



PFAS and Biosolids

Frequently Asked Questions

What are per- and polyfluoroalkyl substances?

PFAS stands for per- and polyfluoroalkyl substances. First developed in the 1940s, the PFAS chemical group has grown to include over 3,000 synthetic chemicals, none of which are naturally occurring. PFAS are useful because they repel oil and water, reduce friction, and resist extreme temperature. Two chemicals in the PFAS group, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS), are no longer manufactured in the United States due to health concerns.

Where do they come from?

PFAS are a broad group of chemicals that fill a variety of purposes, from lining microwave popcorn bags to creating smudge-free surfaces on cellphones. PFAS are in plastics, stain-resistant carpets, water-resistant textiles, nonstick cookware, rubber, packaging, firefighting foam, cosmetics, etc.

Why do we care?

Most people in the United States are exposed to PFAS through daily use of common household products, drinking water, and many types of food packaging. PFAS do not break down naturally, which means they can move throughout our environment, accumulate in our soils, our water, and our bodies. Researchers have found that PFOA and PFOS, the most extensively studied PFAS, can cause health problems in animals and people if they reach certain concentrations levels. Because PFAS are so widely used, they have been detected in human blood and animal tissue samples across the globe, as well as most waterways.

What does this have to do with biosolids?

Due to the use in common household products, PFAS are present in small amounts in wastewater.

Biosolids are not a source of PFAS but will contain detectable amounts of these chemicals due to their extensive use in common household products. Biosolids from areas where PFAS are manufactured are likely to have higher amounts than biosolids from areas primarily serving residential areas. There are no PFAS manufacturers in Washington state.

What does the research tell us so far?

Studies done specifically with biosolids are increasing. Since King County's biosolids product, Loop®, is a fertilizer replacement and 100% of it is beneficially land applied, it is important that we understand how PFAS function and move within soils.

So far, based on research results, daily exposure to PFAS from household sources such as dust, food containers, or cosmetics poses more risk of human exposure to PFAS than from biosolids. Reducing the use of PFAS in everyday products is the single best way to limit exposure to these compounds.

To date, there are no technologies that destroy PFAS completely. There are some removal technologies for drinking water, but wastewater treatment technologies are still evolving.

What are we doing about it?

PFAS are not a regulated compound, but rather than wait for new regulations, we're proactively initiating testing our wastewater and biosolids for PFAS. We are also identifying sources of PFAS in our environment, and looking for the best ways to control them and reduce exposure risk for our communities.



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It's important to note that PFAS are not a problem caused by wastewater treatment. It's one of many chemicals of concern that come from consumer products, medicines, processes, and other sources upstream of our wastewater treatment plants.

The fastest, most effective, and least expensive solution is source control, preventing these toxic chemicals from entering our waterways to begin with.

What can you do?

The best way to reduce PFAS in the environment is to avoid products containing PFAS.

[Click here](#) to learn more about other things you can do to protect yourself, your family, and our environment. Brochure long link: <https://bit.ly/WA-Ecology-ReducePFAS-Exposure>

[This video](#) from the Washington Department of Ecology can help. Video long link: <https://bit.ly/reducePFASexposure>

Regulations and voluntary phase-outs of use/manufacturing have worked to reduce pollutants, such as lead and mercury, and they can work for PFAS. Stopping the production of PFOS and PFOA has reduced their prevalence. Unfortunately, manufacturers have substituted thousands of different kinds of PFAS in their place.

PFAS are a worldwide issue. You can learn more and track progress at the state and federal levels.

Below are additional resources:

- Federal EPA [PFAS Explained](#)
Long link: <https://www.epa.gov/pfas/pfas-explained>
- Federal EPA [PFAS Strategic Roadmap](#)
Long link: <https://www.epa.gov/pfas>
- EPA's [Safer Choice Campaign](#)
Long link: <https://www.epa.gov/saferchoice>

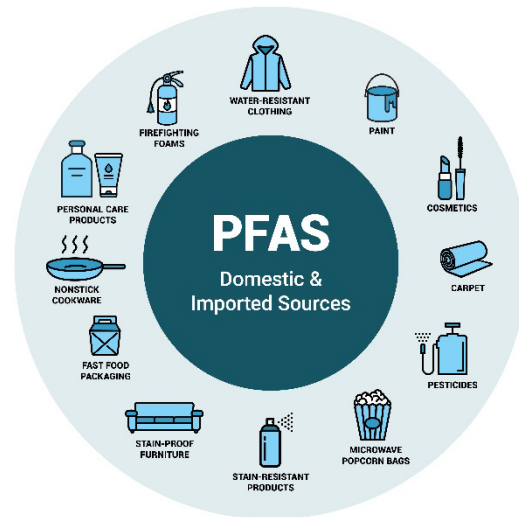


Figure 1 Some Consumer Sources of PFAS

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