AMERICAN WATER

PFAS Briefing
U.S. Conference of Mayors

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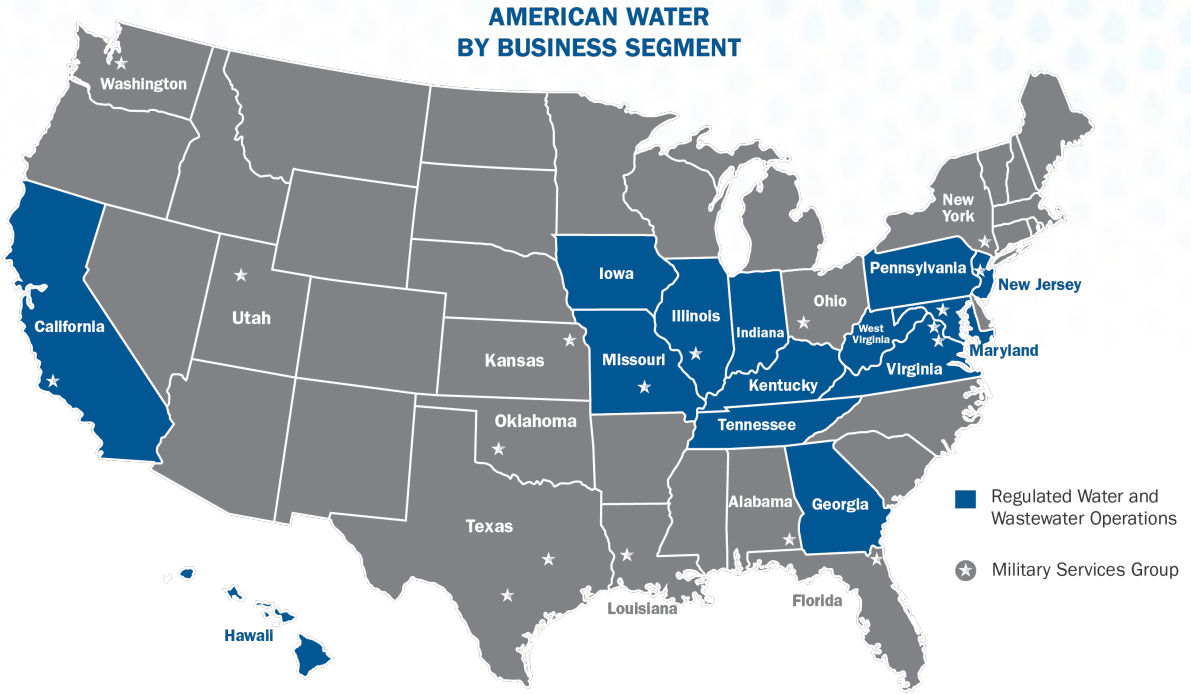
American Water

American Water Operations

We operate as regulated utilities in 14 U.S. states. Our primary operating assets include approximately:

- **80** surface water treatment plants
- **490** groundwater treatment plants
- **175** wastewater treatment plants
- **53,500** miles of transmission, distribution and collection mains and pipes
- **1,100** groundwater wells
- **1,700** water and wastewater pumping stations
- **1,100** treated water storage facilities
- **73** dams



Military Services

American Water's Military Services Group partners with the Department of Defense through the Utilities Privatization ("UP") Program.

Through UP, our 50-year contracts allow us to serve as the water and/or wastewater utility system owner at 18 military installations across the U.S.

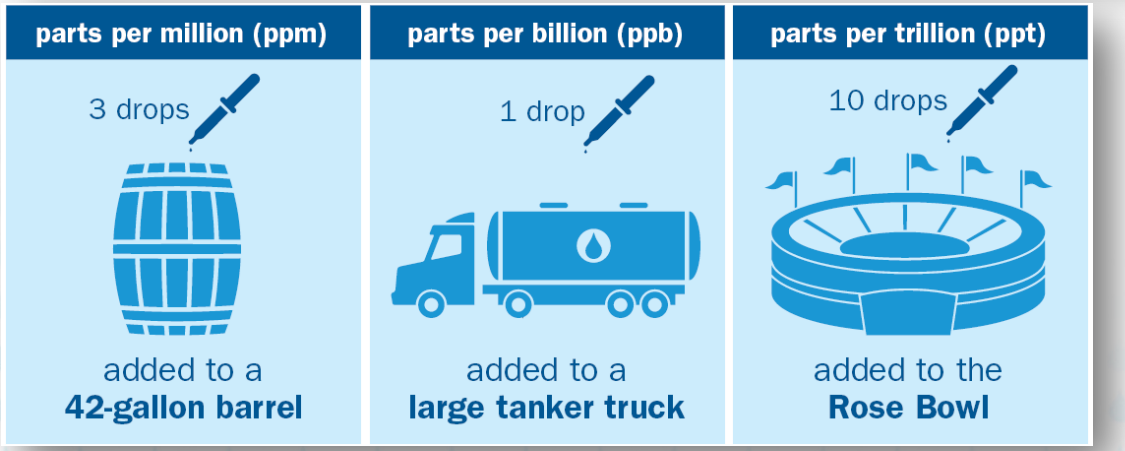
EPA's Proposed PFAS Drinking Water Rule

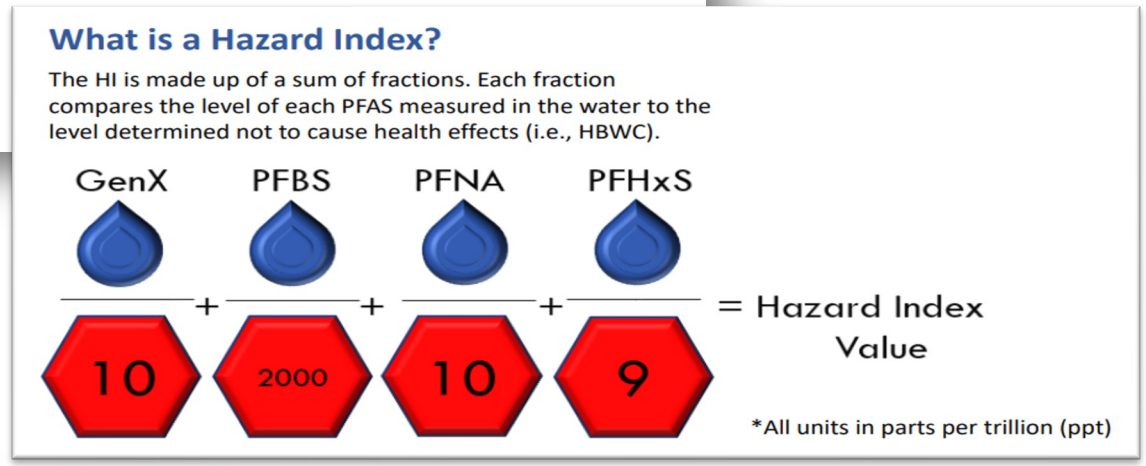
Compound	Proposed MCLG	Proposed MCL (enforceable levels)
PFOA	zero	4.0 ppt*
PFOS	zero	4.0 ppt*
PFNA	1.0 (unitless) Hazard Index	1.0 (unitless) Hazard Index
PFHxS		
PFBS		
HFPO-DA (commonly referred to as GenX Chemicals)		

The Hazard Index is a tool used to evaluate potential health risks from exposure to chemical mixtures.

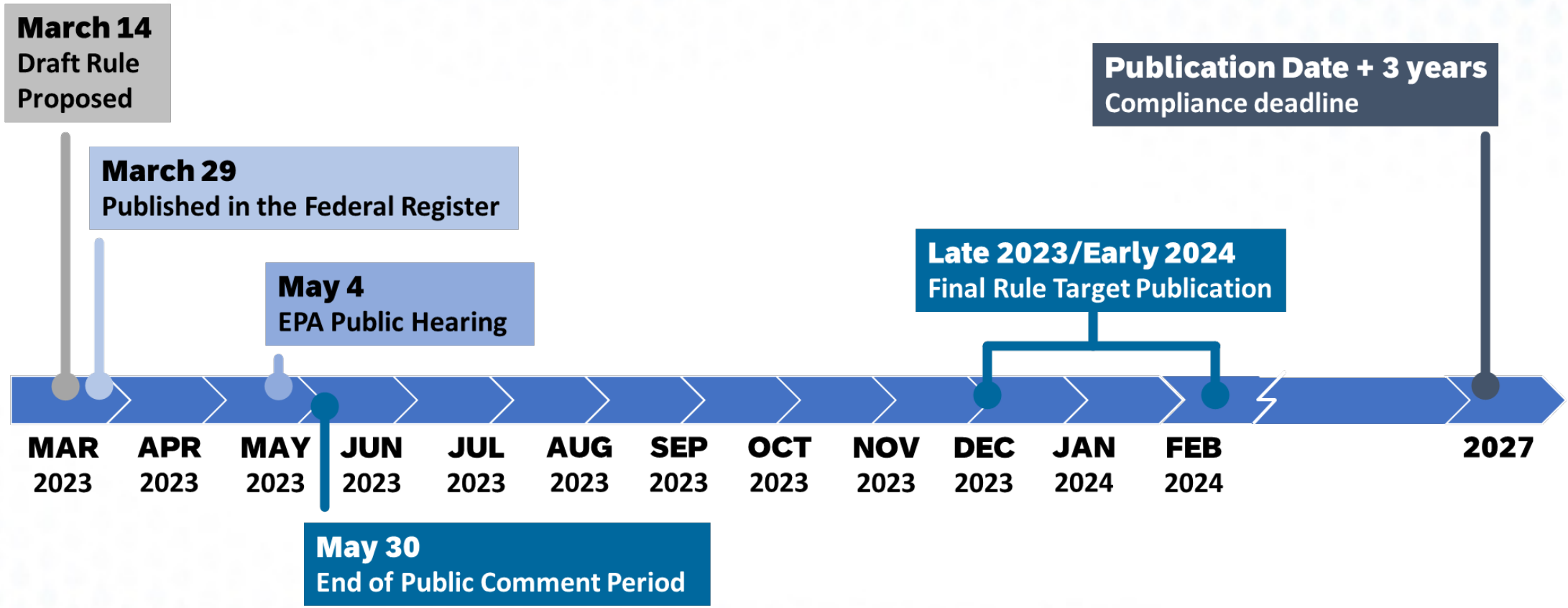
Link: https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas

*ppt = parts per trillion (also expressed as ng/L)



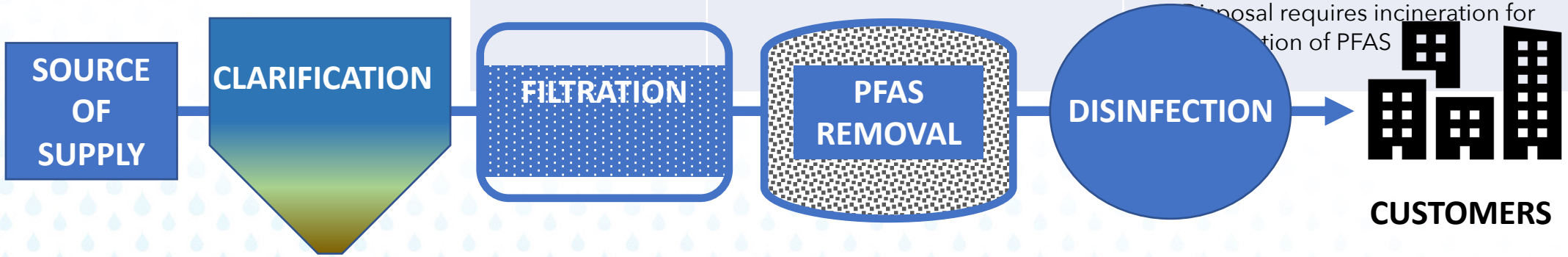


EPA's Proposed PFAS Drinking Water Rule Timeline

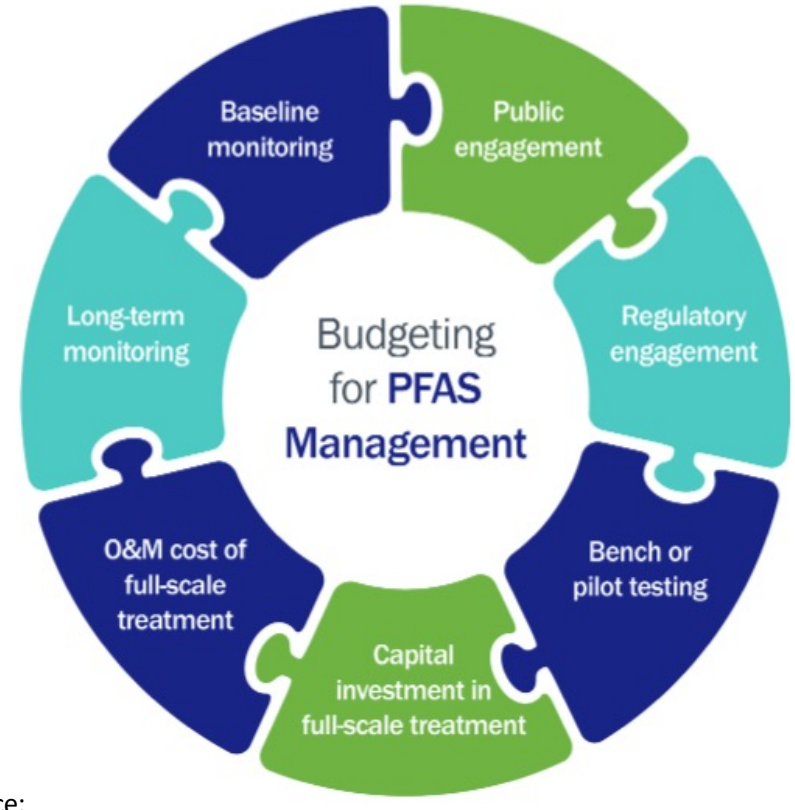


PFAS Treatment Summary

TECHNOLOGY	ADVANTAGES	DISADVANTAGES
Granular Activated Carbon (GAC)	• Easy to use • Reactivation offers destruction of PFAS • Provides removal of other contaminants of emerging concern • Beneficial tool for "common" hazardous chemical spills • Taste and odor benefit	• Larger footprint than IX • Iron and manganese removal sometimes required upstream of GAC • (Generally) higher capital expenses than IX • More frequent replacement of GAC than IX (but much lower cost on a per pound basis)
Ion Exchange (IX)	• Easy to use • Smaller footprint than GAC	• Pre-filtration usually required • Iron and manganese removal more often required upstream of IX than for GAC • Concern with fouling in surface water treatment • Dechlorination (as needed) to prevent NDMA • Disposal requires incineration for destruction of PFAS



Projected PFAS Treatment Costs



Source:
Consider the Hidden Costs of PFAS Treatment
AWWA OpFlow January/February 2021,
Patricia Whitby, Rosa Yu, Erin Mackey https://doi.org/10.1002/opfl.1484

Federal PFAS Drinking Water Rule Cost Headlines

- EPA estimates a total annualized national compliance cost of **$772 million to $1.2 billion** (20-year lifecycle, 3% and 7% discount rates, 2021 dollars)
- American Water Works Association (AWWA) estimates the total annualized national compliance cost of **$3.9 billion to $5.2 billion** (20-year lifecycle, 3% and 7% discount rates, 2022 dollars)
  - **$47.4 billion initial capital cost**
  - **$726 million annual operating cost**
- American Water's internal estimates for PFAS treatment across our own footprint align closely to AWWA's estimates (as scaled from AWWA's national compliance cost estimates)
  - **~$1 billion initial capital investment for treatment at approximately 80 facilities across our footprint**
  - **~$50 million annual operating cost**

American Water is currently part of Multi-District Litigation against multiple PFAS manufacturers to support our view that the ultimate responsibility for the cleanup of these contaminants should fall to the polluters