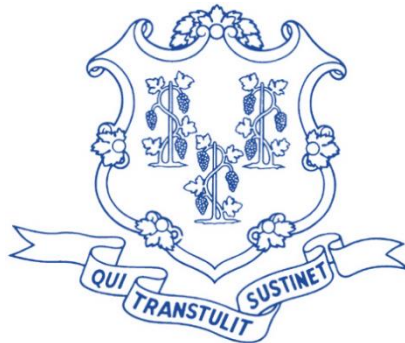


PFAS ACTION PLAN



BY THE CONNECTICUT INTERAGENCY
PFAS TASK FORCE

NOVEMBER 1, 2019

Initiated by

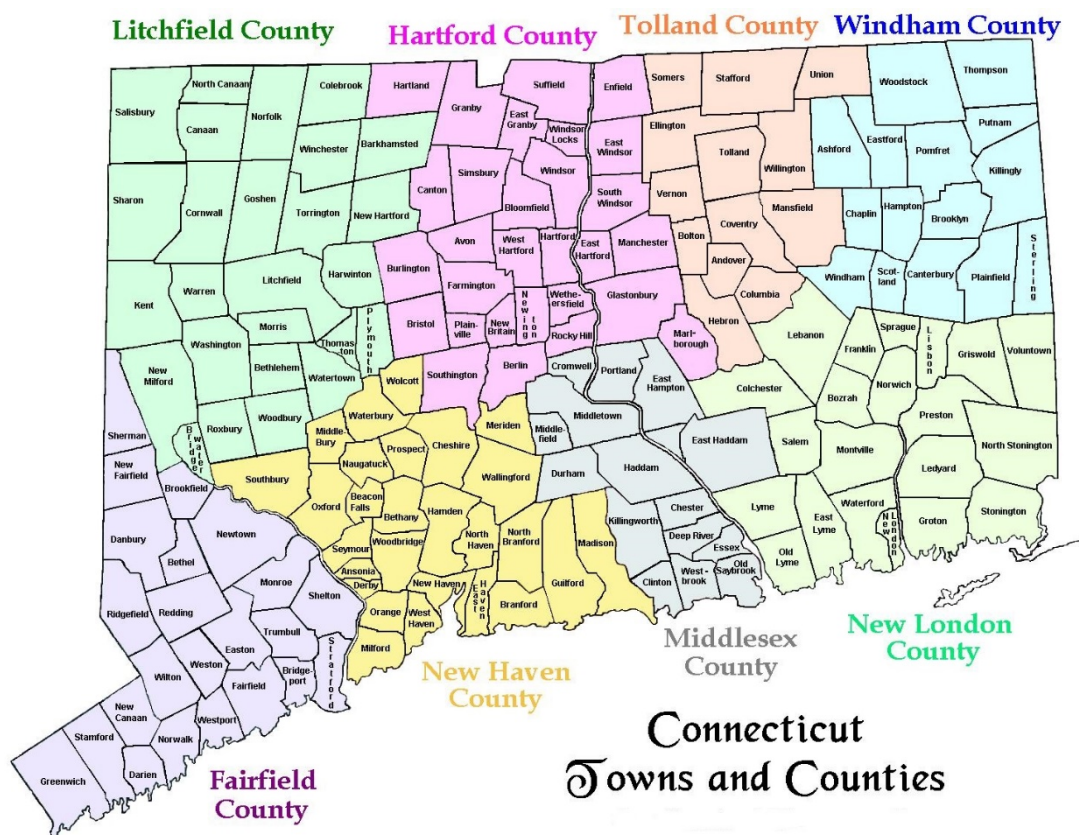
GOVERNOR NED LAMONT

Led by the

DEPARTMENT of PUBLIC HEALTH &
DEPARTMENT of ENERGY AND ENVIRONMENTAL PROTECTION



CONNECTICUT TOWNS AND COUNTIES



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This Action Plan is available on the Connecticut Interagency PFAS Task Force website at:

<https://www.ct.gov/CTPFASTaskForce>

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Office of the Governor (OTG)

Office of the Attorney General (OAG)

Office of Policy and Management (OPM)

Connecticut Agricultural Experiment Station (CAES)

Connecticut Airport Authority (CAA)

Connecticut Military Department (CTMD)

Connecticut State Colleges and Universities (CSCU)

Department of Administrative Services (DAS)

Department of Agriculture (DOAG)

Department of Consumer Protection (DCP)

Department of Correction (DOC)

Department of Developmental Services (DDS)

Department of Emergency Services and Public Protection (DESPP)

Department of Transportation (DOT)

Public Utilities Regulatory Authority (PURA)

University of Connecticut (UCONN)

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ACRONYMS AND ABBREVIATIONS

ACWA	Association of Clean Water Administrators
AFFF	Aqueous film-forming foam
AL	Action Level
ASDWA	Association of State Drinking Water Administrators
AWIA	America's Water Infrastructure Act
AWWA	American Water Works Association
CAA	Connecticut Airport Authority
CADH	Connecticut Association of Directors of Health
CAES	Connecticut Agricultural Experiment Station
CARIC	Convergence Awards for Research in Interdisciplinary Centers
CASE	Connecticut Academy of Science and Engineering
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESE	Center for Environmental Sciences and Engineering
CGS	Connecticut General Statutes
CSCU	Connecticut State Colleges and Universities
CTMD	Connecticut Military Department
DAS	Department of Administrative Services
DCP	Department of Consumer Protection
DDS	Department of Developmental Services
DEEP	Department of Energy and Environmental Protection
DESPP	Department of Emergency Services and Public Protection
DOAG	Department of Agriculture
DOC	Department of Correction
DOT	Department of Transportation
DPH	Department of Public Health
DWS	Drinking Water Section
ECOS	Environmental Council of the States
EHS	Environmental Health Section
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPR	Extended Producer Responsibility
FAA	Federal Aviation Administration
GIS	Geographic information system
ITRC	Interstate Technology and Regulatory Council
LEP	Licensed Environmental Professional
LHA	Lifetime Health Advisory
MCL	Maximum Contaminant Level

NEBRA	North East Biosolids & Residuals Association
NEIWPC	New England Interstate Water Pollution Control Commission
NEWMOA	Northeast Waste Management Officials' Association
ng/L	Nanograms per liter (equivalent to parts per trillion, i.e., ppt)
NFPA	National Fire Protection Association
OAG	Office of the Attorney General
OPM	Office of Policy and Management
OTG	Office of the Governor
P2	Pollution Prevention
PFAS	Per- and polyfluoroalkyl substances
PFHpA	Perfluoroheptanoic acid
PFHxS	Perfluorohexane sulfonic acid
PFNA	Perfluorononanoic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonic acid
ppt	Parts per trillion (equivalent to nanograms per liter, i.e., ng/L)
RCSA	Regulations of Connecticut State Agencies
PURA	Public Utilities Regulatory Authority
SDWA	Safe Drinking Water Act
SERC	State Emergency Response Commission
SIC	Standard Industrial Classification
SRP	Superfund Research Program
UCMR3	Third Unregulated Contaminant Monitoring Rule
UCONN	University of Connecticut
USGS	United States Geological Survey
WQSMA	Water Quality Standards Managers Association

EXECUTIVE SUMMARY

To protect the health of Connecticut residents and the environment from the harmful effects of a class of widely used chemicals called per- and polyfluoroalkyl substances (PFAS), Governor Ned Lamont established the Connecticut Interagency PFAS Task Force on July 8, 2019. He charged this Task Force with producing, by November 1, 2019, a PFAS Action Plan laying out a comprehensive State strategy to:

- 1) Minimize environmental exposure to PFAS for Connecticut residents,
- 2) Minimize future releases of PFAS to the environment, and
- 3) Identify, assess, and clean up historical releases of PFAS to the environment.

The PFAS Task Force is led by the Connecticut Department of Public Health (DPH) and Department of Energy and Environment (DEEP) and co-chaired by DPH Commissioner Renée Coleman-Mitchell and DEEP Commissioner Katie S. Dykes. As the cross-cutting nature of its charge necessitates collaboration across State government, the Task Force comprises representatives of nearly twenty State agencies and entities.

The Task Force held its initial meeting on July 30, 2019, where it established Human Health, Pollution Prevention, and Remediation Committees to address the three strategic focus areas identified by Governor Lamont and provide policy recommendations to the Task Force. These committees were open to all who wished to participate. Each committee convened two meetings, all of which were broadcast live and recorded. The primary focus of the meetings was to receive stakeholder input, discuss important issues, and prepare for the second and third Task Force meetings on August 28, 2019 and September 18, 2019. The deliberations that took place and the public comments that were provided during this series of meetings culminated in the development of recommended actions reflecting input from knowledgeable and invested stakeholders statewide.

To provide an additional opportunity for public participation, the Task Force published its draft PFAS Action Plan on October 1, 2019 and instituted a fifteen-day public comment period, during which more than 400 comments were received. After review and careful consideration of each comment, the draft Plan was revised, where appropriate, to reflect public input.

The recommended actions outlined in the PFAS Action Plan lay out a comprehensive strategy for protecting Connecticut's citizens from PFAS exposure and protecting the environment from the effects of PFAS pollution. Moving forward, implementation of these recommendations will require continued collaboration among all of the stakeholders brought together by the Connecticut Interagency PFAS Task Force.

SUMMARY OF KEY RECOMMENDED ACTIONS

To minimize Connecticut residents' PFAS exposure:

- **Test drinking water for PFAS.** Require PFAS testing of public drinking water, using a phased approach that prioritizes the sources of public drinking water that are most vulnerable to PFAS pollution or serve vulnerable populations. Identify and prioritize testing of private drinking water wells proximal to areas with suspected or confirmed PFAS contamination. Require testing of bottled water. Educate residents and local officials on the potential risks associated with drinking PFAS-contaminated water. Continue to evaluate existing drinking water protection laws to proactively protect drinking water sources, monitor new research, and modify health-based guidelines as warranted.
- **Assess food-related PFAS exposure pathways.** Identify, evaluate, and prioritize other potential sources of human exposure to PFAS, including fish and shellfish, agricultural products, and food service ware.
- **Minimize occupational exposure to PFAS.** Identify workplaces where PFAS are used or manufactured and help employers implement exposure control strategies.

To minimize future releases of PFAS to the environment:

- **Reduce or prevent future releases of PFAS-containing firefighting foam to the environment.** Support initiatives including the development and implementation of best management practices for handling aqueous film-forming foam (AFFF), legislation limiting the use of AFFF, an AFFF take-back program for State agencies and municipal fire departments, and the evaluation, selection, and procurement of PFAS-free alternatives.
- **Identify and address other significant sources of PFAS contamination.** Identify the operations, processes, and consumer products that may be sources of PFAS contamination. Establish standards and discharge limits for PFAS in air and water. Evaluate the levels of PFAS that reach wastewater treatment plants, biosolids, and compost. Support the procurement of PFAS-free consumer products by State agencies.

To identify, assess, and clean up historical releases of PFAS to the environment:

- **Identify areas of concern throughout the state.** Develop an interagency geographic information system (GIS) database that identifies the universe of potential sources of PFAS pollution and the populations that may be most vulnerable to exposure to such pollution. Determine ambient conditions of PFAS in the environment and identify impacted areas by developing and implementing a strategy for random and targeted environmental sampling.
- **Require testing of environmental media at sites where PFAS are likely to have been released.** Sample environmental media at airports, fire departments, and firefighting training areas where AFFF has been stored or used. Sample environmental media at and

around landfills using a tiered approach prioritizing landfills that pose a potential risk to human health.

- **Evaluate corrective measures.** Establish PFAS cleanup standards for soil, groundwater, surface water, and aquatic biota. Continue using existing statutory authority to compel environmental investigation and cleanup of PFAS releases.

To enhance education, outreach, and communication on PFAS:

- **Establish a public outreach team** to improve communication with affected communities and other stakeholders.
- **Collaborate with local emergency response personnel** to efficiently and effectively disseminate information to the public about incidents involving PFAS.
- **Support initiatives to enhance notification of PFAS releases** to potentially threatened stakeholders.
- **Continue State agency participation in regional and national workgroups and training opportunities** to maintain knowledge and capacity for addressing PFAS.

The following **potential legislative opportunities** have been identified to support these recommended actions:

- **Establish an AFFF take-back program.**
- **Reduce future releases of AFFF to the environment** through other measures such as a ban on firefighting training with AFFF.
- **Establish a Safe Drinking Water Advisory Council** to make recommendations regarding Maximum Contaminant Levels (MCLs) for emerging contaminants, including PFAS, in drinking water.
- **Require all water bottlers that sell bottled water in Connecticut to test their products for PFAS.**
- **Evaluate whether the State can require manufacturers to disclose PFAS content** in Safety Data Sheets and product labeling, and consider establishing an Extended Producer Responsibility (EPR) program for PFAS-containing products.

INTRODUCTION

PFAS (per- and polyfluoroalkyl substances), a class of more than 4,700 synthetic organic chemicals, have recently entered the national spotlight due to concern about the potential risk that they pose to human health and the environment. While public attention to PFAS is new, the chemicals themselves have been manufactured and used worldwide since the 1940s. The chemical structures of PFAS compounds vary widely but all contain at least one fully fluorinated carbon atom. Their strong carbon–fluorine bonds make PFAS highly stable, heat-resistant, and oil- and water-repellent. Due to these properties, PFAS are widely used in consumer products such as nonstick cookware, waterproof apparel, stain-resistant textiles and carpets, personal care products, cleaners, waxes, and food packaging materials. They also have numerous industrial applications—for instance, PFAS are used in metal finishing operations and as the primary ingredient in aqueous film-forming foam (AFFF), the class of firefighting foam used to extinguish high-hazard flammable liquid fires.

The unique chemical properties that have made PFAS desired chemicals in manufacturing also make them pervasive and persistent once released into the environment. PFAS easily migrate in the environment and cause contamination of soil, sediment, groundwater, and surface water. Since PFAS are not currently known to be broken down by natural processes, they could persist in the environment indefinitely, earning them the nickname “forever chemicals.” As such, humans and animals can be exposed to PFAS through exposure pathways such as drinking contaminated water and eating contaminated fish and plants. Environmental exposure augments the human exposure that potentially results from the use of PFAS-containing consumer products and consumption of food packaged in PFAS-containing materials.

Our scientific understanding of these chemicals and their potential impact on humans and the environment is rapidly expanding. The existing body of scientific literature on PFAS, which has so far focused on a limited number of PFAS compounds, shows that these compounds bioaccumulate in humans and animals and links them to human health effects ranging from developmental effects in fetuses and infants to certain forms of cancer. For these compounds with substantiated health risks, environmental concentrations of concern currently reach as low as the parts per trillion (ppt), or nanograms per liter (ng/L), range. At present, limited toxicity data is available for the remainder of the more than 4,700 PFAS compounds, so further study is necessary to understand their potential health effects. Throughout this document, PFAS are discussed as a class. In the future, however, Connecticut agencies and the workgroups that arise out of this Task Force may consider evaluating these compounds individually.

In the past few years, the United States Environmental Protection Agency (EPA) has begun to assess PFAS, primarily in drinking water. Between 2013 and 2015, large public water systems serving more than 10,000 individuals were required to test their finished drinking water for six specific PFAS chemicals, among other pollutants, under the Third Unregulated Contaminant Monitoring Rule (UCMR3) carried out pursuant to the Safe Drinking Water Act (SDWA). In Connecticut, 42 large public water systems were tested for the six PFAS, and none reported any PFAS detections above EPA’s reporting limit at that time. Nationwide, between 2013 and 2015

under the UCMR3, [1.3 percent of large public water systems reported detections of at least one PFAS compound that exceeded the reference concentration of 70 ppt \(70 ng/L\)](#). These systems are estimated to provide drinking water to approximately 5.5 million people.

In May 2016, soon after the conclusion of the UCMR3 sampling, EPA issued a Lifetime Health Advisory (LHA) for levels of two specific PFAS chemicals in drinking water—perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS)—of 70 ppt, either individually or combined. This LHA was announced to the Connecticut public water systems in June 2016 by the Connecticut Department of Public Health (DPH). The announcement of EPA’s LHA, along with high-profile news reporting on PFAS contamination sites such as those in Parkersburg, WV, Minneapolis-St. Paul, MN, Portsmouth, NH, and Hoosick Falls, NY, caused many states to evaluate the PFAS levels detected in their public water systems and consider how best to address the possibility of contamination of public and private drinking water supplies. Similarly, many individual states’ environmental protection agencies began to assess what could be done to address sources of PFAS pollution. In December 2016, DPH issued an Action Level (AL) of 70 ppt for the combined levels of PFOA, PFOS, and three additional PFAS chemicals. This information was shared with the state’s public water systems and local officials.

In May 2018, EPA hosted a National Leadership Summit on PFAS. Representatives from DPH and the Connecticut Department of Energy and Environmental Protection (DEEP) attended. As a follow-up to the many concerns raised by states and stakeholder groups, EPA held Regional Community Engagement events in communities impacted by PFAS in drinking water and committed to prepare an action plan to address PFAS nationwide. DPH and DEEP attended the session hosted by EPA Region 1 in New Hampshire, where DPH presented on their outreach efforts and the lessons learned during their response in the spring of 2018 to Connecticut’s first instance of PFAS drinking water contamination, in which public and private wells in Greenwich, CT were threatened by groundwater pollution originating from Westchester County, New York, and one private well was found to be polluted with PFAS above the DPH AL.

In February 2019, EPA released its [PFAS Action Plan](#). Key action items in the EPA plan include:

- Determination, by the end of 2019, on whether a Maximum Contaminant Level (MCL) for PFOA and PFOS in drinking water should be promulgated;
- Steps to list certain PFAS as “hazardous substances” under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA);
- Development of interim groundwater cleanup standards;
- Potential PFAS use reporting on the Toxics Release Inventory;
- Potential review of new PFAS under the Toxic Substances Control Act;
- Expansion of PFAS research; and
- Development of a PFAS Communication Toolbox.

While many of the proposed actions in the EPA Action Plan are meritorious, the timelines identified for implementation are considered too long by many states, including Connecticut.

Given the long timeframe for future federal regulations governing PFAS exposure, use, and disposal, state leadership in this regard is crucial. Accordingly, on July 8, 2019, Governor Ned Lamont established the Connecticut Interagency PFAS Task Force with the goal of educating residents about the potential risks associated with PFAS and implementing appropriate safeguards. He charged this Task Force with writing and delivering to him, by November 1, 2019, a PFAS Action Plan (Plan) containing a comprehensive state strategy to (1) minimize environmental exposure to PFAS for Connecticut residents, (2) minimize future releases of PFAS to the environment, and (3) identify, assess, and clean up historical releases of PFAS to the environment.

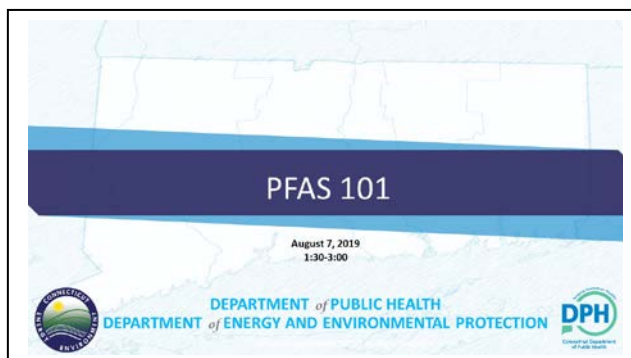
The PFAS Task Force was led by DPH and DEEP, whose initiatives in recent years have laid the groundwork for state action. It was chaired by DPH Commissioner Renée Coleman-Mitchell and DEEP Commissioner Katie S. Dykes. As the cross-cutting nature of its charge necessitates collaboration across state government, the Task Force contained representatives spanning nearly twenty State agencies and entities, including the Office of the Governor (OTG), Department of Emergency Services and Public Protection (DESPP), Connecticut Airport Authority (CAA), Office of the Attorney General (OAG), Office of Policy and Management (OPM), Department of Transportation (DOT), Public Utilities Regulatory Authority (PURA), Department of Consumer Protection (DCP), Connecticut Military Department (CTMD), Department of Correction (DOC), Department of Administrative Services (DAS), Connecticut State Colleges and Universities (CSCU), University of Connecticut (UConn), Department of Agriculture (DOAG), Department of Developmental Services (DDS), and Connecticut Agricultural Experiment Station (CAES).

During its initial meeting on July 30, 2019, the Task Force established Human Health, Pollution Prevention, and Remediation Committees to ensure that the Plan would properly address the three strategic focus areas identified by Governor Lamont and would reflect input from stakeholders. These three committees each held two meetings, one in the run-up to the second Task Force meeting on August 28, 2019 and the other during the week prior to the third and final Task Force meeting on September 18, 2019.



Figure 1. Interagency PFAS Task Force meeting, Legislative Office Building, Hartford, September 18, 2019

Throughout the process of preparing this Plan, transparency and public participation were paramount. Task Force committees were open to participation from all interested parties, and all Task Force and committee meetings were open to the public. To prepare participants for the first round of committee meetings, the Task Force hosted an introductory webinar on August 7, 2019. Subject matter experts from DEEP and DPH reviewed PFAS chemistry, toxicology, laboratory analysis, and remediation, summarized the history of PFAS detections and PFAS-related initiatives in Connecticut, and answered participant questions. This webinar, as well as presentation slides, Task Force and committee meeting recordings, background literature, and other pertinent information, were posted to the Task Force website (<https://www.ct.gov/CTPFASTaskForce>). The Task Force disseminated meeting updates on its ListServ and maintained a centralized email account (CTPFAS@ct.gov) to answer related questions.



Given the strong emphasis on public participation throughout this process, Governor Lamont extended the original deadline for completion of the Plan by one month—from October 1, 2019 to November 1, 2019—to allow for a fifteen-day public comment period giving interested parties an opportunity to provide feedback on the draft Plan. Public comment was accepted from October 1, 2019 to October 15, 2019 both by mail and through the centralized Task Force email. During that time, the Task Force received more than 400 comments. After review and careful consideration of each comment, the Plan was revised, where appropriate, to reflect public input. The finalized Plan was delivered to Governor Lamont on November 1, 2019.

This Plan advances recommendations that provide a comprehensive list of action items from the Task Force for the consideration of the Governor and his staff. Several of these recommendations require legislative action and/or commitment of funds. It is anticipated that items involving legislative action or fiscal impact would be considered through the established processes. Many of the specifics of these recommendations—including sequence, timing, funding levels, and other critical details—will require further elaboration through those processes.

The recommended actions provided in this Plan lay out a comprehensive strategy for protecting Connecticut's citizens from PFAS exposure and protecting the environment from the effects of PFAS pollution. Moving forward, implementation of these recommendations will require continued collaboration among the stakeholders brought together by the Connecticut Interagency PFAS Task Force.

PFAS WORK HAPPENING NOW

This section summarizes select PFAS-related initiatives underway at DPH, DEEP, DESPP, CAA, CAES, OAG, UCONN, and DAS.

Department of Public Health (DPH) Environmental Health Section (EHS)

In November 2016, the DPH Environmental Health Section (EHS) developed a drinking water AL for PFAS of 70 ppt for levels of five PFAS chemicals [PFOA, PFOS, perfluorohexane sulfonic acid (PFHxS), perfluorononanoic acid (PFNA), and perfluoroheptanoic acid (PFHpA)], individually or combined. DPH establishes ALs under Connecticut General Statute (CGS) 22a-471. ALs are not regulatory standards. Rather, if a drinking water well exceeds an AL, DEEP is authorized under CGS 22a-471 to issue an Order to the party(ies) responsible for causing the contamination. The Order can require the responsible party(ies) to provide a short-term and long-term source of safe drinking water to the persons affected by contamination exceeding an AL. Engineering reports required for the provision of drinking water are subject to the approval of the Commissioner of DPH, who must consider many factors per CGS 22a-471. Additionally, ALs provide guidance on drinking water public and private sources and specifically to local health departments and citizens when evaluating the potability of water from private wells. The DPH EHS Private Well Program has coordinated with DEEP and local health departments when PFAS contamination sites have been identified near private wells, with the state having an estimated 325,000 private wells that serve over 800,000 people.

The Private Well Contamination Coordination Protocol was created by the DPH EHS Private Well Program with extensive input from and in collaboration with the DEEP Remediation Division and Connecticut Association of Directors of Health (CADH). The protocol, finalized in September 2017, provides generic responses that EHS, DEEP, and CT local health departments can implement when elevated levels of man-made or naturally occurring contaminants are discovered in an area with private wells. PFAS are covered under the “man-made contaminants” section of the protocol.

EHS toxicologists are monitoring the evolving scientific literature on PFAS health effects and are reviewing PFAS drinking water guidelines/standards set by other states. DPH EHS will update the PFAS AL as warranted by the most current PFAS scientific literature. EHS has also prepared health education materials, such as fact sheets, and conducted risk communication activities at sites where PFAS contamination has been identified. The DPH EHS Private Well Program coordinated and provided PFAS education at the CT Private Well Conferences held in April 2018 and again in April 2019.

EHS also reviews data on fish PFAS contamination. EHS then conducts risk assessment on those concentrations to help inform whether fish consumption advisories are needed.

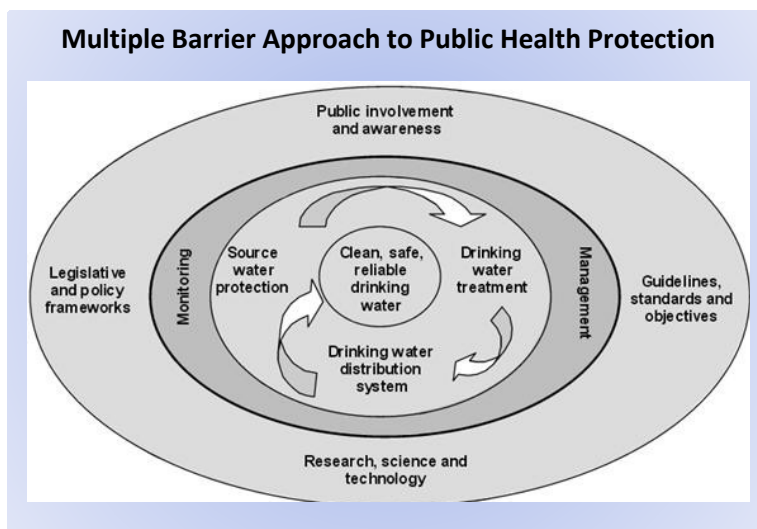
Department of Public Health (DPH) Drinking Water Section (DWS)

The DPH Drinking Water Section (DWS) is responsible for the administration of state and federal drinking water regulations and is dedicated to assuring the quality and adequacy of the

State's public drinking water sources. DWS is organized into seven functional units that provide technical assistance, education, and regulatory enforcement to over 2,500 public drinking water systems, which serve drinking water to approximately 2.8 million persons on a daily basis. The priority of DWS is the administration of drinking water treatment and monitoring, drinking water source protection, and consumer education in order to support the concepts of the multiple barrier approach to protecting public health.

Actions taken by DPH DWS to date:

- DWS monitored UCMR3 results from the state's large public water systems between 2013 and 2015.
- DWS worked with DPH EHS to understand EPA's LHA and subsequently issue Circular Letter 2016-16 to public water systems statewide on the EPA LHA for PFAS.
- DWS began working with DEEP's Remediation Division in 2016 and subsequently assembled an internal team of staff from the Source Assessment and Protection, Enforcement, and Drinking Water State Revolving Fund Units with additional support from summer interns from the University of Connecticut. This team:
 - Has developed subject matter expertise in facets of PFAS related to public drinking water,
 - Has actively participated in the national conversation on PFAS, and
 - Continues to develop internal capacity to address PFAS in both proactive and reactive manners.
- DWS, from the end of 2017 to the spring of 2018, worked together with DPH EHS, DEEP, and the Greenwich local health department to respond to the PFAS ground water contamination that threatened Greenwich public and private wells.
- DWS staff participate in numerous regional and national efforts on PFAS and drinking water under the New England Interstate Water Pollution Control Commission (NEIWPC), Association of State Drinking Water Administrators (ASDWA), Northeast Waste Management Officials' Association (NEWMOA), EPA, and CT Section of the American Water Works Association (AWWA).
- DWS staff work with ASDWA leadership to review and develop national initiatives to address the need for state drinking water primacy agencies to take action, and to



subsequently create an ongoing formal initiative to address states' development of an MCL.

- DWS presented in June 2018 at the EPA's Regional Community Engagement event in Exeter, New Hampshire on actions taken to address risk communication during the Greenwich PFAS event.
- DWS presented on PFAS at the DPH Local Health meeting and Water Works Association meetings in the fall of 2018.
- DWS issued Circular letter 2018-19 to all public water systems, local officials, and certified water operators to provide an update on PFAS and share the DPH AL.
- DWS issued Circular letter 2018-20 to the state's 80 large public water systems requesting testing for PFAS and requiring land use risk assessments per CGS 25-32d.
- DWS initiated in the fall of 2018 under Circular Letter 2018-19 and issued under public water source site approvals per Public Health Code 19-13-B51, CGS 25-32, and CGS 16-262n the requirement to test for PFAS in all new sources of public drinking water.
- DWS staff worked during the fall of 2018 with DEEP and the CT Section AWWA Source Water Protection Committee to develop a form and format for land use risk assessments to analyze PFAS risk to public drinking water quality.
- DWS issued Circular Letter 2018-28 to public water systems, local officials, and certified water operators to share new their new PFAS webpage, the most recently EPA-validated lab method for PFAS analysis, and a general update on new PFAS issues.
- DWS issued Circular letter 2019-03 to share the PFAS land use risk assessment form with all large public water systems subject to CGS 25-32d.
- DWS's Drinking Water State Revolving Loan Fund program has included PFAS in its draft Intended Use Plan by including priority ranking points for treatment systems needed to treat water for emerging contaminants including PFAS.
- DWS has worked with a variety of communities, local health directors, and public water systems to provide technical assistance as PFAS detections have been found in Norwalk and East Hampton.
- DWS participated with DEEP to learn of UCONN's work to pursue research opportunities in the treatment and health impacts of PFAS.
- DWS established a team that maintains subject matter expertise on PFAS in public drinking water. This team is trained to collect PFAS samples and provide education and outreach on PFAS to public drinking water systems.
- DWS issued Circular Letter 2019-18 requiring the four bottled water producers that maintain their own sources to test their source water for PFAS.
- DWS staff works closely with local, state, regional and national government agencies, and with professional working groups. These interactions provide the DWS with knowledge of the challenges facing states where PFAS contamination has been identified,

allowing the DWS to develop tools and additional capacity that can be used if PFAS contamination is identified in Connecticut in the future.

Department of Energy and Environmental Protection (DEEP)

- DEEP has been coordinating with DPH on PFAS since 2016. For example, DEEP's Remediation Division investigates sources of pollution and coordinates closely with DPH DWS, DPH Private Well Program, and local health departments in response to PFAS detections in drinking water wells, per DPH Private Well Coordination Protocol.
- Beginning in the fall of 2016, DEEP Remediation Division staff conducted outreach to the Commission on Fire Prevention and Control to inform commissioners of the presence of PFAS in AFFF used to extinguish Class B petroleum and flammable liquid fires. DEEP has also participated in annual meetings of the State Emergency Response Commission (SERC) at the request of the Commission to provide technical information on the PFAS found in AFFF.
- DEEP has established an internal coordination group within the Environmental Quality branch of the agency to monitor the state of PFAS science and evaluate existing regulatory authority with respect to PFAS releases.
- EPA and DEEP have performed an initial screening of industries in Connecticut that may utilize PFAS in their processes based on Standard Industrial Classification (SIC) codes.
- Partnering with the Connecticut Academy of Science and Engineering (CASE), DEEP has retained a post-doctoral Fellow to assist the Remediation Division in monitoring governmental policy regarding PFAS and other emerging contaminants.
- The DEEP Remediation Division presented at the Remediation Roundtable in June 2017 to notify Licensed Environmental Professionals (LEPs) and the regulated community about investigation and clean-up needs for PFAS. If PFAS are contaminants of concern at sites undergoing environmental investigation pursuant to a State Remedial Program, then appropriate testing and cleanup, consistent with prevailing standards and guidelines, is required. The DEEP Remediation Division also responds to questions from LEPs and the regulated community involving the investigation and remediation of PFAS at cleanup sites.
- The DEEP Remediation Division published optional soil, soil leaching, and groundwater criteria for the sum of five PFAS chemicals (PFOA, PFOS, PFHxS, PFNA, and PFHpA) available for use at cleanup sites, known as Additional Polluting Substances criteria.
- When PFAS are found in a public or private drinking water well during the course of investigating or remediating pollution on or emanating from a property, they must be considered a significant environmental hazard and reported to DEEP accordingly under existing statutory authority [CGS 22a-6u(c)].
- DEEP has developed guidance for its emergency dispatchers who receive notifications about AFFF deployment to enable them to track the situation appropriately and identify whether any vulnerable drinking water resources are located nearby.
- The General Permit for Groundwater Remediation Wastewater includes provisions for monitoring emerging contaminants, PFAS included.

- DEEP is coordinating with researchers at the University of Rhode Island to potentially test PFAS concentrations in a few select rivers in eastern Connecticut.
- DEEP staff participate in regional and national workgroups—including but not limited to NEWMOA, NEIWPC, the North East Biosolids & Residuals Association (NEBRA), the Environmental Council of the States (ECOS), the Association of Clean Water Administrators (ACWA), the Water Quality Standards Managers Association (WQSM), and EPA Region 1—to keep abreast of the evolving landscape of PFAS regulation and science.
- Since the fall of 2016, DEEP staff subject matter experts have attended the meetings of numerous associations to deliver presentations on PFAS, including but not limited to ECOS, CADH, the Connecticut Chapter of the Environmental Business Council of New England, Connecticut Water Well Association, Connecticut Private Well Conference, and the 2019 Association for Environmental Health and Sciences Foundation's 35th Annual International Conference on Soils, Sediments, Water, and Energy.

Department of Emergency Services and Public Protection (DESPP)

- In conjunction with DEEP, DESPP has met with many firefighting foam manufacturers and vendors to search for foams that are PFAS-free but still meet the necessary performance requirements for suppressing flammable vapors and extinguishing flammable liquid fires. DEEP and DESPP are evaluating alternative foams with the goal of publishing a list of fluorine-free alternatives suitable to replace the PFAS-containing AFFF currently stocked in state-managed regional foam trailers, State facilities, and municipal fire departments.
- In June 2019, in conjunction with DEEP, DESPP drafted and distributed to fire departments an advisory bulletin updating guidance on use of AFFF to fire officials statewide. This guidance recommended cessation of training with AFFF and use only when tactically necessary for the protection of life and property. In addition, the guidance highlighted the requirement to report AFFF deployment to the DEEP Emergency Response and Spill Prevention Division per CGS 22a-450.
- DESPP is inventorying AFFF stocked within state government and local fire departments. In the summer of 2019, DESPP sent fire officials a survey on their stocks of pre-2003 and modern AFFF and requested information regarding locations in which AFFF was previously used for firefighter training. This inventory will aid in any future AFFF take-back efforts.

Connecticut Airport Authority (CAA)

- In April 2019, with permission from the Federal Aviation Administration (FAA), CAA began using dyed water in place of AFFF for federally required rescue vehicle training drills.
- CAA is conducting their own research on fluorine-free AFFF alternatives and best practices for foam storage and containment. As part of this effort, CAA is conversing with the National Fire Protection Association (NFPA) about AFFF alternatives that meet NFPA standards for use in large hangars with foam fire suppression systems.

- In response to the June 8, 2019 release of AFFF from a privately owned hangar at Bradley International Airport, CAA requested permission from the State Fire Marshal to plug floor drains at airport hangars that use AFFF, which are required by state fire code, for 90 days. At the close of this 90-day period in October 2019, CAA requested and received an additional 90-day extension. In the meantime, CAA is researching suitable long-term solutions, such as containment methods and automatic valves, to prevent AFFF in hangars from reaching the environment.

Connecticut Agricultural Experiment Station (CAES)

- CAES has developed analytical methods to screen for a wide variety of PFAS and quantify the concentrations of 24 PFAS compounds in water and soils. CAES is working toward the development of accredited methods for PFAS analysis in environmental media including but not limited to soil, air, plants, and other biota.
- CAES is conducting research related to PFAS accumulation in soil and food crops, as well as PFAS removal from soil by plants (i.e., phytoremediation).
- CAES is building an internal library for analysis of unknown PFAS detected during non-target screening.

Office of the Attorney General (OAG)

- On July 30, 2019, Attorney General Tong and 21 other state attorneys general released a joint letter to Congress calling for legislation and funding to aid state and local governments in addressing the public health threat presented by PFAS.

University of Connecticut (UCONN)

- In the inaugural cycle of CARIC—Convergence Awards for Research in Interdisciplinary Centers—the Office of the Vice President for Research awarded funding to *Exposure, Health Effects, Sensing and Remediation of Emergence Contaminants Superfund Research Program (SRP) Center*, a collaborative team of UCONN professors that conducts interdisciplinary research on PFAS and intends to apply for federal funding.
- The Center for Environmental Sciences and Engineering (CESE) laboratory at UCONN has developed capability to perform PFAS analysis in blood and tissue and is currently in the process of seeking certification to perform EPA-validated methods for PFAS analysis in drinking water.

Department of Administrative Services (DAS)

- The State Building Inspector and State Fire Marshal are working with CAA on strategies to (1) reduce the number of AFFF systems through alternative compliance paths, (2) reduce accidental discharges of AFFF systems, and (3) contain foam releases when they do occur.
- DAS Purchasing is working on contracts to buy PFAS-free cleaning supplies and other materials.

RECOMMENDED PFAS INITIATIVES

As stated in the Introduction, three focus committees—Human Health, Pollution Prevention, and Remediation—were established by the Task Force to evaluate how Connecticut can protect human health and the environment from PFAS exposure. Recommended action items in these strategic focus areas are discussed in detail below and described with respect to short-term and intermediate priorities. Depending upon the availability of resources (staffing/funding), short-term actions may be initiated within 3-6 months and intermediate actions may be initiated within 6-12 months. Some activities are already underway and are considered ongoing actions.

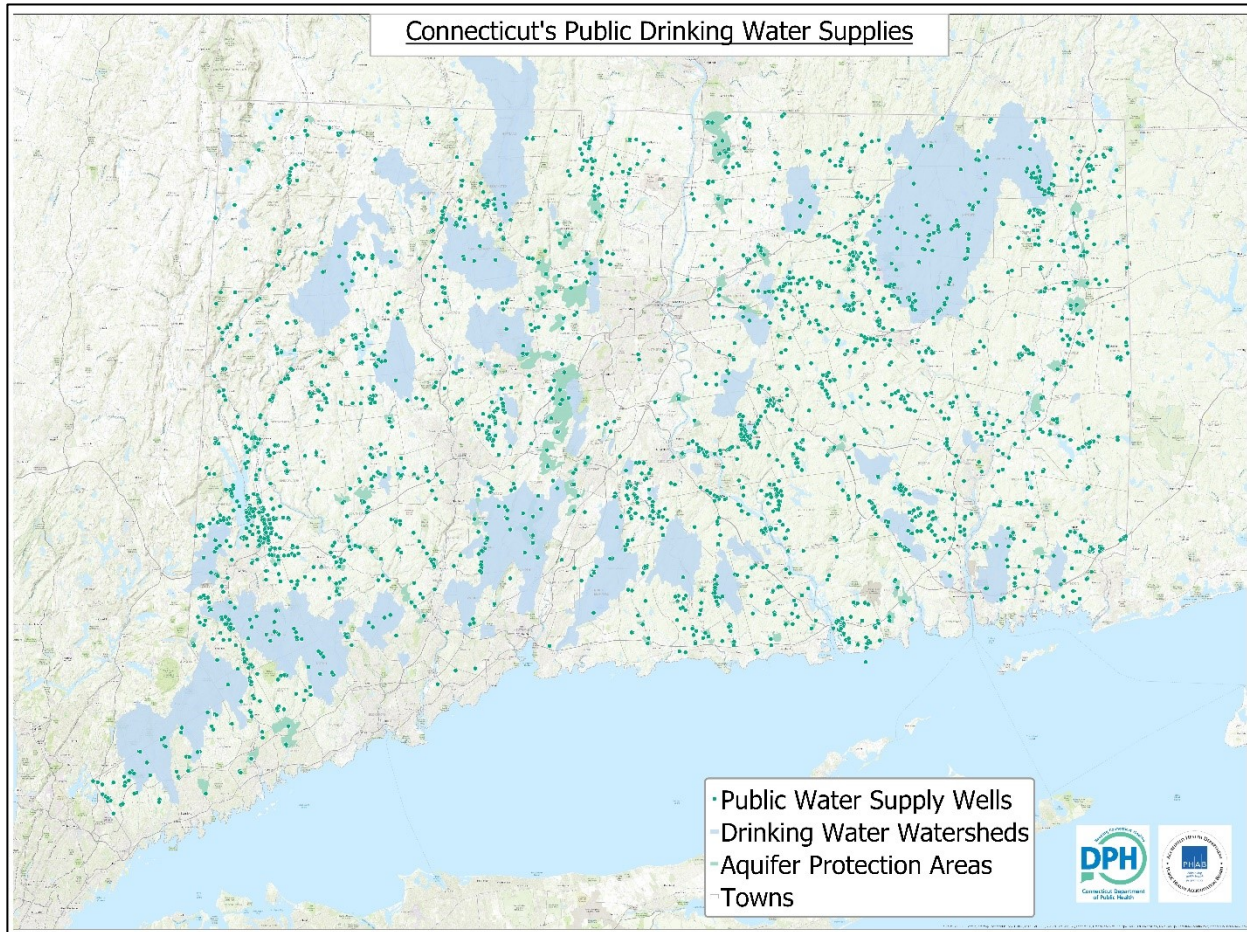
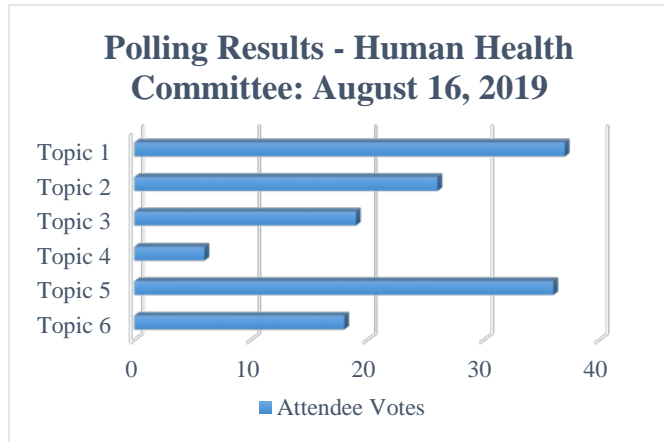
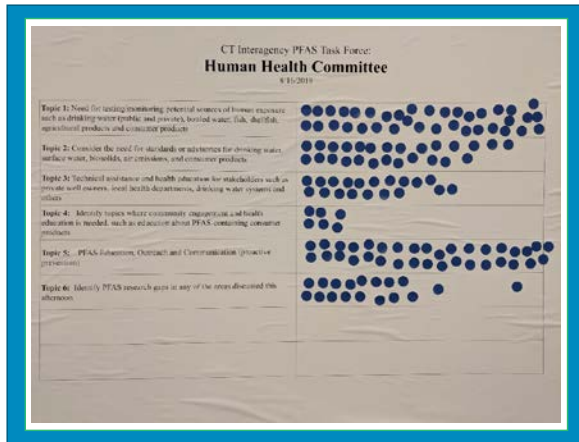
STRATEGIC FOCUS 1 - PROTECT THE HEALTH OF CONNECTICUT'S CITIZENS: MINIMIZING ENVIRONMENTAL EXPOSURE TO PFAS

The first goal of the Interagency PFAS Task Force was to “minimize environmental exposure to PFAS for Connecticut residents.” During the first meeting of the Interagency PFAS Task Force on July 30, 2019, the Task Force established the Human Health Committee to address human exposure to PFAS through various environmental media.

The Human Health Committee held its first meeting on August 16, 2019 and its second meeting on September 10, 2019. During the first meeting, six topics were proposed by the co-chairs of the committee, which were each discussed by the meeting participants in depth. These topics were:

1. The need for testing/monitoring of potential sources of human exposure such as drinking water (public and private), bottled water, fish, shellfish, agricultural products, and consumer products;
2. The need for standards or advisories for drinking water, surface water, biosolids, air emissions, and consumer products;
3. Technical assistance and health education for stakeholders such as private well owners, local health departments, drinking water systems, and others;
4. Identification of topics where community engagement and health education are needed, such as education about PFAS-containing consumer products;
5. PFAS education, outreach and communication (proactive prevention); and
6. Identification of PFAS research gaps in any of the areas discussed.

An informal poll was conducted at the close of the first meeting, which assisted the co-chairs in identifying the topics of greatest importance to the public. Testing drinking water was identified as a priority item because studies indicate that the PFAS compounds in Connecticut's AL can have a variety of health effects at various life stages from before birth to adulthood. As a result, the Human Health Committee recommended that the first action the State should take to minimize environmental exposure for Connecticut residents is to implement a phased PFAS testing program for public drinking water. In the second meeting, the co-chairs shared action items that were identified based on the comments and information offered in the first meeting and the input received during the second Task Force meeting on August 28, 2019. Committee meeting agendas, presentations, and meeting minutes are included in the Appendix to this Plan.



As a result of discussions at these meetings, the Human Health Committee identified several action items, listed below, to minimize Connecticut residents' exposure to PFAS, as well as agencies and organizations that have expertise and/or authority to assist in implementing these actions.

The Task Force recommends prioritization of the following action items:

Ongoing and Short-Term Actions

- 1) Test drinking water for PFAS
 - a) Public drinking water – Require testing of public drinking water for select PFAS using EPA-validated laboratory methods for analysis. Utilize a phased approach to prioritize testing of public water systems with vulnerable sources as identified by land use assessments, those that serve vulnerable receptors such as schools and daycares, and those that serve disadvantaged communities. If PFAS are identified through this testing, work with water companies to mitigate human exposure. Collaborate with local officials on education and outreach to affected communities. Develop educational information specific to schools and daycares.
 - b) Private wells – Identify and prioritize private wells that may need to be tested for PFAS by using analytical data obtained from the testing of public water systems and/or information about potential PFAS sites and sources. Develop a plan to inventory private well locations, working with stakeholders including the State Water Plan implementation group under the Water Planning Council. Support funding for State agencies to conduct private well sampling and analysis.
 - c) Bottled water – Require that all water bottlers in the state that utilize sources approved by DPH pursuant to CGS 21a-150a(a)(2) test for select PFAS and make results available to DPH and the public. DPH and DCP plan to evaluate the feasibility of implementing a requirement for all water bottlers that sell bottled water in Connecticut to test for select PFAS and periodically provide results of PFAS testing on water products ready for consumption.
 - d) Educate Connecticut residents and local officials on the potential risks associated with the ingestion of PFAS-impacted drinking water.
 - e) Continue to monitor new research and modify health-based guidelines as warranted.
 - f) Continue to evaluate existing drinking water protection laws and make recommendations as appropriate to protect public drinking water sources.
- 2) Establish a Safe Drinking Water Advisory Council to advise the Commissioner of DPH regarding the potential development of MCLs. Coordinate Safe Drinking Water Advisory Council duties and provide support in order for the Council to submit recommendations to the DPH Commissioner.
- 3) Support measures that provide financial assistance to public water systems for infrastructure improvements, including treatment and/or interconnections to nearby public water systems.
- 4) Procure laboratory instrumentation for PFAS analysis at the State Department of Public Health Laboratory.
- 5) Continue the laboratorian ad hoc group (including CAES, UCONN, and Yale University) to understand and evaluate laboratory capabilities for PFAS analysis.
- 6) Continue to provide technical assistance, education, and outreach to local health departments and other officials through publications and in-person and web-based training.

- 7) Provide technical assistance and health education for all other stakeholders, including risk communication messaging for consumption of water, fish, and other food products.
- 8) Maintain and strengthen partnerships with Yale University, UCONN, and other academic institutions to keep abreast of PFAS biomonitoring studies, biomonitoring needs, and biomonitoring data trends in the occupational community and general public.
- 9) Establish an academic roundtable that periodically meets to share research and enhance the knowledge of the impacts of PFAS on human health.
- 10) Continue involvement with ASDWA, EPA, and the Centers for Disease Control and Prevention (CDC), as well as interaction with regional state agencies.

Intermediate Actions

- 11) Identify, prioritize, and evaluate other potential sources of PFAS exposure to humans, including but not limited to fish, shellfish, dairy, other agricultural products, and food service ware.
- 12) Identify workplaces where PFAS are used as process chemicals and provide education and technical assistance materials detailing exposure control strategies to those employers.

STRATEGIC FOCUS 2 - POLLUTION PREVENTION: MINIMIZING FUTURE RELEASES OF PFAS TO THE ENVIRONMENT

The Pollution Prevention (P2) Committee was established by the Interagency PFAS Task Force to identify how future releases of PFAS to the environment can be reduced. The P2 Committee was co-chaired by representatives from DEEP and DESPP and held its first meeting on August 15, 2019. Robust discussion was held on AFFF regarding best management practices for storage and use, inventories of existing state and municipal stocks, and financial assistance for the establishment of a take-back program to safely dispose of AFFF and thereby prevent future releases. Additional topics of primary importance, as determined through polling, included education, outreach, and communication; PFAS levels in domestic and industrial wastewaters; permitting of PFAS in wastewaters; the universe of potential PFAS sources; and the irrigation of agricultural land with PFAS-contaminated water.

The second meeting of the P2 Committee occurred on September 11, 2019. At the meeting, DEEP gave a presentation on PFAS in food service ware, and the American Chemistry Council presented on PFAS in consumer products. The following topics were discussed and recommended for consideration in the Action Plan: biosolids, additional evaluation of consumer products that may contain PFAS, PFAS discharges to different environmental media, and steps that Agencies can take to reduce PFAS pollution.

The main pathways for continued releases of PFAS to the environment are discharges to air, soil, water, and municipal wastewater treatment facilities as a result of industrial and commercial processes, as well as the use of AFFF for both training and incident response. Of particular interest in Connecticut, given the state's industrial history, are metal finishers, certain types of textile mills, and other operations that utilize PFAS-containing materials.

AFFF is used to fight high-hazard Class B petroleum and flammable liquid fires. Examples of locations where this type of foam might be used include chemical plants, airports, bulk petroleum storage facilities, military facilities, and municipal firefighting response and training areas. All AFFF contains PFAS. Versions of AFFF manufactured prior to 2003 were known to contain primarily PFOS. Although the use of PFOS in AFFF was discontinued, legacy products are still in use, and replacement AFFF formulations still contain other PFAS that may be problematic and present an unacceptable risk to human health and the environment.

Numerous consumer products can also contain PFAS, including but not limited to carpeting, treated fabrics, cleaners, and waxes. Manufacturing, use, and disposal of these products may release PFAS to the environment and lead to human exposure.

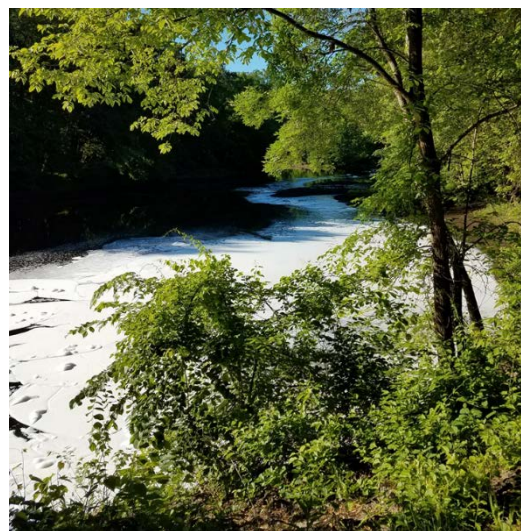


Figure 2. AFFF release to the Farmington River, Windsor, June 9, 2019.

The Task Force recommends prioritization of the following action items:

Ongoing and Short-Term Actions

- 1) Determine the universe of potential PFAS sources by:
 - a) Identifying the operations and processes that may be sources of PFAS contamination. These may include but are not limited to metal finishing facilities, car washes, land-applied biosolids, biosolids incineration, firefighting training facilities, landfills, waste-to-energy facilities, recycling facilities, and spills and incidents where AFFF is used.
 - b) Identifying the consumer products that may contain PFAS. These may include but are not limited to food and product packaging, nonstick cookware, cleaners, waxes, and coated fabric and paper.
- 2) Support initiatives that minimize future releases of AFFF to the environment:
 - a) Legislation and financial support to establish an AFFF take-back program for State agencies and municipal fire departments.
 - b) Evaluation, selection, and procurement of fluorine-free alternative foams for Class B flammable liquid fires.
 - c) Development and implementation of best management practices for the handling and storage of AFFF concentrate, management of released AFFF, and disposal of associated impacted media.
 - d) Future legislation that would reduce future releases of AFFF to the environment, such as a ban on firefighting training with AFFF.
- 3) Enhance procurement of PFAS-free consumer products by State agencies, such as cleaning products, food service ware, and food packaging.
- 4) Continue involvement with workgroups including NEBRA, NEWMOA, and NEIWPC, as well as interaction with regional state agencies.

Intermediate Actions

- 5) Establish standards and discharge/emission limits for PFAS in air and water.
- 6) Implement baseline sampling at wastewater treatment plants.
- 7) Evaluate biosolids' PFAS levels and ultimate use and/or disposal.
- 8) Evaluate PFAS levels in compost derived from food waste containing compostable food containers, disposable cutlery, and/or PFAS-treated paper products.
- 9) Convene an ad hoc group to review the most current research and nationwide actions regarding food packaging, consumer products, and the recycling thereof. Develop recommendations for reducing PFAS exposures, such as considering an Extended Producer Responsibility (EPR) program for effective management of waste from PFAS-containing products.
- 10) Educate Connecticut residents, businesses, and local officials on best management practices to reduce PFAS discharges to subsurface sewage disposal systems.

STRATEGIC FOCUS 3 - REMEDIATION: IDENTIFYING, ASSESSING, AND CLEANING UP HISTORICAL RELEASES OF PFAS TO THE ENVIRONMENT

The Remediation Committee was established by the Interagency PFAS Task Force to provide direction for the process of finding, assessing, and cleaning up past PFAS releases. This committee was co-chaired by representatives from DEEP and the LEP community.

The Remediation Committee held its first meeting on August 16, 2019 and its second meeting on September 12, 2019. During the first meeting, a number of topics were introduced by the committee co-chairs and discussed by the committee members in attendance, including the numerous PFAS sources potentially responsible for sites of historical PFAS pollution in Connecticut. At the close of the meeting, committee members voted on these topics. The topics considered most important included the universe of potential PFAS sites; the establishment of cleanup standards and applicability of Significant Environmental Hazard Notification; education, outreach, and communication; evaluation of background concentrations in the environment; and evaluation of cleanup options for contaminated environmental media.

During the second Remediation Committee meeting, a representative of the United States Geological Survey (USGS) presented to the committee on USGS PFAS initiatives at the national, regional, and local levels. Committee members revisited some topics to discuss them in greater detail, and the co-chairs shared the action items identified through prior committee and Task Force discussion.

Given the prevalence of PFAS in consumer products, AFFF, and industry, particularly in light of our state's rich industrial history, the probability is high that there have been releases to Connecticut's environment that should be investigated and remediated. Properties impacted by PFAS releases must be identified and assessed, with priority given to those in close proximity to sensitive receptors such as potable wells and ecologically important areas.

The Task Force recommends prioritization of the following action items:

Ongoing and Short-Term Actions

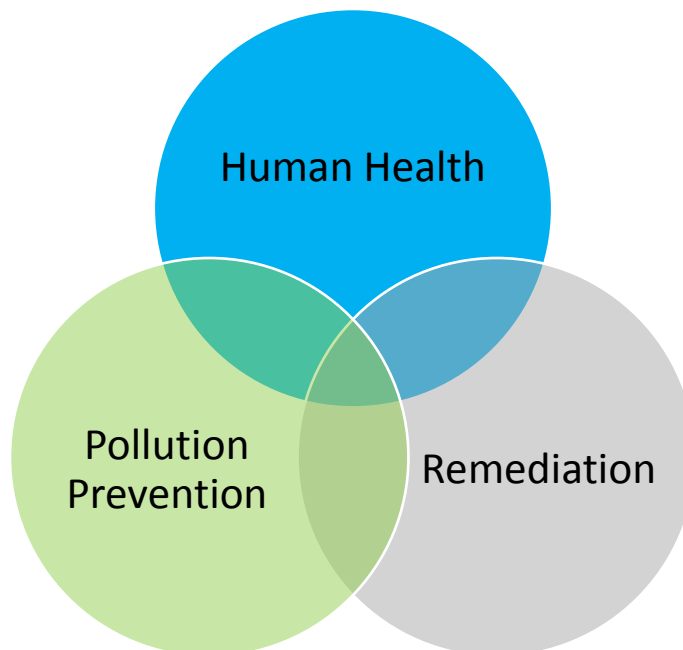
- 1) Develop an interagency geographic information system (GIS) database that identifies the universe of potential source sites and threatened receptors, including sensitive areas such as high-quality drinking water sources, Outstanding National Resource Waters, wild and scenic rivers, and habitats for endangered, threatened, and special concern species that may be vulnerable to PFAS.
- 2) Sample and analyze environmental media at airports where AFFF has been stored or released.
- 3) Sample and analyze environmental media at fire departments and firefighting training facilities where AFFF has been stored or released.
- 4) Continue the use of existing statutory authority to compel the investigation and cleanup of PFAS releases.

- 5) Support measures that provide financial assistance to municipal entities for environmental investigation and cleanup of publicly owned PFAS sites.
- 6) Collaborate with university researchers, environmental consultants, and others to keep abreast of emerging technologies for PFAS detection and cleanup and to evaluate the potential efficacy and applicability of such technologies in Connecticut.
- 7) Continue involvement with regional state agencies and groups including NEWMOA, EPA Region 1, ECOS, NEIWGCC, and the Interstate Technology and Regulatory Council (ITRC) to share information related to PFAS sites, fate and transport, and remediation.

Intermediate Actions

- 8) Develop and implement a strategy for random and targeted sampling of environmental media and aquatic organisms to determine ambient conditions and identify impacted areas. Consult with federal agencies and other parties conducting environmental sampling to share information on sample locations and analytical results.
- 9) Sample and analyze various environmental media at and surrounding landfills using a tiered approach, prioritizing landfills located near potential human receptors.
- 10) Establish PFAS cleanup standards for direct exposure to soil, soil leaching to groundwater, groundwater, surface water, and aquatic biota.
- 11) Establish an academic roundtable that periodically meets to share research and enhance knowledge of the impacts of PFAS on aquatic life and other wildlife.

STRATEGIC FOCUS 4 – EDUCATION, OUTREACH, AND COMMUNICATION



Throughout the Action Plan development process, one of the primary topics raised by stakeholders was the importance of effective communication by State agencies on PFAS-related topics. PFAS present a new and complex challenge to existing channels of education, outreach, and communication, and holistic enhancement of these channels is essential to ensure that all stakeholders have timely access to the PFAS-related information that they require. The stakeholders impacted by PFAS are many and diverse, ranging from private well owners and consumers of public drinking water to wastewater treatment facilities and water companies.

Numerous established laws and plans provide a consistent method for State agencies to disseminate information. The State Response Framework describes how the State of Connecticut and its partners will work together to support local governments and their residents in response to disasters and emergencies. CGS 22a-449 provides the framework for notification of chemical releases to the chief executive officer and local health director of a municipality where a release occurs. The Regulations of Connecticut State Agencies (RCSA) Section 19-13-B102(i)(10)(J) requires all community public drinking water systems to report annually to customers on contaminants found in the drinking water supply (Consumer Confidence Reports), and America's Water Infrastructure Act (AWIA) section 2018 amends the Emergency Planning and Community Right-to-Know Act (EPCRA) to include community public drinking water suppliers and primacy agencies. Moving forward, use of this existing framework at the local level will assist in facilitating timely and effective communication related to PFAS.

The following recommendations were developed to enhance how the State conducts public education, outreach, and communication. These actions can be scaled for different events and adapted for use in different situations.

Ongoing and Short-Term Actions

1. Establish a public outreach team consisting of DEEP and DPH personnel along with representatives of other State agencies as needed. On a case-by-case basis, this group may also include local officials and other stakeholders. This team would provide risk communication to the public in response to environmental incidents that pose a real or perceived threat to human health. Team members would provide a variety of risk communication services, such as communications templates, physical canvassing of affected areas, printing and circulation of informational newsletters, and/or hosting of public meetings.
2. Collaborate with local emergency response personnel and utilize existing communication plans to effectively disseminate information to the public.
3. Support technological and procedural initiatives to enhance notification of PFAS releases to potentially threatened receptors, including but not limited to water companies and wastewater treatment facilities. Monitor other states' activities for models of innovative and successful initiatives.
4. Continue State agency participation in regional and national workgroups, conferences, and training opportunities. These interactions provide the State agencies with knowledge of the challenges faced by states where PFAS contamination has been identified and the actions that states are taking to address these challenges.

POTENTIAL LEGISLATIVE OPPORTUNITIES TO SUPPORT RECOMMENDED ACTIONS

1. Establish an AFFF take-back program.
2. Reduce future releases of AFFF to the environment through other measures such as a ban on firefighting training with AFFF.
3. Establish a Safe Drinking Water Advisory Council - Legislation would create an advisory council for emerging contaminants, such as PFAS, to make recommendations regarding, *inter alia*, MCLs, notification levels, testing timeframes and frequencies with which testing should be required, and the form and content of public education materials to the Commissioner of Public Health regarding such contaminants. The Commissioner of Public Health would appoint the members of such an advisory council, which would include individuals with expertise in the appropriate fields, based upon a review of the Safe Drinking Water Councils of other states. The Council's process would be executed in a transparent fashion. Such members would serve without compensation.
4. Require all water bottlers that sell bottled water in Connecticut to test for PFAS in water products ready for consumption and to periodically provide the results of this testing.
5. Evaluate whether the State can require the disclosure of products containing PFAS in Safety Data Sheets and in product labeling, and consider establishing an EPR program for certain consumer products containing PFAS.

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SUPPLEMENTAL INFORMATION PROVIDED BY STATE AGENCIES

ACRONYMS AND ABBREVIATIONS

A2LA	American Association for Laboratory Accreditation
CAES	Connecticut Agricultural Experiment Station
CFSAN	Centers for Food Safety and Applied Nutrition
CGS	Connecticut General Statutes
DABA	Department of Agriculture Bureau of Aquaculture
DOAG	Department of Agriculture
DEEP	Department of Energy and Environmental Protection
DPH	Department of Public Health
DWS	Drinking Water Section
DWSRF	Drinking Water State Revolving Fund
EHS	Environmental Health Section
FDA	U.S. Food and Drug Administration
GCSL	Gulf Coast Seafood Laboratory
GIS	Geographic information system
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
LHD	Local health department
NSSP	National Shellfish Sanitation Program
PFAS	Per- and polyfluoroalkyl substances
PHL	Public Health Laboratory
PWP	Private Well Program
PWS	Public water system
PURA	Public Utilities Regulatory Authority
RCSA	Regulations of Connecticut State Agencies
SOP	Standard operating procedure
STEAP	Small Town Economic Assistance Program
UCMR3	Third Unregulated Contaminant Monitoring Rule
UCONN	University of Connecticut
USDA	U.S. Department of Agriculture
USHUD	U.S. Department of Housing and Urban Development

DEPARTMENT OF PUBLIC HEALTH DRINKING WATER SECTION (DWS)

Proactive approaches to protecting public health are the cornerstone of [Connecticut public drinking water laws](#) and policies. The following laws are being used as a part of the Department of Public Health (DPH) Drinking Water Section (DWS)'s per- and polyfluoroalkyl substances (PFAS) strategy:

- Connecticut is the only state in the nation that does not allow sewage discharges upstream of public drinking water surface supplies pursuant to [Connecticut General Statutes \(CGS\) 22a-417](#). This statute provides Connecticut residents consuming public drinking water with a protective barrier from contaminants that are typically found in wastewater.
- Connecticut requires all public water systems that serve over 1,000 individuals to prepare a plan pursuant to [CGS 25-32d](#). The contents of the plan are set forth in the Regulations of Connecticut State Agencies (RCSA) Section 25-32d-1 through 6. Each individual water supply plan contains “[an evaluation of source protection measures.](#)” [Circular Letter 2018-20](#) was sent to public drinking water systems that serve over 1,000 individuals requiring these public water systems to update their inventory of land use activities to include potential PFAS generators. The DWS worked with a subcommittee of the [CT Section of the American Water Works Association](#) to develop a spreadsheet for use by all of the public water systems subject to this statutory requirement. This spreadsheet was distributed to all applicable public water systems through [Circular Letter 2019-03](#).
- Public drinking water systems that utilize surface water supplies must annually inspect all the properties within the public drinking water supply watersheds pursuant to [RCSA Section 19-13-B102\(b\)](#) and report to the DWS on their inspection results. The goal of these inspections is to identify violations of the Public Health Code and work with the appropriate authority to ensure that appropriate measures are implemented to protect public health. New for the 2019 inspection cycle, the public water systems will have identified potential PFAS generators and inspected them.

The DWS is using its authority under [CGS 16-262m](#) and [CGS 25-32](#) to require new public drinking water source applicants to test sources of supply for the presence of the six PFAS tested as part of the Third Unregulated Contaminant Monitoring Rule (UCMR3) and provide analysis results to DPH prior to DPH approval of the use of new public drinking water sources of supply. The DPH notified all public water systems and local directors of health of this requirement through [Circular Letter 2018-19](#). The State of Connecticut's Drinking Water State Revolving Fund (DWSRF) is a viable source of funding for public water systems (PWSs) to offset the costs associated with the installation of a water treatment system to address PFAS-contaminated sources of supply, or utilization of alternative potable drinking water sources. The DWSRF program provides long-term below market rate loans to community, and non-profit non-community public water systems to finance necessary infrastructure improvement projects. Loans have interest rates at approximately half the market rates with repayment terms that can be extended up to 20 years.

Certain projects may be eligible for Federal subsidization and/or State grant-in-aid as detailed annually in the Intended Use Plan. Any available state grant-in-aid funding is provided through the [Public Water System Improvement Program](#).

The DWSRF program supports and recognizes strong infrastructure sustainability programs that emphasize prevention as a tool for ensuring long term safe and affordable drinking water to Connecticut's residents. The program also places an emphasis on providing loans to small water systems and communities most in need. PWSs which serve fewer than 10,000 persons are strongly encouraged to apply. Although PWSs of all sizes can take advantage of the program's benefits.

The DWSRF also has a Small Loan Program which offers streamlined procedures for PWSs to receive funding for projects that cost less \$100,000 and do not involve construction activities, such as construction of new facilities, renovation of existing buildings, demolition or site work.

As mentioned in the Action Plan, the DWSRF is adding incentives for projects in which the primary purpose of which is to provide proactive measures to eliminate, reduce or treat unregulated contaminants, such as PFAS, that have been determined by the DPH Commissioner to present an unacceptable public health risk, or are listed in the EPA's Unregulated Contaminant Monitoring Rule.

For more information on the DWSRF, and how to apply for financial assistance, please check the DWSRF website at <https://portal.ct.gov/DPH/Drinking-Water/DWS/Drinking-Water-State-Revolving-Fund-Program>, or contact the DWSRF program at 860-509-7333.

Some other potential sources of funding that can be considered include the Small Town Economic Assistance Program (STEAP), US Department of Agriculture (USDA), and the US Department of Housing and Urban Development (USHUD).

CT PUBLIC HEALTH LABORATORY (PHL)

The CT Public Health Laboratory (PHL) has been investigating the feasibility of bringing analysis of selected PFAS in drinking water to the laboratory. The CT PHL reached out to other state public health laboratories and private labs that have this testing capability in order to better understand the complexities and issues associated with this testing. One major consideration is where this testing best fits into our current laboratory design and how much space and special configuration will be needed to the current laboratory space. The large number of possible cross contaminants makes the location of the preparation, extraction and instrumental analysis of the drinking water a critical consideration. If it is decided to bring this testing to the CT PHL, a segregated clean room will need to be configured utilizing available expansion space at the lab.

DEPARTMENT OF PUBLIC HEALTH PRIVATE WELL PROGRAM (PWP)

The Private Well Program (PWP), a unit within the DPH Environmental Health Section (EHS), routinely provides technical assistance to a variety of stakeholders including private well users, local health departments (LHDs), the Department of Energy and Environmental Protection

(DEEP), and the private well work force. The PWP also creates and maintains educational materials for CT private well users and the private well work force.

The [Private Well Contamination Coordination Protocol](#) was created by the PWP with extensive input from and in collaboration with the CT DEEP Remediation Division and CT Association of Directors of Health. The protocol, finalized in September 2017, provides generic responses that the CT DPH EHS, CT DEEP, and CT local health departments can implement when elevated levels of man-made or naturally occurring contaminants are discovered in an area with private wells. PFAS are covered under the “man-made contaminants” section of the protocol. The PWP will continue to maintain, use, and promote the protocol.

The PWP is working toward development of a state-wide geographic information system (GIS) private well database which would assist in identifying the location of private wells that may be impacted from nearby potential PFAS pollution sources. When new contamination is identified, the database should make it easier to identify private wells that could be impacted by the contamination and communicate with potentially impacted property owners so that well testing can be arranged and/or risk communication information can be provided.

The private well GIS database can be developed using existing GIS layers showing locations of public water system services areas and municipality GIS layers showing locations of property parcels. Parcels not located immediately adjacent to a road where a community public water system is located can be assumed to be supplied by a private well. Parcels immediately adjacent to a road where public water is located can be assumed to be supplied by the community public water system, but will require further review and verification by the community public water system to determine whether they are connected. Parcels determined to not be supplied by the community public water system will be listed as supplied by a private well. Completing this exercise for all 169 Connecticut towns will identify whether developed parcels are supplied by public water or a private well. Once this GIS layer is created, its maintenance and upkeep will be determined based on available resources and future needs.

DEPARTMENT OF AGRICULTURE BUREAU OF AQUACULTURE (DABA): SHELLFISH PROGRAM MANAGEMENT RELATED TO PFAS

The Connecticut Department of Agriculture (DOAG) Bureau of Aquaculture (DABA) is the lead agency for the regulation of molluscan shellfish and aquaculture for the State. The regulation of molluscan shellfish falls under regulations of the National Shellfish Sanitation Program (NSSP), the Federal/State cooperative program overseen by the U. S. Food and Drug Administration (FDA). Shellfish producing states are required to establish a program to protect the public health of consumers by assuring the sale or distribution of shellfish from safe sources and assuring shellfish have not been adulterated during cultivating, harvesting, processing, shipping, or handling.

Molluscan shellfish, such as oyster, clams, and mussels are filter feeding organisms that pump large quantities of water through their bodies. During this process, molluscan shellfish can concentrate microorganisms, toxigenic micro-algae and poisonous or deleterious substances from the environment is present. As required by the NSSP, a shellfish growing area must be placed in the prohibited classification when the sanitary survey or marine biotoxin surveillance program

indicates that fecal material, pathogenic microorganisms, poisonous or deleterious substances, marine biotoxin, or radionuclides have the potential to impact the growing area. The NSSP Model Ordinance also requires that a growing area for which there is no sanitary survey be placed in the prohibited classification as a precautionary measure. Taking shellstock from a prohibited area for any human food purpose is not allowed.

In Connecticut, water bodies that have a history of contamination, or are currently exposed to contaminants through a direct industrial or wastewater discharge, are classified as Prohibited and are unlikely to pose a significant route of human exposure to PFAS compounds. There may be isolated situations whereby a potential source of PFAS compounds is identified through sanitary survey as having the potential to impact shellfish growing areas. These potential sources are in the process of being identified by DABA environmental analyst staff and growing areas will be prioritized for shellfish tissue testing for PFAS compounds as resources and analytical capabilities are developed, as per Strategic Focus 1 - Protect the Health of Connecticut's Citizens: Minimizing Environmental Exposure to PFAS:

Strategic Focus 1, Item 11: Identify, prioritize, and evaluate other potential sources of PFAS exposure to humans, including but not limited to fish, shellfish, dairy, other agricultural products, and food service ware.

In addition to the appropriate classification of water bodies suspected to be impacted by PFAS, an action plan will be developed that includes procedures for emergency response following a release of PFAS compounds into an area that is open for the harvest of shellfish. The DABA has procedures in place that include notification by DEEP in case of any type of release that has the potential to impact shellfish growing areas. DABA staff are on call 24 hours a day to take immediate action to close shellfish growing areas in case of this type of emergency. The DABA works with municipalities and DEEP Environmental Conservation Officers to implement emergency closures in order to prevent the harvest of contaminated shellfish.

It is critical that the DABA have the resources to allow shellfish specialists to act quickly following a PFAS release. Closures may be implemented immediately following a PFAS release, however a strategy for assessing impacts to shellfish will be required to reopen areas following an event. The development of in-state analytical capabilities through state partner agencies and/or university laboratories [DPH, the Connecticut Agricultural Experiment Station (CAES), and the University of Connecticut (UCONN), etc.] will be necessary to ensure the ability of DABA staff to respond in a timely manner following an event.

The DABA works closely with the FDA, the federal agency that oversees state shellfish programs. The FDA Centers for Food Safety and Applied Nutrition (CFSAN) operates the Gulf Coast Seafood Laboratory (GCSL), the agency that provides analytical services in support of seafood commodities, including shellfish. In case of an emergency event, the DABA may request testing services and guidance from the CFSAN and GCSL.

Response to a PFAS release that impacts open shellfish harvest areas will require the implementation of an emergency action plan:

- 1) The DABA is notified of a PFAS release by the DEEP Emergency Response Unit;
- 2) Shellfish growing areas are closed to commercial and recreational harvest through the existing emergency closure procedures;
- 3) DABA staff would require the assistance of DEEP Emergency Response to assess the extent of the impact of a release according to the nature and volume of the release and the recovery of materials following a spill, and the hydrographic characteristics of the impacted areas;
- 4) The DABA would request analytical assistance from in-state laboratories to initiate a testing of shellfish tissues;

The DABA would request consultation with DPH toxicologists in order to assess potential human health impacts related to the PFAS spill.

CONNECTICUT AGRICULTURAL EXPERIMENT STATION (CAES)

CAES is currently ISO (International Organization for Standardization)/IEC (International Electrotechnical Commission) 17025:2017 accredited (pesticide, aflatoxin, and metal analysis in food/feed) by the American Association for Laboratory Accreditation (A2LA) and our scope could be expanded to include PFAS in matrices such as environmental solids (water, soil, sediment, sludge/biosolids, compost), food (including produce, prepared foods, seafood, animal feeds), and air (puff plugs from high volume air samples). We will work with other state agencies to determine analytical needs, then focus on developing standard operating procedures (SOPs) for each matrix and establishing levels of uncertainty in our measurements for method validation purposes. Importantly, standard methods do not exist for most of these matrices and significant time is needed for method investigation/development and validation. This is not the case for water, where testing can begin in the next month or so. There is a clear need for staged testing and funding, but if testing were to begin on some of these other matrices in 1-2 years, method development work needs to begin now. This would all be conducted under CAES's existing accredited quality management system and would undergo review by an independent external auditor (A2LA). Our SOPs would be based on methods put out by other states for conducting similar analyses and methods from the scientific literature. CAES has experience in this type of method validation and has previously completed it for the analysis of pesticides, heavy metals and aflatoxins in foods and feeds as part of state and FDA programs. Implementation and accreditation of these methods for PFAS analysis in environmental solids, food and air would require additional staff, as well as a yearly budget for supplies, accreditation fees, and instrument maintenance.

PUBLIC UTILITIES REGULATORY AUTHORITY (PURA)

The Public Utilities Regulatory Authority (PURA) has regulatory authority over the ten public service companies that provide water to fifty or more consumers and will support the DPH by ensuring that those water companies are being proactive and responsive to health requirements proposed by the DPH. PURA will carefully assess any potential financial impacts related to PFAS which may affect those regulated utilities.