

# Managing Per- and Polyfluoroalkyl Substances (PFAS) in Oregon

**September 24, 2024**

**House Interim Committee on  
Agriculture, Land Use, Natural Resources, and Water**

*Lori Pillsbury – Oregon Dept. of Environmental Quality*

*Samina Panwhar – Oregon Health Authority*

*Susie Smith – OR Assoc. of Clean Water Agencies*

*Tracy Rutten Rainey – Clean Water Services*

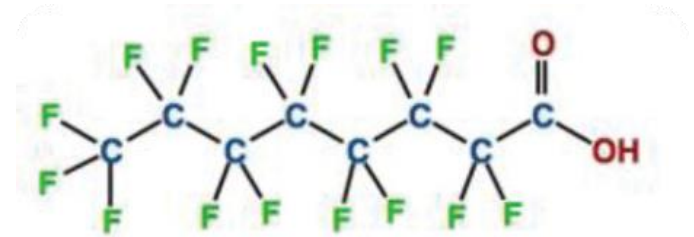
# PFAS Background and Recent Developments

Oregon Department of Environmental Quality

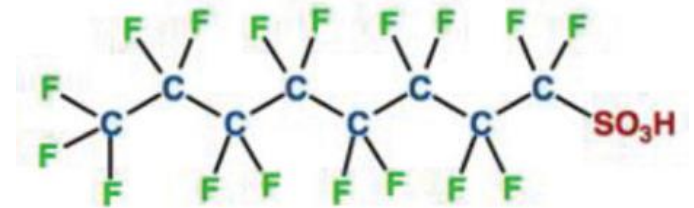
# PFAS...What is it?

## Per-and polyfluoroalkyl substances

- **A class of man-made chemicals**
  - PFOA, PFOS, GenX, plus > 9000 other chemicals
  - Totaling ≈ 14,000 chemicals
  - Ubiquitous in the Environment
- **Used in product manufacturing since the 1940s**
  - Coatings
  - Products that resist sticking, heat, oil stains, grease, stains, and water
  - Cleaning products
  - Fire fighting foams, fire suppression, and fumes
  - Industrial processes
- **CEC (Contaminant of Emerging Concern)**
  - Made to last forever (i.e. forever chemicals)
  - Environmental and Human Health effects are being realized and evolving
  - Federal and state regulations are being developed with some states already taking actions

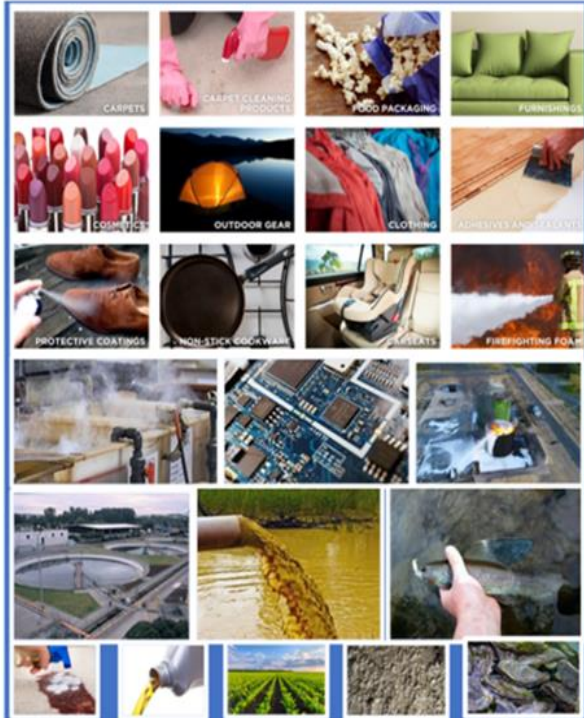


PFOA - perfluorooctanoic acid



PFOS - perfluorooctanesulfonic acid

# Where are they found?



rainwater  
 freshwater  
 biosolids  
 sediments  
 atmosphere  
 household dust  
 vegetation  
 urban areas



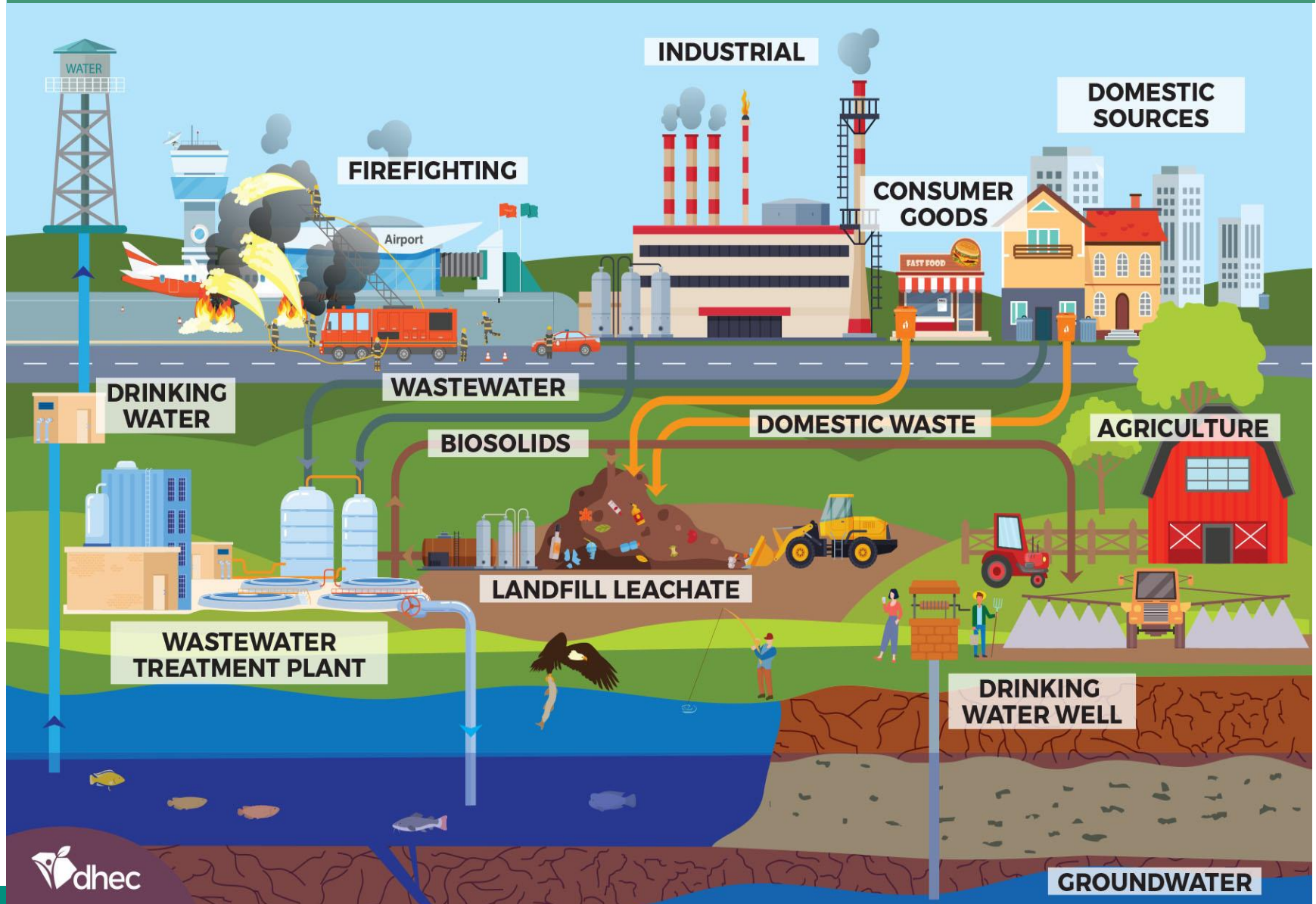
wastewater  
 soils  
 oceans  
 groundwater  
 indoor air  
 streams  
 landfill leachate  
 remote areas

Several PFAS compounds are widely detected in humans and wildlife!

Source: Green Science Policy Institute, Stony Creek Consulting, & Adobe stock



# Generalized PFAS life-cycle



# Oregon DEQ Actions Related to PFAS



Ongoing DEQ work



Cleanup



Materials Management



Lab



Interagency coordination



ODEQ PFAS Strategic Plan:

Provide overview of existing work and alignment with US EPA PFAS Strategic Roadmap

Develop recommendations based on analysis and most recent data

Develop outreach and education plan

Develop communication Plan Draft

Finalize ODEQ PFAS Strategic Plan:

2023

Quarters 1&2  
2024

Quarter 4 -2024  
& Quarter 1 2025

Quarter 4  
2024

Quarter 2  
2025



OREGON  
**HEALTH**  
AUTHORITY

# PFAS and Public Water systems

# Possible Health Effects of PFAS Exposure

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- Changes in blood lipid levels
- Changes in liver enzymes
- Small decreases in infant and fetal growth
- Lower antibody levels to vaccines in children
- Increased risk of high blood pressure in pregnant women
- Increased risk of kidney or testicular cancer in adults

## **OHA addresses PFAS in several contexts:**

- Drinking water
- Toxic Free Kids Act
- Toxic Free Cosmetics Act
- Fish consumption study and advisories in the future



# Final EPA PFAS Rule

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- Final regulation released for 6 PFAS on April 10, 2024; will be adopted into OARs
- Applicable to all community and non-transient non-community water systems
- Three years for systems to complete initial monitoring
- Additional two years to address MCL exceedances

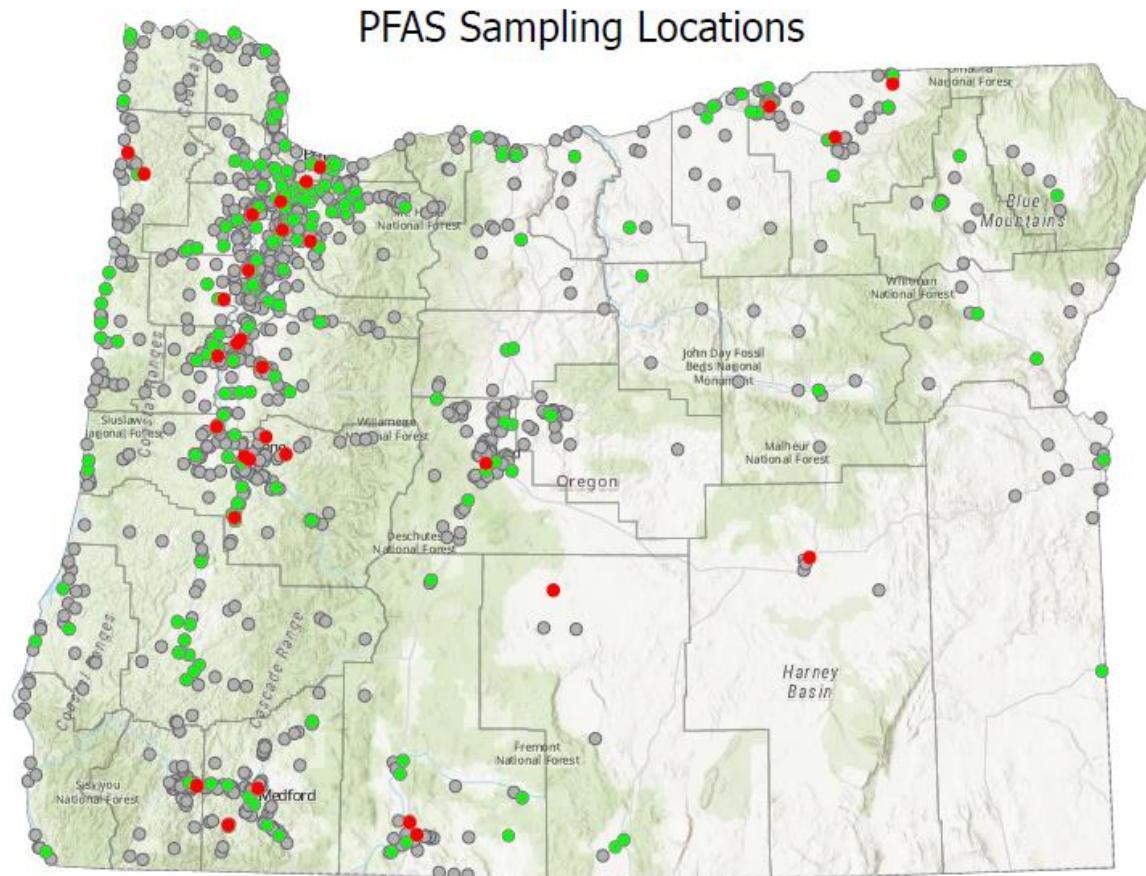
Compound	Final MCLG	Final MCL (Enforceable levels)
PFOA	Zero	4.0 parts per trillion (ppt) (or ng/L)
PFOS	Zero	4.0 ppt
PFHxS	10 ppt	10 ppt
PFNA	10 ppt	10 ppt
HFPO-DA (aka GenX chemicals)	10 ppt	10 ppt
Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS	1 (unitless) Hazard Index	1 (unitless) Hazard Index

# PFAS Monitoring at Public Water Systems

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- OHA's PFAS monitoring project in 2021/2022 and 2023 with federal funding
  - Total 160 samples collected from 143 public water systems with proximity to a known or suspected PFAS site
- EPA's Unregulated Contaminant Monitoring Rule 5 (UCMR5), 2023 to 2025
  - 127 systems serving over 3,300 people are monitoring for PFAS
- Planned monitoring at over 900 systems (<3,300) in next two years
  - 32 systems with measurable detections and 23 systems with detections above EPA's MCLs

# Monitoring and Detection Locations



- Monitoring Completed and PFAS Not Detected
- Monitoring Completed and PFAS Detected
- Monitoring Not Completed



# Funding to Assist Water Systems

- Bipartisan Infrastructure Law (BIL) provides 5-year grant funding for emerging contaminants (EC) including PFAS
  - BIL-EC
  - EC-Small Disadvantaged Communities (SDC)
- 19 out of 29 SRF eligible systems with PFAS detections currently engaged in funding process
- Typical treatment options include granular activated carbon, anion exchange, reverse osmosis, or nanofiltration

	BIL-EC	EC-SDC
2022	\$9,940,000	\$9,457,000
2023	\$11,493,000	\$9,457,000
2024	\$11,493,000	\$9,457,000
2025	\$11,493,000	\$9,457,000
2026	\$11,493,000	\$9,457,000

Approximately 150 for-profit non-transient and 800 state regulated system are not eligible for federal funding

# Tackling PFAS in Oregon: ACWA Updates to the Legislature

House Committee on Agriculture, Land Use, Natural  
Resources, and Water  
September 24, 2024

Susie Smith  
Stony Creek Consulting  
on behalf of:  
Oregon ACWA



*Community wastewater treatment and stormwater management agencies across the state working together to protect Oregon's water quality since 1987*



# Local Clean Water Agency Roles

- We protect public health & safety, and the environment!
- We provide sustainable, cost-effective water/wastewater services
- We comply with State and Federal regulations
- Water and wastewater facilities “passive receivers”; they don’t use or create PFAS
- We reduce toxics like PFAS through source reduction; treatment plants can’t breakdown or destroy PFAS
- We educate the public about health risks and solutions



# PFAS Concerns for Public Wastewater and Water Utilities

- PFAS pass through to treated wastewater and biosolids because:
  - Wastewater facilities are not designed to treat PFAS
  - PFAS don't break down easily and they persist
- Found in ground and surface waters
- Some PFAS are toxic at very low levels
- Water/Wastewater Utilities are required to address PFAS
- Limited treatment approaches (not available to WWTPs) would be the costliest approach; shifting economic burden from polluters to the public
- Other states' PFAS issues put long-standing sustainable beneficial reuse practices at risk—more OR study is needed



# ACWA ACTION PLAN SUPPORTS LOCAL CLEAN WATER AGENCIES

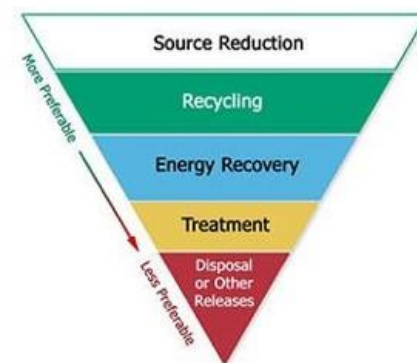
- ACWA PFAS Work Group established in 2019 to learn, share, and inform (over 65 participants)
- ACWA Action Plan:
  - Track PFAS science, policies and actions, and engage for OR
  - Identify sources and contaminant levels in Oregon to improve science basis for future policies
  - Coordinate research opportunities and resources to improve the science on PFAS in Oregon
  - Provide communications and outreach tools for ACWA members to use in their communities
  - Support local PFAS source reduction efforts

# Priority Actions and Outcomes

- Biosolids Study: A collaboration of ACWA members, farmers, DEQ, and OSU researchers—*seeking funding*
- EPA Toxics Reduction Grant—PFAS and Phthalates:
  - Local gov't purchasing guides and resources for safer products
  - Best Practices Guide to reach and inspire hard-to-reach audiences
  - Facts About PFAS Exposure
  - What You Can Do to Reduce Your PFAS Exposure
  - Municipal Wastewater Influent, Effluent, Biosolids, Industry Sampling in Oregon (Summary Report in Fall 2024)
  - Business & Industry Sources of PFAS in Wastewater (Fall 2024)
  - Pollution Prevention and Source Control Resources (for Local Governments, Businesses, & Industries Fall 2024)

# The Path Forward: ACWA Perspectives

- Establish an Oregon-specific scientific basis for policy decisions
  - What are the sources and levels of PFAS? Where do they end up? What are the impacts?
- Focus on “upstream” source reduction
  - Restrict use of PFAS in products
  - Control or eliminate industrial sources
  - Increase public & business awareness of safer alternatives
- Avoid reliance on treatment technologies and unattainable limits—focus on flexible pollution reduction/pretreatment plans
  - Advanced chemical treatment is costly & unproven for wastewater facilities
  - Limits for some PFAS could be below detection capabilities



# ACWA Recommendations to the State of Oregon

- Develop a coordinated interagency strategy and action with transparency and stakeholder involvement
- Consider product phase out actions
- Conduct studies to determine sources and levels levels of PFAS and determine risks associated with biosolids management practices
- Pursue and fund targeted monitoring strategies and push back on costly blanket monitoring requirements
- Advocate for source reduction/pretreatment focus
- Establish a regulatory framework following EPA completion of risk assessments and water quality limits, with a focus on feasible, affordable and flexible pollution reduction plans



# Recommendations for Local Government Action

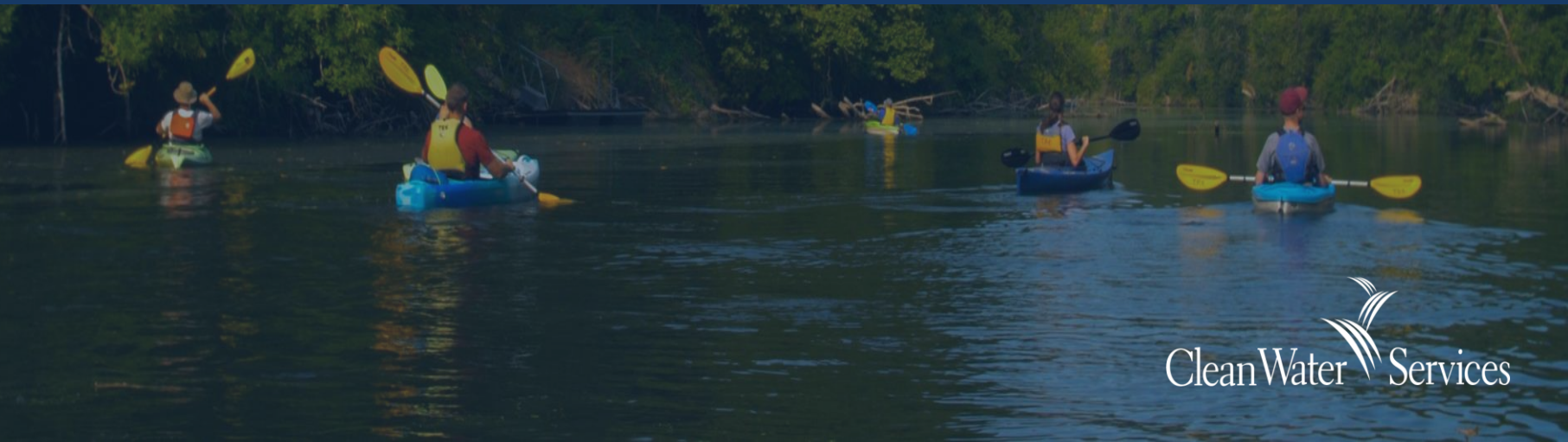
- Address PFAS in local operations--identify products with PFAS and purchase safer alternatives!
- Test wastewater influent, effluent, biosolids, leachate and targeted industries—find the source of PFAS!
- Identify PFAS source reduction opportunities in the community including outreach to industrial sources
- Communicate with the public about PFAS in consumer products—inspire choices to use safer products!
- Participate in biosolids management studies to ensure safe practices



# Clean Water Services: PFAS Source Identification and Reduction

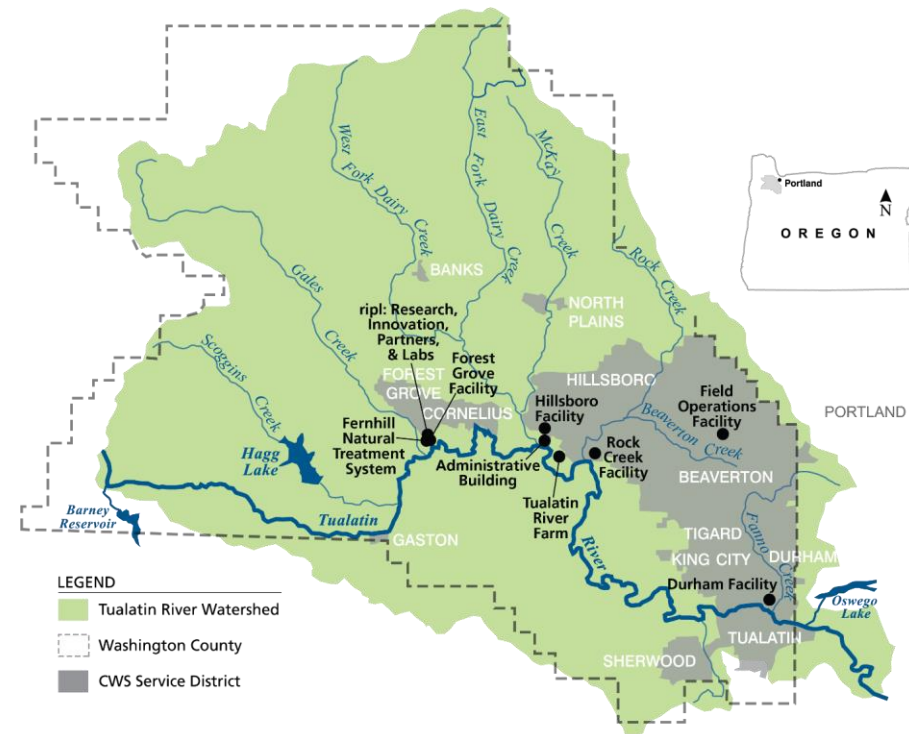
Tracy Rainey, Government Relations Manager

September 24, 2024



# About Clean Water Services

- Local Government Utility Provider (Special Service District – County Service District):
  - Sanitary
    - ❖ *Collection, conveyance, treatment*
  - Resource recovery
  - Stormwater collection & treatment
  - River flow management
- Services to 605,000+ residents & businesses
  - serving urbanized areas of Washington County including 12 cities within county
- Infrastructure
  - over 1400 miles pipe; more than 44 pump stations; 4 water resource recovery facilities



# Sources of PFAS to Water Resource Recovery Facilities

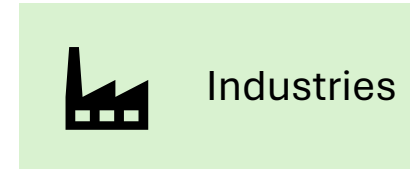
Not subject to regulatory controls



Not subject to regulatory controls



Some are subject to regulatory controls



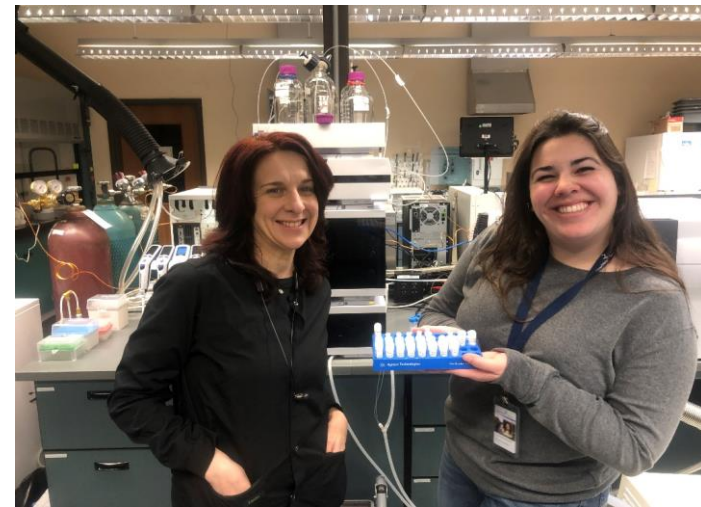
Dominant source varies by Water Resources Recovery Facilities





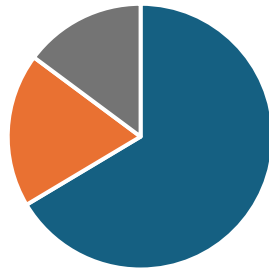
# CWS – Our Approach to PFAS Research

- Identification of sources in our sewershed/watershed
  - Sampling
  - Lab analysis
- Engage in source tracing and outreach
  - Additional sampling
  - Tracking through the system to an identifiable source (similar to how we trace sources of wipes or Covid)
- Measure impacts from outreach, education and source reduction strategies
  - More sampling & lab analysis
- ***Note: this work requires significant sampling throughout; and careful analysis in the lab!***



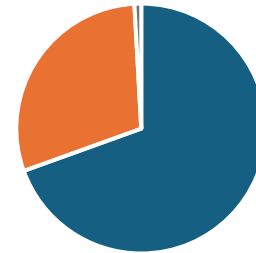
# Sources of PFAS Mass - CWS Water Resource Recovery Facilities

Forest Grove WRRF



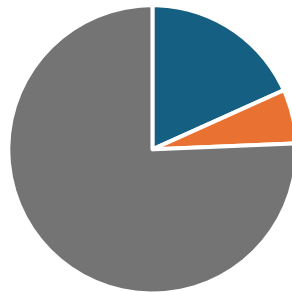
■ Domestic ■ Commercial ■ Industrial

Hillsboro WRRF



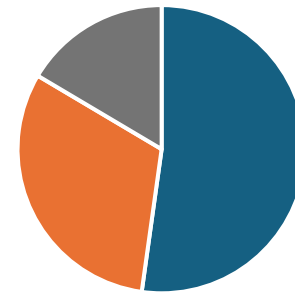
■ Domestic ■ Commercial ■ Industrial

Rock Creek WRRF



■ Domestic ■ Commercial ■ Industrial

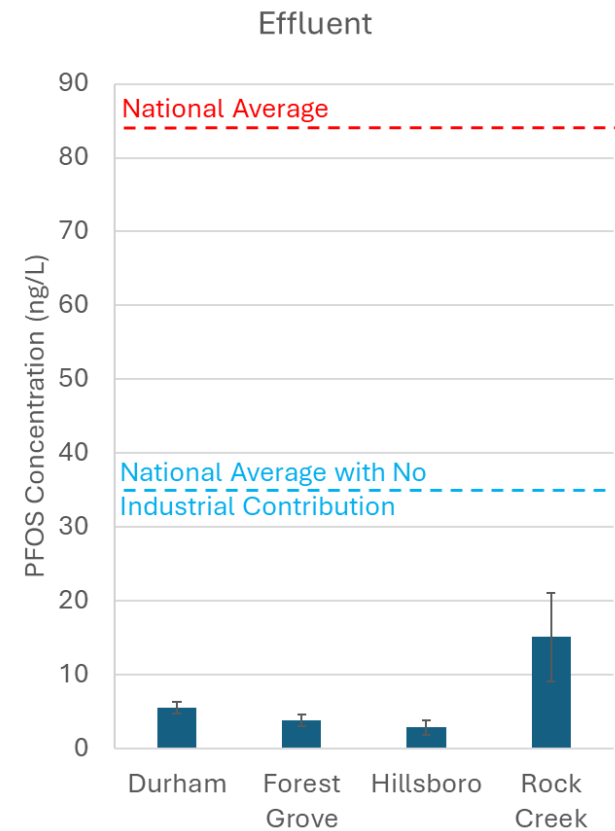
Durham WRRF



■ Domestic ■ Commercial ■ Industrial

# What we have learned...

- Samples showing levels that are lower than national averages
- Dominant sources dependent upon community demographics/Water Resource Recovery Facility
- Industrial source reduction efforts can be effective; we are able to measure these reduction/outcomes
- To really address PFAS, we need reductions from domestic/commercial sources
- Approaches to domestic/commercial source reduction requires a different approach
  - More difficult and less targeted opportunities for source control





# Concluding Remarks

- Drinking water data to date does not indicate extensive statewide contamination
- Collective effort needed by federal, state and local government, and industry
- Implementation of EPA, state, and local PFAS plans and guidance
  - all prioritize building on existing data and science-based assessments of impacts and risks
- Priority actions:
  - identifying impacted areas and remediation solutions, and
  - source reduction efforts that address PFAS compounds used in consumer products and industrial processes through targeted regulatory actions and collaborative efforts
- Additional state and local Oregon studies needed to determine PFAS sources, impacted locations, and exposure risks, but additional funding is required
- Maintaining or increasing state agency capacity to address PFAS is critical

# PFAS Resources

## US EPA PFAS Strategic Roadmap: Commitments to Action 2021-2024

[https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap\\_final-508.pdf](https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf)

## Oregon Health Authority – Drinking Water Services

[www.healthoregon.org/dwpcfas](http://www.healthoregon.org/dwpcfas)

- PFAS Drinking Water Health Advisory Levels
- PFAS Monitoring by Public Water Systems in Oregon
- PFAS Screening and Assessment Project
- Links to PFAS information from other organizations

## Oregon Health Authority – Environmental Public Health

[www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/HEALTHYNEIGHBORHOODS/TOXICSUBSTANCES/Pages/PFAS.aspx](http://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/HEALTHYNEIGHBORHOODS/TOXICSUBSTANCES/Pages/PFAS.aspx)

- General PFAS information (FAQs)

## Toxic Substances and Disease Registry

<https://www.atsdr.cdc.gov/pfas/health-effects/index.html>

- PFAS exposure and health information

## National Academies

<https://www.nationalacademies.org/our-work/guidance-on-pfas-testing-and-health-outcomes>

- Clinical recommendations

# PFAS Resources (cont.)

## Oregon Association of Clean Water (ACWA) Agencies:

- Guide to Avoiding PFAS in Consumer Products:

([https://oracwa.org/mp-files/pfas\\_free\\_purchasing\\_guide\\_april-2024.pdf/](https://oracwa.org/mp-files/pfas_free_purchasing_guide_april-2024.pdf/))

- Best Practices Guidance (for agencies):

(<https://oracwa.org/mp-files/acwa-outreach-best-practices.pdf/>)

- Facts About PFAS exposure:

*English:* (<https://oracwa.org/mp-files/acwa-outreach-best-practices.pdf/>)

*Spanish:* ([https://oracwa.org/mp-files/pfas-exposure-facts\\_spanish\\_080524.pdf/](https://oracwa.org/mp-files/pfas-exposure-facts_spanish_080524.pdf/))

- PFAS: What You Can Do:

*English:* ([https://oracwa.org/mp-files/pfas-what-you-can-do\\_final.pdf/](https://oracwa.org/mp-files/pfas-what-you-can-do_final.pdf/))

*Spanish:* ([https://oracwa.org/mp-files/pfas-what-you-can-do\\_spanish-080424.pdf/](https://oracwa.org/mp-files/pfas-what-you-can-do_spanish-080424.pdf/))