“Forever Chemicals” in Groundwater

John Lovie

Whidbey Island Water Systems Association

Safe Adequate Water

Whidbey Island Water Systems Association

- Represents water systems, private well owners
- About 100 members
- Group A, Group B water systems, private wells, associate members
- Recipient of a Public Participation Grant from Washington State Department of Ecology
- whidbeywatersystems.org
- mail@whidbeywatersystems.org

Disclaimer

This material is funded through a Public Participation Grant from the Washington State Department of Ecology. The content was reviewed for grant consistency but is not necessarily endorsed by the agency.

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Overview

- Timeline
- Limits
- Detections
- Potential Sources
- Cleanup Process
- Environmental Report Tracking System (ERTS)
- PFAS Cleanup Guidance
- Alternative solutions for drinking water
- Sourcewater Protection
- Paying for cleanup
- Public Participation Grants

PFAS in Drinking Water Timeline

UCMR3 – Third Unregulated Contaminant Monitoring Rule

EPA LHA – Environmental Protection Agency Lifetime Health Advisory

PFAS CAP – Per- and Poly-Fluorinated Alkyl Substances Chemical Action Plan

DOH SALs – Washington State Department of Health State Action Limits

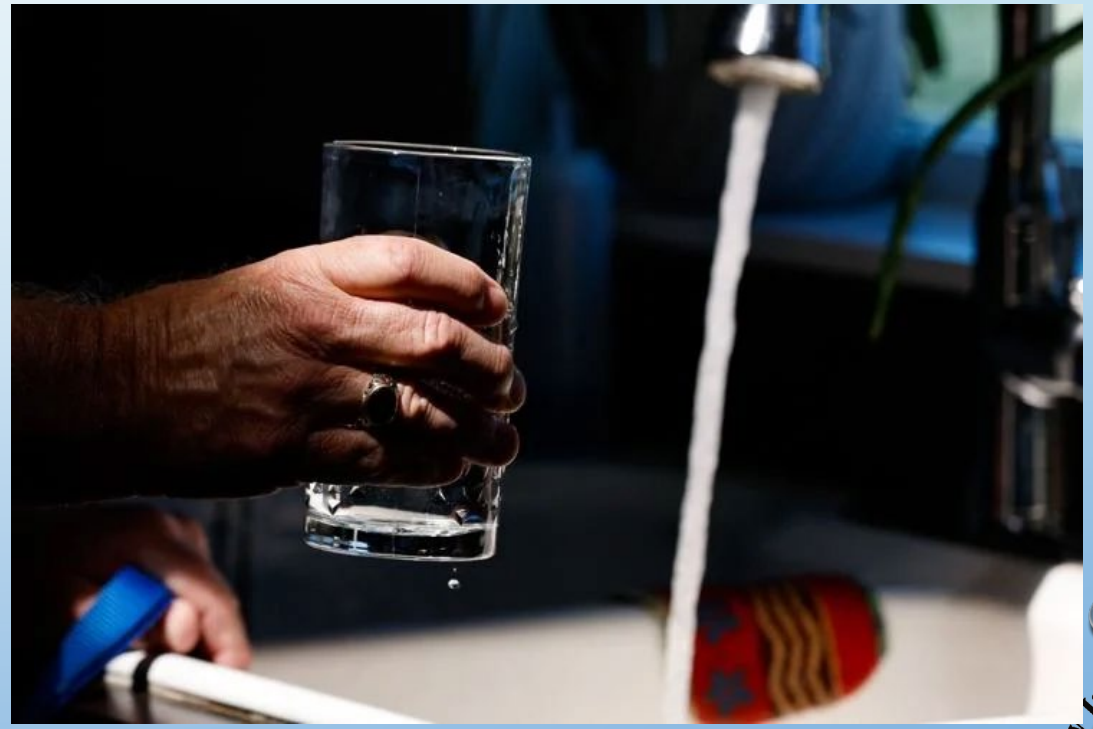
MCL – Maximum Contaminant Level

PFAS Regulatory Limits

PFAS	PFAS Name	2016 EPA LHA ng/l	DOH SAL ng/l	Ecology Cleanup ng/l	2022 EPA LHA ng/l
GenX	GenX Chemicals			24	10
PFBS	(PFBS) PFbutane sulfonic acid		345	345	2000
PFHxS	(PFHxS) PFhexane sulfonic acid		65	65	
PFNA	(PFNA) PFnonanoic acid		9	9	
PFOA	(PFOA) PFoctanoic acid	70	10	10	0.004
PFOS	(PFOS) PFoctane sulfonic acid	70	15	15	0.02

DOH Voluntary Testing Program

- Group A water systems
- Take-up varied widely across the state
- Some counties submitted no samples
- Overall, 1000 out of 7000 systems have been tested, but predominantly in the northwest
- Island County is the leader, with 137 out of 293 Group A systems tested
- The 10% detection rate in Island County (14 systems) is holding up across the state
- 700 Group A, 1800 Group B, and thousands of private wells can be expected have detections
- With MCLs, new methods, and compulsory testing, thousands of exceedances can be expected



The data is in [Sentry Internet | Washington State Department of Health]

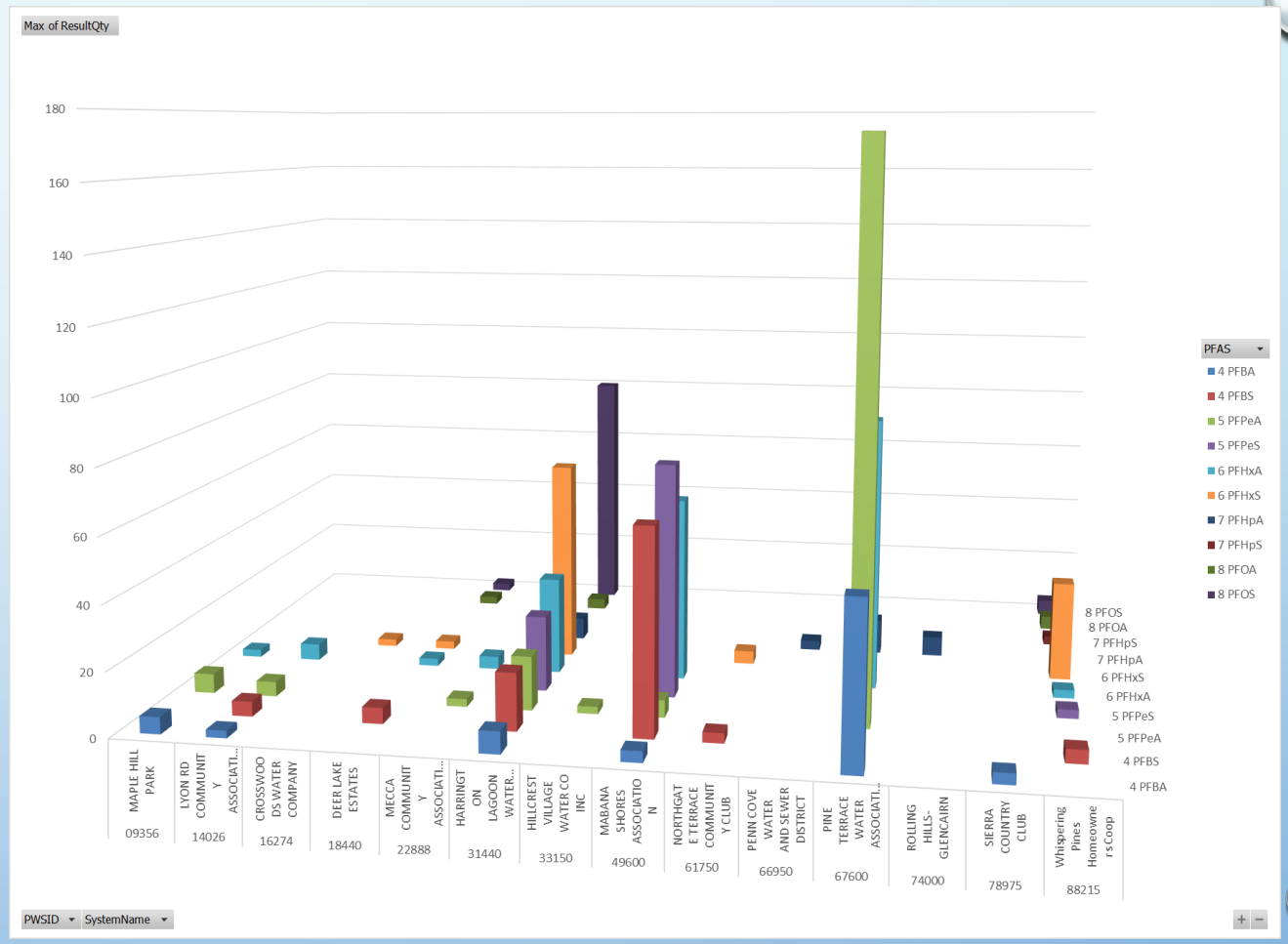
- Water quality data report
- Filter out pesticides
- Filter out non-detects (<=2 ng/l)
- Water system names are in a separate table. A lookup is needed.

Island County PFAS Detections in DOH Voluntary Testing Program

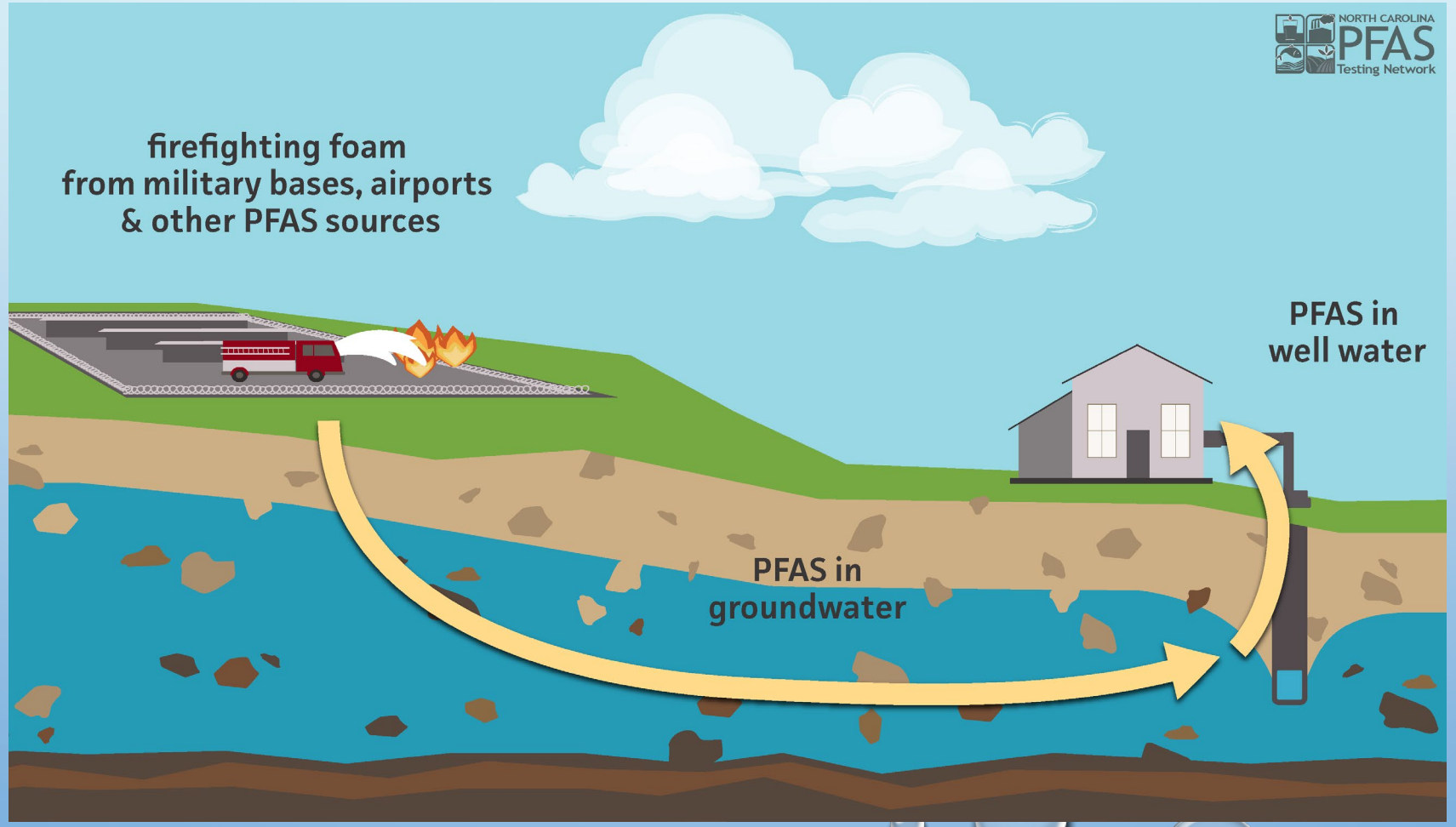
- 14 systems with detections out of 137
- One exceeds old LHAs
- One exceeds SALs
- Four exceed new LHAs

BUT

- With MCLs and new analytical methods, many more exceedances can be expected



What are the sources of PFAS in drinking water?



AFFF - Washington State Department of Ecology

Firefighting foam
is the suspected source of all PFAS contamination in our state's
drinking water.

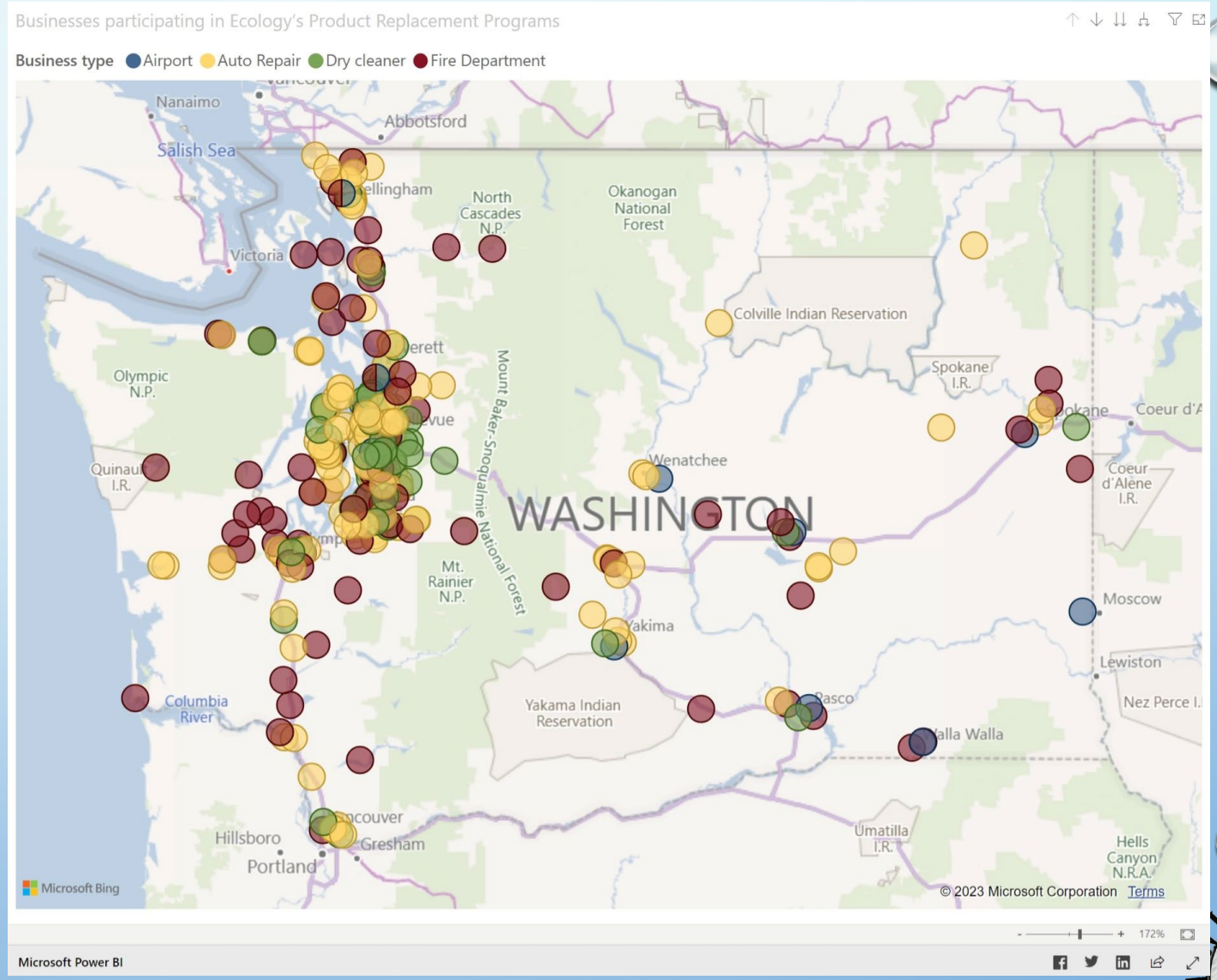
PFAS in Firefighting Foam (wa.gov)

Collection and disposal program

Environmental Impact Statement

Product Replacement Program - Washington State Department of Ecology

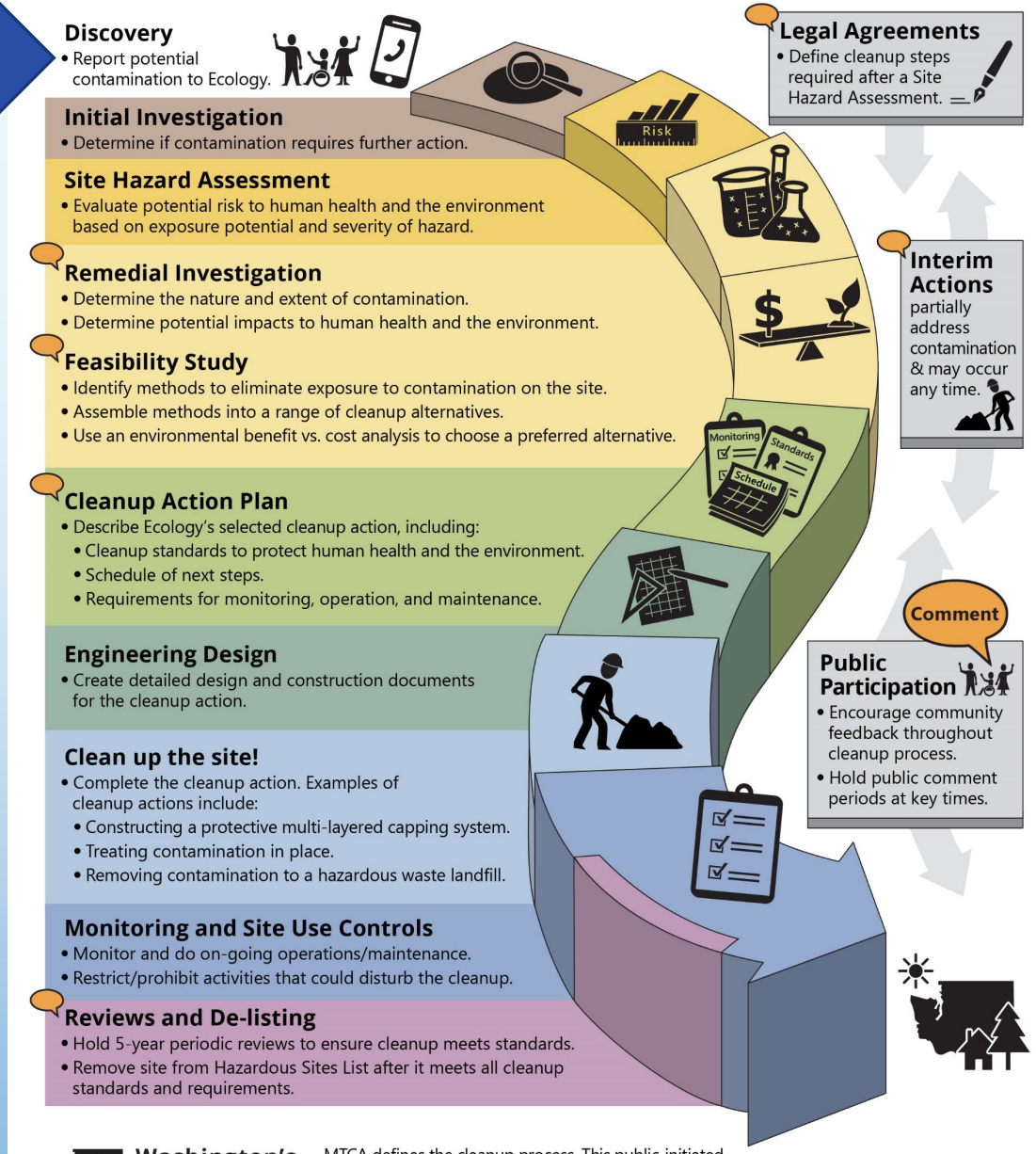
- Fire departments who plan to participate in Ecology's AFFF firefighting foam disposal program



Cleanup process - Washington State Department of Ecology

You are here

Discovery
- Report potential contamination to Ecology.



Whidbey Island Water Systems Association
Safe and Reliable Water

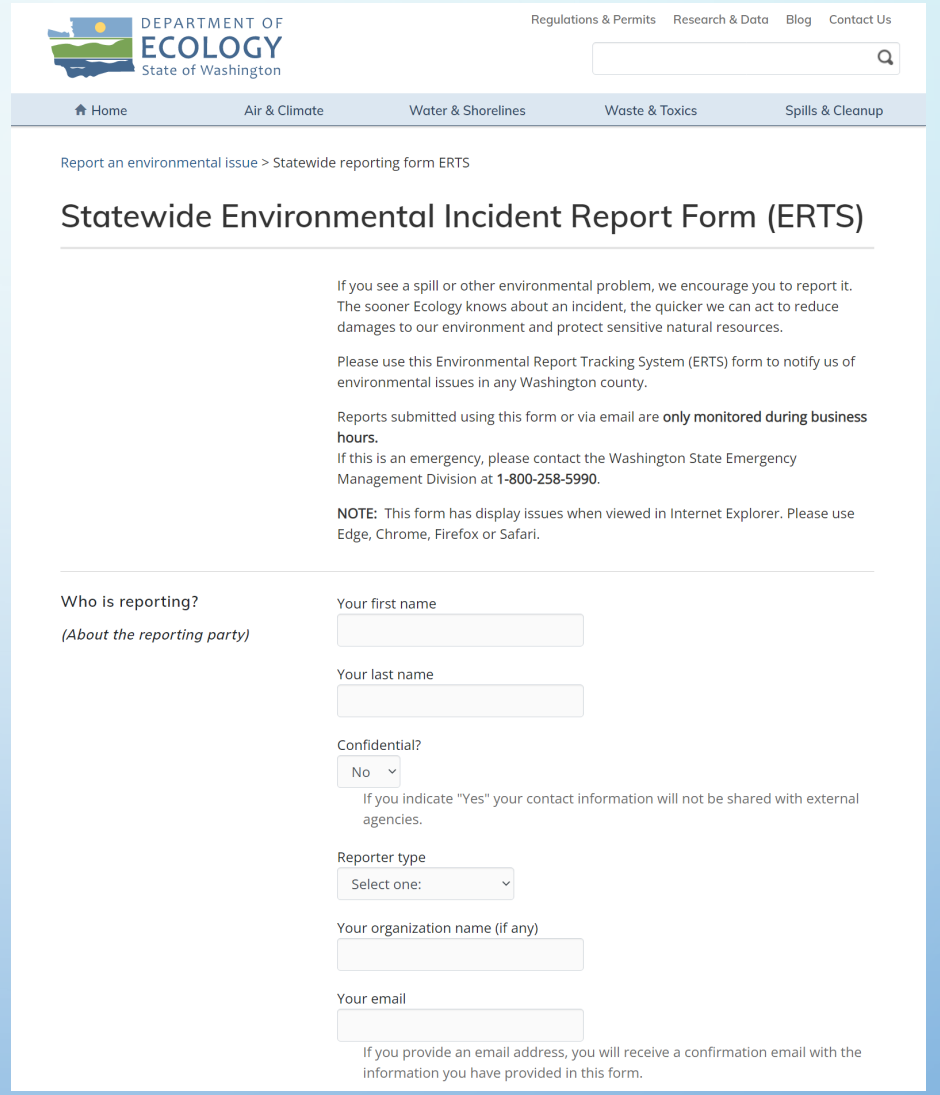
Statewide reporting form ERTS - Washington State Department of Ecology

Who is reporting?

Where did it happen?

What happened?

Who might be responsible?



DEPARTMENT OF ECOLOGY
State of Washington

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Home | Air & Climate | Water & Shorelines | Waste & Toxics | Spills & Cleanup

Report an environmental issue > Statewide reporting form ERTS

Statewide Environmental Incident Report Form (ERTS)

If you see a spill or other environmental problem, we encourage you to report it. The sooner Ecology knows about an incident, the quicker we can act to reduce damages to our environment and protect sensitive natural resources.

Please use this Environmental Report Tracking System (ERTS) form to notify us of environmental issues in any Washington county.

Reports submitted using this form or via email are **only monitored during business hours.**
If this is an emergency, please contact the Washington State Emergency Management Division at **1-800-258-5990**.

NOTE: This form has display issues when viewed in Internet Explorer. Please use Edge, Chrome, Firefox or Safari.

Who is reporting?

(About the reporting party)

Your first name

Your last name

Confidential?

No

If you indicate "Yes" your contact information will not be shared with external agencies.

Reporter type

Select one:

Your organization name (if any)

Your email

If you provide an email address, you will receive a confirmation email with the information you have provided in this form.

Reporting Environmental Contamination

Reporting not required for water systems but much appreciated
We won't list your water system; we'll list potential source or unknown source
You don't need to know source or have much data but any info on potential sources is appreciated

Reporting environmental contamination

What to Report

Detection of PFAS in water system
Any suspected environmental contamination

Reporting Options

Email nwroerts@ecy.wa.gov
Call 206-594-000
Online reporting form

Any Spill to Surface Water

Call immediately 24/7
800-OILS-911 / 800-645-7911

Finding the Reporting Form

Visit Ecology's web site at ecology.wa.gov
Click on "Report environmental issues"
Click on "Report other environmental issues"
Go to the section for the Northwest Region

Whidbey Island Water Systems Association
Safe Adequate Water

Cleanup Process in Action

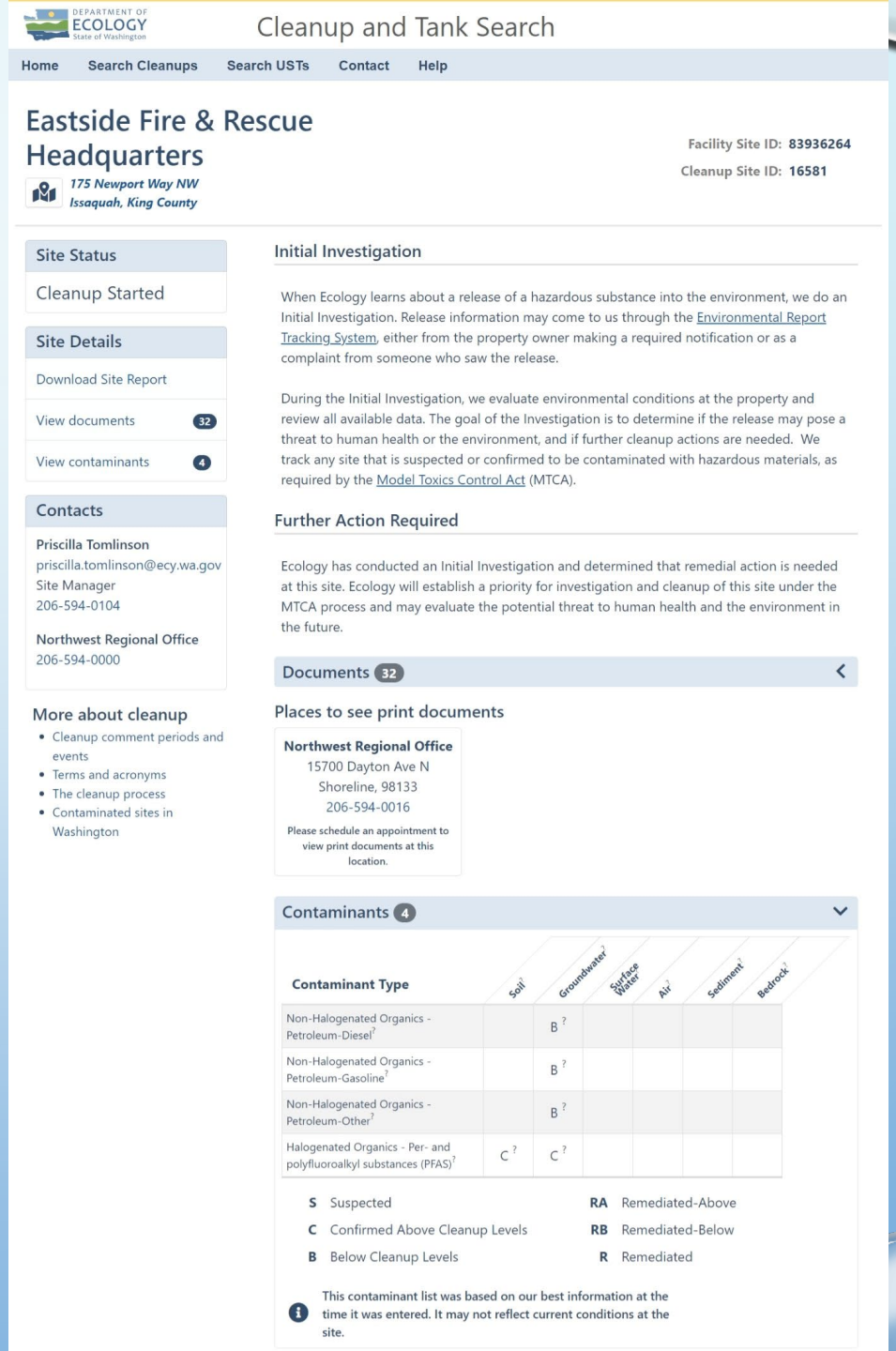
[Eastside Fire & Rescue Headquarters - (16581) (wa.gov)]

Initial Investigation

Further Action Required

Cleanup Started

Permeable Reactive Barrier



DEPARTMENT OF ECOLOGY State of Washington

Cleanup and Tank Search

Home | Search Cleanups | Search USTs | Contact | Help

Eastside Fire & Rescue Headquarters

175 Newport Way NW
Issaquah, King County

Facility Site ID: 83936264
Cleanup Site ID: 16581

Site Status

Cleanup Started

Site Details

Download Site Report

View documents 32

View contaminants 4

Contacts

Priscilla Tomlinson
priscilla.tomlinson@ecy.wa.gov
Site Manager
206-594-0104

Northwest Regional Office
206-594-0000

More about cleanup

- Cleanup comment periods and events
- Terms and acronyms
- The cleanup process
- Contaminated sites in Washington

Initial Investigation

When Ecology learns about a release of a hazardous substance into the environment, we do an Initial Investigation. Release information may come to us through the Environmental Report Tracking System, either from the property owner making a required notification or as a complaint from someone who saw the release.

During the Initial Investigation, we evaluate environmental conditions at the property and review all available data. The goal of the Investigation is to determine if the release may pose a threat to human health or the environment, and if further cleanup actions are needed. We track any site that is suspected or confirmed to be contaminated with hazardous materials, as required by the Model Toxics Control Act (MTCA).

Further Action Required

Ecology has conducted an Initial Investigation and determined that remedial action is needed at this site. Ecology will establish a priority for investigation and cleanup of this site under the MTCA process and may evaluate the potential threat to human health and the environment in the future.

Documents 32

Places to see print documents

Northwest Regional Office
15700 Dayton Ave N
Shoreline, 98133
206-594-0016
Please schedule an appointment to view print documents at this location.

Contaminants 4

Contaminant Type	Soil	Groundwater	Surface Water	Air	Sediment	Bedrock
Non-Halogenated Organics - Petroleum-Diesel		B				
Non-Halogenated Organics - Petroleum-Gasoline		B				
Non-Halogenated Organics - Petroleum-Other		B				
Halogenated Organics - Per- and polyfluoroalkyl substances (PFAS)	C	C				

S Suspected
C Confirmed Above Cleanup Levels
B Below Cleanup Levels
RA Remediated-Above
RB Remediated-Below
R Remediated

This contaminant list was based on our best information at the time it was entered. It may not reflect current conditions at the site.

Cleanup Levels

[Focus on: PFAS cleanup levels (wa.gov)]

DEPARTMENT OF ECOLOGY
State of Washington

Focus on: PFAS Cleanup Levels

Photo credit: jplenio on Pixabay

Purpose and background

This focus sheet provides the Washington State Department of Ecology's (Ecology's) recommended soil and groundwater cleanup levels for part of a group of harmful compounds known as per- and polyfluoroalkyl substances, or PFAS. These compounds include:

1. PFOA, or perfluorooctanonic acid,
2. PFOS, or perfluorooctane sulfonic acid,
3. PFNSA, or perfluorononanoic acid,
4. PFHxS, or perfluorohexane sulfonic acid,
5. PFBS, or perfluorobutane sulfonic acid, and
6. HFPO-DA (GenX), or hexafluoropropylene oxide dimer acid.

The Washington State Department of Health (DOH) issued a final rule that included groundwater State Action Levels (SALs) for the first five PFAS compounds listed above, which became effective on January 1, 2022. The Department of Health calculated the SALs using peer-reviewed non-cancer reference doses (RfDs) that represent the best available science. They used RfDs to establish the SALs because there are limited data available to support a quantitative assessment of cancer risk for PFAS compounds.

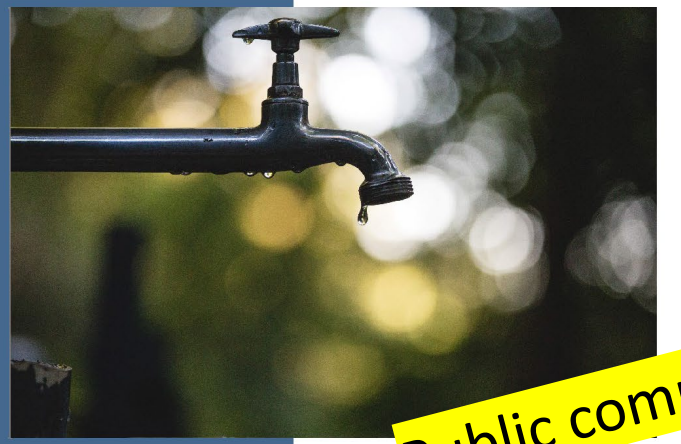
We calculated the recommended groundwater cleanup level for HFPO-DA using Model Toxics Control Act (MTCA) Equation 720-1[1] and EPA reference doses (RfDs).

For comparison purposes, we've also included the Environmental Protection Agency's (EPA) Health Advisory Levels for PFOA, PFOS, PFBS, and HFPO-DA. EPA is still evaluating the RfDs they used to develop the interim Health Advisory Levels for PFOA and PFOS, and it's possible these levels could be revised in the future. EPA is also developing RfDs for several other PFAS compounds, which may lead to additional groundwater health advisories.

Table 1: Recommended groundwater cleanup levels

PFAS Compound	Recommended Groundwater Cleanup Level	EPA Health Advisory Level
PFOA	10 ng/L	0.004 ng/L
PFOS	15 ng/L	0.02 ng/L
PFNA	9 ng/L	None
PFHxS	65 ng/L	None
PFBS	345 ng/L	2,000 ng/L
HFPO-DA (GenX)	24 ng/L	10 ng/L

Whidbey Island Water Systems Association
Safe Ad[illegible] Water



DRAFT Guidance for Investigating and Remediating PFAS Contamination in Washington State

Toxics Cleanup Program

Washington State Department of Ecology
Olympia, Washington

December 2022 | Publication No. 22-09-058

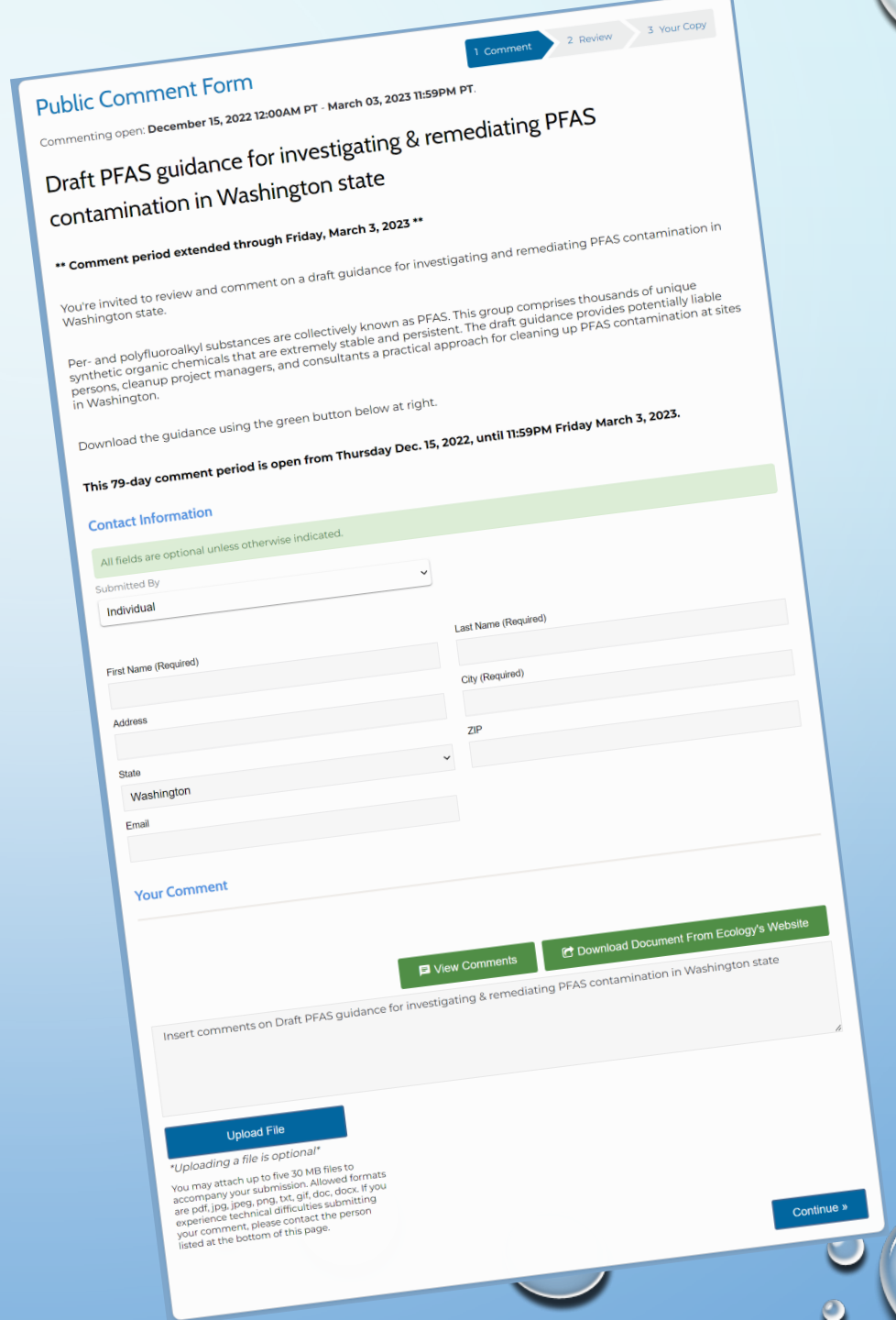
DEPARTMENT OF ECOLOGY
State of Washington

Public comment period extended to March 3, 2023

Contents

Submit a comment

[Draft PFAS guidance for investigating & remediating PFAS contamination in Washington state (commentinput.com)]



Alternative Solutions

Bottled water

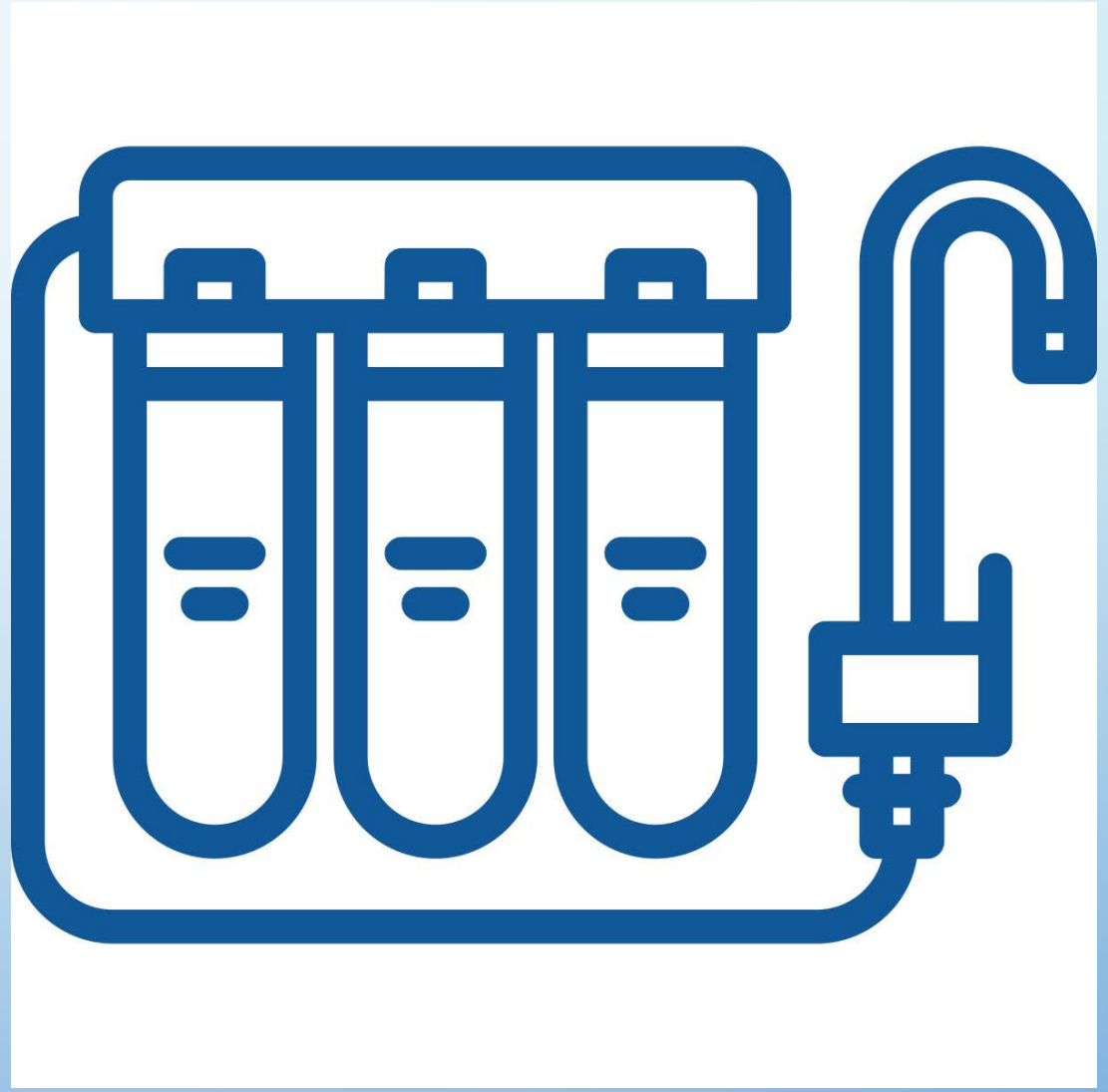
Point of use filtration

Treatment of drinking water

Relocation of wells

Consolidation of water systems

Clean up of groundwater



Sourcewater Protection

We are used to doing this for surface water

What tools exist to protect groundwater?

Paying for cleanup

A core principle of MTCA is “polluter pays”

Everyone who touches the material is a Potentially Responsible Person (PRP)

Some states have sued the manufacturers

It will take a long time to recover the money

Need a fund NOW!

Public participation grants - Washington State Department of Ecology

Funding cycle

- **Amount of funding available:** $4.87 million for 2023 – 2025
- **Grant award limit:** Up to $60,000 per year, for up to two years
- **Amount of matching funds required:** No matching funds are required.

Application information | Who's eligible | Eligible project types

Applications are not being accepted at this time.

We will accept applications for the 2023 – 2025 biennium starting March 8, 2023 and closing at 5 p.m. on April 5, 2023.

Application information | Who's eligible | Eligible project types

Funding is available for the following entities:

- Individuals affected by the release of a hazardous substance.
- Nonprofit public interest organizations.

Application information | Who's eligible | Eligible project types

PPG will fund two basic types of projects:

- Projects that engage the public in the investigation and remediation of a release or threatened release of a hazardous substance.
- Projects that support the state's Solid and Hazardous Waste Management Priorities.

“Forever Chemicals” in Groundwater

John Lovie

Whidbey Island Water Systems Association

Safe Adequate Water