible for blood testing or medical monitoring through the PFAS Fund, at this time.

Populations exposed to PFAS primarily through other means, such as firefighters, military service members and veterans, people living adjacent to military installations or airports, and people working in factories that use PFAS are not eligible for PFAS blood testing, medical monitoring or mental health support through the PFAS Fund, at this time. Likewise, people who ate products from PFAS-impacted farms or ate PFAS-contaminated game or fish are not presently eligible for support from the PFAS Fund.

Is there a model for this, either in or outside of Maine?
Maine Farm and Ranch Stress Assistance Network (Maine FRSAN), Cultivemos (formerly FRSAN-NE), PFAS Farmer Wellness Fund, Vermont Farm First, Rural Minnesota Mental Health Support, etc.

Do we need additional research or data?
Yes. We need to learn from impacted populations what sort of a broad mental health support program and what sort of peer-to-peer supports would be most helpful. We also need to learn if there are outcome data for existing programs.

How will recipients be identified?
Verified water and/or soil test results from Maine DEP or DACF.

What documentation is needed?
Verified water and/or soil test results from Maine DEP or DACF.

What sort of controls should be in place?
The PFAS Fund will need to establish protocols to approve and track expenditures.

What is the timeframe for implementation?
As soon as possible.

Should there be a time limit?
No.

How might the strategy address issues of equity?
Access to mental health supports should be broadly available to farm workers, not just farmers, farm families, and residents identified by DEP's tiered testing program. These individuals should be able to choose which supports are best suited to their needs.

What is the anticipated budget? Budget considerations?
An annual budget of about $130,000 per year will cover the cost 1) either hiring a licensed clinical social worker or contracting with an EAP program to support the mental well-being of farm communities in Maine and other eligible individuals, 2) supporting development and implementation of peer-to-peer support initiatives, and 3) supporting development and distribution of training materials for therapists and other behavioral health providers.

If needed in the future, the PFAS Fund could augment the PFAS Wellness Fund administered by MOFGA.

The cost of providing information about mental health resources funded by the PFAS Fund to organizations such as 2-1-1, Help Me Grow (Maine), and StrengthenME will be minimal. Staff time will be covered by other sources.

Note: Dedicated long-term funding is needed to support a permanent mental health support program for the agricultural community.

Strategy IV.G: Educational Resources

Identify which purpose(s) listed in Public Law 2021, chapter 635, if any, that this strategy addresses.

- Providing medical care to a person found to have blood levels of PFAS greater than the general population or health effects associated with exposure to PFAS. 7 MRSA § 320-K(4)(B).

Describe the strategy:

There is a need to educate the public and clinicians about sources of PFAS exposure and associated health issues. The PFAS Fund can support development of materials but will primarily rely on existing mechanisms for distribution.

Materials for farms and residential well owners:

- Information about where PFAS are found and how to minimize exposure.
- Guidance on the potential health impacts of PFAS exposure and the importance of soil and water testing.
- Information about available soil and water testing, including how to access information about available resources should they have an elevated test result (e.g., mental health supports, potential mitigation grants through Maine State Housing Authority [if LD 1006 passes]).

Materials for people currently or previously living with water or soil that exceed threshold levels:

- Information about where PFAS are found and how to minimize exposure.
- Guidance on the potential health impacts of PFAS exposure, the importance of ongoing health care for early detection and treatment of any health impacts, who should consider getting a blood test for PFAS, why they should consider blood testing, how to obtain it, and available resources to help with the cost. See Strategy IV.A, Blood Testing.
- Information about obtaining health insurance. For example, CoverMe.gov is Maine's state-based health insurance marketplace for affordable health coverage. Additionally, community public health agencies (e.g., Consumers for Affordable Health Care, CAP agencies) can help people enroll in MaineCare.
- Information about available resources, including mental health supports and potential mitigation grants through Maine State Housing Authority (if LD 1006 passes).

Materials for clinicians caring for patients with PFAS exposure:

- Information about where PFAS are found and how to minimize exposure.
- Guidance on the potential health impacts of PFAS exposure.
- Information about ordering PFAS blood tests: order codes, labs, etc.
- Guidance on how to interpret and discuss results with patients.
- Guidance about recommended monitoring based on PFAS blood levels.
- Guidance on when to retest (interval between tests).
- Guidance on who to contact with questions.
- Information about where to refer patients with very high PFAS levels.
- Information about additional training available.

Clinical audiences:

- Primary care practices (Pediatrics, Internal Medicine, and Family Practice)
- OB/GYN

- Health provider associations (e.g., Maine Medical Association, Maine Osteopathic Association, Maine Chapter – American Academy of Pediatrics)
- Community health workers, public health nurses
- Federally Qualified Health Centers (Maine Primary Care Association)
- Public health professionals (e.g., public health educators)

Modes of communication:

- Webinars to medical practices.
- Maine Public Health Association (MPHA) can connect with New England Public Health Training Center, Maine Public Health Training Center, and professional associations (e.g., Maine Medical, Maine Chapter-American Academy of Pediatrics, Maine Osteopathic, Maine Academy Family Physicians) to offer trainings – and can offer continuing education credits (CME and CHES/MCHES).
- Maine CDC or MPHA could maintain web links to existing trainings (e.g., https://childrensmercy.cloud-cme.com/course/courseoverview?p=0&eid=4449).
- Maine CDC could send information through its Health Alert Network.
- Maine CDC could work with the Maine Office of Professional and Occupational Regulation to send messages to license holders.
- If PFAS results become a notifiable condition, Maine CDC could include a standard reporting form back to the PCP and could conduct outreach to each patient with elevated blood PFAS level.
- Maine CDC or MPHA could engage community health workers, especially for farm workers.
- Maine CDC could engage public health nurses, especially in rural areas.
- MPHA could develop a website template for professional associations.
- Maine CDC or MPHA could table at events (e.g., fairs).
- Clinicians with relevant expertise could conduct Grand Rounds at hospitals and lectures to medical trainees.
- Maine CDC could prepare a short, written reference guide with information about tests to order & how to order them. The document should use a flowsheet format and be a double-sided, laminated sheet.
- Maine CDC can establish and facilitate a "PFAS Learning Community." Clinicians will be invited to gather remotely once every 1 to 3 months to discuss cases, share literature updates, and discuss questions raised by CDC materials.

Who will be eligible?

All Maine health and public health workers can take advantage of these educational resources.

Who will benefit? How?

Educational resources will benefit all healthcare providers in Maine caring for patients and communities with concerns about PFAS, with increased benefit to those providers caring for patients with concerns about PFAS exposures from land application of sludge.

Patients will benefit from more information and better care.

Will anyone be disadvantaged?

Patients not connected to a health center may have a harder time accessing information. We will want to work with trusted community-based organizations to provide more information. Municipalities,

drinking water specialists, and local health officers may be other workforces to engage to minimize disparities in information.

Is there a model for this, either in or outside of Maine?
There are existing educational resources available for clinicians; however, none of those specifically address concerns related to exposure to PFAS through land application of sludge, and none provide clinician resources related to testing, medical monitoring, and mental health needs of impacted communities in Maine.

We do have models for providing information to providers that is intended to improve care, access resources, and educate patients.

Do we need additional research or data?
It may be helpful to know if different health providers need different information.

How will recipients be identified?
Providers will be able to obtain these free resources from the Maine CDC website or via partners such as Maine Public Health Association, Maine Medical Association, and Maine Osteopathic Association.

If PFAS blood tests become reportable, Maine CDC would be able to share educational resources with clinicians who are identified through the ordering of blood tests that are reported to Maine CDC.

What documentation is needed?
N/A

What sort of controls should be in place?
N/A

What is the timeframe for implementation?
Summer/fall 2023

Should there be a time limit?
No

How might the strategy address issues of equity?
By developing materials intended for a wide range of health providers, and including patient and provider resources, we are intending to maximize reach, regardless of how people access health care services.

What is the anticipated budget?
The Public Health Educator III funded under Strategy IV.B (Public Health Oversight) would develop the materials detailed here. Additionally, approximately $7,000 is needed annually for costs such as speaker honoraria and CME credit fees.

Strategy IV.H: Farmer/Farm Worker Soil Exposure Study

Identify which purpose(s) listed in Public Law 2021, chapter 635, if any, that this strategy addresses.
This proposal advances the law's broad goals related to 1) understanding the health impacts of PFAS exposure and 2) supporting research that helps to inform farm management decisions:

- The department may establish, in coordination with the Department of Health and Human Services, Maine Center for Disease Control and Prevention, a PFAS medical monitoring and blood levels of PFAS testing program for persons whose drinking water or agricultural land is found to be contaminated by PFAS . . . (Public Law 2021, c. 635 § XX-3(3)).
- Monitoring the health of a person, and members of that person's household, whose agricultural land is found to be contaminated by PFAS. 7 MRSA § 320-K(4)(A).
- Conducting research that supports short-term farm management decisions and assesses future options for viable uses of agricultural land that has been contaminated with PFAS. 7 MRSA § 320-K(4)(I).

Describe the strategy:
A study focused on farmers and farm workers is needed to investigate whether certain levels of PFAS-contaminated soil represent a significant source of ongoing exposure to people who work with soil. Soil PFAS levels ranging from less than 10 to over 1000 parts per billion (ppb) have been reported for farmland amended with biosolids in Maine. Background soil levels are generally less than 1 ppb. Modeling work indicates that incidental soil ingestion by adults regularly working on soils with more than 300 ppb PFOS could have an exposure resulting in a blood serum level approaching 20 ng/mL, but such modeling has considerable uncertainty. Current interventions to mitigate exposures do not consider the potential for ongoing soil exposure of farm workers who may continue to farm on PFAS-contaminated soils.

There is a surprising lack of empirical data on soil exposure by farmers and farm workers (e.g., incidental soil ingestion, dermal absorption, inhalation of re-entrained soil particles) needed to make reliable model predictions of PFAS exposure from soil-related pathways.

A farmer/farm worker soil exposure study will combine blood testing, environmental measurements of PFAS soil levels, and empirical and modeled estimates of soil exposure through incidental ingestion, inhalation, and skin contact to determine the magnitude of soil-related PFAS exposures and to better understand the most important pathways for soil-related PFAS exposure for farmers. Study participants will be recruited from both PFAS-impacted farms and non-impacted farms, with non-impacted farmers serving as a control group. Results will help to inform better guidance for farmers on actions to reduce exposure as appropriate.

Who will be eligible?
The study will be conducted by Maine CDC's Environmental and Occupational Health Program (EHP) with potential field assistance from Maine CDC's Public Health Nursing and expected assistance or advice from academic groups involved in related exposure studies. The EHP is staffed by toxicologists and epidemiologists and was established by statute to:

1. Develop and monitor health status;
2. Identify health problems including those which may be related to environmental factors;
3. Conduct and contract for investigations as necessary to determine whether particular problems are related to environmental factors;
4. Advise the Commissioner of Health and Human Services, as well as other state agencies and boards, such as the Departments of Environmental Protection and Agriculture, Conservation

and Forestry, regarding the potential health implications of their actions, the nature and extent of identified problems and the steps which can be taken to address them; and

5. Provide the public with information, and advise them as to preventive and corrective actions in the area of environmental health. (22 MRS §1692).

Who will benefit? How?

Farmers with elevated PFAS in agricultural soils will be the primary beneficiaries of this study. The results of this study will allow farmers to know whether their exposure to PFAS contaminated soil results in an elevated blood serum level and, if so, which activities are most associated with this finding and, thus, point to actions that can protect their health while working on land contaminated by PFAS.

Will anyone be disadvantaged?

Farmers with known PFAS exposure from contaminated drinking water may not be eligible to participate in the study as it may not be possible to determine whether their serum levels of PFAS are the result of soil or water exposure. Therefore, some farmers with potentially significant soil PFAS exposure and who also have water exposure may be ineligible to participate. Even though this group would not be able to participate in the study, they would benefit from the results of the study (e.g., by having a better understanding of exposure pathways).

Is there a model for this, either in or outside of Maine?

There are a number of published PFAS biomonitoring studies for firefighters and occupational cohorts with industrial exposures (e.g., those involved in the manufacture of PFAS). These occupations, however, are less likely to have significant soil-related exposure pathways. Therefore, these studies do not provide information on the relationship between PFAS soil levels, farming activities, and resulting elevated blood PFAS levels. The firefighter studies do provide a possible model for the conduct of such a study in farmers. There have been recently published scientific studies developing semi-quantitative methods to estimate soil exposure by farmers. This proposed study would seek to partner with these academic researchers.

Do we need additional research or data?

Maine CDC is exploring a possible collaboration with a researcher at Johns Hopkins School of Public Health who is engaged in developing new methods for estimating farm worker exposure to soils.

How will recipients be identified?

Recruitment will be based on known soil PFAS levels from existing soil testing efforts by the DEP and DACF. Organizations such as MOFGA, the Maine Dairy Industry Association, the Maine Beef Producers Association, and similar organizations can assist with informing farmers about the ability to participate in this study.

What documentation is needed?

A full research proposal consistent with the standards to be developed for the PFAS Fund's competitive research grants program. See Strategy III.A, Competitive Research Grants.

What sort of controls should be in place?

Reporting requirements consistent with the PFAS Fund's competitive research grant program. See Strategy III.A, Competitive Research Grants. Also, because this study involves human subjects, the protocol will need to be reviewed by a Human Subjects Protection Institutional Review Board (IRB), likely the IRB at the University of Southern Maine.

What is the timeframe for implementation? The study protocol will be finalized during the summer of 2023. IRB review will be obtained in the fall of 2023. Recruitment of study subjects will commence during the winter of 2023/2024. The first field season will begin in the summer of 2024, with a second field season in the summer of 2025. A report on findings will be completed approximately 1-year following the end of the study. Interim reports can be prepared as appropriate.
Should there be a time limit? If unforeseen delays arise, the study should be allowed to carry over to a third summer field season if necessary to achieve the study's goals.
How might the strategy address issues of equity? Not yet assessed.
What is the anticipated budget? The estimated budget is $190,000 per year for two years. Expenses include, but are not limited to, Maine CDC staff time, academic consultants, a consulting physician, contracted resources for obtaining blood draws in the field, supplies for electronically administered surveys, transportation to farms for field work, environmental measurements of PFAS in soils and water to augment existing data as needed, environmental measurements of airborne particulate matter, and compensation for study participants' time. This total reflects that the State's Health and Environmental Testing Lab (HETL) will be able to perform the blood analysis at a substantially reduced cost compared to the fees that would be charged by a commercial lab. This study also includes significant in-kind services from Maine CDC staff supported by existing funding sources. Public Health Nursing may develop blood collection skills; if so, the cost for phlebotomy services can be dropped.

V. Estimated Budget

	FY'24	FY'25	FY'26	FY'27	FY'28	
Strategy	**7/1/23-6/30/24**	**7/1/24-6/30/25**	**7/1/25-6/30/26**	**7/1/26-6/30/27**	**7/1/27-6/30/28**	**TOTAL**
Direct Support						
I.A Income replacement	$ 1,000,000	$ 4,000,000	$ 3,000,000	$ 3,000,000	$ 2,000,000	$ 13,000,000
I.B Roster of experts	$ 240,000	$ 240,000	$ 240,000	$ 240,000	$ 240,000	$ 1,200,000
I.C Navigator - salary	$ 47,112	$ 48,525	$ 49,981	$ 51,481	$ 53,025	$ 250,124
1C Navigator - health & dental	$ 10,826	$ 11,151	$ 11,485	$ 11,830	$ 12,185	$ 57,476
I.C Navigator - retirement	$ 6,200	$ 6,386	$ 6,578	$ 6,775	$ 6,978	$ 32,916
I.D Compensation for time spent on PFAS response	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 500,000
I.E Infrastructure	$ 1,000,000	$ 3,500,000	$ 3,500,000	$ 3,000,000	$ 3,000,000	$ 14,000,000
I.F Loan Assistance - FSA guaranteed loans	$ 10,800	$ 10,800	$ 10,800	$ 10,800	$ 10,800	$ 54,000
I.F Loan Assistance - FAME commercial loan insurance	$ 210,000	$ 210,000	$ 210,000	$ 210,000	$ 210,000	$ 1,050,000
I.F Loan Assistance - Environmental Site Assessments	$ 10,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 110,000
I.G Public relations and marketing	$ 25,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 65,000
I.H PFAS Response Kit (design & printing)	$ 5,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 9,000
Subtotal						**$ 30,328,517**
Land						
II.Ai Land purchases - cost of land	$ 1,500,000	$ 5,000,000	$ 5,000,000	$ 3,000,000	$ 2,000,000	$ 16,500,000
II.Aii Land purchases - ancillary expenses (appraisal, survey, etc.), ~30,000 each	$ 60,000	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 780,000
II.Bi DACF holds and manages property (stewardship/maintenance)	$ 50,000	$ 200,000	$ 300,000	$ 300,000	$ 300,000	$ 1,150,000
II.Bi DACF holds and manages property (legal fees)	$ 2,500	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 22,500
II.C Rental payments for stewardship	$ -	$ 1,500,000	$ 1,500,000	$ -	$ -	$ 3,000,000
II.D Guidance on land transactions, e.g., to realtors, appraisers	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal						**$ 21,452,500**
Research						
III.A Competitive research grants (cap of $500,000/project)	$ 3,500,000	$ 3,500,000	$ 1,500,000	$ 1,500,000	$ -	$ 10,000,000
III.A Public service coordinator (PSC-I) [27]	$ 84,874	$ 87,421	$ 90,043	$ 92,745	$ 95,527	$ 450,610
III.B Experiment station	$ -	$ -	$ 250,000	$ 250,000	$ 250,000	$ 750,000
III.C Research database	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal						**$ 11,200,610**
Health						
IV.A Blood testing	$ 425,000	$ 425,000	$ 425,000			$ 1,275,000
IV.B Public health oversight - toxicologist (4.H too)	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 625,000
IV.B Public health oversight - clinician	$ 17,700	$ 17,700	$ 17,700	$ 17,700	$ 17,700	$ 88,500
IV.B Public health oversight - educator (4.G too)	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 125,000
IV.C Medical monitoring	$ -	$ 850,000	$ 850,000	$ 850,000	$ 850,000	$ 3,400,000
IV.D Medical treatment	$ -	$ -	$ -	$ -	$ -	$ -
IV.E Clinical trial	$ -	$ 200,000	$ 500,000	$ -	$ -	$ 700,000

[27] The PSC-I position was shifted from Land to Research.

IV.F Mental health care	$ 130,000	$ 130,000	$ 130,000	$ 130,000	$ 130,000	$ 650,000
IV.G Develop educational resources	$ 7,000	$ 7,000	$ 7,000	$ 7,000	$ 7,000	$ 35,000
IV.H Farmer soil exposure study	$ 190,000	$ 190,000	$ -	$ -	$ -	$ 380,000
Subtotal						**$ 7,278,500**
Miscellaneous						
Travel reimbursements	$ 350	$ 350	$ 350	$ 350	$ 350	$ 1,750
					GRAND TOTAL	**$ 70,260,127**

Glossary

BAFRR	Bureau of Food and Rural Resources
BPL	Bureau of Public Lands
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
DACF	Department of Agriculture, Conservation and Forestry
DEP	Department of Environmental Protection
DHHS	Department of Health and Human Services
DIPP	Dairy Indemnity Payment Program
FAME	Finance Authority of Maine
FRSAN	Farm and Ranch Stress Assistance Network
FSA	Farm Service Agency
LMF	Land for Maine's Future
Maine CDC	Maine Center for Disease Control and Prevention
Maine IF&W	Maine Inland Fisheries and Wildlife
MFT	Maine Farmland Trust
MOFGA	Maine Organic Farmers and Gardeners Association
PFAS	Per- and polyfluoroalkyl substances
USDA	United States Department of Agriculture
VRAP	Voluntary Response Action Program