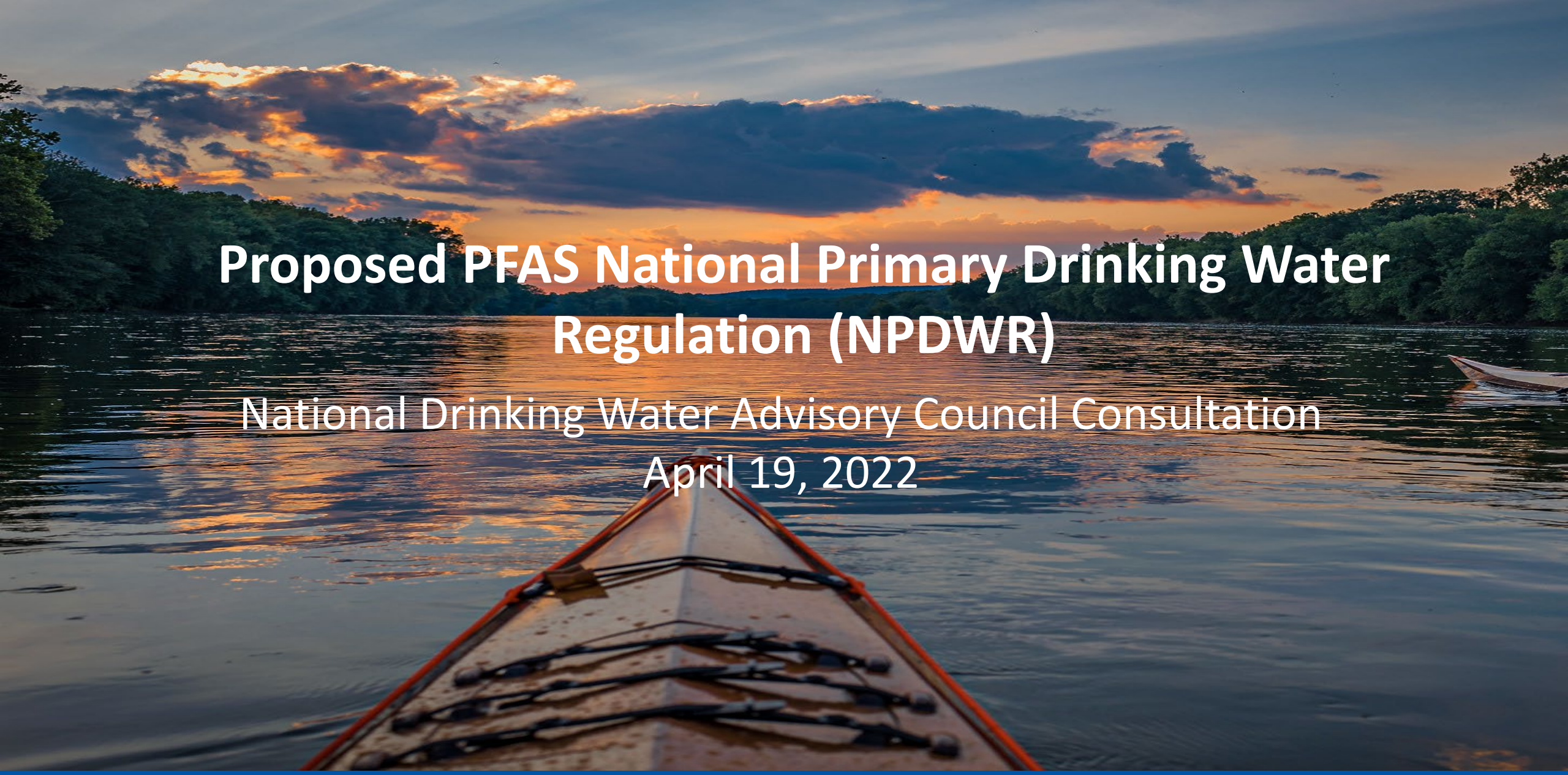


Proposed PFAS National Primary Drinking Water Regulation (NPDWR)

National Drinking Water Advisory Council Consultation

April 19, 2022

United States Environmental Protection Agency

Office of Water

Purpose

- To provide the National Drinking Water Advisory Council (NDWAC) with information on the development of the proposed per-and polyfluoroalkyl substances (PFAS) National Primary Drinking Water Regulation (NPDWR)
- To solicit input from NDWAC members on key areas of the development of the proposed PFAS NPDWR

Overview

- Background
- Key Areas of Consideration on potential NPDWR requirements
- Cost information and funding considerations
- Next steps

Background

PFAS Overview

- PFAS are a group of synthetic chemicals that have been in use since the 1940s.
- There are thousands of types of PFAS chemicals, some of which may have been more widely used than others.
- PFAS can be found in stain and water repellants used in fabrics, carpets and outerwear, among other consumer products.
- PFAS can also be found at manufacturing and processing facilities, and airports and military installations that use firefighting foams which contain PFAS.
- Over the past few years, science has progressed rapidly, and the agency must move forward with actions that are based on this new science and a better understanding of the challenges many communities are facing.

PFAS Health Effects and Drinking Water Occurrence

- Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) have been the most extensively studied PFAS.
  - Both are very persistent in the environment and human body.
- Current scientific research and available evidence have shown links between oral exposure to studied PFAS chemicals and adverse health outcomes and effects, including prenatal and postnatal development (e.g., low birth weight), cancer (e.g., kidney), liver effects (e.g., tissue damage), immune effects (e.g., antibody production and immunity), and other effects (e.g., cholesterol changes).
- PFOA and PFOS occur with a frequency and at levels of public health concern at public water systems (PWSs) based on available occurrence information from the third Unregulated Contaminant Monitoring Rule (UCMR 3). Recent state PFAS monitoring data demonstrates occurrence consistent with UCMR 3 monitoring.
  - Under UCMR 3, 4,920 PWSs were analyzed for PFOA and PFOS. A total of 162 PWSs (3.29%) had reported detections (greater than or equal to the Minimum Reporting Level (0.02 µg/L and 0.04 µg/L, respectively)) of at least one of the two compounds within 25 states, tribes, and territories.

Regulating PFAS in Drinking Water

- On March 3rd, 2021 EPA published the final regulatory determinations for PFOA and PFOS under the Safe Drinking Water Act (SDWA).
- With the final regulatory determinations for PFOA and PFOS, EPA is developing a proposed SDWA NPDWR for PFAS.
- EPA is also evaluating inclusion of additional PFAS chemicals into the NPDWR as supported by the best available science.
- Additionally, EPA released the PFAS Strategic Roadmap in October 2021 which lays out the Administrator's commitment to addressing PFAS. The plan includes an overall strategy of tangible actions both upstream and downstream to deliver public health benefits to all people.
- Under the PFAS Roadmap, establishing a PFAS NPDWR is a key action. EPA anticipates publishing the proposed rule for public comment in Fall 2022 and promulgating a final rule in Fall 2023.

SDWA: Proposing an NPDWR

- An NPDWR establishes requirements applicable to PWSs.
- A PWS provides water for human consumption to at least 15 service connections or serves an average of at least 25 people for at least 60 days a year.
- EPA defines three types of PWSs:
  - Community Water System (CWS): Serves same population year round
  - Non-Transient Non-Community Water System (NTNCWS): Regularly supplies water to at least 25 of the same people at least six months per year (e.g., school)
  - Transient Non-Community Water System: Serves water where people do not remain for long period of time (e.g., gas station)
    - EPA does not anticipate that the PFAS NPDWR will affect transient non-community water systems.

SDWA: Proposing an NPDWR

- For each contaminant receiving a positive determination, the Administrator shall:
  - Propose a Maximum Contaminant Level Goal (MCLG) and NPDWR not later than 24 months after determination and promulgate within 18 months after proposal
- An **MCLG** is the non-enforceable level at which no known or adverse effects on the health of persons occur and which allows for an adequate margin of safety. It does not account for limits of detection and treatment technology effectiveness.
- An enforceable **Maximum Contaminant Level (MCL)** is set as close as feasible to the MCLG (taking costs and benefits into consideration).
- If it is not economically/technologically feasible to ascertain the level of the contaminant EPA may propose a Treatment Technique (TT) in lieu of an MCL.
  - Prevents known or anticipated adverse effects to the extent feasible
  - Minimizes overall risk by balancing risk from the contaminant and the risk from other contaminants the concentrations of which may be affected by the TT

SDWA: Proposing an NPDWR

- EPA is seeking Science Advisory Board (SAB) input on draft documents, including those that describe EPA's proposed approaches toward deriving the health-based MCLGs for PFOA and PFOS.
  - Within the documents are key inputs for deriving MCLGs including draft toxicity values and the available animal toxicity and human epidemiological data on health effects from exposure to PFOA and PFOS. They do not contain the draft MCLG values.
  - The SAB has formed a PFAS Review Panel and have developed a draft SAB PFAS Review Panel report with recommendations which will be provided to the full chartered SAB body. The chartered SAB members will review and provide input on the draft report and it will be finalized and transmitted to the EPA Administrator as early as August 2022.
  - EPA will consider the SAB's recommendations to inform the development of the proposed MCLGs and NPDWR requirements.

SDWA: Proposing an NPDWR

- Identify available technologies for contaminant removal
  - Small System Compliance Technologies (SSCT) that are affordable* for:
    - Systems serving 25-500 people,
    - Systems serving 501-3,300 people, and
    - Systems serving 3,301-10,000 people
  - Best Available Technologies (BATs)
    - Examined under field conditions
    - Consider efficacy and cost

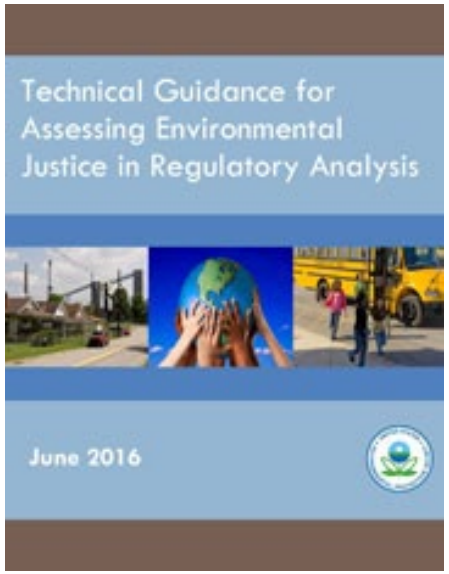
* If there are no affordable SSCTs for one or more category of small systems, EPA must identify variance technologies that may not achieve compliance but that achieve the maximum reduction that is affordable and are “protective of public health”.

SDWA: Proposing an NPDWR

- A Health Risk Reduction Cost Analysis that includes:
  - Quantifiable and non-quantifiable health risk reduction benefits from removing the regulated contaminant and co-occurring contaminants;
  - Quantifiable and non-quantifiable health risk reduction costs of compliance;
  - Incremental costs and benefits;
  - Effects on sensitive populations such as infants, children, pregnant women, and the elderly;
  - Any increased health risk that may result from compliance; and
  - Other relevant factors including the quality of information.
- A determination as to whether the benefits of the proposed MCL justify, or do not justify, the cost
  - If benefits do not justify costs, EPA may set the MCL at a level at which health risk reduction benefits are maximized at a cost justified by the benefits.

EJ Considerations for Proposing a Drinking Water Regulation

- EPA is committed to ensuring the fair treatment and meaningful involvement of all people with respect to environmental laws, regulations, and policies.
- A priority action under EPA's Equity Action Plan is to also "develop a comprehensive framework for considering cumulative impacts in relevant EPA decisions and operationalize that framework in EPA's programs and activities."
- To directly support this commitment to EJ, EPA's *Technical Guidance for Assessing Environmental Justice in Regulatory Analysis* outlines particular technical approaches and methods to help EPA analyze potential EJ concerns for regulatory actions.
- As a part of the PFAS drinking water rule development process, EPA is currently conducting this analysis and will provide this information when issuing the proposed rule.
- Within the analysis, EPA is considering if population groups of concern (e.g., low-income populations) are disproportionately exposed to PFAS in drinking water.
- EPA's analysis will also evaluate whether population groups of concern are disproportionately affected by PFAS regulatory options under consideration.



Key Areas of Consideration

Key Areas of Consideration for Potential NPDWR Requirements

- EPA is considering practical monitoring options and treatment technology feasibility to control for PFAS as a part of MCL and/or TT requirements.
- EPA is interested in input related to implementation challenges to achieving MCLs and/or TTs.
- EPA is specifically interested in input related to the following proposed rule areas:
  - Treatment
  - Monitoring
  - Public notification
  - PFAS Mixtures

Treatment Considerations

PFAS Treatment – General Considerations

- Traditional treatment technologies are largely ineffective at removing PFOA and PFOS to drinking water levels protective of public health.
- Some water systems with PFAS contamination will be required to install treatment or take other actions to reduce PFAS levels in their drinking water.
- EPA is evaluating technologies and has studies that demonstrate the following PFAS reductions for each technology:
  - Activated carbon can remove greater than 92% and 95% of PFOA and PFOS, respectively.
  - Ion exchange achieved removal of greater than 75% and 92% of PFOA and PFOS, respectively, however may not be as effective if not designed to remove PFOA and PFOS.
  - Nanofiltration and reverse osmosis are both highly effective in separating PFOA and PFOS, often to a 99% reduction in both PFOA and PFOS.
- These technologies may also remove other contaminants.
- Some water systems may be able to reduce PFAS levels without installing treatment by developing a new source of water that does not have PFAS contamination.

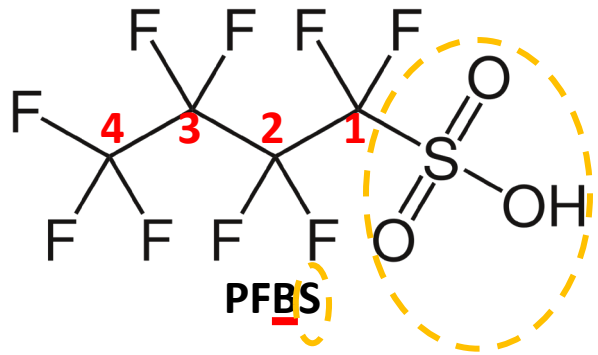
PFAS Drinking Water Treatment Overview

What Works

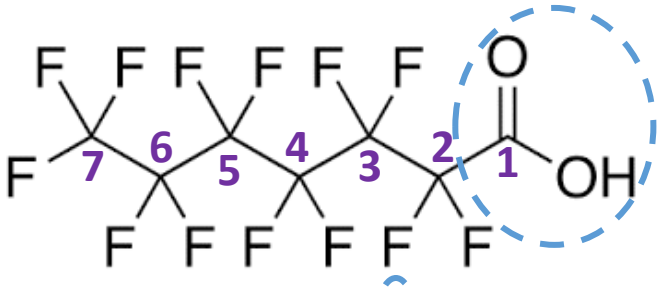
- Activated Carbon
- Ion Exchange
- Nanofiltration
- Reverse Osmosis

Broad Considerations

- "Longer Chain" PFAS are easier to remove
- Site specific footprints
- Formation from precursors
- Ancillary benefits especially with DBP
- These technologies have been demonstrated to achieve or go below current analytical quantitation limits in drinking water



PFBS



PFHpA

Root	Carbon Length
Meth-	1
Eth-	2
Prop-	3
But-	4
Pent-	5
Hex-	6
Hept-	7
Oct-	8
Non-	9
Dec-	10
Undeca-	11
Dodeca-	12
Tridec-	13
Tetradeca-	14

Activated Carbon Background

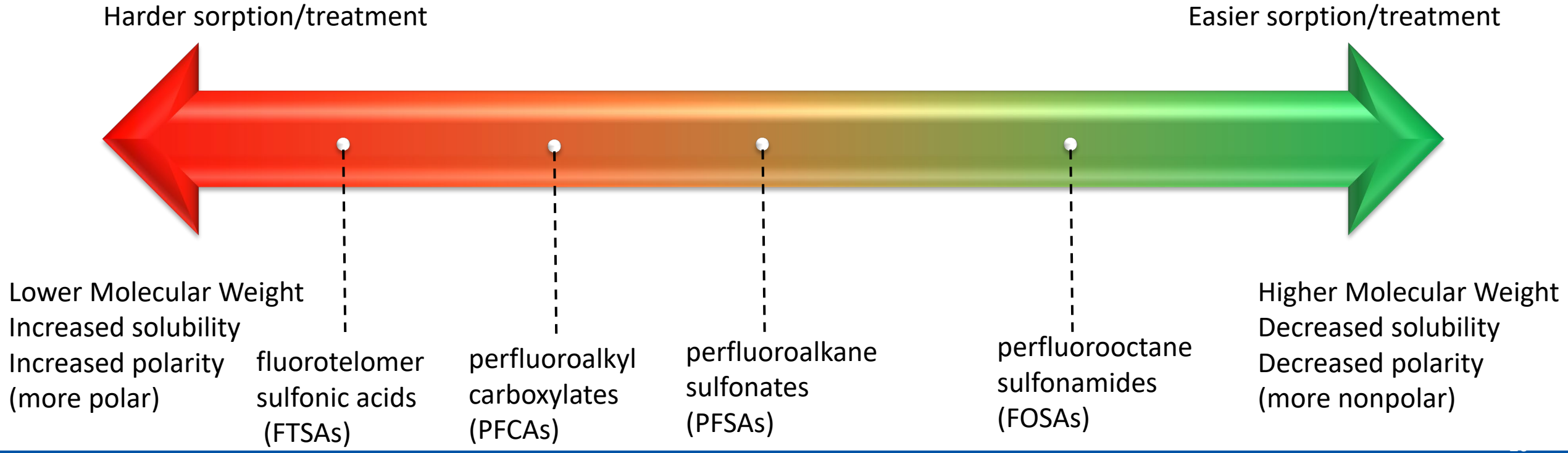
- Produced from:
  - Anthracite, lignite, peat, coconut husks, peach pits, etc
- Activation – increases surface area
  - Thermally (steam, pyrolysis), chemically
  - May be reactivated
- Reversible process
  - Chromatographic Peaking, Competitive Sorption

Granular

Powdered

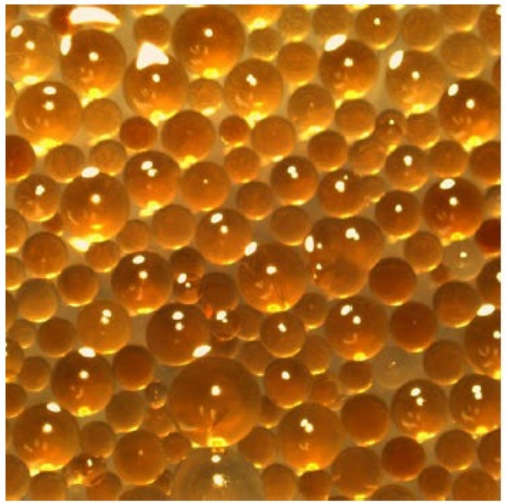
Activated Carbon Sorption

- PFAS sorption to activated carbon varies by the characteristics of the PFAS
- From ≈C7-C17 linearly dependent on chain length shifted by functional group



Ion Exchange

- Exchanges unwanted minerals with less objectionable ones
- Resins absorb PFAS and replace it with a negative anion
- Resins may be reactivated
- Reversible process



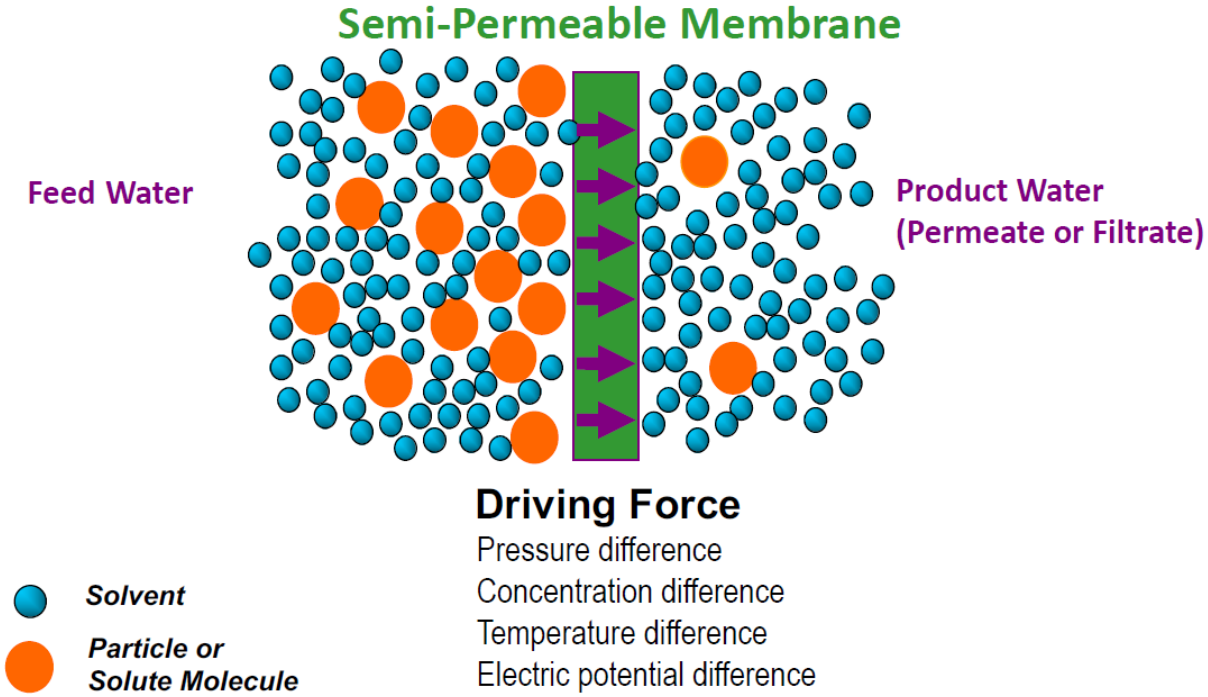
Nanofiltration (NF) and Reverse Osmosis (RO)

NF

- Removal occurs due to size exclusion and diffusivity/solubility differences
- Typically characterized by Molecular Weight Cut Off (MWCO) or NaCl/$MgSO_4$ rejection
- 90-150 psi operating pressure

RO

- Removal occurs due to diffusivity/solubility differences
- Typically characterized by NaCl rejection
- 100-1,100 psi operating pressure (400 psi minimum for desalinization but normally around 800-1,100 psi)



Treatment Residuals and Disposal

- EPA has prioritized research on PFAS disposal options in different environmental media and best management practices.
  - Evaluation of single use disposal options and reactivation potential of certain media, concentrate disposal for NF and RO, and related uncertainties for each disposal option.
- EPA is also evaluating the actions that PWSs must take to dispose of treatment residuals that contain PFAS, including actions resulting from other environmental statutes that may impact drinking water treatment and disposal options.
  - EPA interim guidance is available for destruction and disposal of PFAS and PFAS-containing materials from some products, including spent drinking water treatment media.
- As part of proposed PFAS NPDWR, EPA is considering the costs of various disposal options for drinking water treatment residuals that contain PFAS.

Treatment: Consultation Questions

- What input do NDWAC members have related to the identified of treatment technologies for removal of PFAS (GAC/PAC, IX, RO and NF)?
- Are there other treatment technologies that EPA should consider?
- What non-treatment options for reducing levels of PFAS in drinking water should EPA consider?
- How should EPA consider the disposal of PFAS treatment residuals or regenerating treatment media?

Monitoring Considerations

Monitoring

- Monitoring is critical to assuring that water systems are providing public health protection. EPA is evaluating requirements for PWSs to conduct initial and ongoing monitoring that will be required under the rule.
- Possible options for initial monitoring of PFAS concentrations include:
  - Two or four samples collected over a period of one year, dependent on system size
  - Use of recent, previously acquired PFAS drinking water data from the Unregulated Contaminant Monitoring Rule (UCMR) or a state-level drinking water occurrence data collection program

Monitoring

- EPA is considering provisions for systems with multiple entry points to consider analyzing composite samples to reduce analytical costs (i.e., a single analysis may establish a below-detection-limit concentration across multiple entry points).
- EPA is considering provisions for ongoing monitoring similar to current regulations for Synthetic Organic Contaminants under the Standardized Monitoring Framework.
  - Systems may be granted a monitoring waiver by the primacy agency if a vulnerability assessment finds that the contaminant has not been used in the area, or that the PWS can prove it is not susceptible to contamination from that contaminant. Vulnerability assessments must be updated every three years.
  - The frequency of monitoring for systems that do not receive waivers is set based upon a comparison of past monitoring results to a “trigger level” and to the MCL. A trigger level is often based on the sensitivity of analytical methods for the contaminant.

Monitoring

Standardized Monitoring Framework for Synthetic Organic Contaminants.

Synthetic Organic Contaminants	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9
Pop. > 3,300 (Below Trigger Level)									
Waiver		X			X			X	
No Waiver		**			**			**	
Pop. < 3,300 (Below Trigger Level)									
Waiver		X			X			X	
No Waiver		*			*			*	
Above Trigger Level									
Reliably and Consistently ≤ MCL	*	*	*	*	*	*	*	*	*
Not Reliably and Consistently ≤ MCL	****	****	****	****	****	****	****	****	****

X = No sampling unless required by the primacy agency

* = 1 sample per entry point to the distribution system (EPTDS)

** = 2 quarterly samples at each EPTDS. Samples must be taken during two quarters of a single calendar year during each 3-year compliance period.

**** = 4 quarterly samples at each EPTDS within time frame designated by the primacy agency

Monitoring: Consultation Questions

- What input do NDWAC members have related to:
  - How should available PFAS drinking water monitoring data be considered in the initial monitoring requirements?
    - UCMR Data
    - State Data
    - Other Data
  - Should the PFAS regulation incorporate Standardized Monitoring Framework provisions for Synthetic Organic Contaminants?
    - Monitoring waivers based on vulnerability assessments
    - Monitoring frequency determined based on previous monitoring results

Public Communication Considerations

Communication with the Public

- PWSs may be required to issue public notification to customers if PFAS levels in drinking water exceed regulatory standards.
- Under the Public Notification Rule, there are three tiers of notification:
  - Tier 1: Immediate notice where there is potential for human health to be immediately impacted; water systems have 24 hours to notify consumers
  - Tier 2: Notice as soon as possible where does not pose immediate risk to human health; within 30 days of violation
  - Tier 3: Annual notice, does not have direct impact on public health
- EPA is currently considering which notification tier will be required for proposed PFAS regulation.
- Community water systems may also be required to include PFAS information in the Consumer Confidence Report distributed to their customers including:
  - The level of PFAS that is measured in the drinking water.
  - The potential health effects of any PFAS detected in violation of an EPA health standard.

Public Communication: Consultation Questions

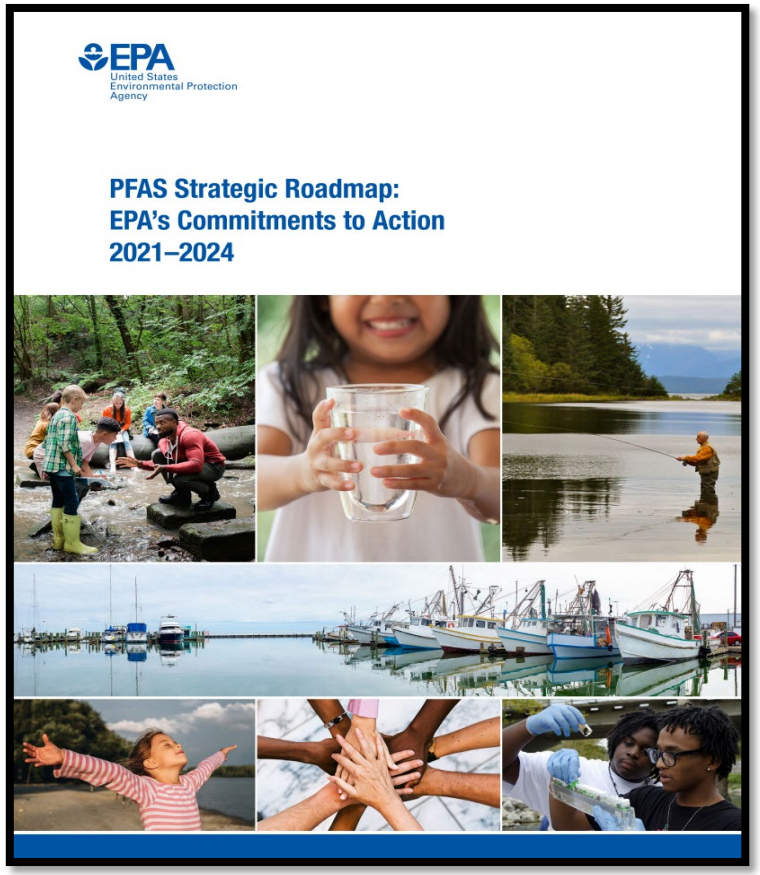
- What input do NDWAC members have related to:
  - How quickly should water systems be required to notify the public following a violation of the PFAS standard?
  - What information should be included in Consumer Confidence Reports regarding PFAS in drinking water?

Considerations for PFAS Mixtures

PFAS Mixtures - Background

- Since the 1940's, over 4,000 PFAS have been manufactured and used in a variety of industries across the world (OECD, 2019). There are also over 700 TSCA-registered PFAS and over 9,000 PFAS based on the CompTox Dashboard.
- PFAS have been found around the world in abiotic media, aquatic and terrestrial organisms, and humans.
- Targeted and non-targeted analysis of environmental media, such as water, has revealed the co-occurrence of multiple PFAS.
    - Among samples with reported levels of PFAS in UCMR 3: Two or more PFAS co-occurred in 48% of sampling events; PFOA and PFOS co-occurred in 27% of sampling events.
- Human biomonitoring data indicates multiple PFAS in blood
- Human health risks associated with exposure to mixtures of PFAS has not been well characterized – few whole mixture studies; a formal PFAS mixtures assessment has not been conducted by federal government entities.

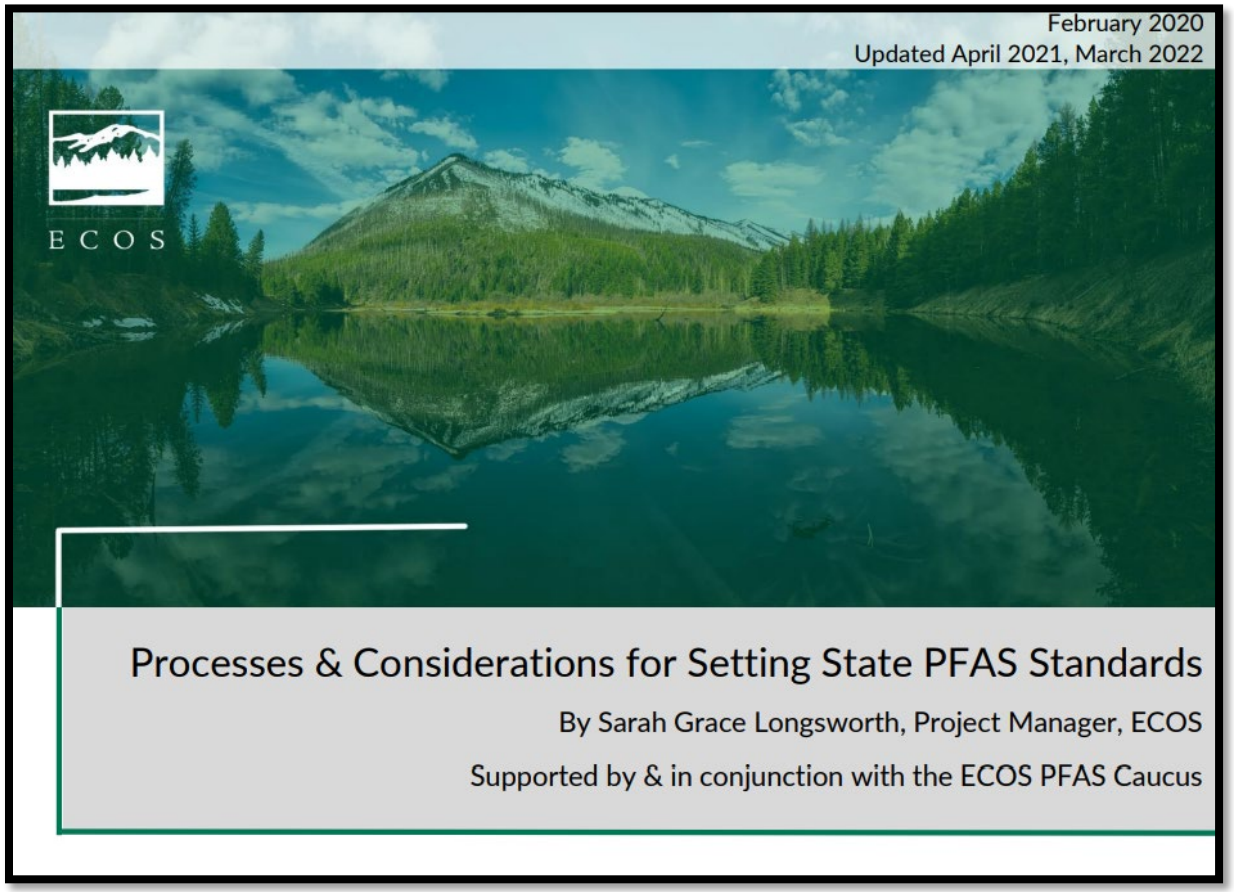
PFAS Mixtures - Background



- EPA is investing in scientific research to fill data gaps in understanding PFAS, including new research on "…how to address groups and categories of PFAS."
  - *EPA PFAS Strategic Roadmap, 2021*
- Under the Safe Drinking Water Act, EPA is considering "…to further evaluate additional PFAS chemicals and provide flexibility for the agency to consider groups of PFAS as supported by the best available science."
  - *EPA Final Regulatory Determinations 4, 2021*
- The EPA has regulated contaminants as a group in drinking water, including disinfection byproducts (*i.e.,* haloacetic acids and total trihalomethanes).

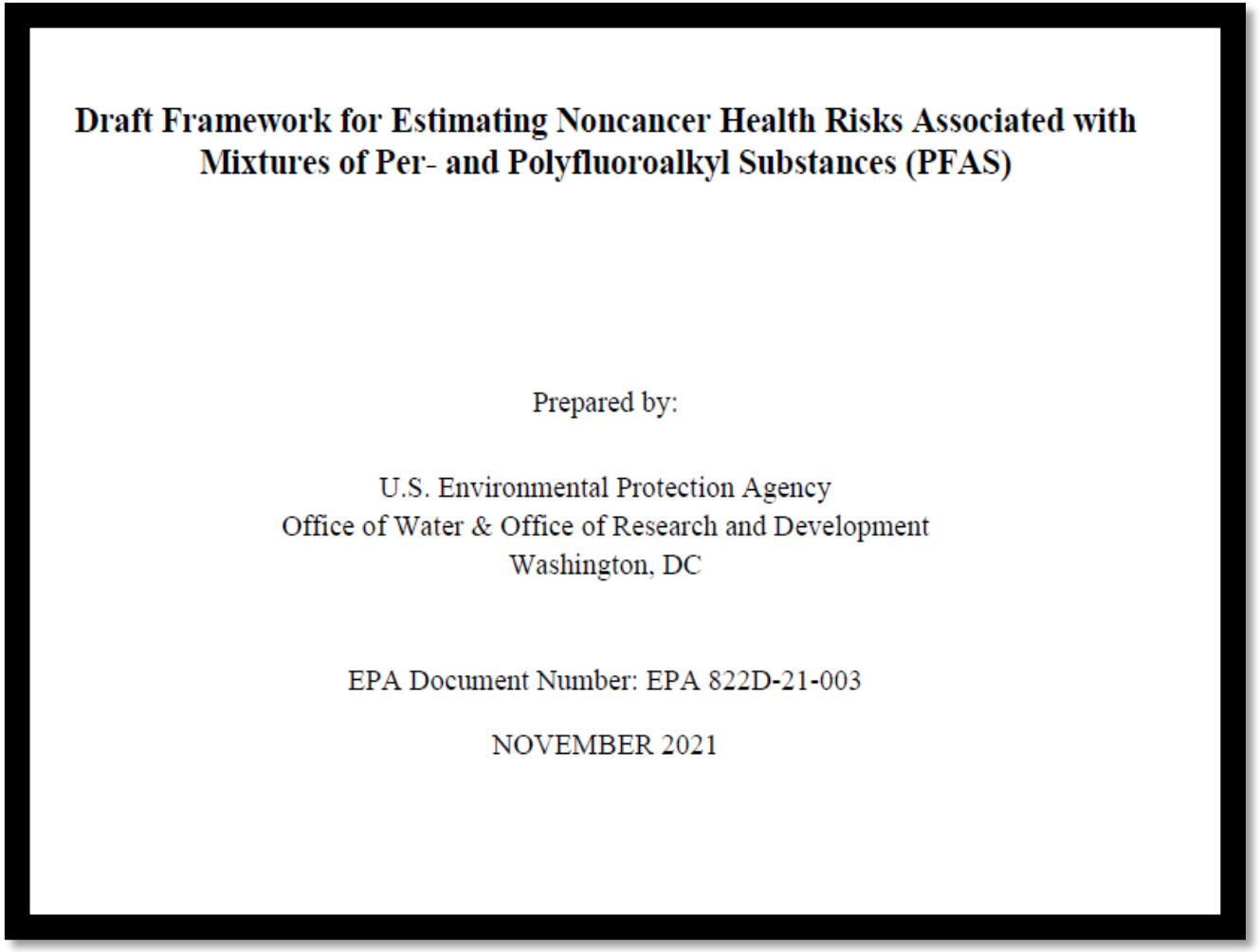
PFAS Mixtures

- Some States are considering human health risks posed by mixtures of PFAS and different class-based approaches, including:
  - State of Wisconsin's hazard index (HI) approach for groundwater quality.
  - State of Rhode Island's considerations for a class-based MCL based on structural similarity and surrogate toxicity.
  - State of Minnesota's Health Risk Index approach to evaluate mixtures of similar PFAS.
  - State of Massachusetts's Total Hazard Index waste site evaluation.
  - ..and more.



PFAS Mixtures

- Purpose: Provide a data-driven framework for estimating human health risks associated with oral exposures to mixtures of PFAS, consistent with existing EPA guidance.
- Based on common health outcomes/endpoints among PFAS.
- Assumes dose additivity for chemicals with common health outcomes.
- Relies on EPA component-based mixture assessment methods:
  - **Hazard Index,**
  - **Relative Potency Factors,** and
  - **Mixture Benchmark Dose** approach.



Draft Framework for Estimating Noncancer Health Risks Associated with Mixtures of Per- and Polyfluoroalkyl Substances (PFAS)

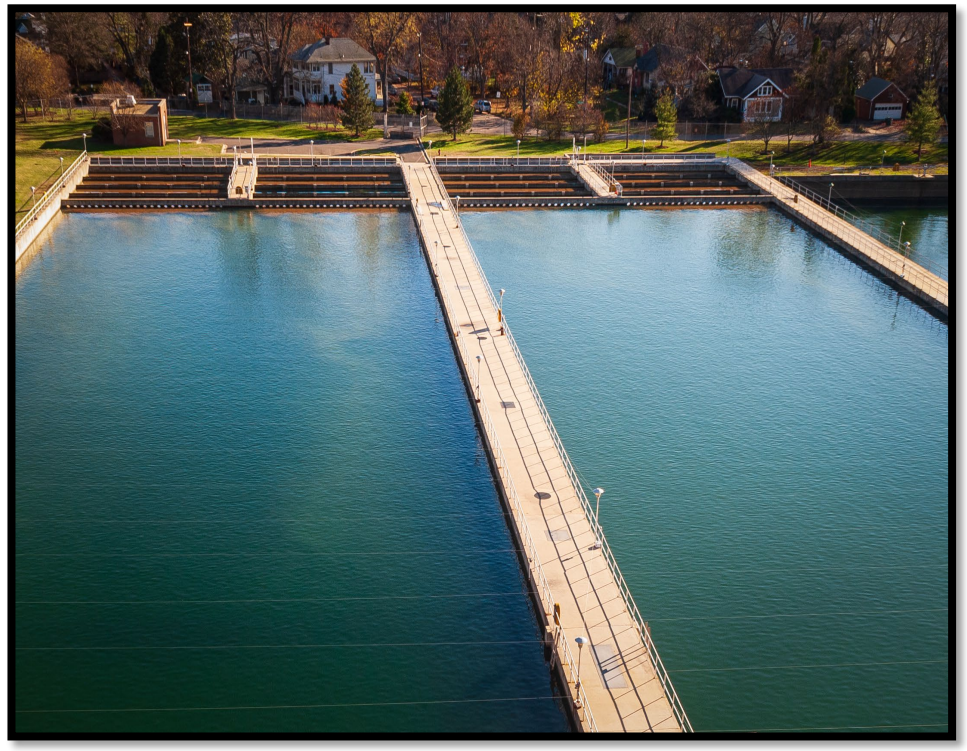
Prepared by:

U.S. Environmental Protection Agency
Office of Water & Office of Research and Development
Washington, DC

EPA Document Number: EPA 822D-21-003

NOVEMBER 2021

PFAS Mixtures



- When it is not economically or technologically feasible to ascertain the level of the contaminant, SDWA authorizes EPA to promulgate a **Treatment Technique (TT)**
  - an enforceable procedure or level of technological performance that PWSs must follow to ensure control of a contaminant.
  - would prevent known or anticipated adverse effects on the health of persons to the extent feasible.
- The Surface Water Treatment Rules are examples of treatment techniques that remove multiple contaminants (pathogens)
- Treatment technologies to remove PFOA and PFOS have been demonstrated to co-remove other PFAS compounds and co-occurring contaminants.

PFAS Mixtures: Consultation Questions

- How should EPA consider or address potential mixtures of PFAS in the proposed drinking water standard?

Cost Information and Funding Considerations

Cost Information

- The proposed PFAS NPDWR will not uniformly impact every PWS.
  - Costs will vary significantly depending on monitoring results.
  - Only systems that exceed PFAS regulatory standards or action levels would need to install treatment and incur these costs. Further, those treatment costs will vary depending on source water characteristics.
  - There may also be point-of-use (POU) treatment options that may be more cost effective for some systems, particularly very small systems, than centralized treatment.
  - Costs will also vary based upon the extent to which systems must conduct and pay for monitoring. EPA is considering multiple monitoring-related flexibilities to help reduce burden and costs to systems.

Economic Impacts Public Water Systems

- EPA estimated preliminary regulatory cost impacts associated with the proposed PFAS NPDWR. These costs include monitoring and treatment components for systems that install treatment to comply with the rule, including some POU cost estimates.
- In determining costs, the agency typically accounts for a 20 percent operational safety margin, which PWSs have previously incorporated to ensure drinking water rule compliance.
- Treatment cost estimates developed based on externally peer-reviewed Work Breakdown Structure (WBS) models that are updated annually to capture changes in labor construction, and commodities costs (https://www.epa.gov/sdwa/drinking-water-treatment-technology-unit-cost-models).
- Treatment costs include both indirect and direct capital and operations and maintenance costs annualized over a 20-year period.
- EPA is considering the potential costs to systems associated with management of possible simultaneous compliance issues that may get triggered with a PFAS drinking water regulation.

Monitoring and Treatment Cost Information

Annualized Cost per System of Proposed PFAS NPDWR by System Size (2020$, 3% discounting, numbers round to the closest hundred)

	Population Served ≤500	Population Served 501 to 3,300	Population Served 3,301 to 10,000	Population Served 10,001 to 50,000	Population Served 50,001 to 100,000	Population Served 100,001 to 500,000
Monitoring Costs[a]	$900 ($300 to $1,500)	$1,800 ($600 to $2,900)	$2,100 ($1,300 to $3,000)	$3,200 ($1,900 to $4,500)	$5,400 ($3,200 to $7,500)	$5,400 ($3,200 to $7,500)
Treatment Costs: GAC[b]	$25,000 ($19,800 to $30,300)	$110,900 ($87,700 to $134,000)	$412,200 ($335,000 to $489,500)	$1,246,400 ($1,016,000 to $1,476,900)	$2,799,400 ($2,281,900 to $3,316,800)	$8,947,800 ($7,255,600 to $10,640,000)
Treatment Costs: IX[b]	$19,500 ($15,000 to $24,000)	$74,000 ($59,100 to $88,900)	$262,400 ($212,400 to $312,300)	$869,700 ($692,700 to $1,046,600)	$2,036,400 ($1,623,400 to $2,449,300)	$7,339,100 ($5,777,400 to $8,900,800)
Treatment Costs: POU RO[c]	$17,800 ($1,700 to $33,800)	$128,500 ($33,800 to $223,100)	$449,600 ($223,100 to $676,000)	Not applicable	Not applicable	Not applicable

Data shown are the midpoint of estimated annualized costs per system, with the estimated range in parenthesis.

a) The ranges shown reflect differences in annualized monitoring cost between analytical methods that might be required (low cost of $302 for EPA Method 537.1 or high cost of $376 for EPA Method 533), differing numbers of samples per year per entry point as noted in the text, and the number entry points per system (an average of 1 entry point for systems serving less than or equal to 500 people and 2 entry points for systems serving more than 500). They do not consider potential cost savings that may be realized by utilizing existing monitoring data.

b) The range shown reflect differences in cost among treatment technologies (granular activated carbon or ion exchange), example PFAS contaminants (PFOA or PFOS), and variations in treatment system design (high, mid, or low cost). Estimates assume 90 percent removal for GAC and IX. Treatment process designs assume the specified percent removal of PFOA or PFOS at all entry points. Systems requiring lower removal percentages or with fewer-than-average entry points requiring treatment could have costs lower than the ranges shown. Systems requiring higher removal percentages could have costs greater than the ranges shown.

c) The values shown reflect minimum, midpoint, and maximum population served within each size range divided by an average household size of 2.58 people to approximate the number of residential connections that would need a POU RO device. Annualized cost includes POU RO device purchase ($312/unit) and installation (0.6 hours per unit for administrative time and 2 hours per unit for installation), which are annualized over a 10-year device useful life at 3%, plus annual filter maintenance costs ($93 for filters and 0.6 hours/unit). The values are based on the plumbed-in RO costs and assumptions developed for the Lead and Copper Rule Revisions. RO devices are certified by third parties for contaminant removal effectiveness and currently the removal standard is 70 parts per trillion (ppt). EPA notes that the standard for the final regulation may differ from 70 ppt.

Public Communication Cost Information

- EPA estimates that public notifications can cost systems approximately $1,100 (2020$ for Tier 1 notification) each though costs vary based on system size and public notification tier.
- EPA does not anticipate the PFAS NPDWR to impose any significant additional costs associated with Consumer Confidence Report requirements since systems are already required to prepare a report.

Funding Considerations

- The recently enacted Bipartisan Infrastructure Law (BIL) provides for significant investments in safe drinking water infrastructure and drinking water programs.
- EPA is working to ensure the funds are available to drinking water systems, especially those within disadvantaged communities.
- Specific funds to potentially support addressing drinking water PFAS contamination:
  - $11.7 billion: Funding to supplement the Drinking Water State Revolving Loan Fund (DWSRF)
  - $4 billion: Funding to specifically address emerging contaminants, including PFAS, through the DWSRF
  - $5 billion: Funding through the Small, Underserved, and Disadvantaged Communities Grants, which can be used to address and remediate emerging contaminants, including PFAS, in drinking water within disadvantaged communities
  - An example eligible project for all of these funds may upgrading treatment technologies.

Next Steps

- In addition to this consultation, EPA is seeking input from other key stakeholders and entities to inform the proposed PFAS NPDWR.
  - Science Advisory Board, Small Business Advocacy Review Panel, Local, State and Tribal government officials, environmental justice-related organizations, and others
- EPA anticipates publishing the proposed rule for public comment in Fall 2022 and promulgating a final rule in Fall 2023.

Consultation Questions

Treatment: Consultation Questions

- What input do NDWAC members have related to the identified of treatment technologies for removal of PFAS (GAC/PAC, IX, RO and NF)?
- Are there other treatment technologies that EPA should consider?
- What non-treatment options for reducing levels of PFAS in drinking water should EPA consider?
- How should EPA consider the disposal of PFAS treatment residuals or regenerating treatment media?

Monitoring: Consultation Questions

- What input do NDWAC members have related to:
  - How should available PFAS drinking water monitoring data be considered in the initial monitoring requirements?
    - UCMR Data
    - State Data
    - Other Data
  - Should the PFAS regulation incorporate Standardized Monitoring Framework provisions for Synthetic Organic Contaminants?
    - Monitoring waivers based on vulnerability assessments
    - Monitoring frequency determined based on previous monitoring results

Public Communication: Consultation Questions

- What input do NDWAC members have related to:
  - How quickly should water systems be required to notify the public following a violation of the PFAS standard?
  - What information should be included in Consumer Confidence Reports regarding PFAS in drinking water?

PFAS Mixtures: Consultation Questions

- How should EPA address potential mixtures of PFAS in the proposed drinking water standard?

United States Environmental Protection Agency

Office of Water