

# Development of the Proposed PFAS Drinking Water Regulation

EPA Region 7 Presentation for the Missouri PFAS Workgroup

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Samantha Harden

US EPA Region 7

# Overview

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# PFAS Overview

- PFAS are synthetic chemicals that have been used since the 1940s.
- There are thousands of PFAS chemicals widely used in different consumer, commercial, and industrial products.
  - Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) are two of the most widely used and studied.
- PFAS are found in water, air, fish, and soil at locations across the nation and the globe.
- Sources of PFAS contaminants in the environment include:
  - Manufacturing processes or chemical production facilities that produce or use PFAS
  - Fire extinguishing foam- in aqueous film-forming foams used to extinguish flammable liquid-based fires
  - Landfills, disposal sites, and hazardous waste sites
  - Biosolids applied to agricultural land

# PFAS Health Effects and Drinking Water Occurrence

- Current scientific research has shown links between oral exposure studied PFAS chemicals and adverse health effects, including prenatal and postnatal development, cancer, liver effects, immune system effects, and other effects (e.g., cholesterol changes).
- Based on available nationwide occurrence information from the third Unregulated Contaminant Monitoring Rule (UCMR3) and state PFAS monitoring data, PFOA and PFOS occur with a frequency and at levels of public health concern at public water systems nationwide.

# PFAS Health Advisories

The SDWA authorizes EPA to issue health advisories (HAs) for contaminants that are not subject to a NPDWR

- HAs are concentrations of contaminants in drinking water at which adverse health effects and/or aesthetic effects are not anticipated to occur over specific durations.
  - Based solely on risk, and do not consider feasibility, cost, or benefits of reducing contaminant levels
  - Only applies to exposure scenarios involving drinking water
- HAs are not legally enforceable federal standards and are subject to change as new information becomes available.
- Provisional HA v. Interim HA v. Final HA
  - Provisional HAs are issued when the Agency is not currently planning to develop a final HA, MCLG, or MCL
  - Interim HAs are issued when a contaminant's health effects assessment is in draft form, but there is a pressing need to provide information to public health officials prior to finalization of the health effects assessment
  - Final HAs are based on final health effects assessments

# PFAS Health Advisories cont'd

EPA issued provisional HAs for PFOA and PFOS in 2009 and final HAs in 2016

- 2016 individual (PFOA and PFOS) and combined HAs = 70 ppt
- Levels were based on best available science at that time

On June 15, 2022, EPA released updated interim lifetime HAs for PFOA and PFOS and final lifetime HAs for GenX and PFBS

- Interim updated HA for PFOA = 0.004 ppt
- Interim updated HA for PFOS = 0.02 ppt
- Final HA for GenX chemicals = 10 ppt
- Final HA for PFBS = 2,000 ppt

What health effects are the basis for these HAs?

- Interim updated HAs for PFOA and PFOS are based on human epidemiology studies in populations exposed to these chemicals
- The levels at which negative health effects could occur are much lower than previously understood

# PFAS Health Advisories and Minimum Reporting Levels

<b>Chemical</b>	<b>Minimum Reporting Level (ppt)</b>	<b>Lifetime Health Advisory Level (ppt)</b>
PFOA	4	0.004 (Interim)
PFOS	4	0.02 (Interim)
GenX Chemicals	5	10 (Final)
PFBS	3	2,000 (Final)

Based on current methods, the HAs for PFOA and PFOS are below the level of both detection and quantitation. This means that it's possible for PFOA and PFOS to be present in drinking water at levels that exceed the HAs even if testing indicates no level of these chemicals.

# EPA Actions to Regulate PFAS in Drinking Water

On March 3, 2021, EPA reissued the final regulatory determinations for PFOA and PFOS under the SDWA

PFAS Strategic Roadmap (Oct. 2021) lays out EPA's commitment to addressing PFAS and its overall strategy to deliver public health benefits

3 Mar. 2021

Apr. 2021

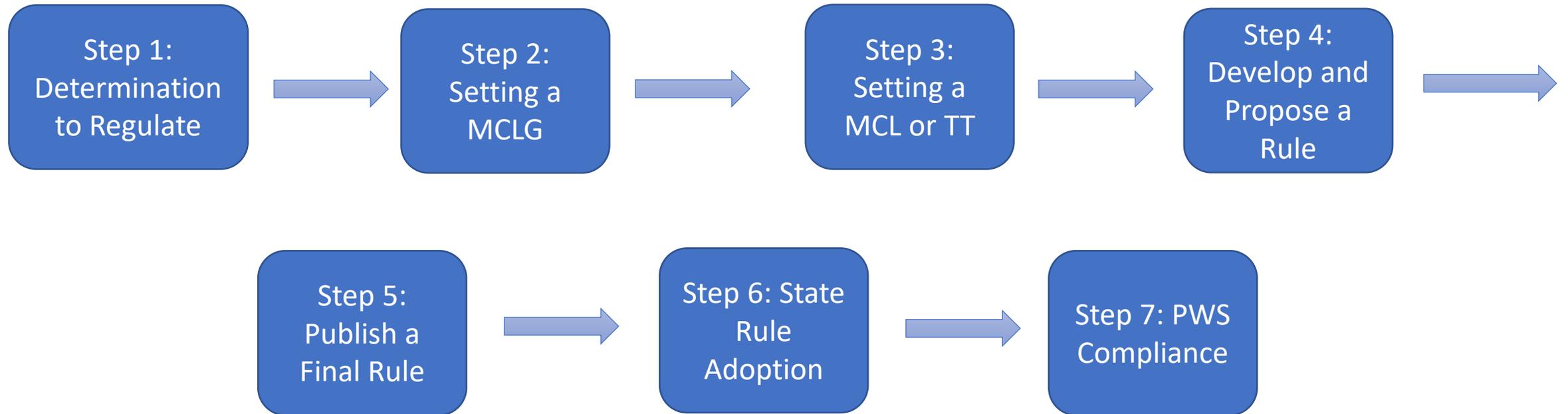
Oct. 2021

End of 2023

EPA Council on PFAS was established in April 2021 to develop a whole-EPA strategy to protect public health and the environment from impacts of PFAS

Establishing a PFAS drinking water regulation is a key action under the PFAS Roadmap. EPA committed to promulgating a final rule by the end of 2023

# Overview of NPDWR Development Process



# Timeline for PFAS NPDWR Development

## Final Regulatory Determination

March 3, 2021

## Publish a Proposed Rule

In the coming weeks\*

## Promulgate a Final Rule

Late 2023

## State Rule Adoption

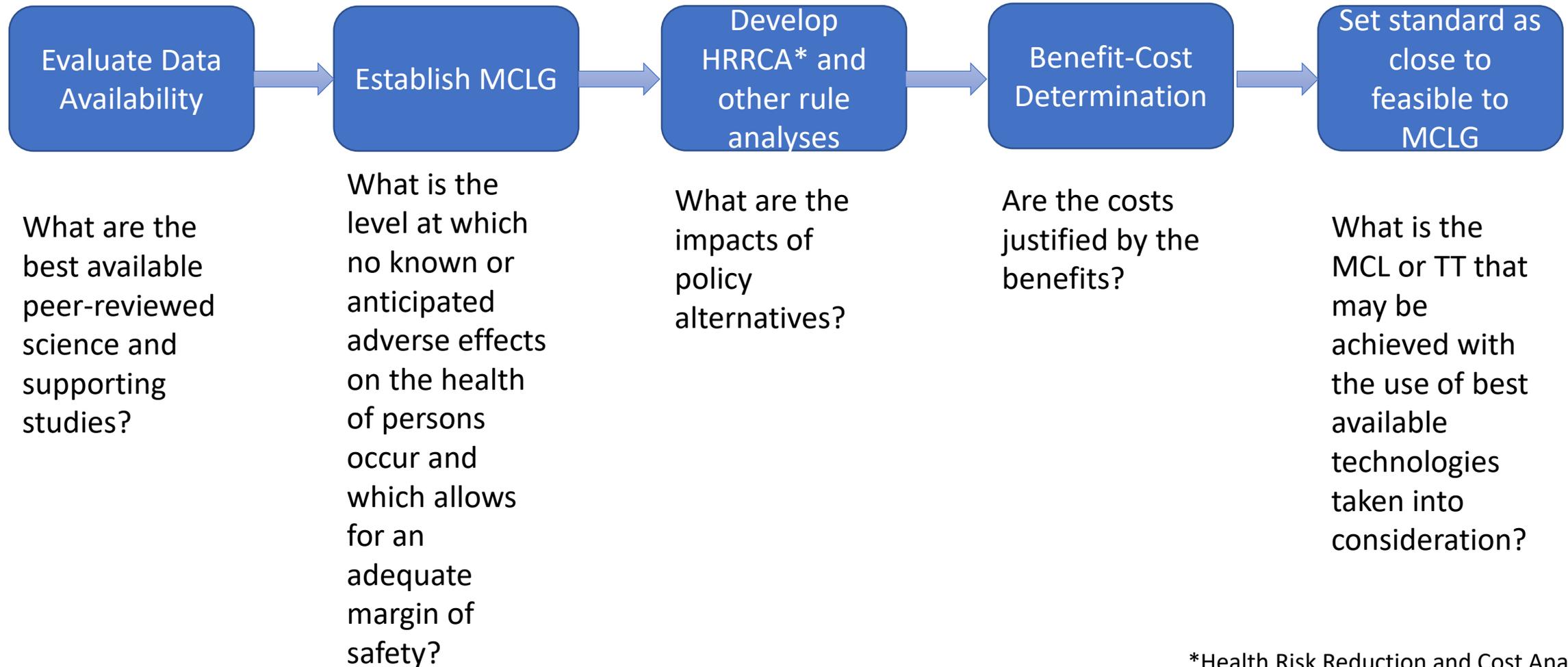
No later than 2 years from promulgation

## Public Water System Implementation

3 years after promulgation

\*EPA's goal is to propose a PFAS NDWR in the coming weeks. The draft proposed rule is currently undergoing interagency review, and EPA will issue the proposed rule for public comment when it clears OMB. The agency anticipates finalizing the rule by the end of 2023.

# Overview of NPDWR Development Process



\*Health Risk Reduction and Cost Analysis

# SDWA Economic Analysis

EPA uses cost-benefit analysis to evaluate the impacts of alternative policy choices during the development of a NPDWR.

Cost Analysis - Estimates the expenses needed to comply with new drinking water regulations such as:

- Expenditures to install and operate contaminant removal technologies
- Costs of water monitoring and analyzing water samples
- Management and oversight costs

Benefits Analysis – Represents the avoided damages or losses in well-being that humans would have experienced without regulatory action

- Focuses on the qualitative, quantitative, and monetary assessment of these positive changes

Primary data used for analysis includes:

- Health effects and risk assessment
- Contaminant occurrence in drinking water
- Regulated community statistics

# SDWA and Treatment Technologies

Identify available technologies for PFAS contaminant removal

- Best Available Technology (BAT)
  - Considers efficacy under field conditions and cost for meeting the standard (MCL) or treatment approach (TT) set by the NPDWR
- Small System Compliance Technologies (SSCT)
  - Compliance technology – affordable technology that achieves compliance with a MCL or satisfies a TT requirement (e.g., POE or POU)
  - Variance technology – alternative technology must achieve the maximum reduction efficiency that is affordable considering the system size and source water quality

# Public Communication

- PWSs may be required to issue public notification to consumers if PFAS levels exceed regulatory standards
- Under the Public Notice 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 customers
  - Tier 2: Notice as soon as possible where there is not an immediate risk to human health; within 30 days of violation
  - Tier 3: Annual notice, does not have direct impact on public health
- CWSs may be required to include PFAS monitoring results in the Consumer Confidence Report 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

# Source Water Protection

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# Source Water Protection Overview

- Source water is defined as a source that provides water to public drinking water supplies and private wells
  - Rivers/Streams
  - Lakes/Reservoirs
  - Springs/Groundwater
- Protection helps reduce risks by preventing exposures to contaminated water
- SWP Activity Examples
  - Land Protection/Easements
  - Best Management Practices for stormwater control
  - Local ordinances
    - Limit certain activities in SWP or wellhead protection areas
  - Development of emergency response plans
  - Education of businesses, citizens, and industries on pollution prevention



# How to Participate in SWP

- Identify and prioritize necessary protection actions based on source water assessments
  - Resource for updating Source Water Assessments: <https://www.epa.gov/sourcewaterprotection/source-water-assessments>
- Educate Consumers on SWP
  - Provide a summary of the SWP assessment report in Consumer Confidence Reports (CCRs)
  - Hold workshops or meetings to allow public input or comments related to SWP topics
- Form an Advisory Committee or Collaborative

# Source Water Protection Eligibilities

## Clean Water State Revolving Fund (Loan Fund)

- Develop/Update SWP Plans
- Land Acquisition/Conservation Easements
- Stormwater Management
- Develop Public Outreach/Education Material

Full list of CWSRF eligibilities:

[https://www.epa.gov/sites/default/files/2016-07/documents/overview\\_of\\_cwsrf\\_eligibilities\\_may\\_2016.pdf](https://www.epa.gov/sites/default/files/2016-07/documents/overview_of_cwsrf_eligibilities_may_2016.pdf)

## Drinking Water State Revolving Fund (Set-Asides)

- Develop, Update, or Implement SWP Plans
- Develop/Update SW Assessments
- Establish/Develop Wellhead Protection Programs
- Data Collection and Analysis (used to define a threat to SW quality/quantity)
- Public Outreach and Education

Full list of DWSRF eligibilities:

[https://www.epa.gov/sites/default/files/2020-12/documents/using\\_the\\_dwsrf\\_set-asides\\_for\\_source\\_water\\_protection\\_loans\\_1.pdf](https://www.epa.gov/sites/default/files/2020-12/documents/using_the_dwsrf_set-asides_for_source_water_protection_loans_1.pdf)

# Bipartisan Infrastructure Law Fund Eligibilities for Emerging Contaminants/PFAS

## CWSRF

- Projects that address substances and microorganisms that could pose newly identified or re-emerging risks to human health, aquatic life, or the environment
  - Not Eligible: Projects that address contaminants with water quality criteria established by EPA (CWA Section 304(a)) except for PFAS

## DWSRF

- Projects with a primary purpose to address PFAS or contaminants of any of EPA's Contaminant Candidate Lists (CCL)
  - Not Eligible: projects with a primary purpose to address contaminants with a National Primary Drinking Water Regulation (except for PFAS)

# SWP Resources

- [General SWP Information](#)
- [Collaboration and Outreach Resources](#)
- [Public Engagement](#)
- [Clean Water SRF](#)
- [Drinking Water SRF](#)
- [Bipartisan Infrastructure Law](#)

# Questions?

Katrina Ferry

Source Water Protection Coordinator

USEPA Region 7

[ferry.katrina@epa.gov](mailto:ferry.katrina@epa.gov)

Samantha Harden

Missouri PWSS Coordinator

USEPA Region 7

[harden.samantha@epa.gov](mailto:harden.samantha@epa.gov)