DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

DELAWARE DEPARTMENT OF AGRICULTURE

2026 Strategic Framework for Contaminants of Emerging Concern

Tracking, Reducing and Communicating Exposure to Contaminants of Emerging Concern in Delaware

PHOTO: Delaware DNREC

March 25, 2026

State of Delaware

Acknowledgements

The *2026 Strategic Framework for Contaminants of Emerging Concern* was created through a collaborative effort led by staff from the Delaware Department of Natural Resources and Environmental Control (DNREC), the Delaware Department of Health and Social Services' Division of Public Health (DHSS-DPH), the Delaware Department of Agriculture (DDA) and the Delaware Department of Justice (DOJ).

This plan also includes significant contributions, including document design and layout, from The Water Center at Penn.

PHOTO: Delaware DNREC

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PHOTO: Delaware DNREC

Acronyms

ATSDR.....U.S. Agency for Toxic Substances and Disease Registry
CEC.....Contaminant of emerging concern
CME.....Continuing Medical Education
DelDOT.....Delaware Department of Transportation
DEMA.....Delaware Emergency Management Agency
DDA.....Delaware Department of Agriculture
DHSS.....Delaware Department of Health and Social Services
DNREC.....Delaware Department of Natural Resources and Environmental Control
DHSS-DPH.....DHSS Division of Public Health
DOJ.....Delaware Department of Justice
EPA.....Environmental Protection Agency
HSCA.....Hazardous Substance Cleanup Act
MCDA.....Multiple Criteria Decision Analysis
NELAP.....National Environmental Laboratory Accreditation Program
PCB.....Polychlorinated biphenyl
PFAS.....Perfluoroalkyl and polyfluoroalkyl substances
SRF.....State Revolving Fund
WATAR.....Watershed Approach to Toxics Assessment and Restoration

Letter from the Secretaries

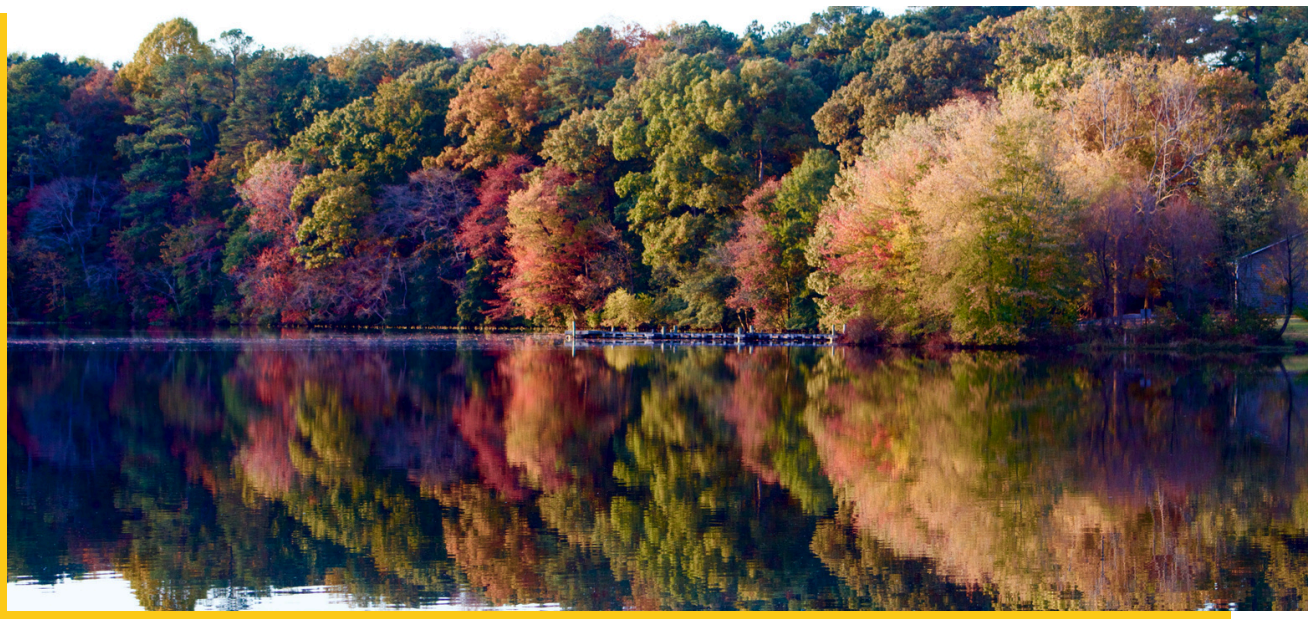

PHOTO: Delaware DNREC

Delaware is known for its rich history of innovation, including in chemical manufacturing, which has generated thousands of jobs and stimulated the economy for Delawareans. However, this industrial history means we must remain vigilant about legacy and emerging contaminants that pose risks to human and environmental health. Known as contaminants of emerging concern (CECs), these contaminants often lack regulation and routine monitoring due to their newness or low detection levels, and scientists are still working to understand their full impacts. As research advances and detection capabilities improve, new CECs will continue to emerge, and Delaware will need to be prepared to respond.

True to our identity as the First State, we've taken a pioneering approach to addressing CECs that sets us apart from other states. We've developed a first-of-a-kind strategic framework for contaminants of emerging concern, an innovative, comprehensive structure designed to address not just today's known contaminants, but any emerging threats that may arise in the future. This positions us as a leader in environmental health protection and demonstrates our commitment to safeguarding the health and safety of our residents for generations to come.

Letter from the Secretaries

We've spent over a decade coordinating action to address contaminants of emerging concern like perfluoroalkyl and polyfluoroalkyl substances (PFAS) and microplastics. As we learn more, we understand that these problems must be addressed together. We share our framework with Delaware residents now to inform and seek feedback. As the undersigned Secretaries, we endorse this groundbreaking framework and the vision it represents for a healthier, more resilient future in the First State.

Secretary Greg Patterson
Delaware Department of Natural Resources and Environmental Control

Secretary Christen Linke Young
Delaware Department of Health and Social Services

Secretary Wm. Donald Clifton II
Delaware Department of Agriculture

Secretary Patterson
PHOTO: Delaware DNREC

Secretary Young
PHOTO: Delaware DHSS

Secretary Clifton
PHOTO: Delaware DDA

Introduction

The State of Delaware is taking clear, proactive steps to protect our communities and environment from contaminants of emerging concern (CECs). The U.S. Environmental Protection Agency (EPA) defines CECs as naturally occurring or human-made substances that are present — or expected to be — in the environment and may threaten human and environmental health. These substances may pose new or increasing risks to public health and ecosystems, and can include pesticides, microplastics, pharmaceuticals, certain biological materials and components of personal care products and industrial waste.

The Contaminants of Emerging Concern Leadership Team — led by the Delaware Department of Natural Resources and Environmental Control (DNREC), the Department of Health and Social Services' Division of Public Health (DHSS-DPH) and the Delaware Department of Agriculture (DDA) — created the *2026 Strategic Framework for Contaminants of Emerging Concern* to provide a science-based, community-focused approach to identifying, monitoring and reducing these contaminants. The framework provides a roadmap for addressing both known contaminants and those that may emerge in the future, ensuring we're prepared to respond effectively. The *2026 PFAS Implementation Plan* is the first iteration of this framework in action.

This framework emphasizes the use of new and proven technologies to detect CECs in drinking water, surface water, soil, air and wildlife. It prioritizes reducing pollution at its source, cleaning up existing contamination and expanding the use of effective treatment solutions to better protect public health and the environment.

Community support is central to the framework. We prioritize outreach, transparency and partnership, especially in communities that have historically faced greater environmental and health burdens. We're committed to sharing clear, timely information, strengthening environmental protections and helping communities access the resources and support they need to reduce exposure.

Potential Partners

The groups and individuals identified below represent a network of partners who may be called upon to support implementation, ensuring the right expertise is engaged at the right time. Participation from potential partners can adapt based on the contaminant or toxin being addressed.

- Department of Natural Resources and Environmental Control (DNREC) Secretary
- Delaware Department of Health and Social Services (DHSS) Secretary
  - DHSS Division of Public Health (DHSS-DPH) Director
- Delaware Department of Agriculture (DDA) Secretary
- Delaware Department of Transportation (DelDOT) Secretary
- Delaware Department of Justice (DOJ) Attorney General
- The Delaware General Assembly Joint Committee on Capital Improvement
- Office of the State Fire Marshal
- Office of Veterans Services
- DNREC Environmental Justice Office
- DNREC Office of Communications
- DHSS Office of Communications
- DDA Office of Communications
- Legislative Representatives
- External Public Liaisons
- Cooperative Extensions and Universities
- Workgroups
  - Citizens Advisory Workgroup
  - Science Advisory Workgroup

Current and Past Action

The State of Delaware has undertaken significant efforts to understand, monitor and address contaminants of emerging concern through collaborative research, public education and targeted cleanup efforts. The following examples represent a non-exhaustive list of actions that demonstrate our commitment to science-based action and coordination in protecting public and environmental health.

The Watershed Approach to Toxics Assessment and Restoration (WATAR)

WATAR is a collaborative program at DNREC that evaluates the sources, movement and impacts of toxic contaminants in Delaware's waterways. Its goal is to restore watersheds to fishable, swimmable and healthy conditions by addressing both ongoing and legacy pollution in sediment, soil and aquatic life.

PHOTO: Delaware DNREC

WATAR integrates expertise across DNREC divisions to coordinate remediation and restoration strategies, with an emphasis on persistent pollutants like polychlorinated biphenyl (PCB), dioxins, mercury, pesticides and perfluoroalkyl and polyfluoroalkyl substances (PFAS). The program targets areas with heavy industrial and urban land use, which are historically the most contaminated.

Major WATAR Initiatives include:

- **Statewide PFAS Survey (2022):** Sampled surface waters statewide to identify PFAS contamination hotspots and prioritize future cleanup efforts.
- **Dam Removal Sediment Studies:** Analyzed sediment contamination behind dams on the Brandywine River and White Clay Creek to guide safe removals and protect downstream water quality.
- **National Vulcanized Fibre Facility Remediation (Yorklyn):** Multi-program cleanup and redevelopment of a former industrial site, including zinc removal, wetland restoration and flood mitigation.
- **A-Street Ditch PCB Remediation (Wilmington):** Pilot study using inoculated SediMite™ and micro-organisms that degrade PCBs, achieving up to 67% reduction in sediment porewater concentrations.
- **Christina River Basin Sampling (2015):** Comprehensive toxics survey informing targeted remediation and confirming improving trends from earlier efforts.
- **CBR4 Project (Christina-Brandywine Rivers):** Long-term initiative to transform the tidal rivers in Wilmington into fishable and swimmable waters through coordinated restoration projects.
- **Mirror Lake Project (Dover):** Innovative use of activated carbon and wetland creation to bind contaminants and improve fish safety.
- **Little Mill Creek/Meco Drive:** Joint flood mitigation and contamination cleanup addressing petroleum and PCB sources.
- **PCB Mass Loading Study:** Statewide assessment linking upland PCB sources to waterway impacts to prioritize cleanups and improve fish health.

- **Chesapeake Drainage Study (2017/2018):** Multi-media sampling to characterize toxic contaminants in Delaware watersheds that drain to the Chesapeake Bay. The study evaluated multiple legacy contaminants, as well as pyrethroid, neonicotinoid and sulfoximine insecticides, hormones, sterols and steroids.
- **Regional Core Study (2025):** Regional study to analyze archived and radiometrically dated sediment core samples for contaminants of emerging concern, specifically PFAS and microplastics.

Through WATAR, Delaware has developed a science-based, watershed-scale framework to track toxic pollutants, reduce contamination and restore ecological health across its watersheds.

PHOTO: Delaware DNREC

Multi-Agency Coordination: Understanding PFAS Exposure in New Castle County

In 2022, New Castle, Delaware, was chosen by the U.S. Agency for Toxic Substances and Disease Registry (ATSDR) and the Environmental Protection Agency (EPA) to be part of a national exposure investigation into PFAS to explore non-drinking water exposure pathways, particularly in communities near military sites with historic firefighting foam use. This followed a 2019–2020 PFAS exposure assessment that found New Castle residents had PFAS blood levels up to 9.8 times higher than the national average, despite compliant drinking water.

The 2022 study sampled dust, soil and air from 41 homes. Results showed PFAS were detected in over half of all samples, with two types correlating between household dust and blood levels, suggesting that exposure extends beyond drinking water. State departments, including DNREC and DHSS, are using these findings to advance both immediate and long-term strategies for PFAS mitigation and public education. While PFAS contamination is vast and complex, we're advancing coordinated efforts to reduce risks through monitoring, policy and public outreach.

Educating the Medical Community on PFAS

On September 11, 2025, the DHSS-DPH Office of Environmental Hazards and Toxicology organized the nation's first Continuing Medical Education (CME) course to enhance physicians' and health professionals' understanding of PFAS, their health impacts and the interpretation of PFAS blood serum results. The course responded to growing evidence that PFAS exposure occurs through multiple pathways beyond drinking water and is linked to cancers, hormonal disruption, thyroid dysfunction and other diseases.

The CME course aimed to equip the medical community with the knowledge to interpret PFAS exposure data, guide patient care and support our broader efforts to reduce toxic exposures and protect public health. Conference attendees identified via survey that after the CME course they could list health effects associated with PFAS exposure and describe considerations for clinical evaluation and management of people with PFAS exposure concerns. Participants could also identify possible PFAS contamination in water, understand exposure in populations, verbalize risk communication strategies and identify gaps in PFAS research.

Legislative Action

The Hazardous Substance Cleanup Act (HSCA) (7 Del.C., Ch. 91) framework is a proactive legislative approach to managing CECs and hazardous substances. Since its approval in 1990, HSCA has enabled DNREC to address contaminated sites not covered by the federal Superfund program, identifying over 700 potential release sites statewide.

Through its Brownfields and Voluntary Cleanup programs, Delaware offers responsible parties pathways to address contamination, while HSCA funding supports state-led cleanups until responsible parties are identified. This strategy reflects Delaware's commitment to equitable regulation that protects public health while fostering responsible environmental stewardship.

In 2016, Delaware listed PFAS compounds PFOA and PFOS as hazardous substances and has continuously added compounds and refined values on a regular basis since then. The state established best practices through its 2018 HSCA PFAS sampling policy (revised in 2023) and adopted an enforcement discretion framework recognizing PFAS complexity. This measured approach allows time for appropriate permitting programs to develop rather than defaulting to immediate enforcement actions.

In 2025, HB 210 was enacted to update the fine structure for major commercial polluters of hazardous waste, stream pollution and other types of contamination. It also increased the amount of penalty funds directed to communities near facilities with violations from 25% to 40%. This Act demonstrates Delaware’s commitment to holding polluters accountable and prioritizing restitution for communities affected by environmental harm.

Guiding Principles

Delaware envisions a future where every community is protected from harmful contaminants through science-based action, community engagement, and environmental justice, so that all Delawareans can enjoy clean air, water, land, and healthy lives. To achieve this, the strategic framework is grounded in a set of core principles that guide decision-making and support long-term success.

Stakeholder Involvement

Community members, local organizations and partner agencies play a central role in shaping priorities, informing strategies and evaluating progress. Meaningful engagement ensures transparency, fosters trust and promotes shared ownership of both challenges and solutions.

Strategic Prioritization

This framework focuses time, funding and staff resources toward the areas of greatest need and potential impact, particularly in communities that have been historically underserved or disproportionately affected by environmental challenges. This targeted approach promotes equity, effectiveness and long-term sustainability.

Flexibility and Adaptability

As new information emerges and circumstances evolve — whether due to environmental changes, scientific advances, policy shifts or community feedback — this framework will respond and adapt. This flexible approach allows us to remain relevant, forward-looking and capable of meeting the changing needs of its people and environment.

The Path Forward: Our Strategy

The following primary objectives establish Delaware's strategic framework to address contaminants of emerging concern. These objectives guide coordinated state action across public health protection, impact assessment, source elimination, community engagement, effective communication and emergency response.

Protecting Public Health

Drinking Water

- Adopt and implement maximum contaminant levels enforceable under the Safe Drinking Water Act
- Offer testing and technical assistance for Delawareans with private wells
- Utilize accredited laboratories associated with DHSS and DNREC for analytical testing
- Develop standard operating procedures for communications from drinking water systems during emergency responses
- Monitor and assess surface water sources used for drinking water to identify and manage CEC risks

Air

- Adopt a regulatory definition of CECs appropriate for air permitting
- Develop a methodology to conduct health and safety screening modeling for air permitting
- Ensure the use of reliable testing methods to measure compliance with permits
- Develop strong air dispersion modeling techniques to estimate concentrations of CECs from air emission sources

Food Consumption and Products

- Adopt product bans or require labeling on food or products containing CECs
- Address CECs in fish, shellfish, and wildlife advisories

Natural and Working Lands

- Develop a strategy for managing agricultural inputs containing CECs, such as biosolids or wastewater spray irrigation
- Develop a strategy for monitoring agricultural ecosystems

Assessing and Identifying Sources and Impacts

Intra-Governmental Coordination

- Develop statewide monitoring protocols
- Standardize identification protocols for sources and impacts across departments and agencies
- Ensure all affected state agencies are working on the same data-sharing platforms and with the most up-to-date information
- Maintain consistent methodology for data verification

Inter-Governmental Coordination

- Coordinate with other states, NGOs, nonprofits and federal agencies to stay up to date on innovative practices and analytical technologies for assessing CECs

Sampling

- Continue sampling efforts to identify lands, water, air, and foods contaminated with CECs

Research

- Conduct source apportionment studies to continue identifying and quantifying CECs from various sources and media to guide interventions and remediation
- Conduct human health studies to assess impacts of CEC exposure, with a focus on vulnerable communities who disproportionately suffer environmental harms associated with CECs

Eliminating Sources and Minimizing Exposure

Reducing Exposure Pathways

- Explore legislative and regulatory mechanisms to reduce exposure pathways from the following media:
  - Air, including dust
  - Consumer products
  - Soil
  - Land application sources
  - Water, including surface water, source water, wastewater, groundwater and stormwater

Cleanup and Disposal

- Destroy and dispose of contaminants using the latest and/or most widely accepted technologies
- Continue researching, developing and utilizing sustainable technologies for destruction and disposal

Inviting Public Participation

Community Engagement

- Provide at least one virtual and/or in-person listening session per county after publication of an implementation plan
- Hold community meetings for CEC information or updates about CECs
- Allow sufficient time for public comments on plans and legislation about CECs
- Maintain timely and easily accessible public communication

Developing and Deploying an Effective Communications Strategy

Cross-Agency Communications

- Develop a cross-agency communication plan for CECs
- Work across agencies to ensure information reaches at-risk communities and populations
- Train internal employees on best practices in risk communication
- Develop a statewide hub for CEC information that is easily accessible across agencies
- Identify agency-specific points of contact to facilitate collaboration

Legislative Communications

- Keep legislators informed about CEC efforts in their communities
- Work with legislators to craft legislation to protect public health and the environment from CECs
- Continue to report expenditures related to CEC remediation efforts

Public Communications

- Establish a webpage for each implementation plan, including informational video presentations, a resource mailbox for public comment, and progress updates on the plan
- Ensure public CEC testing results are easily accessible and understandable to the general public
- Post notification of any requirements of CEC legislation on Delaware's website
- Share the latest information about CECs' impacts to human health, livestock and wildlife through various accessible forms of communication and outreach events

Engaging with Emergency Services

Delaware Emergency Management Agency (DEMA) Protocols

- Follow up-to-date DEMA protocols for dealing with hazardous materials, including coordinating with and through the proper channels

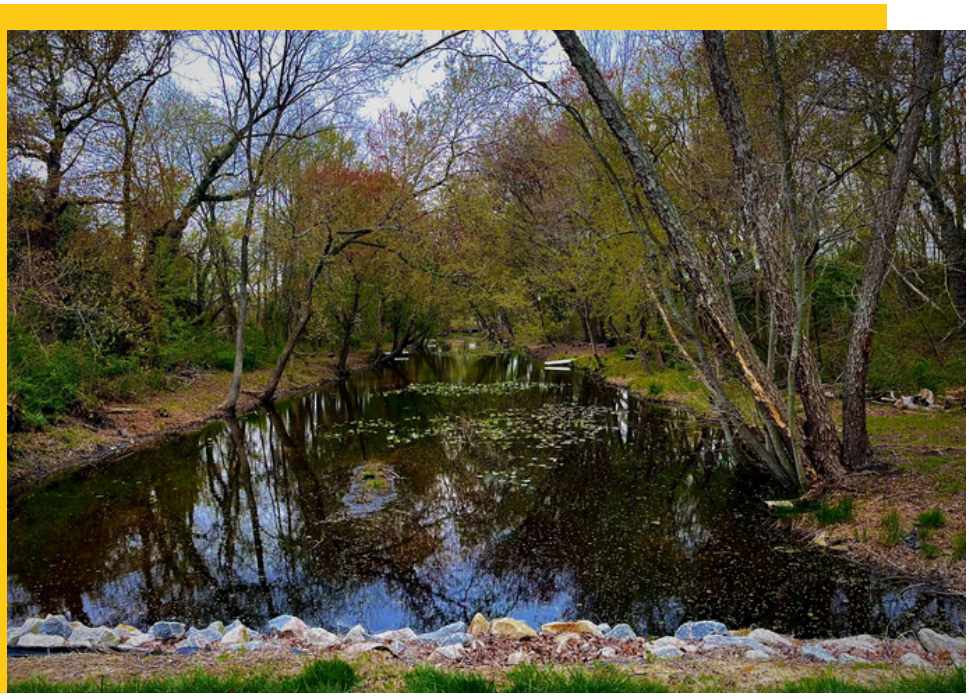

PHOTO: Delaware DNREC

Performance Indicators and Accountability

To keep moving toward our vision, Delaware's Strategic Plan for Contaminants of Emerging Concern will serve as a living guide for long-term planning and investment. The plan will be reviewed and updated every five years to reflect evolving needs, information and priorities.

Each specific contaminant or group of related contaminants will have its own implementation plan that outlines clear goals, actions and ways to measure progress. These plans will track success using simple, consistent indicators, milestones and deliverables. Each year, we'll publish an annual summary that explains what we accomplished during the previous fiscal year, evaluates progress and identifies priorities for the year ahead. The goal of these implementation plans is to fully integrate CEC management into existing programs and day-to-day operations while improving efficiency and adapting to changing environmental conditions.

Transparency and public participation are essential to this process. Delaware state agencies will actively seek public input and hold at least one public listening session per county after releasing updated implementation plans and the annual workplan report.

PHOTO: Delaware DHSS

Funding and Resources

PHOTO: Delaware DNREC

Addressing the sources of CECs will require funding and capacity to assess the levels of contamination, identify sources and determine the best approaches for treatment or remediation. We will continue to ensure transparency in how funds are used by regularly updating a public website with clear, accessible information on expenditures and funded initiatives.

Delaware will collaborate across the state to reach decisions on resource allocation for CECs utilizing various funding sources, such as:

- State Revolving Fund (SRF)
- Federal funding
- Hazardous Substance Cleanup Act (HSCA)
- State regulations and statutes
- Legal action
- State funding
- Private foundations & philanthropy

To ensure funds are used effectively, we will use Multiple Criteria Decision Analysis (MCDA) to allocate resources. We'll match each contaminant and response strategy with the most appropriate funding source, recognizing that different contaminants present different challenges.

Conclusion

PHOTO: Delaware DNREC

Contaminants of emerging concern will continue to pose challenges as new science, research and technology develop. We understand that protecting public health and the environment requires long-term effort, strong coordination and the ability to adapt as new information becomes available. This strategic framework provides clear and flexible guidelines to inform that work, with a focus on science-based decision-making, teamwork across departments and open communication with the public. As this effort progresses, we'll endeavor to broaden participation and include additional partners to ensure that the framework reflects evolving circumstances.

By improving monitoring, reducing pollution at its source, minimizing exposure pathways, sharing clear information and investing resources where they're needed most, we're taking meaningful steps to reduce exposure to harmful contaminants. This framework reaffirms our commitment to protecting people's health, restoring the environment and ensuring a safer future for everyone in the First State.

Related Reports, Plans and Links

- DNREC's PFAS webpage
- Delaware's 2024 PFAS Implementation Plan
- House Bill 210 (2025)
- Senate Bill 72

PHOTO: Delaware DNREC