

# Update on PFAS Regulations and Groundwater Supply

Kim DeFolo and Glen George  
September 27, 2023

1

## Update on PFAS Regulations and Groundwater Supply

- Review from February Discussion
- PFAS Overview & Long-term Planning
- Groundwater Supply & Integrated Resource Plan
- WestRock Closure

2

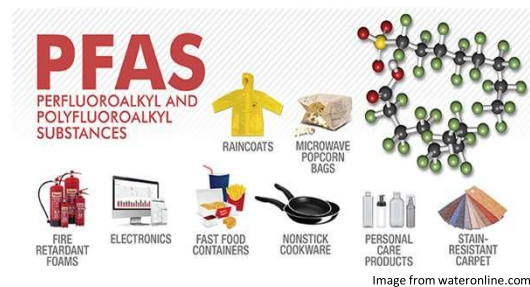
## Review from February Discussion

- Primary source is Green River, but plentiful and protected groundwater capacity available as backup ✓
- Evolving state and federal drinking water regulations related to PFAS compounds  
→ EPA published proposed regulation in March
- Planning another round of comprehensive PFAS sampling of all sources  
→ Sampling nearly complete
- Starting long-term planning related to PFAS treatment for groundwater  
→ Selection of engineering consultant underway

3

## Per- and Polyfluoroalkyl Substances (PFAS)

- These are a large family (thousands) of human-made chemicals in use since the 1940's to make a wide variety of stain-resistant, water-resistant, and non-stick consumer products
- Used in certain types of firefighting foams utilized by the US military, local fire departments, and airports
- PFAS are widespread, do not break down easily in the environment, and are found in people, wildlife, and fish all over the world
- Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects
- **There are many, many unknowns related to PFAS**



4

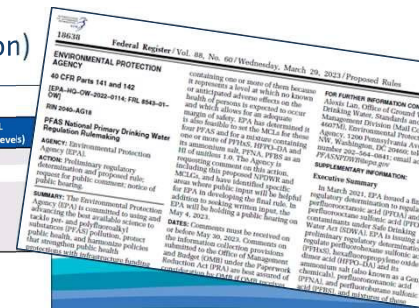
## Proposed EPA PFAS Rule

- EPA published proposed National Primary Drinking Water Regulation for PFAS in March 2023
- Regulates six PFAS compounds, including PFOS and PFOA
- Thousands of public comments received
- Final rule expected in late 2023 or early 2024
- Compliance likely required by 2027 or 2029 (with extension)

Two of the  
most common  
PFAS  
chemicals

EPA's Proposed Action for the PFAS NPDWR

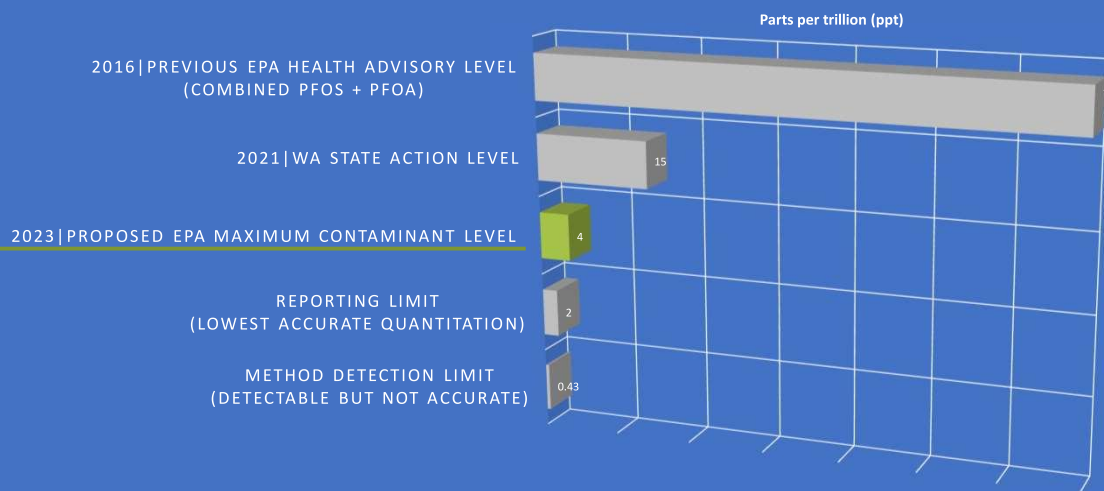
Compound	Proposed MCLG	Proposed MCL (enforceable levels)
PFOA	0 ppt*	4.0 ppt*
PFOS	0 ppt*	4.0 ppt*
PFNA		
PFHxS	1.0 (unitless) Hazard Index	1.0 (unitless) Hazard Index
PFBS		
HFPO-DA (commonly referred to as GenX Chemicals)		
The Hazard Index is a tool used to evaluate potential health risks from exposure to chemical mixtures.		
*ppt = parts per trillion (also expressed as ng/L)		



5

## Proposed EPA PFAS Rule

REGULATORY CHANGES FOR PFOS



6

## Tacoma Water PFAS Sampling

- **In 2015** Tacoma Water sampled for 6 PFAS chemicals as part of the Third Unregulated Contaminant Monitoring Rule (UCMR3) – **NO DETECTIONS, but**
  - Samples were blends of multiple sources collected entering the system
  - Laboratory Minimum Reporting Levels (MRLs) higher than current
- **In 2018** Tacoma Water proactively sampled all sources for 14 PFAS chemicals at lower lab reporting limits
  - Two South Tacoma wells with levels near EPA's 2016 Health Advisory Level (HAL) of 70 parts per trillion (ppt) were removed from service
  - All other detections were below new 2021 State Action Levels (SALs)
- **In June/July 2023** Tacoma Water sampled the majority of individual sources for 29 PFAS chemicals (awaiting results for 4 wells)

7

## Tacoma Water PFAS Sampling - 2023

- Lab analyzed 28 samples for 29 different PFAS chemicals
- Green River and North Fork Wells (in watershed) continue to have no detections for the proposed regulated PFAS chemicals
- All wells, except those in Deep Aquifer, had detections for one or more PFAS chemicals
- Aside from wells taken out of service in 2018, all other representative well samples were below WA State Action Levels
- Several key wells had samples just above proposed EPA limits



8

## Long-term Planning Regarding PFAS

Although many unknowns remain, Tacoma Water is considering proposed EPA PFAS Rule and most recent PFAS sample data in long-term planning:

- Preparing overall PFAS management strategy for South Tacoma Wellfield
  - Currently reviewing Statements of Qualifications for engineering consultant
  - Expect proposed recommendation, implementation plan, and budgetary estimates near end of 2024
  - Need to incorporate WestRock closure effects into evaluation
- Anticipating compliance by 2029

*PFAS treatment not previously included in 10-year CIP because source levels are less than State Action Levels; must now add to capital plan based on lower proposed EPA levels*

9

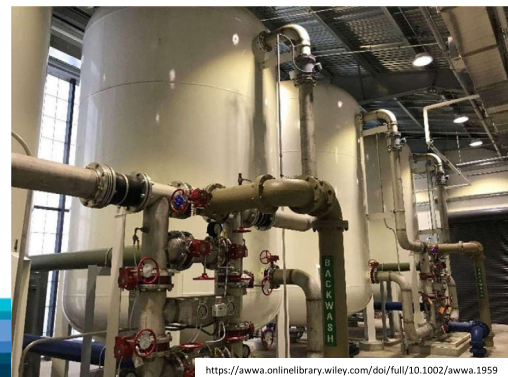
## PFAS Treatment

PFAS treatment options are available, but limited:

- Tacoma Water's current treatment processes are not capable of removing PFAS
- Three primary treatment methods commonly used for PFAS removal
  - Granular activated carbon (most likely for Tacoma Water groundwater)
  - Ion exchange
  - Reverse osmosis
- Blending sources may also support compliance



<https://awwa.onlinelibrary.wiley.com/doi/full/10.1002/awwa.1975>



<https://awwa.onlinelibrary.wiley.com/doi/full/10.1002/awwa.1959>

10

## Limited Overall PFAS Exposure

- Green River source provides majority of the supply for all customers throughout year
- Therefore, overall *lifetime* exposure to PFAS *through drinking water* is low for Tacoma Water's customers
- Tacoma Water will ensure that drinking water is in compliance with any regulations and is safe to drink
- PFAS content available on Tacoma Water website:

[Testing for PFAS - Tacoma Public Utilities \(mytpu.org\)](https://mytpu.org)

- Other resources for more information:

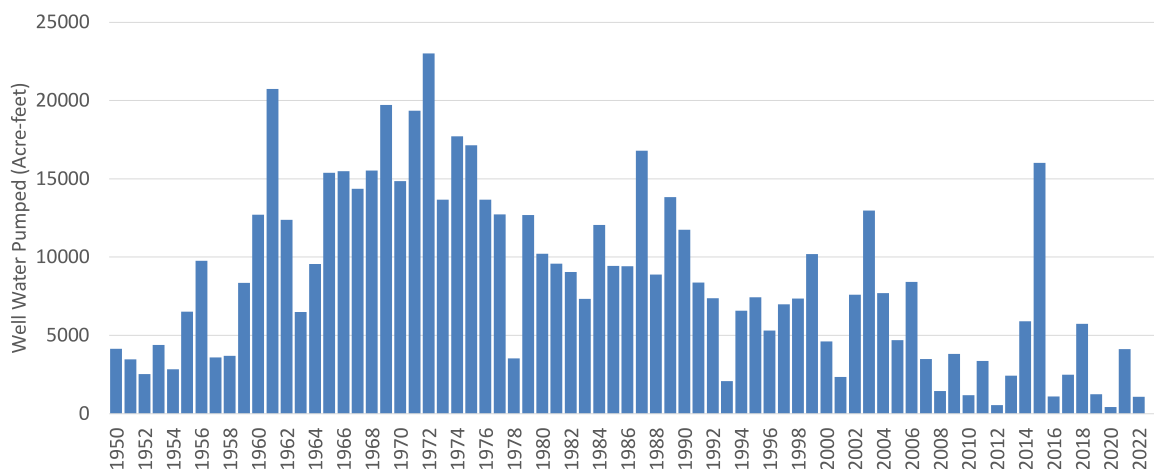
[PFAS | Washington State Department of Health](#)

[EPA | Meaningful and Achievable Steps You Can Take To Reduce Your Risk](#)



11

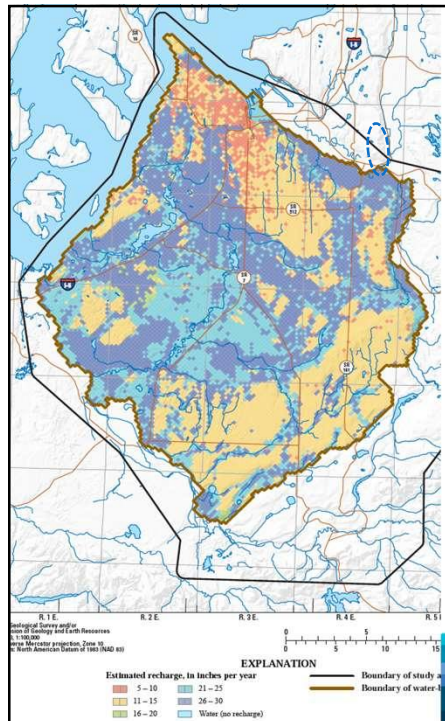
## Annual Well Production



Can produce up to 40-50% of our summer-time peak, if/when needed

12





## Groundwater Planning Studies

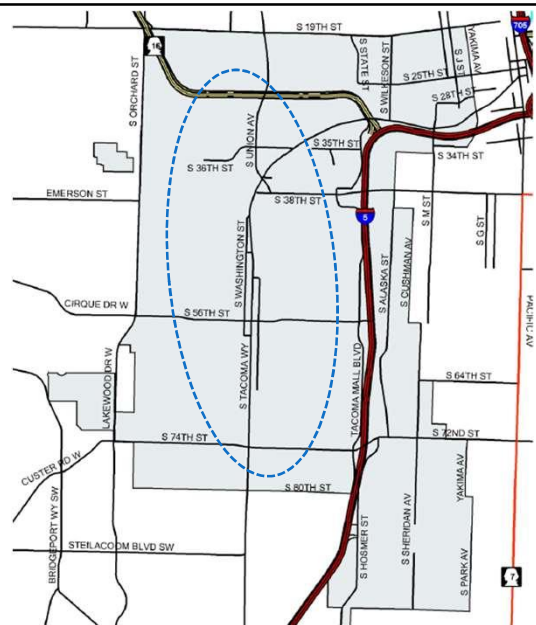
- 1995 Multi-Agency Groundwater System
- 2007 Water Supply Portfolio
- 2010 USGS Hydrogeologic Framework
- 2018 Integrated Resource Plan (1<sup>st</sup> one)
- 2023 USGS Model & **Anticipated Report**
- 2024 Integrated Resource Plan (IRP) Update
- Late 2024 PFAS Management Strategy for South Tacoma Wellfield

13

## South Tacoma Groundwater Protection District (STGPD)

Careful monitoring and managing of activities:

- Tacoma Water, Tacoma/Pierce County Health Department (TPCHD), City of Tacoma Environmental Services, and City of Tacoma Planning Division - work together



14

## Integrated Resource Plan (IRP)

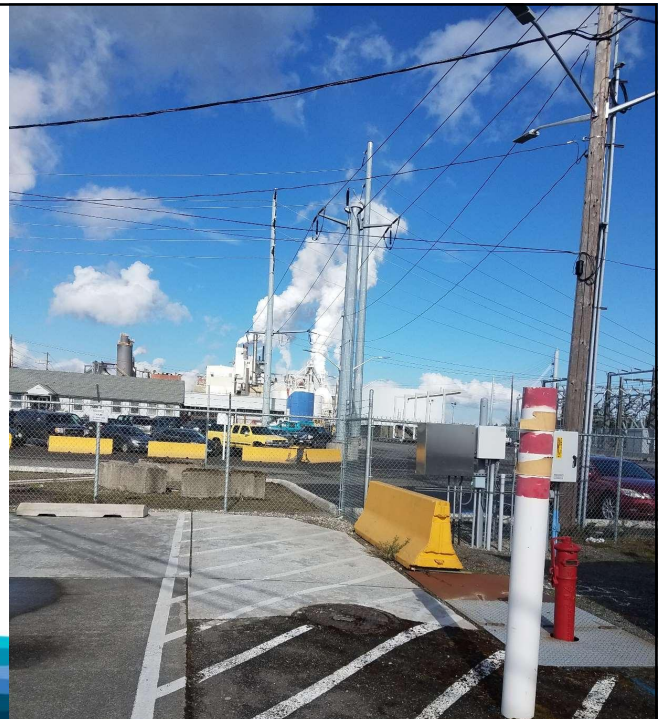
- Being updated in early 2024. Work will be underway very soon (end of Sept)
- Will speak to changing conditions such as PFAS, the impacts of the WestRock shutdown, climate change, and other issues
- Groundwater emphasis
- Informs other planning documents
- Partly a communication tool
- Will assist and guide water source and resource investments in the future



15

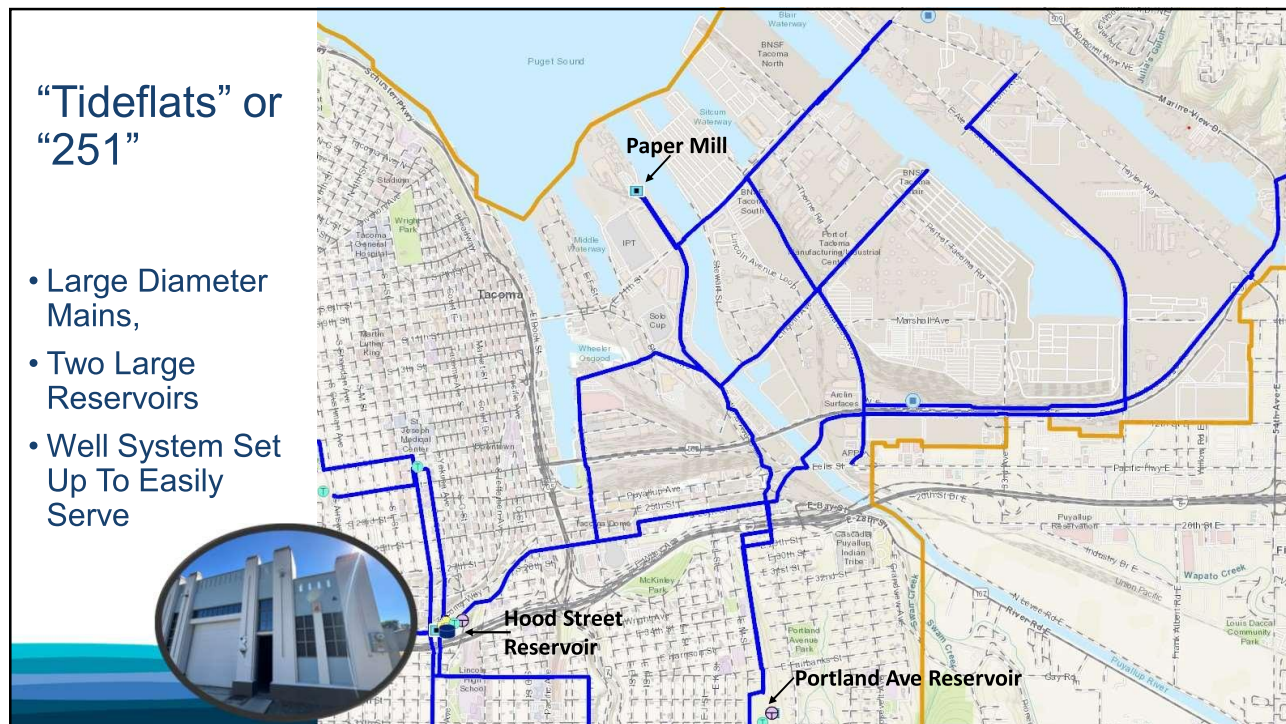
## Analysis of WestRock Closure

- Financial
- Water Quality
- Storage (Reservoirs)
- Wells/Groundwater
- Hydraulics
- Maintenance Practices
- Green River Filtration Facility
- System Reliability
- Water Rights Issues



16





17

## Conclusions

- Still many unknowns related to PFAS
- Majority of Tacoma Water’s overall water supply continues to have minimal PFAS
- Tacoma Water is concerned about PFAS levels in groundwater and will be focused on identifying a PFAS management strategy for affected wells
- Groundwater supply is protected by the South Tacoma Groundwater Protection District and regularly monitored for contaminants
- Plentiful groundwater capacity available to back up primary Green River supply
- Unknowns associated with the WestRock shutdown, but these impacts are being monitored and analyzed and will be addressed in our planning

18