Wisconsin
PFAS Action Plan

Wisconsin PFAS Action Council (WisPAC)

Department of Natural Resources
Department of Safety and Professional Services
Department of Administration
Department of Transportation
Department of Agriculture, Trade and Consumer Protection
Department of Veterans Affairs
Department of Corrections
Department of Public Affairs
Department of Health Services
Public Service Commission
Department of Justice
University of Wisconsin System
Department of Military Affairs
Wisconsin Economic Development Corporation
Department of Public Instruction
Wisconsin State Lab of Hygiene
Department of Revenue

December 2020

State of Wisconsin
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December 16, 2020

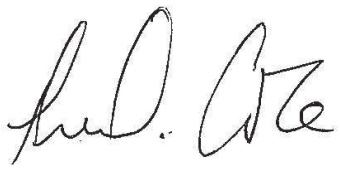
On behalf of Governor Evers and the state of Wisconsin, I would like to thank everyone who contributed to the development of this Acton Plan. The Wisconsin PFAS Action Council (WisPAC) could not have crafted such a comprehensive plan without the extensive engagement of state agencies, stakeholders, and communities. This Action Plan is the culmination of a year of collaboration, including 14 public meetings and hundreds of recommendations and comments from WisPAC members, advisory groups, and the public.

I am especially grateful to the individuals and groups who engaged throughout the process, from providing foundational input in early 2020 to thorough reviews and comments on the full plan. These contributions helped inform and improve the final plan.

Our Local Government and Citizens external advisory groups and their respective co-chairs are also owed a special thanks for leading several meetings and coordinating and compiling recommendations from the diverse groups represented.

This Action Plan is just the blueprint for what can be done in Wisconsin. The real work is just beginning, and will rely heavily upon ongoing collaboration with and contributions from stakeholders and partners across the state. We are hopeful that the people and stakeholders of Wisconsin will remain engaged as we embark on our continued journey to address PFAS and protect Wisconsin's environment and our health.

Sincerely,



Preston D. Cole
Secretary
Wisconsin Department of Natural Resources

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List of Acronyms

PFAS	Per- and poly- fluoroalkyl substances
WisPAC	Wisconsin PFAS Action Council
AFFF	Aqueous film-forming firefighting foam
ATSDR	Agency for Toxic Substances and Disease Registry
CDBG	Community Development Block Grant Program
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response and Cleanup Liability Act
DEHCR	Division of Energy, Housing, and Community Resources
ECOS	The Environmental Council of the United States
EPA	United States Environmental Protection Agency
FAA	Federal Aviation Administration
FDA	U.S. Food and Drug Administration
GLTF	Great Lakes Task Force
NDAA	National Defense Authorization Act
ORD	Office of Research and Development at US EPA
USGS	United States Geological Survey
WAMA	Wisconsin Airport Managers Association
WSFA	Wisconsin State Firefighters Association
WSFCA	Wisconsin State Fire Chiefs Association

Executive Summary

WisPAC and the PFAS Action Plan

The Wisconsin PFAS Action Council (WisPAC) was created by Governor Evers', who issued Executive Order No. 40 in 2019, directing the Department of Natural Resources (DNR) to lead a council in coordinating the state's response to PFAS. Members of WisPAC include designees from nearly 20 state agencies and the University of Wisconsin system.

WisPAC developed the PFAS Action Plan to serve as a roadmap for the state in its efforts to address PFAS contamination. It was built in collaboration with state agencies and entities across Wisconsin, with extensive input from the public, and the action items laid out in the plan reflect this.

Guiding Principles

The development of the PFAS Action Plan was driven by a set of guiding principles. These principles were distilled from public input as well as feedback from advisory groups and state agencies and will inform the state's overall approach to addressing PFAS contamination in Wisconsin communities.

- **Environmental Justice:** Access to natural resources – including clean air, land and water – is an inherent right which must be protected and upheld by the state.
- **Health Equity:** Everyone is entitled to the opportunity to achieve their full health potential, and no socially determined circumstances should preclude them from doing so.
- **Innovation:** Collaborate to educate and encourage state agencies, businesses, manufacturers, consumers and other stakeholder to minimize the PFAS burden in Wisconsin.
- **Pollution Prevention:** Work to limit the amount of PFAS discharged into the environment, in addition to ongoing work to clean up PFAS contamination.

Summary of Recommended Actions

The PFAS Action Plan includes proposed action items, organized into eight themes, that have been identified by state agencies and informed by advisory group and public input. Each action item includes general resources that may be necessary to carry them out, including financial, staffing, and/or legislative needs. However, specific recommendations financial and staffing recommendations were left to the executive and legislative branches to determine based on priority of the item and resources available to address.

1. Standard Setting

Establish science-based PFAS standards for a variety of environmental media; and develop recommendations for the management of PFAS-containing landfill leachate in order to limit discharges to the environment.

2. Sampling

Develop an interactive map and geodatabase to identify known PFAS discharge locations and impacted air, land, water, wildlife and fish; facilitate more timely collection of samples for PFAS analysis through legislation, rulemaking, and/or additional funding; develop standardized sampling protocol; and collect samples from public drinking water systems.

3. Pollution Prevention

Partner with the firefighting community to minimize discharges of and exposure to PFAS-containing firefighting foam; work with stakeholders to develop and apply best management practices for proper handling of a variety of types of PFAS-containing wastes; and identify and minimize PFAS discharges to wastewater treatment plants through sampling, collaboration, and pollution prevention.

4. Engagement, Education and Communication

Develop PFAS risk communication infrastructure including a website and resources, and enhanced public engagement, including listening sessions and public comment periods; incorporate environmental justice and health equity into public engagement efforts; establish and build partnerships with a variety of stakeholders, including public sector employees, within and outside of Wisconsin to increase awareness of and reduce PFAS exposure; and enhance collaboration with federal agencies to address PFAS contamination at military installations.

5. Research and Knowledge

Coordinate and collaborate across agencies and with stakeholders on PFAS-related research activities; collect samples for PFAS analysis from a variety of environmental media; and collect and disseminate data on drinking water treatments and associated costs to inform budget-related decisions.

6. Phase Out

Develop and promote product stewardship to reduce PFAS use through a variety of mechanisms such as education, laws, and grants; and minimize the state's purchase of PFAS-containing products.

7. Future Investments

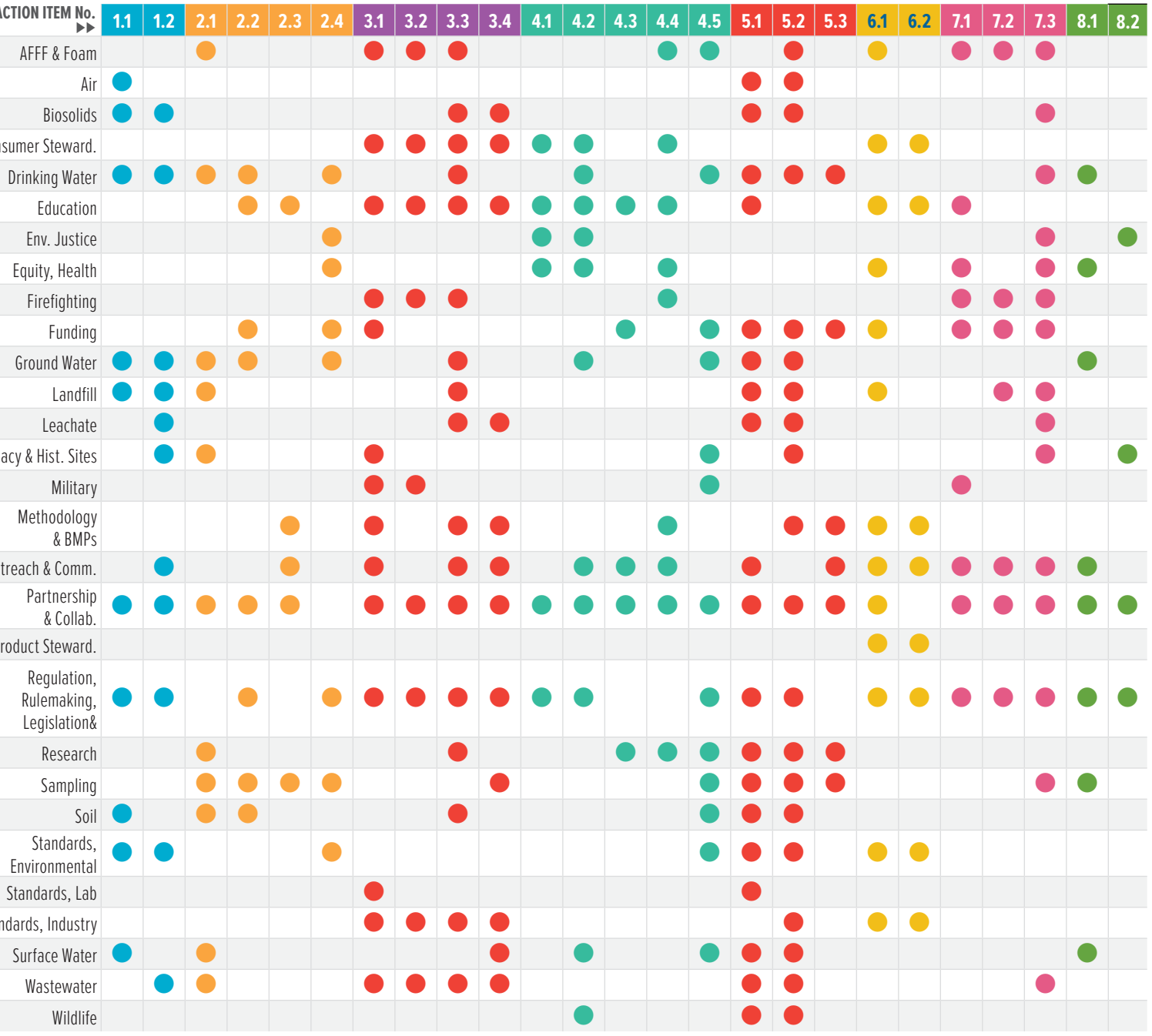
Support veterans, their families and others close to military sites who have elevated PFAS levels in blood and potential PFAS-related health issues; launch a state-sponsored fluorinated foam collection and disposal program; and provide financial tools for local governments to address drinking water impacts or conduct site investigation and remediation.

8. Identify and Address Historic Discharges

Streamline processes associated with the delivery of safe drinking water supplies for communities impacted by PFAS contamination and develop new tools to address PFAS contamination, such as requiring responsible parties to establish financial assurance; creating a PFAS-specific natural resources damage claims provision; and creating a DNR PFAS action fund for settlements of PFAS contamination cases.

Index

Use this index to quickly locate Action Items (listed by number along the top) that address selected topics of interest (listed along left side of the table). The colors represent eight themes that Action Items are organized by. The themes and full titles of Action Items are listed on the next page.



Action Item Themes

(order is not meant to convey relative priority):

Standard Setting

Sampling

Pollution Prevention

Engagement, Education, and Communication

Research and Knowledge

Phase Out

Future Investments

Identify and Address Historic Discharges

PFAS: The Basics

Per- and poly- fluoroalkyl substances (PFAS) are a group of over 5,000 humanmade chemicals that were invented in the 1930's. They were introduced into industrial manufacturing and commercial use in the 1940's, with peak production occurring between 1970 and 2000.

In products, PFAS are particularly useful due to their characteristic carbon-fluorine bonds, which make them temperature resistant and water and oil repellent. These chemicals have been used in products ranging anywhere from nonstick cookware, waterproof clothing, and stain-resistant textiles to Aqueous Film-Forming (AFFF) firefighting foam and food packaging. However, they are also exceptionally resistant to degradation and, when discharged into the environment, linger for prolonged periods of time and may bioaccumulate in humans, fish and wildlife.

PFAS have been discovered in groundwater, soil, air, sediment, surface water and drinking water, as well as in humans, wildlife and fish in Wisconsin, nationally and internationally. Ingestion of contaminated water or food are the primary pathways through which they enter the human body.

In recent years, it has been discovered that PFAS substances bioaccumulate in the human body and studies have found that 98% of Americans have measurable levels of PFAS in their blood. According to the Environmental Protection Agency (EPA), certain PFAS substances pose a number of risks to human health, including developmental problems in fetuses and infants, certain types of cancer, reduced antibody response, decreased immune response to vaccinations, and kidney disease. You can learn more about these findings from the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR).

Current State Responses to PFAS

The recommendations presented in this plan were developed to function as a blueprint for Wisconsin to follow for new, coordinated actions to tackle PFAS in the short- and long-term. It is important to note that while the plan looks to the future, before and during the time it was developed, state agencies were already at work addressing PFAS concerns. As PFAS emerged as a growing environmental and public health concern, here are some (but not all) of the ways the state of Wisconsin has responded:

Department of Agriculture, Trade and Consumer Protection

DATCP continues to track developments from federal partners including the Food and Drug Administration (FDA), Agency for Toxic Substances and Disease Registry (ATSDR) which is the EPA's health advisors at the Centers for Disease Control (CDC), and the Environmental Protection Agency (EPA) for the latest in PFAS science, guidance, and standards. DATCP will partner with any Wisconsin agricultural producer or community with products found to be contaminated with PFAS in order to coordinate source identification and mitigation strategies with appropriate state agencies.

Department of Health Services

Groundwater Standard Recommendations

By virtue of the 1983 Groundwater Law, Wis. Stats. ch. 160, DHS plays a very important role in the establishment of health-based groundwater recommendations. In June 2019, DHS recommended to the DNR groundwater standards for PFOA and PFOS, as well as 25 other non-PFAS substances. In November 2020, DHS recommended an additional 22 groundwater standards, 16 of which were for PFAS. These recommended standards are set to protect human health, and DHS must follow a rigorous, science-based process in state law to establish these recommendations. DNR is currently in the process of developing administrative rules to propose these PFAS groundwater recommendations, as well as related surface water and drinking water standards. DHS has participated in several advisory group meetings to describe the basis for the recommendations.

Site-specific Health Assistance

DHS has worked with state and local partners to assess health risks in response to PFAS sites in Marinette/Peshtigo, Rhinelander, and Madison. In response to public concerns, DHS evaluated risks from multiple scenarios including exposures from groundwater, drinking water, surface water, biosolids, plants, livestock, and wildlife. The findings directly inform PFAS exposure reduction recommendations, which are shared in outreach materials, presentations, and direct conversations with stakeholders.

General Outreach and Education

DHS has participated in a number of stakeholder engagement activities to increase awareness of health implications of PFAS contamination in the environment. Through outreach events, DHS has engaged a

variety of audiences on PFAS, including public health and environmental science professionals, emergency responders, Tribal organizations, and legislators (e.g., Speaker's Task Force on Water Quality), sharing health information to support risk management and policy decisions based on sound science.

Milwaukee Biomonitoring Study

DHS conducted a biomonitoring study to identify exposure patterns among Burmese immigrant populations in the Milwaukee area. Observed PFAS concentrations in blood samples revealed significantly higher PFAS levels in the blood of Burmese immigrant angler populations than would be expected based on national reference levels. The study provided valuable insights for future efforts to evaluate and communicate about environmental health risks with Burmese immigrant populations in Wisconsin.

Great Lakes Collaboration

DHS has worked with EPA and health and environmental agencies from the Great Lakes states and provinces for many years to develop, coordinate and harmonize guidance on the consumption of sport fish from the Great Lakes. When results from the testing of fish tissue from inland waterways in Wisconsin revealed the presence of PFAS compounds in fish in Dane County, DHS worked with DNR and local health officials to develop the state's first fish consumption advisories for PFAS in early 2020.

Department of Justice

DOJ Comment Letters

DOJ co-drafted or signed onto the following PFAS-related letters:

- DOJ co-drafted, and the Attorney General signed onto, a multistate comment letter regarding an EPA proposal to regulate PFOS and PFOA under the federal Safe Drinking Water Act.
- The Attorney General signed onto a multistate comment letter regarding an EPA advance notice of proposed rulemaking on the listing of PFAS on the Toxics Release Inventory.
- The Attorney General signed onto a multistate comment letter regarding an EPA significant new use rule proposal for PFAS under the Toxic Substance Control Act.

Department of Military Affairs

Foam Use

Prior to 2006, the Wisconsin National Guard used C8-based AFFF in both the fire crash vehicles and fire protection systems in aircraft hangars. By 2009, when the EPA issued its initial health advisories for PFOS/PFOA in drinking water, most of the hangar fire protection systems in the Department of Military Affairs (DMA) had been changed to using High Expansion Foam (HEF). In 2015, the National Guard Bureau (NGB) directed that all C8-based foam usage be for emergencies only (no training or testing). By 2016, the Wisconsin National Guard had converted to C6-based AFFF while still only using it for emergencies.

Environmental Assessments

By 2017, funding was available to do a site inspection for PFAS contamination. Per Wisconsin law, the results of the site inspection were submitted to the DNR resulting in the issuance of a "responsible party" (RP) letter. In response to the RP letter, the DMA worked with the DNR to fund a remedial investigations (RI) for all four (4) DMA sites affected by PFAS discharges – work is still underway at those sites. DMA will complete the RI plans and use the results to work with the DNR in seeking funding to address contamination resulting from AFFF discharges.

Department of Natural Resources

E.O. No. 40

In response to Governor Evers' Executive Order (E.O.) No. 40, the DNR created WisPAC and Wisconsin state agencies collectively committed to addressing PFAS use and contamination in Wisconsin. The WisPAC PFAS Action Plan calls upon all member state agencies to leverage resources and personnel to address issues across impacted institutions, communities and local governments. WisPAC conducted a survey to ascertain the chief priorities and concerns of the public and established a public comment period for the WisPAC PFAS Action Plan in advance of its final draft and submission to the Governor. All WisPAC meetings have been open to the public and are available to view online.

PFAS Rulemaking Efforts

The DNR has advanced several rulemaking efforts:

- **Firefighting Foam:** Wis. Stat. § 299.48, effective September 1, 2020, prohibits the use of PFAS-containing firefighting foam, with exceptions only for its use in emergency firefighting operations or for testing purposes in a facility equipped with proper treatment, containment and disposal measures. Per the conditions of 2019 Wisconsin Act 101, the DNR is drafted an emergency rule and will work to promulgate a permanent rule (Wis. Admin. Code ch. NR 159) to establish these measures.
- **Drinking Water Standards:** Wis. Admin. Code ch. NR 809 is also undergoing revisions. This rule establishes safe drinking water standards in Wisconsin. The agency is proposing maximum contaminant levels for PFOA and PFOS.
- **Groundwater Standards:** The DNR is revising Wis. Admin. Code ch. NR 140 to include groundwater standards for PFOA and PFOS, and is working with recent recommendations from the Department of Health Services for groundwater standards for an additional 16 PFAS compounds in the future.
- **Water Quality Standards:** Lastly, the DNR is in the process of updating Wis. Admin. Code chs. NR 105, 106 and 219 to include surface water standards for PFOA and PFOS, and any other PFAS which the DNR determines may be harmful to human health.

Firefighting Foam Survey

With resources from the 2019-21 state budget, the DNR has taken several steps to assist and educate the firefighting and foam testing community on proper storage, containment and disposal of PFAS-containing foams. This included the development of a survey for fire departments that helped identify the general use of, user knowledge base and disposal needs associated with PFAS-containing foam throughout the state. The DNR has developed a frequently asked questions document, a poster for fire departments, and is developing a best management practices (BMP) document on foam use and proper management.

Great Lakes' States PFAS Taskforce

In response to the Great Lakes St. Lawrence Governors & Premiers PFAS Strategy Coordination Resolution dated June 14, 2019, the DNR initiated the development of the Great Lakes PFAS Task Force. The Task Force includes groups of directors, subject matter experts, and three topical expert sub-groups from various states that are sharing information and experiences and coordinating requests for future research and funding needs.

General Outreach

The DNR continues to make every effort to engage the community and provide opportunities for public input. This includes listening sessions, accessible through web conferencing during COVID-19, and solicitation of public input related to rules, WisPAC, and other PFAS-related activities. In areas that are in proximity to known contamination sites, the DNR works to support residents and solicit feedback and concerns through listening sessions and direct community engagement.

Environmental Assessment and Response

The DNR is conducting statewide, ambient sampling of surface water, air, fish and deer to determine the level of PFAS impacts to the air, land and waters of Wisconsin. In addition, DNR is conducting site-specific investigations into environmental contamination by PFAS, including testing of fish and wildlife around Marinette and Peshtigo, groundwater and surface water testing in areas of concern, and testing public and private water supplies when deemed appropriate.

Department of Revenue

The DOR creates proactive programming to assist water and wastewater facilities to eliminate PFAS from streams. The DOR is discussing options with the public and private sector to determine funding alternatives that could assist in these partnerships.

Department of Safety and Professional Services

DSPS works to minimize occupational exposure to PFAS for public sector employees. This work includes a partnership with the DNR and the firefighting community.

Department of Transportation

Requested the Wisconsin Airport Management Association (WAMA) to articulate and represent airport PFAS use challenges to the DNR. WAMA is engaged and working directly with DNR.

Participating in AFFF inventory workgroup.

Evaluating PFAS foam containment system acquisition options for Commercial Service Airports. We have found three retrofit equipment options for the airports. All meet Federal Aviation Administration (FAA) requirements. The type of equipment the airport has will determine the best retrofit option. In addition, WisDOT Bureau of Aeronautics (BOA) has implemented a funding program to assist airports in acquiring the equipment they need.

Ensuring FAA commercial service certification requirements are achieved. This is more dependent on the relationship each airport has with their FAA regional certification inspector. However, we are engaged with the FAA on this issue on behalf of the airports as a whole.

Encouraging collaborative approach between the State of Wisconsin and the National Association of State Aviation Officials (NASAO) to encourage the FAA to change PFAS requirements and/or encourage new product development (perhaps via Department of Defense) for commercial service airport application. See additional notes below:

- Based on FAA commercial service airport certification requirements, commercial service airports do not have an alternative product. If commercial service airports do not maintain the ability to sustain certification, commercial service at those airports will not be permitted.
- Commercial service airports no longer train with PFAS. They stopped that some time ago and instead use water for training. They still must conduct testing in accordance with regulations but will do so in a manner that is compliant with DNR requirements (hence – the retrofit equipment).
- FAA will rely on DOD to develop an alternative; any local solution developed will not be accepted by the FAA.

Applying DOT/DNR Interagency Cooperative Agreement principles and began quarterly PFAS topic coordination meetings. (7/29/20 Meeting No. 1)

University of Wisconsin System

PFAS Research Projects

Researchers from at least seven campuses in the UW System are currently working on PFAS or have research interests that align well. On-going research projects include environmental fate of PFAS; novel treatment, separation, and detection technologies; health impacts of PFAS; and social aspects of PFAS contamination in impacted communities.

Wisconsin State Lab of Hygiene

The WSLH led or participated in the following:

PFAS in Serum

Method development nearly complete. Discussion of interpretation and availability with the DHS has been initiated.

Accreditation

Drinking water certification has been granted. Other matrices and methods are under development.

Air Deposition

The National Atmospheric Deposition Program (NADP) work has progressed (data previously presented).

PFAS in Wastewater

Analytically the lab is ready. Project logistics and sampling plans need to be finalized and worked out.

Other Miscellaneous Work

Efforts ongoing such as ways to increase capacity, considering ways to efficiently screen for broader suite of compounds, fish work continues.

Introduction to WisPAC

Wisconsin Governor Tony Evers declared 2019 the Year of Clean Drinking Water, and issued Executive Order No. 40, calling upon state agencies to address environmental contamination by PFAS in Wisconsin. The Department of Natural Resources assembled WisPAC, comprising representatives from over a dozen different state agencies in Wisconsin. The current members of WisPAC are listed below (retired representatives are listed behind, where applicable).

Darsi Foss
Department of Natural Resources

Mike Friis
Department of Administration

Angela James
Department of Agriculture, Trade and Consumer Protection

Steve Krallis
Department of Corrections

Mark Werner and Chuck Warzecha
Department of Health Services

Bradley Motl
Department of Justice

Col. Jon Kalberer (Col. Kevin Philpot)
Department of Military Affairs

Victoria Rydberg
Department of Public Instruction

John Dickert
Department of Revenue

Bradley Johnson
Department of Safety and Professional Services

Bob Pearson (Patricia Trainer)
Department of Transportation

Mary Kolar
Department of Veterans Affairs

Timothy Cornelius
Office of the Commissioner of Insurance

Denise Schmidt
Public Service Commission

Dr. Christina Remucal
University of Wisconsin System

Missy Hughes
Wisconsin Economic Development Corporation

Dr. James Schauer and David Webb
Wisconsin State Lab of Hygiene

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Bart Sponseller
Jim Zellmer

The council was charged to address the following:

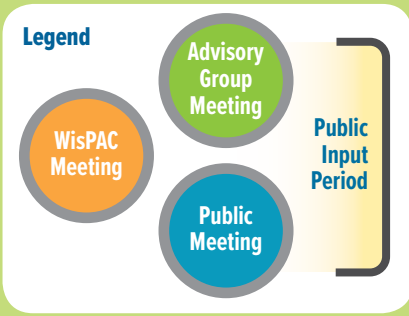
- Develop a multi-agency PFAS action plan for the State of Wisconsin.
- Develop protocols to effectively inform, educate, and engage the public about PFAS.
- Identify and prioritize likely known PFAS sources and incorporate this information into the PFAS action plan.
- Evaluate the public health risks of PFAS in addition to any impacts to Wisconsin's natural resources, agriculture, wildlife, and fisheries.
- Develop best practices and protocols for identifying PFAS sources to ensure that the materials are managed in a way that protects natural resources and human health.
- In partnership with stakeholders, develop standard testing and treatment protocols that are both cost-efficient and effective.
- Engage academic institutions and experts to identify and collaborate on joint projects, and further identify technical resources necessary to implement a PFAS action plan.
- Explore avenues of funding for the state, local governments, and private parties to aid their effort to address PFAS.

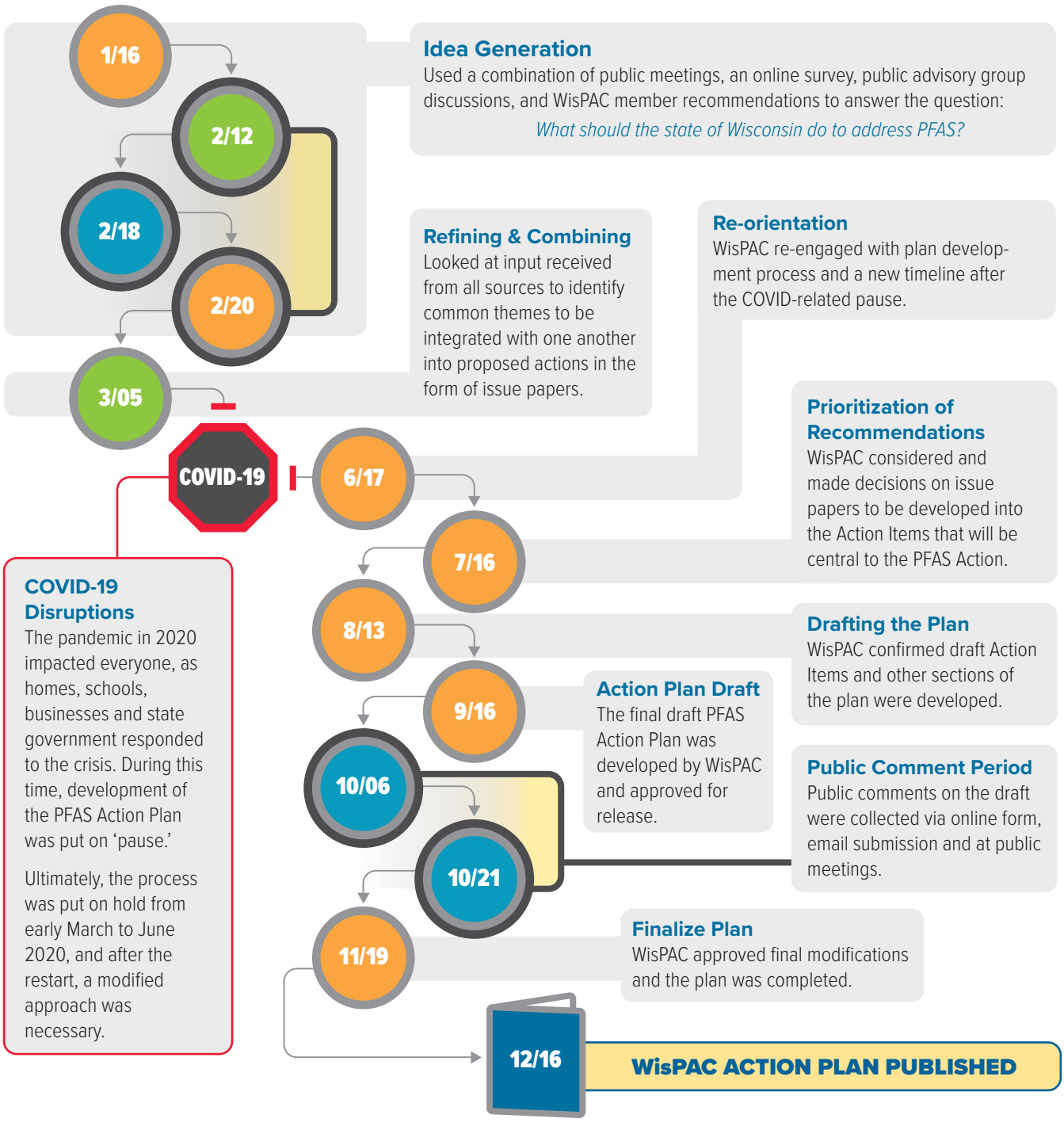
This report represents the Action Plan deliverable listed above and the recommendations presented provide a foundation from which the goals of the executive order may be accomplished. Many other actions are being taken by state agencies, local governments, businesses and citizens to address PFAS throughout the state, at all levels. WisPAC's recommended actions are those that require high-level coordination of government resources, through administrative, financial, operational or other types of change.

Building the Plan

Timeline

In October of 2019, representatives from state agencies were invited to participate in WisPAC and an introductory meeting was held in November. From that point on, development of the Action Plan proceeded as outlined below:





Public Input Gathered

Given the implications of PFAS for all Wisconsinites – from private citizens to local governments and businesses – input from a broad audience was important in the development of the recommendations presented in this plan. WisPAC state agency members were directly involved in plan development and their input was collected in various ways over the course of the process.

To pull in other perspectives and points of view to consider, WisPAC sought input from two main sources: two external advisory groups and the general public.

WisPAC Advisory Groups

Two advisory groups were convened to provide educational and feedback forums for the introduction of PFAS and WisPAC, and to explore how to respond to PFAS from two main perspectives:

- Citizens/Public Policy
- Local Government

The advisory groups were co-chaired by invited representatives from several external groups and interested parties (see box). Additional state agency co-chairs were assigned to support the engagement efforts and act as liaisons between the advisory groups and WisPAC. These individuals provided invaluable support to and input into this overall process.

Citizen/Public Policy Group Co-chairs		Local Government Group Co-chairs	
Lynn Morgan *Business Representative*	**Ned Witte** *Private Sector Attorney*	**Lawrie Kobza** *Private Sector Attorney*	**Paul Kent** *Private Sector Attorney*
Bart Sponseller *Department of Natural Resources*	**Chuck Warzecha** *Department of Health Services*	**Jim Zellmer** *Department of Natural Resources*	**John Dickert** *Department of Revenue*

The advisory group co-chairs' primary role was twofold:

1. Facilitate public meetings to solicit comments from interested parties focused on identified group.
2. Produce a summary of all input received during the public meetings and forward this information on to WisPAC for consideration in the development of the Action Plan.

The individuals acting as advisory group co-chairs played an important facilitation role in collecting input from others and forwarding this on to WisPAC. While these groups' input was included, their involvement in the process does not imply approval or endorsement of the recommendations that came out of the advisory group process.

As shown on the timeline displayed previously, each advisory group met in person twice – first to brainstorm ideas, and then to consolidate and refine these initial thoughts into more clear recommendations. The co-chairs fulfilled the second part of their charge when they delivered a set of issue papers for WisPAC to review and consider for inclusion in the draft action plan.

The full version of these submissions may be found in Appendix D and E, which are available online.

Please consult the "Using the Input" section to learn more about how these advisory group issue papers were considered by WisPAC.

General Public

While the two advisory groups were designed to provide some sideboards or structure to the discussion of how to respond to PFAS from local governments and other interested parties, broad input from the general public was collected in other ways:

1. Public, On-Line Web Survey: Suggestions for the Wisconsin PFAS Action Plan
    - Survey open from February 3 – February 21, 2020
    - Submission of responses was possible via an online form or in hardcopy
    - Survey summary shown on next page
2. Public Listening Session in February 2020
    - Held at UW Oshkosh – Fond du Lac Campus on February 18th
    - PFAS and WisPAC 101 presentation
    - Q&A session and public comment opportunity
3. Opportunities for public comment during WisPAC meetings
    - Started as in-person opportunities, transitioned to virtual comments once process restarted after initial COVID-19 pause
    - 2019: November 18
    - 2020: January 16, February 20, June 17, July 16, August 13, September 16, and November 19
4. Draft PFAS Action Plan public comment period
    - Public comments solicited throughout October 2020
    - Two public listening sessions held: October 6 and October 21

WisPAC's guidelines for Advisory Groups:

- All meetings of the WisPAC advisory groups are open to the public.
- Agendas and logistics will be posted a week before each meeting, to the WisPAC web page.
- There is no formal membership in any of the PFAS advisory groups other than the two public co-chairs and two state co-chairs.
- Minutes summarizing meetings will be taken by state agency staff and posted to the WisPAC web site. Minutes will be shared with WisPAC members.
- Main focus of advisory committee meetings between January and June 2020 will be to solicit input on the state's PFAS action plan and feedback on state's ongoing PFAS initiatives.
- Advisory committees will solicit input from the public on the four PFAS action categories approved by WisPAC.
- Recommendations from the advisory committees will be forwarded to WisPAC for consideration, per the schedule and format approved by WisPAC.
- Advisory committee members and public recognize that WisPAC may adopt, reject, or modify any recommendations proposed by an advisory workgroup.
- Advisory committees will continue to meet on a regular basis after the WisPAC Action Plan is completed to continue providing feedback to the state.
- Advisory committees may invite guest speakers to present during a committee meeting.

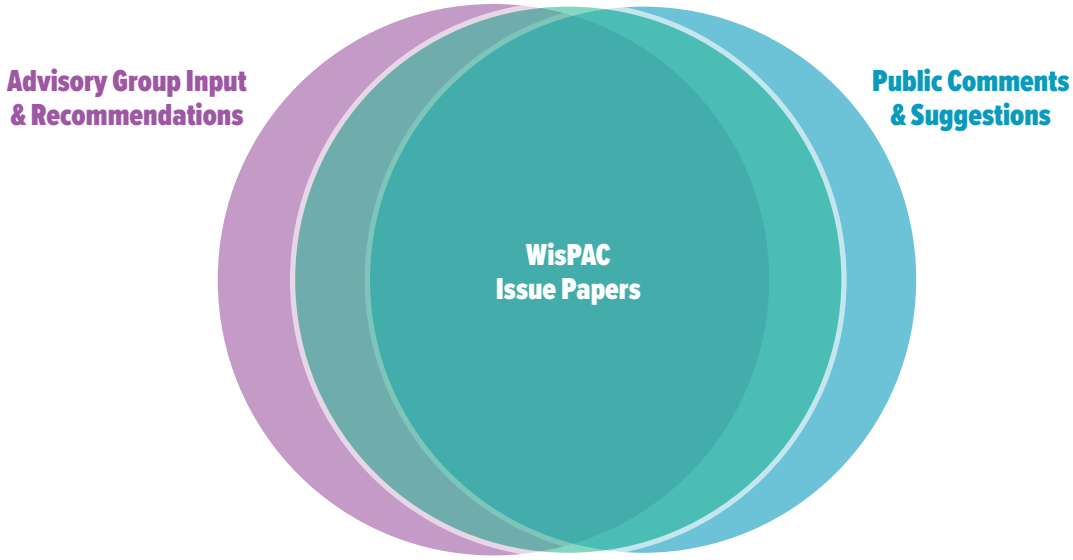
Public Input Survey Summary

- Main questions in survey:
  1. Briefly describe the problem or issue related to PFAS that you think needs to be addressed by the state of Wisconsin.
  2. If you have a suggestion for how the issue or problem above could be addressed, please share that with us here.
- 230 total responses were identified. Not all questions were answered on every submission.
- A qualitative analysis was performed to help identify potential topic areas for WisPAC to consider in the development of the PFAS Action Plan.
- Most comments could be grouped according to common themes which were then carried forward to help in the development of issue papers. The themes were ultimately used to organize the Action Items within the plan (with some minor wording changes).
- A number of public comments related to specific properties with PFAS contamination were received; while those comments were important to the DNR they were not addressed in the specific action items. General comments were also submitted that were not addressed in specific action items. These two categories of comments are noted (*) in the table below.
- Survey responses by theme or category:

Themes (comments were tagged to the theme that fit best, but may have applied to other themes as well)	Number of Comments	Percent of total
Phasing Out (or Banning) PFAS in Products	54	23%
Site-Specific Concerns*	38	17%
Sampling	33	14%
General Comments*	27	12%
Research & Knowledge	21	9%
Engagement, Education & Communication of PFAS & Public Health	19	8%
Standard Setting	16	7%
Identifying & Addressing Historic or Legacy PFAS Discharges & Exposures	12	5%
Pollution Prevention	6	3%
Future Investments	4	2%
Grand Total	**230**	**100%**

Using Input Gathered from Advisory Groups and General Public

Early in the plan development process, WisPAC members were asked to develop an initial set of issue papers to capture ideas for how to best address PFAS. Next, WisPAC evaluated input from the advisory groups and the general public by comparing the input to existing issue papers. In many cases, there was overlap on the general PFAS issues being identified by WisPAC, the advisory groups and the public. There was overlap in many but not all the WisPAC, advisory groups' and public recommendations on how to address the PFAS issues that were identified as challenging to Wisconsin.



WisPAC reviewed the PFAS issues identified and the recommendations on how to address those from the public, and where gaps were evident, they were reviewed, considered and addressed in the following manner:

1. Edits or additions to action items or recommendations were proposed by state agencies that were related to the issue being raised.
2. New action items or recommendations were developed to be considered by WisPAC for inclusion in the action plan.
3. No specific action was taken (typically where no specific, actionable issue was identified).

Please consult the "Additional Information" section at the conclusion of each Action Item write-up in the Recommendations section of this plan. There you can find excerpts from the advisory group feedback that relate to the WisPAC Action Item. Also, see Appendix C (available online), for a few items suggested by the advisory groups that did not fit with any of the final Action Items for the Wisconsin PFAS Action Plan, but might represent an opportunity for others to engage.

Public Input on the Final Plan

The month of October was dedicated to collecting public comments on the PFAS Action Plan prior to it being approved by WisPAC. The comment period was kicked off with a listening session on October 6, which was followed by a second listening session on October 21. Verbal comments on the plan were collected at both public meetings. Written submissions and letters were collected via an online form and through emails sent directly to the DNR.

Approximately 300 individual comments were received from over 50 commenters. Many commenters provided feedback on specific Action Items being recommended in the plan. Input was also received about other sections of the Action Plan and more broadly about PFAS.

After the comment period closed, all input was reviewed by DNR staff. Recommended modifications to the plan were developed and proposed to WisPAC for approval at the November WisPAC meeting. All submissions received during the public comment period are available for review online, along with a summary of how each comment was considered. Overall, the feedback received provided valuable input on proposed actions, identified gaps and helpful clarifications, and contributed many solid ideas for future consideration in the implementation of the plan.

Recommendations

Principles for All Actions

Many of the Action Items WisPAC has identified to support Wisconsin's response to PFAS are relatively distinct from one another – there is a clear and defined scope. In other cases, there is a recognized need to apply or embrace a general approach or principle that should be considered across all actions. The following principles were highlighted as being of particular importance for consideration in how any single Action Item might be implemented.

Environmental Justice

The EPA defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys: the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work." According to national studies, PFAS has disproportionally impacted communities of color and low-income communities.

Equity and justice are central to the Evers Administration as well. From Executive Order No. 1, which reinforced Article I, Section 1 of the Wisconsin Constitution that declares, "All people are born equally free and independent, and have certain inherent rights," to Executive Order No. 3, which declares "to ensure that current and future generations of Wisconsinites thrive, the State of Wisconsin must promote the wellbeing of individuals and their communities" and "must address acute health disparities."

The Evers Administration also issued Executive Order No. 18, which reinforces the partnership with the 11 federally recognized Tribal Nations within Wisconsin.

Executive Order No. 40, which established WisPAC and set the expectations for this action plan, did so because "all Wisconsin residents deserve access to safe drinking water and clean natural resources."

Health Equity

The CDC defines health equity as "when everyone has the opportunity to be as healthy as possible." It is "achieved when every person has the opportunity to 'attain his or her full health potential' and no one is 'disadvantaged from achieving this potential because of social position or other socially determined circumstances.' Health inequities are reflected in differences in length of life; quality of life; rates of disease, disability, and death; severity of disease; and access to treatment."

Executive Order No. 17 required the formation of Wisconsin's Health Equity Council, which must develop a comprehensive strategy to address public health issues to improve health outcomes and reduce disparities. The Council's charge "includes assessing and improving all determinants of health including… the physical environment." The Council may create such subcommittees as are necessary to achieve this mission;" a subcommittee could intentionally address physical environment inequities or link with the work of WisPAC.

Possible Tools and Actions Across Issues

- Accessibility of Information
    - Low literacy
    - Culturally and linguistically relevant/appropriate – e.g., always include Spanish, Hmong resources
    - Data to action – ensure resources are available for communities to use to understand
- Risk Assessments
    - Make it easier to request, understand, utilize (health) risk assessments
- Data and Mapping
    - Ensure data and mapping are done at the census tract level (as possible), or zip code level (at a minimum)
    - Allow communities to search for whether (and in what medium) PFAS is in the community
- Community Resources
    - Ensure services are available for communities (and developed with/by communities) to help address inequities and determinants of health
- Community Participation
    - Formation of an environmental justice advisory group
    - Formation of a representative community advisory group for PFAS/WisPAC

Innovation

As an emerging contaminant, the collective understanding of PFAS continues to grow. WisPAC recognizes the importance of reducing the burden of PFAS though continued collaboration including education and outreach with all stakeholders, including businesses, scientists and engineers, the general public and partners such as the EPA's Office of Research and Development (ORD) and the Interstate Technology and Regulatory Council (ITRC). The state also recognizes that some of the strongest environmental initiatives in Wisconsin, such as the state's brownfields redevelopment initiative or mercury reduction initiative involved

innovative approaches or incentives for participation and use reduction or elimination. While the Action Plan does not specifically contain such new innovations, it commits the state to work with stakeholders in the public and private sector, as well as citizens, to explore such initiatives.

Pollution Prevention

Much of the PFAS work underway across the country and in Wisconsin has focused on mitigation and treatment downstream. There is also interest in reducing and preventing the introduction of PFAS at all. PFAS pollution prevention will require collaboration and additional outreach, education, resources, and innovation. Several of the action items contained in the report address halting or mitigating the use and discharge of PFAS through educating businesses, government agencies and consumers that the products they purchase and use may contain PFAS. Many businesses and consumers are unaware of the environmental and human health concerns from certain PFAS substances. They are also unaware of the choices they may have about purchase and use of products that do not contain PFAS. Many states are enacting laws governing the manufacture and use of PFAS-containing products in their states. The federal government continues to work on voluntary reduction of certain PFAS by businesses in consumer products, as well as establishing deadlines for the military, airports and other to move to PFAS-free firefighting foams.

What's Next

Implementation

This plan is intended to serve as a blueprint for action. As such, many of the "what's next" details for implementation are not included at this time. Action Items indicate approximately the length of time needed to implement the actions, many of which are already underway.

Throughout the development of this plan, WisPAC received several comments with great ideas and questions related to implementation. These comments will be shared with those working on plan implementation and will be addressed as pieces of the plan are advanced.

As implementation of the plan advances, Wisconsin will continue to work to align with and leverage the work of other partners, including the federal government and other states.

Collaboration was central to the development of the plan, and continued collaboration will be necessary for implementation of the plan, in whole and in part. The WisPAC webpage and listserv will continue to provide updates on opportunities for engagement through public meetings and comment periods.

Metrics

The success of the plan is reliant upon the collective work of everyone in Wisconsin. In addition to the overall plan, WisPAC will also develop metrics of success as appropriate for each action item. Throughout the public comment period, stakeholders reinforced the importance of accountability and establishing metrics for success.

The DNR, as lead coordinating agency, will utilize the PFAS webpage – and relevant WisPAC pages – to report on activities related to the plan. Among the items that will be tracked include:

- Overall plan implementation
- Action Item implementation
- Metrics for measuring progress
- Overview of types of action underway (e.g., budgetary, legislative, administrative, research, other)
- Overview of opportunities for engagement – public meetings, work groups, partnerships, etc.
- Incorporation of guiding principles

While there may be one or two primary state agencies involved with implementing an Action Item, WisPAC will assess the overall progress of the plan, including the work of key stakeholders. WisPAC will periodically review the progress of plan implementation, including what has been successful, what barriers may exist, and any new or emerging issues.

Actions Items

NOTE: Action Items are organized by theme; the order in which they are listed does not indicate priority.

A guide for how to navigate the writeup templates below:

Background

Information such as historical context or relevant legislation and local regulation(s) on the nature of the issue.

Action

Recommendation(s) from WisPAC to resolve the issues and concerns.

Time to initiate

An estimate of how long it will take to implement this action based on steps started prior to the submission of the Action Plan or needed additional steps after the submission to initiate the stated action.

Proposed lead agency

State agency(ies) primarily responsible for implementation.

Proposed partnerships

Anticipated partners in implementing this action: these are typically other state agencies but may include other federal or local agencies or entities.

Type of action – Resulting type of change(s)

Information such as historical context or relevant legislation and local regulation(s) on the nature of the issue.

- **Budgetary** Change in budget: reallocation in funds or acquisition of additional funds.
- **Legislative** Proposed legislation or modifications to current legislation.
- **Administrative (Rulemaking)** Adoption of new rulemaking within agency
- **Administrative (Operations)** Amendments/ changes to current processes or policies.
- **Research** Proposed research projects and/or collaboration with other agencies to develop new techniques, technologies, and breakthroughs in PFAS understanding.
- **Other** Communicative actions, educational actions, or other actions that do not coincide with the above listed types of actions.

Reason for Action

The necessity of the action and how it is beneficial to Wisconsin communities, citizens, developers, the environment, etc.

Anticipated resource needs

Either additional or change in current structure of staffing, funding, input, support, etc.

Additional Information

Other items relevant to the Action Item, including:

- Related feedback WisPAC advisory groups and the general public
- Additional background and reference material
- Relevant examples

1.1

Establish Science-Based Environmental Standards for PFAS

Background

As part of the state's groundwater law, the Wisconsin Department of Natural Resources (DNR) is required to maintain a list of substances that have been discovered in groundwater or have a reasonable probability of entering groundwater, and to routinely provide those lists to the Wisconsin Department of Health Services (DHS) for groundwater standard recommendations. In March 2018, DNR requested that DHS provide a groundwater enforcement standard for two of approximately 4,000 PFAS substances: PFOA and PFOS. In April of 2019, the DNR requested groundwater enforcement standards for an additional 34 PFAS substances.

To ensure that the state is developing PFAS-related groundwater standards sufficiently protective of public health, the Department of Health Services (DHS) evaluated each PFAS sent to them by DNR on an individual basis. Currently, DHS is not recommending PFAS groundwater standards as a "class" given how each of these PFAS react in the body. However, DHS did add 4 "precursor" substances to the 20 parts per trillion (PPT) threshold for PFOA and PFOS. The state will continue to evaluate science-based information in order to determine the necessity to regulate PFAS as a class, individual compound or both. As more technical information becomes available at the federal and state levels, DHS will continue to determine when human health risk assessments should include evaluation of the mixtures of PFAS present.

Having clear, consistent and science-based environmental standards is a DNR priority for the protection of public health safety, welfare, and the environment for the citizens of the State of Wisconsin. The DNR establishes science-based environmental standards as part of its mission, including standards for:

- Groundwater in ch. NR 140 (as described above).
- Safe drinking water in ch. NR 809.
- Water quality in chs. NR 101-299.
- Soil standards in ch. NR 720.
- Hazardous air contaminants in the NR 400 rule series.
- Site-specific sediment standards in ch. NR 722.

Action

WisPAC recommends that state agencies take proactive and consistent action toward establishing science-based environmental standards for PFAS. Standards should be developed to address the expanding number of PFAS compounds of emerging concern in a variety of environmental media and substances.

The DNR should routinely send PFAS substance recommendations to DHS, consistent with Wis. Stats. ch. 160, the state's Groundwater Law. Upon receiving the groundwater enforcement standard recommendation, DNR should also simultaneously begin rulemaking for PFAS standards for those substances in surface water and drinking water, as appropriate.

In addition, DNR should update the ch. NR 720 soil direct contact and soil-to-groundwater cleanup standards as well as establishing guidelines through rule or guidance for land application of biosolids and cleanup of contaminated sediments.

Further, DNR should work with the U.S. Environmental Protection Agency's (EPA) Office of Research and Development (ORD), academia, other states, stakeholders and Department of Defense (DOD) to identify a model for calculating a ch. NR 720 soil standard for PFAS substances that would be protective of groundwater.

Finally, the DNR should continue to work with EPA on the implementation of a federally approved stack testing method and monitoring method, technical information to consider when evaluating best available control technology and the development of federal air toxics standards for PFAS.

Additional supporting actions include:

- On a case-by-case basis, evaluating the need to promulgate emergency rules when criteria under Wis. Stats. ch. 227 can be met. Such emergency rules would be effective for 150 days, and if approved by the legislature, for up to an additional 120 days. By utilizing 150 days, and if approved by the legislature, for up to an additional 120 days. By utilizing emergency rules to develop standards more quickly, there could be a gap between when an emergency and a permanent are in effect.
- Evaluating the necessity of establishing PFAS standards or guideline for biosolids, solid waste, and sediment.
- Evaluating the necessity of adding PFAS to the list of hazardous constituents under the ch. NR 600 rule series.

Time to Initiate

Parts of these actions are already underway. The rulemaking process has started for PFOA and PFOS for groundwater, surface water and drinking water with approximately 30 months to complete.

Additional work is required and would be implemented on an ongoing basis, driven by future DNR requests for PFAS substance groundwater standard recommendations from DHS, and DHS providing those health-based recommendations upon which other media-specific standards would be developed, as appropriate.

Proposed Lead Agency

DNR

Proposed Partnership

DHS, EPA ORD, academia, other states, stakeholders and DOD

Type of Action

- Budgetary
- Legislative
- Administrative (rulemaking)

Reason for Action

Having science-based standards provides the regulated community and the public with a clear benchmark on what level of PFAS in the air, land or water is protective or actionable under state law. This allows general public, the regulated community and brownfields redevelopers to determine how to address the contaminated media and the costs of those actions. Establishing standards for PFAS removes regulatory uncertainty for municipalities, businesses, and the public.

Anticipated Resource Needs

It is expected that additional funding and staff for rule writing, toxicity research, sampling to develop economic analyses are required to support full and efficient implementation of this action in the long term.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "The WisPAC Action Plan should include expedited state action, such as emergency rule development or executive order, to develop interim statewide clean-up standards for soil and groundwater."
- "The WisPAC Action Plan should direct state researchers to gather and assess data on chemical toxicity and environmental exposures for PFAS of highest concern; health impacts…"

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "Provide greater flexibility in code/statute to address additional compounds (e.g., water quality values) as knowledge base increases."
- "Expand toxicology understanding."
- "PAG participants expressed a desire for clearer definition of the proposal to 'expand' our understanding of PFAS toxicology. This could be through encouraging the U.S.EPA to address toxicology, as one of the pillars of the February 2019 federal PFAS Action Plan, more quickly."
- "Evaluate legislative solutions to allow local government/municipalities to set and implement more restrictive standards to address local PFAS issues and concerns."
- "Consider impacts of federal or state preemption of state or local standards, respectively."
- "A PAG participant suggested that municipalities should set more stringent standards than state law."

Establishing environmental standards for PFAS was one of the most commonly addressed topics received from the public during WisPAC's initial public outreach via an online survey in February 2020.

1.2

Develop Recommendations for Management of PFAS-containing Landfill Leachate

Background

Due to the historical prevalence of PFAS in consumer products and industrial use, PFAS-containing waste has been disposed of in Wisconsin landfills for many years. Over time PFAS can be released in leachate and could enter or has impacted groundwater. Current landfill design requirements, in place since the early 1990s, include liner and leachate collection systems to protect groundwater from contamination by leachate. The primary method by which landfills in Wisconsin manage the leachate they collect is to utilize wastewater treatment plants (WWTPs), including publicly owned wastewater treatment (POTW) facilities. Landfills also serve WWTPs by accepting biosolids for disposal when land application is not an available option.

Action

WisPAC recommends the following:

- The Wisconsin Department of Natural Resources (DNR) develop a comprehensive strategy in collaboration with key public and private stakeholders, such as WWTPs and landfills operators, to explore recommendations on how to safely manage PFAS in leachate, and to minimize or eliminate impacts to WWTPs, waters of the state and biosolids. These recommendations would supplement existing state statutes that already address actual or potential impacts to air, land, and waters of the state, including private wells. DNR will also evaluate Best Management Practices from other states and the U.S. Environmental Protection Agency (EPA) and incorporate those practices when practicable and appropriate.
- Similar to requirements in other states, landfill operators should be required to analyze drinking water samples from neighboring private drinking water wells whenever available information indicates a significant potential for PFAS impacts at those wells.
- These recommended management options should be summarized in an external document to be shared with various stakeholders.
- Evaluating the necessity of adding PFAS to the list of hazardous constituents under the ch. NR 600 rule series.

Time to Initiate
This can be initiated 1–6 months from now.

Proposed Lead Agency
DNR

Proposed Partnership
Solid Waste Landfill Stakeholders, WWTPs, Local Government

Type of Action
- Legislative
- Administrative (operations)

Reason for Action
Landfills receive consumer and business waste that may contain PFAS compounds. Waste materials containing PFAS disposed of at these locations will continue to enter the waste stream so long as they continue to be manufactured and disposed of as part of general household and commercial waste. There is also a recognition that, even though the domestic use of PFAS compounds such as PFOA and PFOS may cease, international trade may continue to be a pathway for these compounds to enter the environment. Other longer-chain PFAS may interact with the environment and transform into PFOA or PFOS. Shorter-chain PFAS substances are still used in many products and found in landfill waste.

Other states are looking for ways to help solve the issue of elevated levels of PFAS in landfill leachate. Michigan is partnering to look at the age and type of waste, leachate management, operations, and landfill design. The Vermont Department of Environmental Conservation has issued guidelines for POTW acceptance of leachate. The New Hampshire Department of Environmental Services and New York Department of Environmental Conservation require landfill operators with elevated PFAS levels to test neighboring private drinking water wells; landfill operators may be required to provide alternate sources of drinking water and install treatment systems.

Anticipated Resource Needs
It is expected that some additional staffing is required to implement this action, including collaborating with stakeholders, developing a laboratory standard for leachate analysis, developing acceptable levels, and communicating those levels.

Additional Information
None

2.1

Expand PFAS Site Investigations Using GIS Mapping

Background

PFAS are a widespread and large class of chemicals used in hundreds of industries. While there are likely several sources of PFAS contamination in the State of Wisconsin, most of these potential sources have not been identified. In addition, we have a growing understanding of what the most significant or concentrated sources of PFAS contamination are and how the various PFAS compounds and uses enter and impact the environment and human health. While these scientific details continue to evolve daily, relative exposure and risk can be identified by broad categories of uses, including:

- Direct manufacture of PFAS raw materials
- PFAS directly used in industrial applications (e.g., direct application of AFFF at airports, Department of Defense (DOD) facilities, petroleum/oil refineries, etc.)
- PFAS used in the manufacturing process
- Secondary sources of PFAS (landfills, wastewater treatment plants, etc.)
- Emergency response situations, such as chemical fires
- Industries with potential PFAS use where less is known about the location and operations

Identification of potential exposure and risk to PFAS chemicals can serve as a valuable first step in screening potential sources and prioritizing receptors for sampling. The Wisconsin Department of Natural Resources (DNR), with funds provided in the 2019-21 biennial budget, has contracted with a consultant to analyze the prevalence of PFAS in Wisconsin. This information will help Wisconsin continue to identify and summarize potential sources of PFAS and help build a geo-database and conceptual site models. Locating these areas of contamination can also prevent future exposure during construction, well-drilling, or redevelopment, and help map potential sources should contamination be discovered in the future.

For those sources of PFAS contamination that have already been identified, the degree and extent of contamination often expands beyond one property and one media and is sometimes known to affect human receptors. It is important that these known areas of contamination are effectively communicated to the public, along with any health advisories issued for drinking water, fish or wildlife consumption. Up-to-date information regarding one's own property is critical, but also data that is searchable by county, municipality and parcel is important for property acquisition, environmental assessments, infrastructure design and construction, and public information.

Action

WisPAC recommends that the DNR should continue to build upon the prioritization model that they are working to complete, as initially funded by the 2019-21 state budget. Implementing the screening and prioritization protocol developed for the state, and continuing to analyze incoming data from contaminated sites, POTWs, drinking water wells, and health advisories the state can map and prioritize locations for sampling in a process that is well-documented, transparent and reproducible.

As part of this effort, the DNR has also begun building a database that will feed into a geospatial viewer and interactive public map. The database combines known PFAS sources (e.g., contaminated sites and wells) and base layer information of interest (e.g., PFAS impacted waterways, fish consumption advisories, parcel data), as well as the potential source information and risk analysis. The DNR should continue to build upon this database with input and collaboration from the EPA, USGS, DOD, Wisconsin Public Service Commission (PSC) and local governments, in order to ensure a "one-stop-shop" for all PFAS-related environmental impact data for the public and for risk and exposure analysis.

The interactive map available to the public will include the locations of known PFAS sources that have impacted the air, lands or water of the state. Similar systems have been implemented at the Michigan Department of Environment, Great Lakes and Energy, and the California State Water Resources Control Board. Additional base layers, like the state-wide digital parcel map developed and funded by the Wisconsin Land Information Program together with existing hydrology and Wisland data, could be added to interactive map to provide the public with greater searchability over time.

The DNR will continue to evaluate additional information from other agencies and the public in order to continuously improve the applicability and functionality of the interactive map.

Time to Initiate

This is already underway, but requires additional resources before finalized, and will require upkeep.

Proposed Lead Agency

DNR

Proposed Partnership

Department of Military Affairs (DMA); DATCP; DOT, DOA, US Geologic Survey (USGS), Wisconsin Land Information Program, PSC, EPA, DOD

Type of Action

- Budgetary
- Legislative
- Administrative (rulemaking)
- Administrative (operations)
- Research
- Other

Reason for Action

Knowledge of PFAS use and presence is expanding rapidly, and the state must utilize all available data to identify the extent of PFAS contamination and inform the appropriate response by creating a database of potential sources and utilizing spatial analysis tools to prioritize sites for responses and risk management, the state can focus limited resources. The same tools will also allow the state to inform the public of known PFAS issues through an interactive mapping feature. This will allow them to make informed health-and financial-related decisions.

Anticipated Resource Needs

It is expected that additional staff and funding and may be needed to implement the protocol (including collecting, analyzing, and presenting/summarizing data), as well as for development and upkeep of the database and online GIS system. In addition, funding will be needed to sample at prioritized sites.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "The LGAG recommends that the WisPAC Action Plan include guidance LGUs may use to identify entities discharging PFAS to wastewater systems or disposing of PFAS at landfills or other waste disposal sites."
- "The WisPAC Action Plan should include a plan to assist LGUs in proactively identifying PFAS sources in their community…"
- "The PFAS policy goal should be to determine the most effective steps needed to reduce human exposure and implement them within the broad context of protecting human health. This requires differentiating high concentration sites from background concentrations."

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "One suggestion was that State could consider utilizing available funding to broaden the explanation of PFAS use and industries that handle PFAS to better understand potential receptors."
- "Consider additional measures to develop means for inventorying PFAS exposure risks."
- "Identify which PFAS chemicals and which PFAS uses and sites are a priority."

2.2

Facilitate Timely Collection of Environmental PFAS Data

Background

While our body of knowledge regarding PFAS is growing, there are still a significant number of unknowns, and our limited capacity for sampling and testing is an impediment to data collection. In addition, under the current regulatory processes related to PFAS site investigation and cleanup, there can be a significant amount of time between the discovery of a probable discharge and initiation of environmental sampling by the responsible party. The timely collection of environmental PFAS data is necessary to identify contamination and initiate site cleanup quickly and efficiently, thereby mitigating prolonged exposure and preventing adverse health outcomes in Wisconsin communities.

Action

WisPAC recommends that the state explore ways to facilitate timely collection of PFAS data, which will in turn inform appropriate measures toward effective risk communication, mitigating exposure and making sound health-protective decisions in the short-term. Communicating PFAS collection results includes clear, timely updates to state agency webpages regarding all sampled and analyzed environmental media – surface water, air, fish, deer, soil, groundwater, biosolids and other. This could be accomplished through legislation, rulemaking, and/or funding for collection of samples outside the typical site investigation process.

Time to Initiate

The time is to be determined, based upon more specific implementation planning (funding, rulemaking, and/or legislation).

Proposed Lead Agency

Wisconsin Department of Natural Resources (DNR)

Proposed Partnership

Wisconsin Department of Health Services (DHS), Wisconsin State Laboratory of Hygiene (WSLH), Local Public Health Agencies, Tribal Organizations

Type of Action

- Budgetary
- Legislative
- Administrative (rulemaking)
- Other

Reason for Action

Investigating better, cheaper and more accessible techniques for PFAS sampling and testing will improve data collection and ensure that impacted communities have more information sooner about their proximity and exposure to PFAS contamination, thereby supporting their capacity to implement necessary health-protective interventions.

Anticipated Resource Needs

It is expected that substantial finances are required to fully implement this action, possibly including:

- Zone contracts with environmental consultants;
- Partnerships with local health departments, the State Lab, state agencies for fee-exempt environmental sample analysis akin to current Basic Agreement set up

Note: The current resources in the DHS Basic Agreement with the Wisconsin State Laboratory of Hygiene are insufficient to support PFAS testing for public health investigations.

Additional Information

While agency staffing may be restricted to a finite number of individuals to collect samples, since the Action Plan has been put forward for public comment, a number of organizations and NGO's have volunteered time and resources to help conduct sampling.

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "The WisPAC Action Plan should include a plan and funding for additional studies to identify and alert Local Government Units of PFAS contamination. PFAS sampling should be part of site investigations near probable PFAS sources. PFAS sampling should be included in routine monitoring of rivers and lakes. Sampling should be conducted sites where historical information indicates PFAS was used in industrial or manufacturing processes."
- "The most significant action we need to take today is to remove these chemicals of emerging concern from commerce and pursue cleanup and remediation at contaminated sites and waterbodies."

Timely and adequate collection of environmental PFAS data was one of the most commonly addressed topics in comments received from the public during WisPAC's initial public outreach via an online survey in February 2020.

2.3

Standardize PFAS Sampling Methods and Support Statewide Implementation

Background

PFAS testing efforts may involve collection of environmental samples by various entities, including state agencies, local government agencies, tribal organizations, contractors, businesses or residents. PFAS sampling is complex, in large part due to the presence of these compounds in many everyday consumer products. Unclear or non-uniform sampling protocols increases the risk of cross-contamination that would invalidate test results, and ultimately lead to inaccurate conclusions and costly resampling.

Action

WisPAC recommends that the state identify standard protocols for environmental sampling for PFAS to ensure consistency across private and public entities when samples are collected. Evolving analytical methods will also need to be considered in identifying standard sampling protocols. Outreach and training from the State of Wisconsin on proper PFAS sampling would ensure individuals and organizations in Wisconsin would be well-equipped to conduct PFAS sampling as needed.

Time to Initiate
This can be initiated 1–6 months from now.

Proposed Lead Agency
Wisconsin Department of Natural Resources (DNR)

Proposed Partnership
Wisconsin Department of Health Services (DHS) and Wisconsin State Laboratory of Hygiene (WSLH) (co-lead with DNR); Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP); local public health agencies and tribal organizations

Type of Action
- Administrative (operations)
- Other

Reason for Action
Implementation of this recommendation will result in increased confidence in PFAS test results from samples collected by entities across Wisconsin and decrease "false positives." It will also promote more timely response to PFAS issues by increasing the capacity of a broader range of entities, such as local public health agencies, to contribute to PFAS-related environmental and public health investigations. As an example, the State of Michigan has produced several guidance documents on PFAS sampling, based upon environmental media (e.g., soil).

Anticipated Resource Needs
It is expected that some additional staffing or funding is required to implement this action.

Additional Information
Michigan's sampling guidance could be reviewed and adopted as is, or serve as a solid foundation for the identification of Wisconsin's guidance.

Existing relationships and routine interactions (e.g., conferences, continuing education opportunities) with local government agencies, environmental consultants, and others could facilitate dissemination of the protocols among likely users.

The following comment or proposed action related to this action was forwarded through the Citizens external advisory group:

- "A PAG participant suggested that establishing sampling and analysis protocol should be a priority."

2.4

Test Public Water Systems for PFAS

Background

Between 2013 and 2015, the U.S. Environmental Protection Agency (EPA) monitored large municipal public water systems (population of 10,001 people or more) and a representative number of small public water systems for 6 PFAS substances under the Unregulated Contaminant Monitoring Rule 3 (UCMR3). Three large Wisconsin municipal water systems: La Crosse, Rhinelander and West Bend, detected PFAS in drinking water well systems. La Crosse and Rhinelander removed wells with elevated PFAS from service to protect public health. The Wisconsin Department of Natural Resources (DNR) is evaluating the detection of PFAS in the West Bend well.

In addition, while the Madison Water Utility did not detect PFAS during UCMR3, subsequent voluntary sampling has detected PFAS in all 21 of its in-service, drinking water wells. These detections are mainly due to improvements in laboratory testing methodologies and lower detection levels since the UCMR3. The DNR laboratory certification program is now certifying laboratories to analyze 36 PFAS in drinking water and other media.

Since 2013, approximately 30 contaminated sites with PFAS groundwater, drinking water, surface water, sediment and/or soil contamination have been reported to DNR at other locations around the state. DNR is working with the responsible parties to ensure proper investigation and remedial action at these sites, and to ensure Wisconsin citizens have access to safe drinking water.

EPA has committed to propose additional PFAS monitoring in the UCMR5 cycle utilizing newer methods to detect more PFAS and at lower reporting levels than what was possible under the UCMR3. EPA expects to publish the final UCMR5 rule by December 2021. The sampling would ensue in the three years following enactment of the rule, meaning that new sampling results from municipal water supplies would not be available until 2025 or later.

Action

WisPAC recommends that the state conduct statewide drinking water testing, following suit with testing initiatives by Illinois, Indiana, Michigan, Minnesota, and Ohio. The testing would include all municipal systems, as well as some other priority community and non-community water systems. In addition to identifying any public health concerns and mitigating them, the data collected would help develop a base of environmental and economic information for new PFAS drinking water and groundwater standards. If sampling occurs, the systems will be required to public notice if the PFAS exceed a state or federal health advisory levels. These systems will be required to monitor for specified PFAS substances and public notice once public drinking water standards are established.

Time to Initiate
This is ready to implement with sufficient resources.

Proposed Lead Agency
DNR

Proposed Partnership
Wisconsin Department of Health Services (DHS), Wisconsin Public Service Commission (PSC), EPA

Type of Action
- Budgetary

Reason for Action
PFAS occurrence information is crucial to complete an accurate economic analysis of PFAS drinking water standards for rulemaking. The monitoring will assess current public health impact and will lead to information that will reduce exposure.

Statewide testing of public drinking water systems is essential to maintain quality of drinking water at or below proposed standards.

Anticipated Resource Needs
It is expected that additional state funding ($750,000) will be required to fully implement this action, in addition to the federal funds the DNR received in 2020.

Additional Information
During the Action Plan's public comment period, many comments were submitted with respect to details and specifics of Action Item 2.4 implementation. When it is time to create an implementation plan, it is important to reference the comments submitted in order to incorporate and better understand that public's needs.

The following comment or proposed action related to this action was forwarded through the Local Government external advisory group:

- LGU: We need to better understand the complex science of PFAS total exposure and impacts, verifiable analytical methods, and real-world risk before providing common health standards.

3.1

Partner with Firefighting Associations and Municipal Airports

Background

PFAS-containing firefighting foams are used to suppress and extinguish high-hazard flammable liquid fires, which are typically referred to as class B fires. Most Wisconsin fire departments, and all commercial service airports, currently have and use PFAS-containing foams. There are approximately 830 fire departments in Wis., and at least 8 aircraft rescue and firefighting (ARFF) units at commercial service airports.

In January 2020, DNR initiated a survey of all state fire departments and airports asking about their use and storage of PFAS-containing foam. As a result of developing and conducting the survey, informal partnerships have been established with leaders of the Wisconsin State Fire Chiefs Association (WSFCA) and the Wisconsin State Firefighters Association (WSFA), as well as the Wisconsin Airport Managers Association (WAMA). DNR has also worked with the UW Technical College System's Fire Service Training Center director, the Fire Safety program at DSPS, and the Bureau of Aeronautics at DOT.

Action

WisPAC recommends that the state establish and enhance two formal, collaborative partnerships with leaders and key members of: (1) state's firefighting community and (2) municipally owned airports to sustain relationships with these firefighting partners, and help minimize environmental and personal exposures to fluorinated compounds, and to help them as they develop new processes, protocols, and best management practices for Class B type fires.

These partnerships could develop outreach materials for education of fire departments and others impacted by Wis. Stats. § 299.48 pertaining to the regulation of testing, containing, treating, storing or disposing of firefighting foam with intentionally added PFAS. Like other states, such formal partnerships could establish joint training sessions, establish best management practices and could work on evaluation of personal protective and necessity of it containing PFAS. Work with researchers, fire departments and others on protective, PFAS-free alternatives for personal protective equipment for first responders.

These collaborative groups could also explore recommendations for funding for local government and volunteer fire department purchase of non-fluorinated foam and training for using such non-PFAS foams.

Time to Initiate

This was initiated Fall 2020.

Proposed Lead Agency

Department of Natural Resources with DOT and DHS

Proposed Partnership

Wisconsin Fire Chiefs Association, Wisconsin State Firefighter's Association, Wisconsin Airport Managers Association, fire departments and other interested members of the public

Type of Action

- Budgetary
- Legislative
- Other

Reason for Action

Greater collaboration and understanding of the concerns of using PFAS-containing foams will result in: (1) reduced use and thus exposure to PFAS-containing firefighting foams and health risks for firefighters, and (2) reduced discharges of PFAS-containing foam to the environment, thus preventing costly environmental cleanups. Sustained collaboration with fire chiefs, firefighters, trainers, municipal airports, other agencies, foam manufacturers, military, researchers, and more will help everyone understand the key issues from multiple perspectives and greatly increase the likelihood of mutual success.

Anticipated Resource Needs

It is expected that additional staff time and funding may be needed to implement these actions.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "Develop a H&S Plan: Minimizing firefighters and community risk of exposure to AFFF products; Develop education and information regarding fluorine free foam (FFF); Develop education and information on PFAS foams that are being marketed as "safe" or 'safer'."

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "Provide information and assistance to aid manufacturers, fire departments and other PFAS users to transition to products and processes that avoid harmful PFAS compounds"
- "Develop better education on how to prevent future PFAS discharges"
- "Push forward suggestions on steps people can take to… safely discard PFAS containing products… and respond to foam in waterways, for example."
- "Build awareness of actions that individuals, businesses and institutions can take to prevent future PFAS discharges. For example, empowering consumers to avoid products containing PFAS will influence manufacturers to phase out their use."
- "Ensure that potential risks, such as to users of fluorinated firefighting foam or wastewater treatment plant workers, are identified and communicated to the affected populations."

3.2

Amend Firefighting Foam Law, Wis. Stat. § 299.48

Background

It has been common practice since at least the 1970s to use PFAS-containing foams to fight flammable liquid (Class B) fires. PFAS-containing foams are extremely effective in this application and are an important firefighting tool. Most Wisconsin fire departments, and all commercial service airports, currently have and use PFAS-containing foams. However, the discharge of these chemicals into the environment during testing, training and live-emergency firefighting operations responses is a major source of PFAS contamination, which may pose risks to human and environmental health.

The federal government establishes standards for firefighting foam containing PFAS through the Federal Aviation Administration (FAA) and Department of Defense (DOD) for military installations and commercial airports. In the 2020 Defense Authorization Act, the federal government directed that the DOD find an adequate replacement of PFAS-containing foam with fluorine-free foam at military installations. After October 1, 2024, the military is prohibited from using firefighting foam containing PFAS, except for use on ships. The FAA Reauthorization Act of 2018 also directed the FAA to stop requiring the use of PFAS in aircraft firefighting foams within three years. States, like Washington, have passed laws prohibiting the use of PFAS-containing foams, except for the federal agencies required to use them for emergency response. However, once a non-fluorinated foam is approved by DOD and FAA for their use, states have the opportunity to prohibit the use of PFAS foam, even for emergencies or testing.

Wis. Stat. § 299.48 went into effect in February of 2020, and limits the use of PFAS-containing foams to testing and emergency situations. The law requires the Department of Natural Resources (DNR) to adopt emergency rule and permanent rules that establish appropriate containment, treatment and disposal or storage measures for firefighting foam testing facilities. It still allows PFAS foam to be used for emergency response.

The National Defense Authorization Act also establishes guidelines for the proper disposal of firefighting foam at military sites and directs the military to develop guidance to address these issues. Specifically, all incineration of firefighting foam containing PFAS chemicals must be conducted at a temperature range adequate to break down PFAS chemicals, while also ensuring the maximum degree of reduction in emission of PFAS chemicals and must be conducted in accordance with the Clean Air Act at a facility permitted to receive the waste. The Act requires the Environmental Protection Agency (EPA) to publish interim guidance on the destruction and disposal of PFAS substances and materials, which is expected before the end of 2020.

The Federal Aviation Administration (FAA) Reauthorization Act of 2018 was passed on October 5, 2018, and states that no later than three years after the date of enactment, the FAA shall no longer require the use of fluorinated chemicals found in PFAS to meet the performance standards accepted under federal regulations. As a result of this change, the FAA and FAA-regulated facilities will no longer be required to use firefighting foams that contain PFAS.

Action

WisPAC recommends amending Wis. Stats. § 299.48 pertaining to use of fire-fighting foam with intentionally added PFAS to include a deadline and criteria for the phasing out of PFAS firefighting foam that would coincide with the federal government's timeline for the same actions. Appropriate implementation of such a law should rely upon information obtained from stakeholders and through existing partnerships. Legislation could prohibit using any surplus, PFAS-containing foam to coincide with the federal government phase out deadline and ability of the FAA or DOD to find acceptable non-PFAS foam. Establishing a legislative deadline several years in advance would provide those with PFAS foam in their inventory time to properly dispose of it. The state should assist local fire departments with funds to transition their foam inventory to non-fluorinated foams and purchasing non-PFAS foams, prior to the phase out of PFAS-containing foam going into effect.

Time to Initiate

In the next legislative session, work to amend state law, similar to the state of Washington's law, phasing out all PFAS foam with the federal deadline.

Proposed Lead Agency

DNR with DMA, DOT and DHS

Proposed Partnership

Airports (including WAMA), WSFA, WSFCA, fire departments and other interested members of the public.

Type of Action

- Legislative
- Administrative (rulemaking)
- Administrative (operations)

Reason for Action

PFAS-containing foam is one of the most clearly identifiable and accessible sources of potential contamination by PFAS. Greater collaboration and understanding of the concerns of using PFAS-containing foams will result in: (1) reduced use and thus exposure to PFAS-containing firefighting foams and health risks for firefighters, and (2) reduced discharges of PFAS-containing foam to the environment, thus preventing costly environmental cleanups.

This action and supporting work are in alignment with the current trajectory of laws and regulations dealing with PFAS-containing foams at the state and federal level.

Anticipated Resource Needs

It is expected that some additional resources will be needed for training and outreach.

Additional Information

The Wisconsin State Fire Chiefs Association has indicated a significant need for a list of Class B foams that are verified to be effective and PFAS-free.

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "Develop a H&S Plan: Minimizing firefighters and community risk of exposure to AFFF products; Develop education and information regarding fluorine free foam (FFF); Develop education and information on PFAS foams that are being marketed as 'safe' or 'safer'."

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "Provide information and assistance to aid manufacturers, fire departments and other PFAS users to transition to products and processes that avoid harmful PFAS compounds."
- "Develop better education on how to prevent future PFAS discharges."
- "Push forward suggestions on steps people can take to… safely discard PFAS containing products… and respond to foam in waterways, for example."
- "Build awareness of actions that individuals, businesses and institutions can take to prevent future PFAS discharges. For example, empowering consumers to avoid products containing PFAS will influence manufacturers to phase out their use."
- "Ensure that potential risks, such as to users of fluorinated firefighting foam or wastewater treatment plant workers, are identified and communicated to the affected populations."

3.3

Develop and Apply Best Management Protocols (BMPs) for Proper Handling of PFAS-containing Waste

Background

Due to their widespread use, and the approximate 5,000 individual chemicals within the PFAS group, these chemicals have many and varied pathways into waste streams and environmental media (e.g., groundwater and soil).

Determining the appropriate method for ultimate disposal, treatment, storage and containment methods for solid wastes and contaminated media (e.g., soil or groundwater) containing PFAS is a complex issue due to their varied volatility, solubility, and environmental mobility and persistence. Examples of PFAS waste include contaminated soil, wastewater and groundwater, but also include consumer products such as certain nonstick cookware, personal care products, grease-resistant papers, stain-resistant carpeting, textiles and furniture as well as industrial byproducts from PFAS use in manufacturing.

PFAS compounds can be found in solid or hazardous wastes, or environmental media such as soil and sediments. It can be determined that a waste includes PFAS by waste generator knowledge, industry standards and safety data sheets, sampling and analytical information, or a combination of information sources. Presently, soil contaminated with PFAS is considered a solid waste, but not a hazardous waste. Many other types of solid waste or contaminated media may have regulations that manage the materials from cradle-to-grave. However, given the emerging nature of PFAS, those regulatory safeguards generally have not been put in place on a national or state level for PFAS.

Newly enacted Wis. Stat. § 299.48 prohibits training with firefighting foam with intentionally added PFAS as of September 1, 2020. Further, it requires those that test PFAS-containing firefighting foam to have appropriate containment, treatment and disposal or storage measures to prevent discharges of foam to the environment. The Department of Natural Resources (DNR) is required to promulgate emergency and permanent administrative rules to “determine the appropriate containment, treatment, disposal or storage measures for testing facilities to prevent discharges of foam to the environment.”

Action

WisPAC recommends that guidance and best management practices be developed for generators of PFAS containing solid waste, and environmental media including wastes from manufacturing, water treatment systems and environmental cleanups, on proper disposal, storage and treatment methods that contain, destroy or permanently keep PFAS out of the environment. Once there is enough experience with those BMPs and U.S. Environmental Protection Agency (EPA) research has addressed several of the waste treatment and disposal issues, the DNR should amend the relevant portions of DNR's administrative rule series to include standards for PFAS testing, sampling, lab certification, treatment, storage, disposal and transportation.

To ensure that resulting BMPs and any administrative rule amendments comprehensively address the handling of PFAS-containing waste and include practicable measures, consultation and collaboration with a broad set of partners is important. Early input from those who will use or be impacted by application of the BMPs and ultimately administrative rules is crucial to their successful development and implementation.

Time to Initiate

Aspects of this action item are already underway, but require additional work to be fully implemented, including administrative rule amendments.

Proposed Lead Agency

DNR

Proposed Partnership

Regulated community, other states, EPA, local governments, consultants, university researchers, businesses, other states, and other stakeholders

Type of Action

- Legislative
- Administrative (rulemaking)

Reason for Action

As noted above, this effort is meant to prevent further discharges and exposures by containing and managing waste properly. Until safe alternatives to PFAS are developed, these compounds will continue to be parts of waste streams, leading to potential downstream environmental and health impacts.

Anticipated Resource Needs

It is expected that additional resources are required to fully implement this action, potentially including a specific biennial budget request for funds for staff and research.

Additional staff time is needed to focus on collecting, analyzing, and presenting/summarizing data. Continuing staff time will be needed for public engagement, and to gather new information over time as more research results become available. Minimal funding may be needed for publications and roll out of information.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "The WisPAC Action Plan should include a focused effort from regulators to develop guidance, BMPs and regulation specific to PFAS, including handling and disposing of PFAS waste from contaminated sites."
- "The WisPAC Action Plan should include development of Best Management Practices for biosolids, landspreading and disposal options for PFAS-containing waste and wastewater."
- "The WisPAC Action Plan should require state agencies to… focus resources on research needed to better understand… and treatment and disposal."

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "Develop better education on how to prevent future PFAS discharges"
- "Research and develop best management practices for all parts of PFAS lifecycle (including treatment, disposal and destruction), including leachate and biosolids"
- "Management of POTW/WWTP sludges and biosolids is a significant concern which may not yet be fully understood."
- "Push forward suggestions on steps people can take to… safely discard PFAS containing products… "
- "Develop outreach to assist manufacturers in identifying and potentially avoiding materials and processes throughout the supply chain that may contribute to PFAS releases."

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3.4

Identify PFAS Sources and Reduce Discharges to Wastewater Facilities

Background

Wastewater treatment facilities, as built in the last several decades, were not designed to treat, contain or destroy PFAS contaminants to the levels that would otherwise be considered protective. For the most part, PFAS is not treated or destroyed in a wastewater facility; more likely PFAS substances simply pass through by bio-accumulating in the solids of the facility or being discharged to surface waters with little or no reduction in concentration. PFAS-containing biosolids are dewatered and applied to farm fields in compliance with standards that were not developed to address safe application of PFAS. As a result, there are concerns about impacts of these PFAS-containing biosolids to groundwater, drinking water, surface water, sediment and soil, and the resultant impact on humans and the environment.

First and foremost, it is important to educate businesses that dispose of wastewater via a Wisconsin Pollutant Discharge Elimination System (WPDES) permit and the municipalities that accept it regarding the need to know the products and by-products they are dealing with, and whether they contain PFAS. For those businesses that must rely on PFAS-containing products, efforts are needed to use pre-treatment to minimize or eliminate the discharge of PFAS to the wastewater facility. Lastly, wastewater treatment facilities may need to sample their influent to determine which businesses may be contributing unintended levels of PFAS to the Wastewater Treatment Plant (WWTP).

Action

WisPAC recommends the following actions, in order of priority (higher to lower):

1. Work with municipalities, WPDES holders and businesses to identify PFAS substances in their products and processes and minimize or eliminate those sources to the extent possible.
2. Sample the influent from those businesses to the WWTP to identify sources, and work with them on changing processes, products or eliminating PFAS discharges.
3. Work with municipalities to evaluate and identify the primary PFAS sources contributing to the WWTP and take educational or regulatory measures to address those discharges.

Time to Initiate

This can be implemented immediately.

Proposed Lead Agency

Department of Natural Resources (DNR)

Proposed Partnership

Municipalities, WPDES permit holders, businesses

Type of Action

- Budgetary
- Legislative
- Administrative (operations)
- Other

Reason for Action

Minimizing the amount of PFAS that goes into WWTPs and effectively treating the remainder will help mitigate the inadvertent discharge of PFAS contaminants through land spreading of biosolids or discharge of PFAS containing effluent.

Anticipated Resource Needs

It is expected that additional budget needs are required to fully implement this action, including funding for sample analysis.

Additional Information

During the Action Plan's public comment period, many comments were submitted with respect to details and specifics of Action Item 3.4 implementation. When it is time to create an implementation plan, it is important to reference the comments submitted in order to incorporate and better understand that public's needs.

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "The Action Plan should also include investigation of regulatory tools local governments and/or the DNR could use to reduce the volume of PFAS pollutants discharged into sewer systems. This could include the development of model ordinances for implementation of those regulatory tools, where practicable."
- "The Action Plan should also include development of a model Industrial User Survey, which would assist POTWs in identification of potential sources of PFAS that contribute to the sewerage system."

4.1

Develop PFAS Risk Communication Infrastructure

Background

Comprehensive and proactive risk communication through accessible channels to impacted businesses and communities is a key variable in supporting Wisconsin across both the economic and public health impacts of PFAS contamination. The need for effective risk communication was called out by Governor Evers in Executive Order No. 40, where he requested that the state develop a public information website specific to PFAS.

Action

WisPAC recommends that the state undertake measures to develop PFAS risk communication and public education infrastructure. This includes the following items:

- Construct and launch a central PFAS website supported by all relevant state agencies.
- Create a unified, multi-agency communication strategy that will outline the development and implementation of targeted messaging and communication materials to engage the public, local governments and businesses.
- Engage state agencies, school districts and boards to share PFAS-related educational materials with K-12 programs, modeled after standing initiatives like Green & Healthy Schools Wisconsin.
- Involve the public in legislative decisions and rulemaking through listening sessions, public comment periods and other opportunities for active engagement, hosted through accessible virtual platforms such as Zoom web conferencing.
- Partner with environmental entities on a federal level, including the U.S. Environmental Protection Agency (EPA), Environmental Council of the States (ECOS), and Interstate Technology & Regulatory Council (ITRC), to develop consistent risk communication.
- Consult with municipalities, permit holders, community members, etc. in developing information, including resources for assessing risk, exposure and long-term impact. These resources should be accessible online, and also include tools and templates for tailored use within their community.

Time to Initiate
This can be implemented 7–12 months from now.

Proposed Lead Agency
Department of Natural Resources (DNR)

Proposed Partnership
Department of Health Services (DHS), Department of Public Instruction (DPI), school districts, local government (including local health departments), local media, community organizations, stakeholder groups

Type of Action
- Budgetary
- Administrative (operations)
- Other

Reason for Action
Communication and education are important steps toward building an empowered and informed public that can self-advocate and work within individual communities or industries to assess and understand risks, work to solve problems and grow new and better infrastructure.

Anticipated Resource Needs
It is expected that some additional staff and financial resources are required to implement this action, including:

- Staff time dedicated to participating in a task force, building a website and creating a communication strategy and associated materials.
- Funding for the creation and dissemination of information through multiple channels.

Additional Information

Risk communication was one of the most common themes addressed in comments received from the public during WisPAC's initial public outreach via online survey in February 2020. Comments fielded in the public survey identified a lack of consistent, accessible, accurate and up-to-date information as a significant impediment to assessing risk and enabling families and communities to make decisions.

Additionally, survey submissions as well as comments offered in the local government and citizen advisory group meetings pointed to the need for general outreach efforts to be undertaken with an awareness to the challenges that underprivileged and minority communities face in gaining access to information, including language barriers. WisPAC was also advised by these groups to be mindful of the sovereignty of our tribal partners and to offer them the information and resources they need to manage the impacts of PFAS contamination in their communities as they see fit.

4.2

Facilitate Environmental Justice and Health Equity in Wisconsin Communities

Background

While health studies have determined that PFAS substances are detectable in the blood of 98% of the human population, further studies have shown that communities of color and low-income communities are disproportionately impacted by PFAS contamination. At least in part, this can be explained by the potential for PFAS exposure through the consumption of contaminated food or water. Tribal and other subsistence fishing communities depend on harvesting fish as a food source, thus making them especially vulnerable to PFAS through this pathway.

In Executive Order No. 40, Governor Evers emphasized that PFAS is widespread and has been "detected in several counties, cities, villages and towns throughout Wisconsin", "including in drinking, ground, and surface water and the tissue and blood of fish and wildlife". In the "absence of federal enforceable regulatory standards" there is a "need for unified response from the executive, state agencies, and the legislature to protect public health and state natural resources." It is the responsibility of the state government to be mindful of systemic bias and to ensure that the allocation of information and resources is equitable between impacted communities.

Action

WisPAC members recommend the following actions can be taken to better address environmental justice and health equity.

WisPAC – Environmental Justice and Health Equity Advisory Group

- Create an Environmental Justice and Health Equity Advisory Group with members from WisPAC agencies that is representative of communities of color, low income communities, and those working to reduce disparities and improve outcomes.
- Coordinate with the Governor's Health Equity Council as appropriate.

All Agencies – Community Participation

- Ensure opportunities for community participation through listening sessions, advisory bodies, etc.
- Specific outreach to and engagement with:
    - Youth
    - Low-income communities
    - Communities of color
    - Tribal Nations

All Agencies – Accessible Information

- Ensure more information is available and there is a better understanding of areas and populations impacted.
- Use U.S. Census tract data whenever possible; or zip codes as the next best option.
- Assure information is accessible and written in plain language.
- Assure culturally and linguistically accessible and informed resources.

All Agencies – Community Resources

- Ensure services are available for communities (and developed with/by communities); e.g., water access when wells are deemed unusable, food alternatives when consumption advisories are issued, etc.

Department of Health Services (DHS) in partnership with Relevant Agencies – Community Risk Assessments

- Ensure that communities can request a health risk assessment in a simple and convenient way and that health assessment results are provided in a manner that can be easily understood by affected communities.

Department of Justice (DOJ) – Legal Action

- Take appropriate legal actions against companies responsible for PFAS discharges.

Time to Initiate
This is immediate and ongoing.

Proposed Lead Agency
All agencies

Proposed Partnership
Community organizations, general public

Type of Action
- Budgetary
- Legislative
- Administrative (rulemaking)
- Administrative (operations)
- Research
- Other

Reason for Action
Clean water, natural resources and public health for all are an imperative for the Governor, the legislature, and the people of Wisconsin. We share one Wisconsin and need to be united in the pursuit of healthy communities.

Public policies and private sector decisions have made communities of color and low-income communities more vulnerable to environmental pollution. These communities often have fewer resources to help mitigate known problems, especially as communities are often required to pay for the testing and clean-up.

Anticipated Resource Needs
It is expected that additional staffing/budget/training/other are required to fully implement this action, including:

- Funding for potential new projects, additional resources to projects that are underfunded and additional resources for translation and additional outreach.
- Training for existing staff; potentially additional staff resources needed to support additional outreach to and engagement with communities (e.g., advisory bodies, citizen groups, etc.).
- Translation and interpretation services.

Additional Information
Submissions through the public survey identified a need to address environmental racism and disproportionate harm to underprivileged and minority communities caused by PFAS contamination.

Other states have leveraged funds derived from environmental litigation to support communities that have been impacted by PFAS contamination.

4.3

Develop and Promote New Partnerships to Increase Understanding of PFAS

Background

While our understanding of the environmental occurrence and impacts, human exposures and health risks, and valid mitigation and remediation approaches associated with PFAS in Wisconsin continues to grow, there remains much to learn. Wisconsin has a strong history of collaboration among state agencies, academic institutions, and other organizations on multidisciplinary approaches to understanding and addressing complex, technical challenges inherent to environmental issues, like PFAS.

Action

WisPAC recommends that new partnerships be formally created that draw from all levels of Wisconsin's government, academic organizations and other stakeholders to expand our understanding of PFAS in Wisconsin and advance solutions to the complex challenges they pose to society.

The partnerships, comprised of varied interested parties, could take the form of:

- Topical workgroups focused on addressing specific PFAS-related issues (an example of which might be implementation teams focused on Action Items within this plan).
- Information and knowledge sharing forums.
- Applied research and innovation incubators used to bring new technical solutions into use.
- Collaborative communications hubs that ensure the availability of consistent and comprehensive information on PFAS.
- Coordinated regional collaboration across the Great Lakes states.
- Volunteer groups – focused within communities or more broadly – enabled to be a part of information gathering and sharing, propose and implement solutions, and engage with PFAS across agencies and partnerships.

WisPAC is the "PFAS coordinating council" established by Governor Evers' Executive Order No. 40, and as such is well positioned to bring together interested parties to help build these partnerships, and to provide a form of sponsorship. These partnerships should ensure the State is well-positioned to pursue funding opportunities that will contribute to these sustained efforts.

Partnership is the key to success in learning about and addressing PFAS in Wisconsin. Establishing shared goals and understanding each partner's ability to contribute to those goals is central to that success.

Time to Initiate

This action is already underway but requires additional and continuing work to fully implement.

There are already ongoing conversations between some WisPAC member agencies (University of Wisconsin (UW), Wisconsin State Lab of Hygiene (WSLH), Department of Health Services (DHS), Department of Natural Resources (DNR)) about enhanced collaboration to address research needs, and other partnerships are expected to form out of the implementation phase of this plan.

Proposed Lead Agency

DHS, with DNR collaboration

Proposed Partnership

All levels and branches of government, academic organizations, private sector, non-governmental organizations (NGO), and the public

Type of Action

- Administrative (operations)
- Other

Reason for Action

Implementation of this recommendation will result in PFAS contamination concerns in Wisconsin being more comprehensively understood and responded to appropriately, protecting Wisconsin communities and ensuring solid science and data underlie public health assessment and environmental clean-up decisions.

Anticipated Resource Needs

It is expected that some additional financial or in-kind support from some WisPAC member agencies, where appropriate, may increase the chances of securing funding through federal grant opportunities. Additional resources may be needed to ensure accessibility to all partners, including through enhanced virtual connections and translated information and resources.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "Encourage information sharing from and with Wisconsin DNR regarding remediation technologies."

4.4

Develop Exposure Reduction Recommendations for Public Sector Employees

Background

Certain occupations may lead to a higher chance of exposure to PFAS. For example, fire fighters (along with foresters and military personnel) may be exposed to PFAS from many sources including certain foams used during emergency operations, coatings used to make their turn out gear waterproof and the many toxins emitted during a fire. A study by a United Nations Independent Panel of Experts concluded a PFAS study revealing that there is “unequivocal evidence” that firefighters using chemicals containing PFAS to fight fires have high levels of toxic chemicals in their blood in comparison to the general public.

Action

WisPAC recommends that DSPS, in conjunction with partner agencies, develop a working guideline to increase awareness around PFAS for certain higher-risk public sector employees and to reduce their overall risk of exposure.

A priority is to address first responders – specifically those in firefighting operations – in this guidance. Specifically, it should be a priority to identify alternatives to PFAS-containing personal protective equipment for firefighters and, if no alternatives are available, to identify and support ongoing efforts to develop that equipment. Over time, guidance for other types of workers will be developed. The guideline(s) will need to be modified as appropriate to reflect advances in research as they become available.

Time to Initiate
This is already underway – but requires additional work.

Proposed Lead Agency
Department of Safety and Professional Services (DSPS)

Proposed Partnership
Department of Health Services (DHS), Department of Administration (DOA), Wisconsin Air National Guard (WANG), Department of Defense (DOD)

Type of Action
- Administrative (operations)
- Other

Reason for Action
Protecting the state's first responders from preventable exposures will benefit the individuals, their families and communities that they serve.

Many states have already implemented either full or limited prohibitions and bans on the use of PFAS-containing firefighting foam; and there are fluorine-free Class B foams being used worldwide.

In the 2020 NDAA, there were many provisions that emphasized the importance of transition and development of fluorine-free foams.

Anticipated Resource Needs
No special funding is necessary. A single staff person can prepare initial guideline with assistance from partner agencies. Expansion to consider a more comprehensive list of emergency and other types of professionals might require additional resources.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- Develop a H&S Plan: "Minimizing firefighters and community risk of exposure to AFFF products"; "Develop education and information regarding fluorine free foam (FFF)"; Develop education and information on PFAS foams that are being marketed as 'safe' or 'safer'."
- "The most significant action we need to take today is to remove these chemicals of emerging concern from commerce..."

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "Ensure that potential risks, such as to users of fluorinated firefighting foam or wastewater treatment plant workers, are identified and communicated to the affected populations."

4.5

Enhance Collaboration Between Wisconsin and Federal Agencies on PFAS Relating to Military Installations

Background

There are several military installations in Wisconsin where there are known or suspected PFAS contamination concerns. The Wisconsin Department of Natural Resources (DNR) and Wisconsin Department of Health Services (DHS) have positive working relationships with the Department of Defense (DOD), United States Geological Survey (USGS), and Wisconsin Air National Guard (WANG) in the Department of Military Affairs (DMA), on addressing traditional contaminants at their sites, such as petroleum and volatile organic compounds. With the passage of the National Defense Authorization Act (NDAA) in 2020, all parties would benefit from enhanced collaboration on PFAS and improved understanding of the resources in, and expectations set forth in, the 2020 NDAA to successfully investigate and cleanup impacted sites in Wisconsin.

Action

WisPAC recommends that the state of Wisconsin, including the DNR, DHS, and WANG should establish a formal working group with the relevant military service branches of the DOD and, as appropriate, the USGS to enhance collaboration on and implementation of PFAS initiatives in Wisconsin. There are many resources and tools identified in the 2020 NDAA that could be initiated in the state. This group should explore which tools would aid in collaboration on PFAS policies, and ultimately how these tools would help the public and governmental entities in addressing PFAS contamination at military sites.

Specifically, the 2020 NDAA establishes several initiatives that are required of certain federal agencies pertaining to PFAS. This information is beneficial to the public, as it provides tools, resources and deadlines for limiting and phasing out the use of PFAS in firefighting foams and conducting research and developing guidance on PFAS use and cleanup. The NDAA establishes deadlines and limitations on training and testing with PFAS-containing. In addition, it contains opportunities for state and DOD collaboration, such as:

- SEC. 332. COOPERATIVE AGREEMENTS WITH STATES TO ADDRESS CONTAMINATION BY PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES. (a) COOPERATIVE AGREEMENTS.— (1) IN GENERAL.—Upon request from the Governor or chief executive of a State, the Secretary of Defense shall work expeditiously, pursuant to section 2701(d) of title 10, United States Code, to finalize a cooperative agreement, or amend an existing cooperative agreement to address testing, monitoring, removal, and remedial actions relating to the

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contamination or suspected contamination of drinking, surface, or ground water from PFAS originating from activities of the Department of Defense by providing the mechanism and funding for the expedited review and approval of documents of the Department related to PFAS investigations and remedial actions from an active or decommissioned military installation, including a facility of the National Guard.

- SEC. 7333. NATIONWIDE SAMPLING. (a) IN GENERAL. — The Director shall carry out a nationwide sampling to determine the concentration of highly fluorinated compounds in estuaries, lakes, streams, springs, wells, wetlands, rivers, aquifers, and soil using the performance standard developed under section 7332(a). (b) REQUIREMENTS.—In carrying out the sampling under subsection (a), the Director shall— (1) first carry out the sampling at sources of drinking water near locations with known or suspected releases of highly fluorinated compounds; (2) when carrying out sampling of sources of drinking water under paragraph (1), carry out the sampling prior to and, at the request of the Administrator, after any treatment of the water; (3) survey for ecological exposure to highly fluorinated compounds, with a priority in determining direct human exposure through drinking water; and (4) consult with— (A) States to determine areas that are a priority for sampling; and (B) the Administrator— (i) to enhance coverage of the sampling; and (ii) to avoid unnecessary duplication.

Time to Initiate
This is to be determined, based on more specific implementation planning.

Proposed Lead Agency
DNR

Proposed Partnership
DHS, DMA including WANG, Federal DOD, and USGS

Type of Action
- Administrative (operations)

Reason for Action
There are several federal and state military installations that have confirmed or have the potential for PFAS contamination that requires investigation and cleanup in Wisconsin. Establishing a more formal, collaborative partnership that maximizes the resources and tools established in the 2020 NDAA and other sources will accelerate the cleanup of these sites, increase the transparency of all parties' efforts and clarify the environmental standards that apply to the sites.

Anticipated Resource Needs
It is expected that additional staffing or reallocation of staff time is required to fully implement this action.

Additional Information
Cooperative agreements will be more effective with the promulgation of enforceable standards for groundwater that are currently being developed.

Wisconsin will rely on federal funding for DOD cleanups to the extent practicable. Provisions in the 2020 NDAA provide additional mechanisms (including funding) for PFAS-related investigations and cleanup.

5.1

Collaborate On and Implement Research

Background

PFAS are a group of emerging contaminants. While it is known that some PFAS have significant prevalence, stability, toxicity, and mobility concerns, the degree and extent of these properties in various media and various PFAS compounds are still poorly understood, due to little or no public health studies on their impacts. This limited understanding has resulted in the following unique issues:

- **BASELINE DATA:** Since PFAS sample collection and analysis is an emerging science, there is limited information on PFAS concentrations state-wide for all environmental matrix types. Knowing these PFAS baseline concentrations is required to move forward and make informed decisions about monitoring and regulation. The Wisconsin Department of Natural Resources (DNR) is in the process of developing standards for groundwater, drinking water, soil, and surface water, but generally only for two (PFOA and PFOS) of the over 5,000 known PFAS compounds. There is a need to expand toxicological information for more of the commonly detected PFAS, as well as document their presence in other media such as air, fish and wildlife tissue, sediment, human blood, or landfill leachate.
- **VARIABILITY:** As a result of their significant mobility, persistence, and prevalence, PFAS are detected in almost all the above-referenced media. There is a need to better understand the variability of PFAS concentrations that can exist in such media and the factors that enhance or limit PFAS migration between media. Otherwise it can be difficult to interpret sampling results from potential source areas.
- **REMEDIATION:** The significant general mobility and toxicity of PFAS, limited understanding of their fate and transport, significant differences between individual PFAS compounds, and highly stable chemical structures (PFAS are extremely difficult to degrade or remediate and do not degrade naturally), have resulted in issues associated with treatment and disposal of PFAS-impacted media. At this time, PFAS are difficult to remove from these media and known PFAS-impacted media are all disposed at out-of-state locations. There is also a need to better understand which types or suites of PFAS are associated with specific industries.
- **ANALYTIC CAPACITY:** While the DNR currently offers laboratory certification for a suite of 36 PFAS compounds and may adopt an expanded suite once the Environmental Protection Agency (EPA) finalizes its new method, this list only includes a small fraction (albeit the most common) of the over 5,000 known PFAS compounds. Even with this limited list of analytes, PFAS analyses are expensive and time consuming compared with many other types of analyses.
- **COORDINATION & COLLABORATION:** While PFAS-associated research is being done by the University of Wisconsin System, Wisconsin State Laboratory of Hygiene (WSLH), private entities, EPA, other states and other groups outside the State of Wisconsin, there are significant challenges associated with obtaining research funding, tracking research, and avoiding duplication of efforts.

Limited research has been conducted in these areas, but significantly more is needed in order to address these issues, and likely others in the future.

While human health and toxicity is also an important research area, it is not addressed in this Action Item because it already underpins the development of standards (Action 1.1) and is also addressed in Actions 2.1, 5.2, 7.1, and 8.1. In addition, the Wisconsin has relied on federal partner agencies, such as EPA, Centers for Disease Control and Prevention (CDC) and Agency for Toxic Substances and Disease Registry (ATSDR), as well as research in other countries and states to inform public health decisions rather than conducting original health research on specific substances.

Action

WisPAC recommends several activities that fall within three categories:

1. Wisconsin-Specific PFAS Research,
2. General PFAS Research, and
3. Collaboration.

Wisconsin-Specific PFAS Research: State of Wisconsin entities (DNR, Department of Health Services (DHS), UW System (including the various campuses, UW Sea Grant, and WSLH), Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP), etc.) are well poised to focus on issues that are specific to the State of Wisconsin. This includes the collection of samples from various media (soil, sediment, surface water (including wastewater and surface water along the Great Lakes), air, groundwater, biosolids, landfill leachate, fish and animal tissue, and human blood) throughout the state to gain a better understanding of the typical spatial distribution of PFAS concentrations in these media and between sub-media (e.g., groundwater from different types of aquifers or leachate from different types of landfills). The sampling will also likely reveal previously unidentified source areas so that they can be properly remediated or otherwise addressed.

General PFAS Research: The State of Wisconsin also benefits from PFAS-related research that is widely transferrable and generally conducted by university researchers both inside and outside the State of Wisconsin, or Federal agencies within Wisconsin working at regional or national levels.

Some areas of general PFAS research that have been identified as priorities include, but are not limited to, the following:

- Fate and Transport: A better understanding is needed of how different PFAS compounds migrate within and between environmental media such as air, surface water, sediment, wastewater, stormwater, groundwater, soil, biosolids, fish and animal tissue, and humans. These migration patterns are complex because they depend upon the type of PFAS compound, the type of media, and the specific chemistry of that media. This fate and transport understanding will partially guide the development of future standards for the various media.
- Fingerprinting: Specific manufacturing processes and the timeframes linked to those processes are associated with specific suites of PFAS compounds that vary between media. However, these correlations are not well understood at this time. Fingerprinting research will enable regulators to identify potential, primary (e.g., direct discharge by manufacturers or from firefighting foams) and secondary (e.g., landfills, biosolids and compost spreading sites, and wastewater treatment plants) sources based upon the relative concentrations of various PFAS compounds and remediate those sources. Fingerprinting will also help identify the standard and/or site-specific suite of PFAS compounds that DNR needs to require for laboratory analysis.
- Remedial and Treatment Technologies: The DNR's Remediation & Redevelopment Program regulates dozens of sites with PFAS impacts. The degree and extent of remediation conducted at these sites depends largely upon the feasibility of various remedial methods,

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per Wis. Admin. Code § NR 722.07(3). A better understanding of the availability of remedial technologies and their effectiveness is needed in order to facilitate the maximum degree of remediation, treatment of drinking water, and proper disposal of PFAS-impacted media. This will be an ongoing area of research as new PFAS remedial technologies are constantly being developed, tested, and implemented. A better understanding of remedial technologies will be particularly important for potentially impacted potable water sources. Other possible benefits of remediation and treatment advancements include reducing the spread of PFAS away from source areas and reducing the total mass of PFAS that is circulating in the environment, which is important because PFAS do not degrade under naturally occurring conditions.

- **Source Reduction:** A better understanding of which consumer products contain PFAS and the necessity of those PFAS compounds or availability of substitute compounds in the manufacturing processes would allow the State of Wisconsin and other entities within the state reduce their own discharges.
- **Laboratory Analysis:** With over 5,000 known PFAS compounds, it is not currently possible to include every single PFAS compound on the standard analyte list. Furthermore, laboratory analytical standards do not exist for most PFAS, making quantification of these substances not currently possible. The DNR certifies laboratories for PFAS analysis, based partially upon the list of analytes reported. While this list may continue to be expanded or refined based upon better understandings of the most common PFAS in various situations, currently available technology does not make it possible to analyze for every individual PFAS compound. The identification and implementation of various PFAS screening tools (e.g. new measurements of total organic fluorine) for different situations (by WSLH or external entities) that are both accurate and cost effective could lead to efficiencies in other areas of research. The WSLH's integration with a major research university is rare among environmental laboratories. As a result, it is in a unique position to advance laboratory screening methods (e.g. efficient analyses of "total organic fluorine") that may not be deployed by EPA. The State of Wisconsin and rest of the nation would benefit from the development of new and better screening methods.

As noted in Action Item 1.1 related to standards setting, PFAS are not currently evaluated as a class. The state will continue to evaluate science-based information in order to determine the necessity to regulate PFAS as a class, individual compounds or both. As more technical information becomes available, DHS will continue to determine when human health risk assessments should include evaluation of the mixtures of PFAS present.

Collaboration: Research will require significant funding and the various entities will need to collaborate in order to identify priorities, avoid duplicating efforts, and leverage funding for those priorities. WisPAC is therefore recommending the establishment of an interagency research group with appropriate representatives from the UW System and state agencies that will collaborate on research opportunities, share and discuss the results of PFAS-related research conducted within and outside the State of Wisconsin, and discuss how those results should be applied within the State of Wisconsin. A broad and collaborative approach will be taken when forming this group, including offering citizen and volunteer group engagement. The UW System and/or Wisconsin Groundwater Coordinating Council could serve a major role

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in this coordination, or used as a model for a more formal research group. This interagency workgroup should share a database that identifies UW System researchers, their expertise, and equipment in order to facilitate partnering and pursuing large external funding opportunities. The database could also include a list of entities that could assist with sampling such as teachers and possibly students. The cost of PFAS analysis may be prohibitive at smaller campuses, since PFAS analysis requires specialized analytical devices that are not available in all labs. The State of Wisconsin would benefit from additional funding, sharing of equipment, and/or discounted analysis rates at WSLH since obtaining funding is a slow and very competitive process.

This collaboration will also need to include external entities such as the Great Lakes PFAS Task Force, Environmental Council of the States (ECOS), United States Geological Survey (USGS), Water Research Foundation (WRF), Water Environment Federation (WEF), and EPA Office of Research and Development (ORD) as the PFAS-related research accelerates in future years. For example, the USGS will be collecting samples from various media throughout the state for PFAS analysis as part of the 2020 National Defense Authorization Act (NDAA). The planning and results of these sampling efforts will require significant collaboration and information sharing.

Time to Initiate
This is to be determined, based upon more specific implementation planning.

Proposed Lead Agency
DNR

Proposed Partnership
WSLH, UW System, DHS, and DATCP

Type of Action
- Budgetary
- Research

Reason for Action
PFAS contamination throughout the State of Wisconsin is prevalent and poses a threat to human health and the environment. A better understanding of PFAS properties and source types in general, as well as their abundance and prevalence at sites in Wisconsin, is vital in order to identify sources, establish appropriate health-protective interventions, minimize exposure to humans and ecosystems, mitigate historical discharges, and limit future discharges. Efficiently obtaining and tracking the vast amounts of PFAS-related information and obtaining research funding will require significant collaboration and communication between entities both inside and outside the State of Wisconsin.

Anticipated Resource Needs
It is expected that some additional staffing and budget are required to fully implement this action. Funding will be needed to support research efforts and access to PFAS analysis from the WSLH or other laboratories. Additional staff time and funding would also be needed at the WSLH in order to develop, validate, and implement a PFAS screening method and associated instrumentation. An emerging contaminants faculty member (or more) within the UW System would be helpful in order to lead Wisconsin research efforts. Identifying and sharing results of external research will require less funding but will still require significant staff time, particularly as the results of research are implemented into future rulemaking and other policy developments. This would likely result in the need for additional positions.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "The WisPAC Action Plan should direct state researchers to gather and assess data on chemical toxicity and environmental exposures for PFAS of highest concern; health impacts, and the effectiveness and cost of different technologies for treating or removing PFAS from different media."
- "We need to better understand the complex science of PFAS total exposure and impacts, verifiable analytical methods, and real-world risk before providing common health standards."
- "The WisPAC Action Plan should require state agencies to inventory existing research, identify gaps and focus resources on research needed to better understand toxicity of discontinued PFAS (e.g., PFOA and PFOS) and replacement compounds (e.g., GenX and PFBS), occurrence, laboratory analytical methods, and treatment and disposal."

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "Research and develop best management practices for all parts of PFAS lifecycle (including treatment, disposal and destruction), including leachate and biosolids."
- "Expand toxicology understanding."
- "Management of POTW/WWTP sludges and biosolids is a significant concern which may not yet be fully understood."
- "One suggestion was that State could consider utilizing available funding to broaden the explanation of PFAS use and industries that handle PFAS to better understand potential receptors."
- "A PAG participant suggested that establishing sampling and analysis protocol should be a priority."
- "Encourage information sharing from and with Wisconsin DNR regarding remediation technologies."

Research was one of the most commonly addressed topics in comments received from the public during WisPAC's initial public outreach via an online survey in February 2020.

5.2

Monitor Background Levels of PFAS in the Environment

Background

PFAS are persistent, water soluble, semi-volatile and bio-accumulative contaminants with physical properties that make them ubiquitous in the environment and highly mobile among various media (e.g., soil, groundwater & air). They are widely used in everyday products and packaging, as well as being present in a wide variety of industrial applications.

The Wisconsin Department of Natural Resources (DNR), Wisconsin Department of Health Services (DHS) and Wisconsin State Laboratory of Hygiene (WSLH) Lab, in partnership with researchers across Wisconsin, have been conducting PFAS monitoring for the past few years. However, most of these investigations have focused around known or suspected contaminated sites. There are likely numerous sources of PFAS contamination across the State of Wisconsin, and the background – or ambient – levels across all media (e.g., air, surface water, wastewater, biosolids, drinking water, groundwater, foam, soil, sediment, fish and stormwater) remain undetermined. Many states, such as Minnesota and Michigan, have and are undertaking statewide sampling of soil, drinking water, surface water and other media to understand the prevalence of these compounds in our environment, including fish and wildlife.

Action

WisPAC recommends that background PFAS concentrations be measured across a variety of environmental media, so that a baseline can be established against which potential contamination levels can be evaluated. Environmental monitoring and targeted research are required to enable an understanding of ambient concentrations of PFAS in all media across Wisconsin and any broad geographic trends. In the past, DNR has done such ambient sampling to determine ambient or background levels of arsenic, lead, PCBs and mercury. Assessments should be made of the following environmental media:

- Air
- Surface water
- Wastewater
- Biosolids
- Drinking water
- Groundwater
- Soil
- Sediment
- Fish
- Wildlife
- Other biota

The specific approach(es) by which each medium listed above would have ambient PFAS levels examined is provided in the “Additional Information” section at the bottom of this action item.

Time to Initiate
The collection of ambient samples can be initiated 1–6 months from now.

Proposed Lead Agency
DNR

Proposed Partnership
DHS, Environmental Protection Agency (EPA), United States Geological Survey (USGS), University of Wisconsin System (UW), WSLH

Type of Action
- Budgetary
- Administrative (operations)
- Research

Reason for Action
Wisconsin citizens will benefit from the knowledge of ambient background PFAS concentrations across the state in relation to where they live, work and recreate. Investigating ambient background concentrations in different media will allow for the identification of locations that are relatively free of PFAS. Further, the ability to compare these locations with more contaminated areas could result in a greater understanding of their relative impacts to human health and the environment, and to identify sources.

Anticipated Resource Needs
It is expected that additional budget and staff resources are required to fully implement this action, including:
- State and federal funds to support the necessary research and analysis of field samples.
- Additional staff and staff time to collect, analyze, and summarize data.

Additional Information:

How ambient levels could be assessed for specific media:

- **Air:** PFAS are semi-volatile compounds, and deposition chemistry of such compounds is complex and influences their rate of atmospheric deposition to land and water surfaces. In addition to ambient deposition monitoring, Wisconsin is among states that need to better understand atmospheric deposition and, potentially, volatilization rates. The DNR's Air Management program is learning from legal actions in other parts of the country and working through existing partnerships, defined processes and legal authority to determine a comprehensive plan to support greater understanding of the air pathway of PFAS exposure.

  Specifically, the DNR is working with the Wisconsin State Laboratory of Hygiene and EPA Office of Research and Development testing the viability of ambient air monitoring methods (wet and dry deposition) while gaining an understanding of background PFAS concentrations in Wisconsin. Additionally, combined with department efforts across other media, air expects to provide broader understanding of the air contribution to PFAS contamination in Wisconsin.

- **Surface water:** The Long-Term Trend (LTT) Rivers network watersheds cover 80% of the total land area of Wisconsin, as such these sites cover broad geographic and land use conditions. Adding PFAS chemistry data to these sites would allow the estimation of ambient PFAS concentrations in Wisconsin's large rivers and identify watersheds that are contributing higher than average conditions. Adding additional sampling (seasonal) or waterbody types (lakes) would increase the department's confidence in discerning ambient conditions from contamination that requires further investigation.

- **Wastewater:** Data on PFAS concentrations in both influent and effluent to and from industrial and non-industrial/municipal facilities will allow the department and permittees to make informed decisions on prioritization of interim efforts to address PFAS

contamination and to accurately project economic impacts of current rulemaking efforts. Such data will also allow the department to identify which industrial categories are most likely to be PFAS sources, allowing other programs to better prioritize efforts as well. It is important to characterize both influent and effluent concentrations to support development of effective treatment and source reduction strategies and determine necessity of effluent limits.

- **Biosolids:** The DNR's Water Quality program needs to gather data on the concentrations of PFAS in biosolids from both POTWs (Publicly Owned Treatment Works) receiving industrial wastewater and those that do not receive industrial wastewater. Data on PFAS concentrations of industrial waste landspread by industries is also of interest. This data will inform prioritization of department actions and will allow the department to assess the impacts of any future policies or limitations on PFAS concentrations/loading rates of landspread biosolids or industrial waste. Also of interest is data and research on the fate and transport of landspread PFAS compounds, primarily focused on mobility and potential to leach to groundwater.
- **Drinking water:** The DNR Drinking Water Program needs information on background concentrations of PFAS attributable to the source water used for drinking water supplies, it's impact to public health, as well as the potential for plumbing materials and fixtures as a potential source of PFAS.
- **Groundwater:** Multiple state agencies and DNR programs need more information on the potential of PFAS levels in precipitation and air deposition from sources, both within and outside of Wisconsin, that may lead to some level of "background" in groundwater not attributable to activities regulated in Wisconsin. When PFAS are detected in groundwater, it is necessary to be able to determine if a regulated activity needs action, or if an exemption is warranted under NR 140.28. For example, Wisconsin needs to gain an understanding of whether, or to what extent, PFAS is leaking from landfills, including older unlined landfills, construction and demolition landfills, and designed landfills with liners and leachate collection systems, into groundwater. A list of highest priority landfills for monitoring would be developed and the characterization of groundwater around highest priority landfills would be needed.
- **Soil:** The DNR's Remediation and Redevelopment Program needs soil samples in urban and rural areas with no known source activities present in order to determine background levels of PFAS. Additionally, current research suggests that PFAS behaves differently depending on the individual characteristics of a soil (e.g., pH, total organic carbon in the soil, percentage of clay in soils/grain size distribution); thus, in addition to sample collection in 'rural' and 'urban areas,' soil samples must be collected across a variety of soil types representing the types of soil present in Wisconsin in order to adequately characterize ambient PFAS levels in soils across the state. PFAS soil concentrations reported from areas with no proximal sources of contamination will help to distinguish between sources that are from contamination versus those that are background.
- **Sediment:** PFAS has an affinity for certain sediments and those sediments may be an ongoing source of PFAS to surface water and groundwater contamination when PFAS is present. Further study is required to determine the background levels of PFAS in sediment in areas across the state with no known source activities. PFAS in sediment as a source to surface water and groundwater hinges on components of the hydrologic cycle (e.g., whether streams are gaining or losing or if they are intermittent or continuous flow); thus these studies would likely also include hydrologic characterization efforts (e.g., precipitation levels, determination of gaining or losing reaches) alongside PFAS analyses. In addition, as with soil, total organic carbon and grain size determine, in part, the sediment's affinity to hold or release PFAS so total organic carbon and grain size should be included in any sediment assessment for PFAS.

- **Fish:** Fish was identified as the leading source of PFAS contamination in food in a European Food Safety Authority (EFSA) study published in September 2020. Eight inland lakes where 2020 fish contaminant sample collections are planned will also have water samples collected to be analyzed for PFAS. These paired fish and water chemistry data will be used to calculate statewide PFOS and PFOA bioaccumulation factors and is not specifically designed to monitor ambient or background PFAS concentrations. However, these sites may be less contaminated and may provide further data to assess ambient PFAS levels. Beginning in 2020, all fish sampled for contaminant monitoring purposes will also be analyzed for PFAS, which will help to determine concentrations in fish from both contaminated locations and locations with no known source activities.
- **Wildlife:** It is important to monitor the ambient impacts of PFAS on Wisconsin's wildlife, such as deer, small game, eagles and waterfowl, as well as fish. Such sampling is important to not only to measure the impacts to the species, but ultimately the consumption advice the state may provide to person consuming those species. In 2020, the DNR harvested 20 white-tailed deer from the JCI-Tyco Fire Technology Center property and tested their heart, liver, and muscle tissues for PFAS. Elevated levels of PFOS were found in the liver, but not in the heart or muscle tissues. Therefore, the DNR and DHS are advising people not to eat the liver of deer harvested from a 5-mile radius of the JCI-Tyco Fire Technology Training Center (the 5-mile radius accounts for the typical travel distance of white-tailed deer).
- **Stormwater:** The Stormwater management program needs to determine the 'background' and/or current levels of PFAS-related compounds in urban stormwater runoff and sources of the PFAS-related compounds to identify whether, and what types of, Best Management Practices are necessary to meet protect water quality and meet requirements in ch. NR 216. Watershed Management is tasked with managing agricultural and stormwater runoff and associated water quality across the state and has similar needs to the Water Quality and Office of Great Waters in understanding PFAS fate and transport.

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "PFAS sampling should be included in routine monitoring of rivers and lakes."
- "Higher levels (of PFAS) can be found in water and fish near facilities that manufactured, disposed or used PFAS. This requires differentiating high concentration sites from background concentrations."
- "The PFAS policy goal should be to determine the most effective steps needed to reduce human exposure and implement them within the broad context of protecting human health. This requires differentiating high concentration sites from background concentrations and taking action to regulate and mitigate concentrations at high use sites."

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "A PAG participant noted that determining background concentrations is important."

5.3

Collect Data on Drinking Water Treatment and Costs

Background

As a result of known and potential future PFAS detections in the public water supply, some utilities may need to adopt additional water treatment measures that result in capital investment and/or additional operating costs. At present, unless a utility creates separate subaccounts, information about utilities' treatment costs and plant values are reported as aggregate numbers on Annual Report financial and operating pages; Public Service Commission (PSC) is the primary agency responsible for regulating this reporting. In other words, it is challenging to assess and characterize financial need to respond to PFAS, yet this information would help water utilities secure financial support from the state in the face of tight budgets and new health and safety requirements.

Action

WisPAC recommends that PSC work with the Department of Natural Resources (DNR) to identify information gaps and determine an appropriate approach for collecting data regarding PFAS treatment options and associated costs, as well as disseminating this information broadly in a transparent and accessible manner.

Other efforts such as ongoing treatment research, public drinking water sampling, and the development of a guidance document by DNR regarding treatment options will help inform the magnitude of the issue and appropriate treatments to be addressed.

Options of ways to implement this action include revising appropriate PSC Annual Report pages and support materials, conducing a survey of utilities or undertaking other similar actions to develop this information and make it available.

Time to Initiate

This is ready to implement now.

Proposed Lead Agency

PSC

Proposed Partnership

DNR

Type of Action

- Other

Reason for Action

Better understanding of drinking water utility costs could help develop a baseline of current treatment costs and activities. Additional data may help better dimension the statewide scope of financial challenges facing drinking water utilities in meeting emerging regulatory requirements and could potentially be used to direct federal funding to Wisconsin in the future.

Anticipated Resource Needs

It is expected that no specific additional resources are required to fully implement this action:

Additional Information

None.

6.1

Develop and Support Product Stewardship Mechanisms to Reduce PFAS Use

Background

The manufacture of products containing PFAS is widespread – including textiles in clothing and furniture, nonstick cookware, personal care items, and grease resistant food and non-food paper packaging. PFAS contamination is a global concern. The Stockholm Convention on persistent organic pollutants (POPs) has identified a number of PFAS as targets for international bans, with more being considered for similar listing.

The use of PFAS compounds in industrial manufacturing occurs in the United States, but these compounds also appear in products imported from elsewhere. PFAS compounds are extremely effective toward their intended purpose, but there is concern that their continued use poses a risk to public health and the environment. PFAS-containing products also often enter the environment resulting from end-of-life disposal of consumer products through landfilling or composting.

Many consumers believe they are not given enough guidance on which products are safe to use and which are not. Others would like to minimize the purchase and use of PFAS-containing products. There are currently no clear PFAS labeling standards, and manufacturers are not required to divulge proprietary compounds which contain PFAS. The issue of consumer protection and end-of-product-life management of PFAS has raised questions about where and when these compounds can be permitted in manufacturing, and what standards or regulations should be put in place for product labeling.

Given their prevalence, PFAS-containing paper products (e.g., grease-resistant papers) are a heightened concern. There are approximately 25 paper companies operating mills at over 30 locations in Wisconsin. There are also approximately 200 converters that operate facilities in the state. Converters take paper produced at a mill and change it to a finished product. These products are as varied as art paper, food packaging, tissues and towels, medical papers, industrial papers, and printing and writing paper.

While some long-chain PFAS have been recently regulated or phased out of production, these substances have been replaced with shorter-chain PFAS that also may affect human health and the environment. Even when some of these longer-chain PFAS have been regulated or phased out, many recycled products potentially contain the longer-chain PFAS from both older recycled products and from products imported from other areas of the world. Additionally, the equipment and infrastructure (e.g., drains and piping) at these facilities may be contaminated with longer-chain PFAS (e.g., PFOA or PFOS), even though the facility no longer uses that type of PFAS substance.

The EPA, in its 2019 PFAS action plan stated:

> "The EPA plans to continue evaluating toxicity information for PFAS; critical information may come from investigating whether exposure to structurally similar PFAS results in similar health effects. Currently, long-chain PFAS are generally thought to present greater toxicity in humans than shorter-chain PFAS (Ritter 2010, Eschauzier et al. 2012), though the toxicities of short-chain PFAS have generally been less thoroughly studied (Danish EPA 2015). Additionally, short-chain PFAS are as persistent in the environment as their longer-chain analogues and are highly mobile in soil and water (Bergström 2014). Due to increasing global production and use, environmental and human exposure to short-chain PFAS is expected to increase over time (Wang et al. 2013). Differences in mobility, fate and persistence in the environment, as well as treatability in environmental media across the complex family of PFAS are expected to contribute to differences in potential exposures and resulting health risks in humans." (p. 13)

As of July 31, 2020, the US FDA has announced the voluntary 3-year phase-out of some short-chain PFAS compounds found in grease-proofing agents on paper and paperboard food packaging.

Ambitious targets have been set in other industrialized nations and regions around the world, including in the European Union's adoption of the UN Global Goals for Sustainable Development target for the total phasing out of PFAS by 2030.

Action

WisPAC recommends that the state of Wisconsin, working with other interested states, interested parties, and the EPA, determine essential, non-essential and substitutable uses of PFAS in manufacturing. Wisconsin and interested states should also develop a strategy to engage the federal government, product manufacturers and the waste industry in conducting a comprehensive analysis of the life cycle of PFAS products, from cradle to grave. Based on this information, the Wisconsin legislature should pass laws requiring responsible product stewardship and comprehensive and informative labeling to ensure that consumers are sufficiently informed to make healthful and environmentally sound purchasing decisions. The Toxics in Packaging Clearinghouse has draft model legislation available, based off of and already utilized by other states, to add PFAS as among regulated or banned chemicals.

More information and collaboration are needed to assist businesses that may be manufacturing or recycling products that contain PFAS. The State of Wisconsin should support companies as they look for alternative products or methods of manufacturing. This assistance could take the form of research and outreach by DATCP, DNR, and WEDC regarding the concerns associated with PFAS-containing products and viable alternative ingredients or products. The State of Wisconsin could also explore funding for businesses to make equipment changes through grants or revolving loan funds. Small businesses may find it more costly to use alternative materials, particularly if new equipment is required to use the alternate materials.

Legislation could also be enacted to phase-out PFAS when suitable alternatives are identified. For example, PFAS-containing paper products have been phased out through recent legislation in Washington, Maine, and in European countries including Denmark.

Time to Initiate

This can be implemented 1–6 months from now.

Proposed Lead Agency

DATCP, DNR, WEDC

Proposed Partnership

DHS, EPA, Wisconsin Paper Council, Wisconsin Manufacturers and Commerce, and other states that are also working towards finding alternatives

Type of Action

- Budgetary
- Legislative
- Administrative (rulemaking)
- Administrative (operations)
- Research
- Other

Reason for Action

PFAS consumers deserve to be able to make informed purchasing decisions that protect them from potentially hazardous substances that may appear in the products they purchase and use. In conducting a thorough analysis of the use of PFAS compounds in manufacturing, the state government will be equipped to ensure that the public is adequately informed and empowered in making healthy purchasing decisions. Businesses (including manufacturers) and governmental entities should have more clear information on the chemicals that make up the products that they purchase and then need to dispose of after the end of their lifecycle.

A number of states have already passed legislation that regulates PFAS use in, but not limited to, food packaging, cosmetics, children's products, and furniture. Some states have also worked to develop purchasing framework to prioritize avoiding toxic substances such as PFAS in state purchases. In addition, Federal authorities are also in the process of phasing out and banning the use of PFAS compounds.

Considering the growing calls and progress already made towards restricting or banning PFAS-containing products in many global markets, it is imperative that U.S. and Wisconsin manufacturers begin to adapt and identify replacements or alternatives.

Anticipated Resource Needs

It is expected that some additional staffing and financial resources will be required to implement this action, including staff that is dedicated to identifying alternatives and work with specialized groups that are also working on this issue.

Additional Information:

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- "The LGAG recommends that Wisconsin follow the EU's lead in developing an evaluation of PFAS-containing products, immediately phasing out "non-essential" PFAS use in products and only allowing continued use of "essential" PFAS in products until alternatives are developed with a deadline of 2030 to use only PFAS-free products."
- "The WisPAC Action Plan should include listing PFAS as potential toxins and set strict product labeling requirements for manufacturers, distributors and retailers. The plan should also include confirmation testing of products to ensure manufacturers are reporting accurate information."
- "The PFAS policy goal should be to determine the most effective steps needed to reduce human exposure and implement them within the broad context of protecting human health."
- "(Re: the PFAS policy goal) demands both a reassessment of products we produce and use daily, and a realistic assessment of how to control PFAS chemicals already in the background environment."
- "The most significant action we need to take today is to remove these chemicals of emerging concern from commerce..."
- "Source reduction and pollution prevention can serve as the most efficient means of addressing the persistent background presence of PFAS and effectively limit future exposure to PFAS."
- "The WisPAC Action Plan should require state agencies to inventory existing research, identify gaps and focus resources on research needed to better understand toxicity of discontinued PFAS (e.g., PFOA and PFOS) and replacement compounds (e.g., GenX and PFBS), occurrence, laboratory analytical methods, and treatment and disposal."

The following comments or proposed actions related to this action were forwarded through the Citizens external advisory group:

- "Provide information and assistance to aid manufacturers, fire departments and other PFAS users to transition to products and processes that avoid harmful PFAS compounds."
- "Consider necessity/value of full PFAS ban."
- "Provide better/more accessible information to the public on products containing PFAS."
- "Empower(ing) consumers to avoid products containing PFAS will influence manufacturers to phase out their use."
- "Develop outreach to assist manufacturers in identifying and potentially avoiding materials and processes throughout the supply chain that may contribute to PFAS releases."

Banning or phasing out PFAS use and PFAS-containing products was one of the most commonly addressed topics in comments received from the public during WisPAC's initial public outreach via an online survey in February 2020.

6.2

Minimize the state's purchase of PFAS-containing products

Background

The state of Wisconsin and the University of Wisconsin System are significant purchasers of consumer products for dozens of its agencies. In order to minimize the introduction of PFAS into communities through materials purchased, disseminated or utilized by the university system and state government, Wisconsin should investigate its purchasing systems and contracts, and require manufacturers/suppliers to identify the volume and content of PFAS in those products.

Action

WisPAC recommends that the state and university system establish a policy that agencies should minimize or eliminate the purchase of PFAS-containing products, unless they are a necessity or other non-PFAS containing products are not available that can adequately and cost-effectively substitute. The state should incorporate this policy into the purchasing process and provide training to state employees and vendors.

Time to Initiate

This can be implemented in 7–12 months.

Proposed Lead Agency

DOA

Proposed Partnership

All state agencies, including UW System

Type of Action

- Administrative (operations)
- Research
- Other

Reason for Action

Wisconsin should be a leader in minimizing the purchase of PFAS-containing products as well as consumer education about the implications of PFAS products and should minimize or halt their use to the extent feasible.

Anticipated Resource Needs

It is expected that some additional staff time is required to implement this action, including:

- Staff time to create and maintain a list of verified PFAS-free products.

Additional Information

None.

7.1

Provide Support to Wisconsin Veterans to Address PFAS-related Health Risks

Background

The Department of Defense (DOD) began using Aqueous Film Forming Foam (AFFF) in the 1970s to fight fuel fires. The release of these chemicals into the environment during training and emergency responses is a major source of PFAS contamination of ground water on military bases. The DOD is currently conducting several tests of military sites across the nation to determine the extent of contamination and exposure, which has implications for the health of personnel working and living at these sites. In recent years, it has been discovered that PFAS bioaccumulate in the body and may pose a number of risks to human health, including developmental problems in fetuses and infants, certain types of cancer, reduced antibody response and kidney disease.

In North Carolina, Camp Lejeune found contaminants in the water from on-base leaking storage tanks, industrial activities, and an off-base dry cleaner. The wells were shut down in 1987, and the Caring for Camp Lejeune Families Act of 2012 was passed, which provides care and funding to veterans and their family members who lived on Camp Lejeuene.

The DOD has identified eight sites in Wisconsin with known or suspected release of PFAS compounds. The main source of these compounds is PFAS-containing foams used in firefighting applications. These sites include:

- Badger Army Ammunition Plant (suspected)
- Fort McCoy
- General Mitchell Air National Guard Base
- Madison Air Support Facility
- Army National Guard
- Truax Field State Air National Guard Base
- Volk Field State Air National Guard Base
- West Bend Air Support Facility (Army National Guard)

Section 707 of the 2020 National Defense Authorization Act (NDAA) provided funding for blood testing for military firefighters. However, the legislation does not address potential PFAS-related issues for military veterans or non-firefighter personnel exposed to PFAS.

Action

WisPAC recommends that a program be implemented for Wisconsin Veterans that is similar to the one established by the Caring for Camp Lejeune Families Act in North Carolina, which afforded health-care provisions for potentially exposed individuals. The program would consist of three components:

- Blood testing for PFAS for Wisconsin military active duty and veterans that have a higher likelihood of significant PFAS exposure based upon their military occupational specialty (e.g., firefighters or other handlers of fluorinated foams). The Wisconsin Department of Health Services (DHS) should assist in coordination and interpretation of the blood sampling results.
- Enhanced funding and availability of medical services and disability benefits to address potential PFAS-related health issues for military personnel and veterans with elevated levels of PFAS in blood.
- Outreach efforts to make veterans aware of these services.

Time to Initiate

This can be implemented 7–12 months after funding is available.

Proposed Lead Agency

Department of Veterans Affairs

Proposed Partnership

Department of Military Affairs, Wisconsin Air National Guard, Wisconsin Department of Health Services

Type of Action

- Budgetary
- Administrative (operations)

Reason for Action

While military firefighters have been provided with some measure of PFAS-related health provisions through the federal government, a gap exists for service members and their families that might have been negatively impacted by the use of PFAS on military bases. Wisconsin veterans and family members might be at increased risk of developing long-term health issues, including cancer, not only because of exposure through their military assignments, but also from living in military housing that utilizes contaminated potable water supplies.

The example of the Caring for Camp Lejeune Families Act in North Carolina can be followed as way to close this gap.

Anticipated Resource Needs

It is expected that additional staffing and budget resources are required to implement this action. Sources of federal funding should be considered and explored.

Additional Information

None

7.2

Launch a Collection, Disposal and Replacement Program for PFAS-containing Firefighting Foam

Background

PFAS-containing firefighting foams are a significant source of contamination if discharged to the state's air, lands and waters. Many municipal and volunteer fire departments have PFAS-containing foam concentrates that they would like to dispose of but lack financial resources and the technical ability to do so. Other states have worked in collaboration with state and firefighting groups and departments to create a process to identify, collect and dispose of PFAS-containing firefighting foam concentrate in an environmentally protective manner.

Action

WisPAC recommends that the State of Wisconsin create a PFAS-containing firefighting foam concentrate take-back program for local governments, like what was proposed in 2019 Senate Bill 717 and Assembly Bill 792. If similar legislative proposals are reintroduced for consideration by the Wisconsin Legislature in an upcoming session, WisPAC recommends the following amendments to the bills:

a. Limit the program to foam in the possession of fire departments that are funded by local governments or that are volunteer in nature. Once the fire department collection and disposal program is completed, the program could be expanded to include fluorinated foam from municipal airports;

b. Prioritize the collection and disposal of firefighting foam manufactured prior to 2003, recognizing resource limitations;

c. Consider additional funding for the purchase of PFAS-free foams to replace the PFAS-containing foams;

d. Use the recently conducted Department of Natural Resources (DNR) survey of local fire departments to determine the anticipated cost to the state to remove and properly dispose of/destroy PFAS-containing foam on behalf of local fire departments.

Stakeholder engagement (e.g., making eligible entities aware of the program and how to obtain funding) will be an important element of implementing this program.

Time to Initiate
This is to be determined; dependent upon legislation and funding.

Proposed Lead Agency
DNR

Proposed Partnership
Department of Agriculture, Trade and Consumer Protection; Firefighting community (individual departments and state associations); local governments

Type of Action
- Budgetary
- Legislative

Reason for Action
Collection of older, PFAS-containing firefighting foams has occurred in several other states. Michigan, Washington, Massachusetts and New York conducted foam collection efforts for local government fire departments for proper disposal. Costs of collecting and disposing of the PFAS firefighting foam ranged in cost from $600,000 to $2.5M.

In 2020, Wisconsin surveyed over 800 fire departments, with a total 77% response rate (as of August 2020). Of the 596 fire departments that responded, 51% reported having PFAS-containing foam currently on hand that they wished to dispose of; the total volume reported was at least 18,000 gallons and DNR researchers estimated that up to 31,000 gallons of expired PFAS-containing foam might be present across all fire departments in the state. The total amount of PFAS-containing foam stored by fire departments (including expired and unexpired foam) was estimated to be between approximately 36,000 and 51,000 gallons.

The program could be implemented most efficiently by a centralized entity since local governments may lack the expertise to efficiently dispose of fluorinated foams or identify an effective disposal method. Landfills within the State of Wisconsin do not typically accept PFAS-containing foams.

Anticipated Resource Needs
It is expected that additional budget and staffing resources would be required to fully implement this action. Funding would need to be allocated in the state budget or through legislation.

Additional Information
The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- The WisPAC Action Plan should include an aggressive plan to assist local fire departments manage the existing inventory of PFAS-containing aqueous film-forming foam (AFFF).

7.3

Provide Financial Tools for Local Governments

Background

PFAS contamination poses health and safety concerns to already financially challenged communities. These financial issues have been accentuated by the COVID-19 pandemic. The ability to address and treat contaminated drinking water, hold or treat municipal biosolids, contain and treat firefighting foam, address legacy contamination at commercial airports or address abandoned contaminated sites for the safety of their citizens can be significant barriers for local governments. New partnerships, financial tools, and preventative planning are needed to reduce the costs on tax- and rate- payers of these forever chemicals.

Action

WisPAC recommends that the state provide financial assistance to municipalities to properly manage, respond to, investigate and address PFAS contamination. Specifically, this assistance should include the following (in order of highest to lowest priority):

1. Create a **municipal grant program** to fund the following: investigate potential PFAS contamination/sources; sample a private water supply; provide temporary emergency water, water treatment or bulk water supply; or remediate PFAS contamination. A similar program has been implemented in Michigan. Refer to the Additional Information section below for an example of how a Wisconsin grant program might read in a newly proposed statue.

2. Create a **municipal loan program** to provide infrastructure upgrades or new systems due to PFAS contamination and/or pollution prevention (e.g. water system upgrades, wastewater treatment facilities, solid waste/compost facilities, upgrades to firefighting equipment for testing and containment, etc.). Similar programs have been implemented in New York and Michigan (grant program). Funding for such a program could come from bonding or state or federal repayments to the Clean Water or Safe Drinking Water Act revolving loans, as was done in the 1990s for brownfields redevelopment in Wisconsin.

3. Utilize **DOA's State Community Development Block Grant Program (CDBG)** to provide clean-up and remediation funding for public facilities (i.e. water systems), underserved neighborhoods and blighted areas, as well as other areas in need. This program provides federal funding to local governments to support community development through the provision of decent affordable housing, a suitable living environment, and the expansion of economic opportunities, principally for the benefit of persons of low and moderate income.

4. Contract with a state-certified laboratory to offer discounted PFAS lab analysis rates for municipalities. Similar programs have been implemented in Michigan and Vermont.

Stakeholder engagement (e.g., making eligible entities aware of the programs and how to obtain funding) will be an important element of implementing these programs.

Time to Initiate
This is to be determined, based on legislation and more specific implementation planning.

Proposed Lead Agency
DNR and WSLH (Items 1, 2 and 4) DOA (Item 3)

Proposed Partnership
Local government, fire departments, municipal airports, municipal associations.

Type of Action
- Budgetary
- Legislative
- Administrative (rulemaking)
- Administrative (operations)

Reason for Action
Municipalities may not have the financial wherewithal to investigate and clean up these forever chemicals, whether caused by businesses in their communities or through use of firefighting foams. Grant and loan programs for investigation, cleanup and upgrades to infrastructure are essential for addressing these legacy contamination problems. In many cases, local governments are able to address issues specific to their areas more efficiently than the State if they are provided adequate funding.

Anticipated Resource Needs
It is expected that additional budget is required to implement this action, including grants and loans for local governments and funding for laboratory analyses.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- This Action Plan should also identify possible sources of funding for local government resources and staffing.
- The WisPAC Action Plan should…provide guidance and funding for the redevelopment of property affected by PFAS contamination.
- WisPAC Action Plan should include a plan and funding for additional studies to identify and alert Local Government Units of PFAS contamination.

Sample Language for Proposed PFAS Municipal Grant Program:

Attachment 1:

Proposed PFAS Municipal Grant Program

SECTION 12. 292.66 of the statutes is created to read:

292.66 PFAS municipal grant program.

1. DEFINITIONS. In this section:
   a. Department means department of natural resources.
   b. Class B firefighting foam has the meaning provided in s. 299.48(1)(a).
   c. “Municipality” means any city, town, village, county, county utility district, town sanitary district, public inland lake protection and rehabilitation district, sewerage district, metropolitan sewage district or municipally owned or operated airport.
   d. “PFAS” means a perfluoroalkyl or polyfluoroalkyl substance.

2. GRANTS.
   a. The department shall administer a program to provide grants to municipalities for the purpose of conducting any of the PFAS-related eligible activities under sub. (3).
   b. The department may provide a grant to a municipality if the municipality proposes to conduct any of the eligible activities in sub (3) in response to:
   c. The municipality testing or training with a Class B fire fighting foam or using a Class B fire fighting foam as part of an emergency fire fighting or fire prevention operation, if the testing, training, or use occurred, in accordance with state and federal law.
   d. The municipality applying biosolids to land, if the land application or discharge was done in accordance with a pollution discharge elimination system permit issued under ch. 283
   e. The discharge of PFAS or environmental pollution that is suspected to have impacted or is known to be impacting a municipal or private water supply, and the person that caused the discharge or environmental pollution is unknown, unwilling or unable to take the necessary response actions.
3. ELIGIBLE ACTIVITIES. The following activities are eligible for an award of a grant under sub. (2):
   a. Investigating potential PFAS impacts to the air, land or water at a site or facility for the purpose of reducing or eliminating environmental contamination.
   b. Treating or disposing of PFAS-containing firefighting foam containers from a municipal site or facility.
   c. Sampling private water supplies within 3 miles of a site or facility known to have caused the PFAS discharge or environmental pollution of PFAS.
   d. Providing a temporary emergency water supply, a water treatment system, or bulk water to replace water contaminated with PFAS.
   e. Conducting emergency, interim or remedial actions to mitigate, treat, dispose of or remove PFAS contamination.
4. APPLICATION FOR GRANT. The municipality shall apply for a grant on a form prescribed by the department and shall include any information that the department finds necessary to determine the eligibility of the project, identify the funding requested, determine the priority of the project and to calculate the amount of a grant.
5. GRANT CRITERIA. The department shall consider the following criteria when determining whether to award a grant:
   a. The eligible applicant's demonstrated commitment to performing and completing necessary eligible activities, including the eligible applicant's financial commitment and ability to successfully administer grants.
   b. The degree to which the project will have a positive impact on public health and the environment.
   c. Other criteria that the department finds necessary to prioritize the funds for awarding a grant.
6. LIMITATION OF GRANT. The total amount of all grants awarded to an eligible applicant in a fiscal year under this section shall be limited to an amount equal to 15% of the available funds appropriated under s. 20.XXX for the fiscal year.
7. MATCHING FUNDS. The department may not distribute a grant unless the applicant contributes matching funds equal to 20% of the grant. Matching funds may be in the form of cash or in-kind contribution or both.

Provide emergency rulemaking authority without the necessity to make an emergency finding – emergency rule is in place for 3 years or until the permanent rule is in place. Direct DNR to develop administrative rules.

8.1

Improve Efficiency in Development of Long-Term Water Supply Solution

Background

Along with detections in other environmental media, PFAS have been discovered in groundwater, surface water and drinking water. This has relevance for human health, since ingestion through contaminated water and contaminated food are the primary pathways through which PFAS enter the human body, potentially increasing the risk of certain health issues. Since the relatively recent emergence of PFAS as a health concern, they have been detected in a number of public water supplies, and it is reasonable to think that this will continue. In the event of potentially harmful levels of PFAS being detected, emergency water can be provided, but the ability to deliver safe public water in the long term may require new sourcing, infrastructure, treatment or other large-scale water utility projects.

Current processes and procedures for either expanding municipal service, establishing a new interconnection, creating a new public water utility, or undertaking construction activities related to water supply typically require approval from the Public Service Commission (PSC) and the Department of Natural Resources (DNR). This process is intended to ensure proposed activities result in safe, reliable service at reasonable cost to customers, but it can be a lengthy process. If the provision of emergency water to the public (e.g., bottled and/or delivered water) is to continue until a long-term solution is in place, it is essential that the process moves as quickly as possible, while still meeting all necessary requirements.

Action

WisPAC recommends that proactive steps be taken to ensure that any project related to the delivery of public water supply to areas affected by PFAS contamination can be planned, approved and implemented without undue delay.

A process improvement project should be initiated that examines existing between PSC and DNR processes, policies and procedures that make up a complete review for projects involving delivery of public water supply to areas affected by PFAS contamination. These elements should be examined for ways to reduce the total amount of time it takes to complete the planning, review and approval stages of this process.

The Department of Administration (DOA) local government staff should be consulted with as part of the process improvement project.

Time to Initiate
This is ready to implement now.

Proposed Lead Agency
PSC

Proposed Partnership
DNR, DOA, DHS

Type of Action
- Administrative (operations)

Reason for Action
Streamlining can result in cost effective, efficient expansion of municipal service and construction of facilities required to reduce PFAS in drinking water supplies.

The cost (regardless of who is paying) and feasibility of providing emergency public water will continue to be an issue as Wisconsin increases PFAS occurrence testing in the state and potentially finds more contaminated sources. The quicker that longer term solutions can be put into place, the better in terms of human and economic health.

Anticipated Resource Needs
It is not expected that additional resources are required to implement this action.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- LGU No. 5: "The most significant action we need to take today is to remove these chemicals of emerging concern from commerce and pursue cleanup and remediation at contaminated sites and waterbodies."

Another comment received from the public during WisPAC's initial public outreach via an online survey in February 2020 centered on the topic of the importance to maintain water quality in the area for all residents.

8.2

Develop New Tools to Address PFAS Contaminated Sites

Background

There are at least 30 known PFAS sites in Wisconsin that require further investigation and likely cleanup. More sites will likely be found in the coming years, given the heightened awareness of PFAS. At the known PFAS sites, or sites-yet-to-be-discovered, the current proprietors may not be responsible for the contamination, may not have the resources to clean up the contamination, may not be willing to undertake needed actions or a combination of those things. The state should improve its ability to facilitate investigation and cleanup if there were tools available in state law to assist the Department of Natural Resources (DNR) and Department of Justice (DOJ) in doing so. These tools are available in some federal cleanup programs, like the federal Superfund program, or other states may have such tools available as well.

Action

WisPAC recommends that the state government provide DNR and DOJ, through legislation, additional tools to address contaminated PFAS sites, by enacting the following:

1. Requiring responsible parties to establish financial assurance to cover the investigation, cleanup and long-term continuing obligations at a PFAS site if directed by the DNR;
2. Creating a natural resources damage claims provision for PFAS whereby the state could recover from the responsible parties' environmental damages from a contaminated site. This provision should apply to the producer of the product as well as the person that discharged the hazardous substance or created the environmental pollution;
3. Creating a PFAS action fund for moneys collected by DNR for future DNR use related to PFAS.

Time to Initiate
This is to be determined, based on more specific implementation planning.

Proposed Lead Agency
DNR

Proposed Partnership
DOJ

Type of Action
- Legislative

Reason for Action
For a variety of reasons, it is not always clear where responsibility lies for the cleanup of environmental contaminations. However, contaminated sites – including the increasing number of PFAS sites – must be addressed as quickly as possible to limit negative impacts on the environment and public health. The recommendations included in this action have been used in different jurisdictions, and for other types of contamination, to take effective action in investigating and cleaning up sites and paying for this work.

Anticipated Resource Needs
It is expected that additional legislation is required to fully implement this action, which would likely include a request for funding and staffing resources.

Additional Information

The following comments or proposed actions related to this action were forwarded through the Local Government external advisory group:

- Several participants in the public survey emphasized the importance of accountability in addressing PFAS-contamination, particularly in how cleanups were paid for and how public health and environmental impacts could be mitigated or how compensation could be allocated after the fact;
- LGU No. 5: “The most significant action we need to take today is to remove these chemicals of emerging concern from commerce and pursue cleanup and remediation at contaminated sites and waterbodies.”

Many comments submitted and received from the public via an online survey during WisPAC’s initial public outreach centered around the topic of holding responsible parties from industry accountable for pollution in Wisconsin communities. The comments suggested that regulation and legislation is enacted in order to both stop additional PFAS contamination from those sources, as well as ensure the responsible parties adhere to a comprehensive cleanup.