

PFAS & Biosolids

About PFAS

- Per- and polyfluoroalkyl substances (PFAS) are widely used, man-made chemicals in products like food packaging, textiles, cleaners and cosmetics.
- PFAS are highly persistent chemicals that don't break down easily, leading to long-term exposure and accumulation in the body and environment.
- Exposure can occur directly through man-made products or indirectly as these products move by the ecosystem via solids, liquids and air.
- Research links certain PFAS to adverse health effects, leading to efforts to limit their use and presence in consumer goods.
- The best way to stop PFAS is to avoid using products that contain PFAS.

agencies are working to understand potential risks and acknowledge that there are broader exposure pathways for these chemicals.

It is important to note that while biosolids are being monitored for PFAS, there are many other pathways that could lead to PFAS migrating to local farm fields. These pathways include air, dust, pesticides, rain, and septic systems. The presence of PFAS in these pathways is a direct result of their use in many household products that continue to be commonly used today. In fact, some of these products can contain concentrations of PFAS that are thousands or even millions of times higher than those found in biosolids.

Minnesota PFAS in Biosolids Requirements

In 2025, the MPCA developed the Minnesota Biosolids PFAS Strategy to assess the presence of PFAS in biosolids that are land-applied to agricultural fields. The primary objective of this strategy is to better understand how much PFAS entering wastewater treatment facilities, such as the WRP, ultimately ends up in biosolids. The strategy aims to support efforts to reduce PFAS at the source and assist farmers and landowners in making informed decisions about participating in the biosolids land application program.

The strategy establishes four thresholds based on two specific forms of PFAS: PFOS and PFOA. Tier 4 indicates the highest concern, where PFOS or PFOA levels are equal to or greater than 125 micrograms per kilogram ($\mu\text{g}/\text{kg}$). In contrast, Tier 1, which is considered acceptable for land application without restrictions, has PFOS or PFOA levels of 20 $\mu\text{g}/\text{kg}$ or less. Based on samples collected in July 2025, the biosolids from WRP contained less than 4.5 $\mu\text{g}/\text{kg}$ for PFOS and 0 $\mu\text{g}/\text{kg}$ for PFOA. This means that WRP's biosolids fall into Tier 1 and can be applied without limitation.

What to know about PFAS and Biosolids

The Water Reclamation Plant (WRP) focuses on recovering nutrients from wastewater, through the use of biosolids. Our biosolids serve as a nutrient-rich organic fertilizer that enhances soil fertility and promotes plant growth. Biosolids contain nitrogen and other micro- and macronutrients and are a source of organic matter that can be returned to the soil for use in crop production. Biosolids improve soil structure and water-holding capacity that stores carbon and protects against flooding. By reusing these biosolids in agriculture, we reduce costs associated with less sustainable disposal methods and help farmers decrease their reliance on chemical fertilizers.

Before application, our biosolids undergo thorough treatment and testing to ensure safety. The nutrient-rich solids are applied to local farmland as a natural fertilizer. This process is closely monitored to meet safety standards from the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA). While biosolids do contain trace amounts of PFAS,

More About Biosolids



WRP Wastewater site:
www.rochestermn.gov/departments/public-works/wastewater-management/biosolids-program

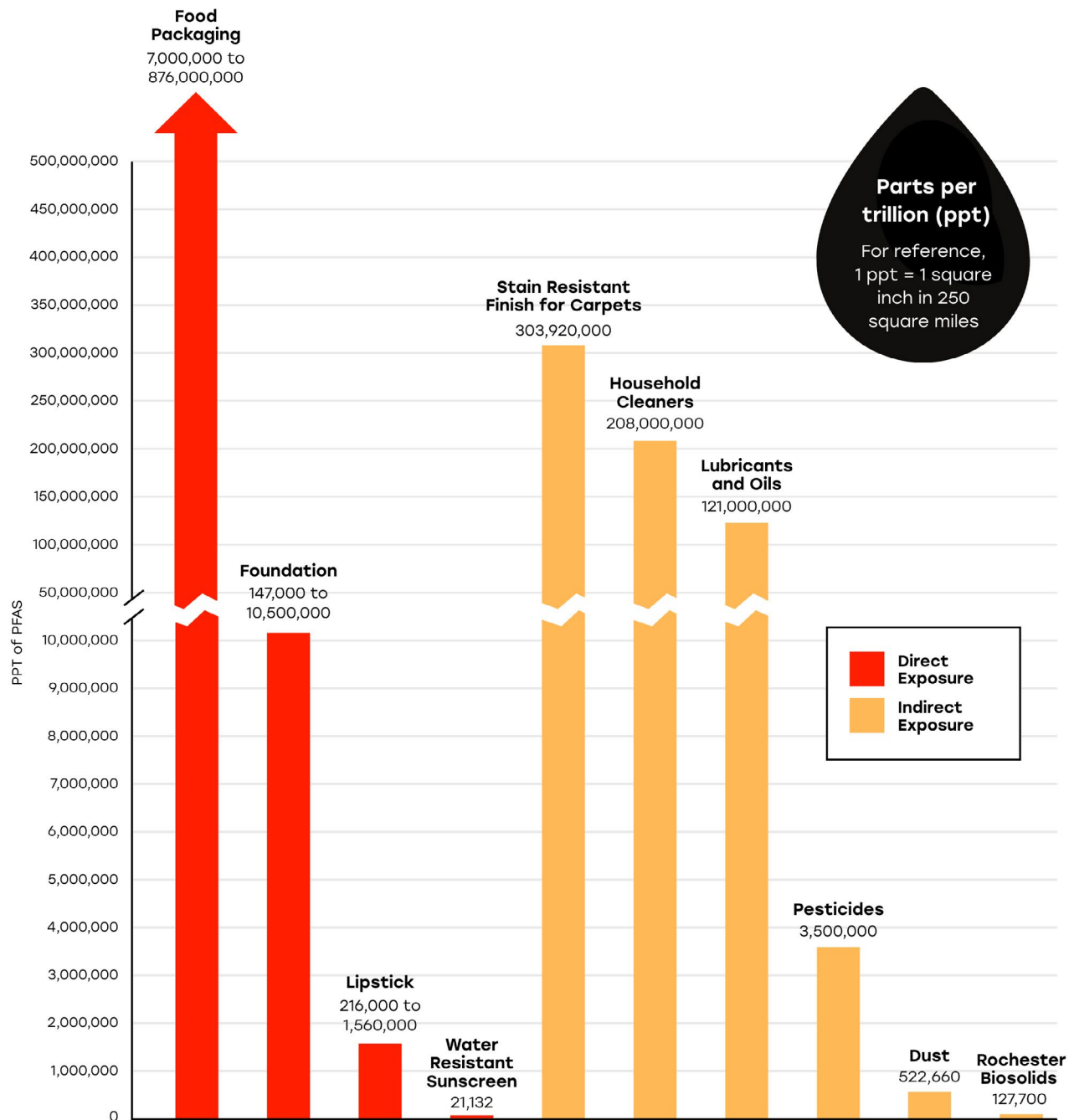
MPCA PFAS in Biosolids:
www.pca.state.mn.us/air-water-land-climate/pfas-in-biosolids-strategy

MPCA Biosolids:
www.pca.state.mn.us/business-with-us/land-application-of-biosolids

Biosolids program:
www.epa.gov/biosolids

PFAS by the numbers

Relative ranges in parts per trillion (ppt)



References: Journal of Hazardous Materials (2023), Environmental Engineering Research (2015), Environmental Engineering Research (2015), Cosmetics - Environmental Science & Technology (June 15, 2021) and Carpets & Dust - 2018 data published in Chemosphere (May 14, 2020)

What else you should know

While biosolids do contain trace levels of PFAS, the most effective way to reduce your exposure and the amount of PFAS in our environment is to reduce the PFAS you bring into your home through common products like non-stick cookware, single-use food contact materials, cosmetics, personal care products and household products. Choose PFAS-free or reusable alternatives, avoid products with

“fluoro” ingredients and limit contact with stain- and water-resistant materials.

Finding PFAS-Free Products

PFAS-Free Products:

www.pfascentral.org/pfas-free-products/

Alternatives for Products that Contain PFAS:

www.ewg.org/withoutintentionallyaddedpfaspfc