

WTD and PFAS

Per- and polyfluoroalkyl substances

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Erika Kinno, Research & Policy
Resource Recovery, King County



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

TODAY'S DISCUSSION

- What are PFAS?
- Significance
- PFAS and wastewater
- Regulations and planning
- Source control
- Treatment options
- Coordination

PFAS and its significance



What are PFAS?

- A group of human made compounds
- In use for more than 70 years
- Widespread in environment
- Resistant to heat, water, oil
- Found in wide range of products



CLOTHING



FURNITURE



REPELLANTS



LUBRICANTS



PAINT



**NON-STICK
COOKWARE**



**CARPETING &
RUGS**



DENTAL FLOSS



COSMETICS



PIZZA BOXES

*Source: Madison Metro Sewerage District

Significance

Research on humans continues, and suggests human health risks including...



Increased cholesterol levels



Changes in liver enzymes



Small decreases in infant birth weights



Increased risk of kidney or testicular cancer



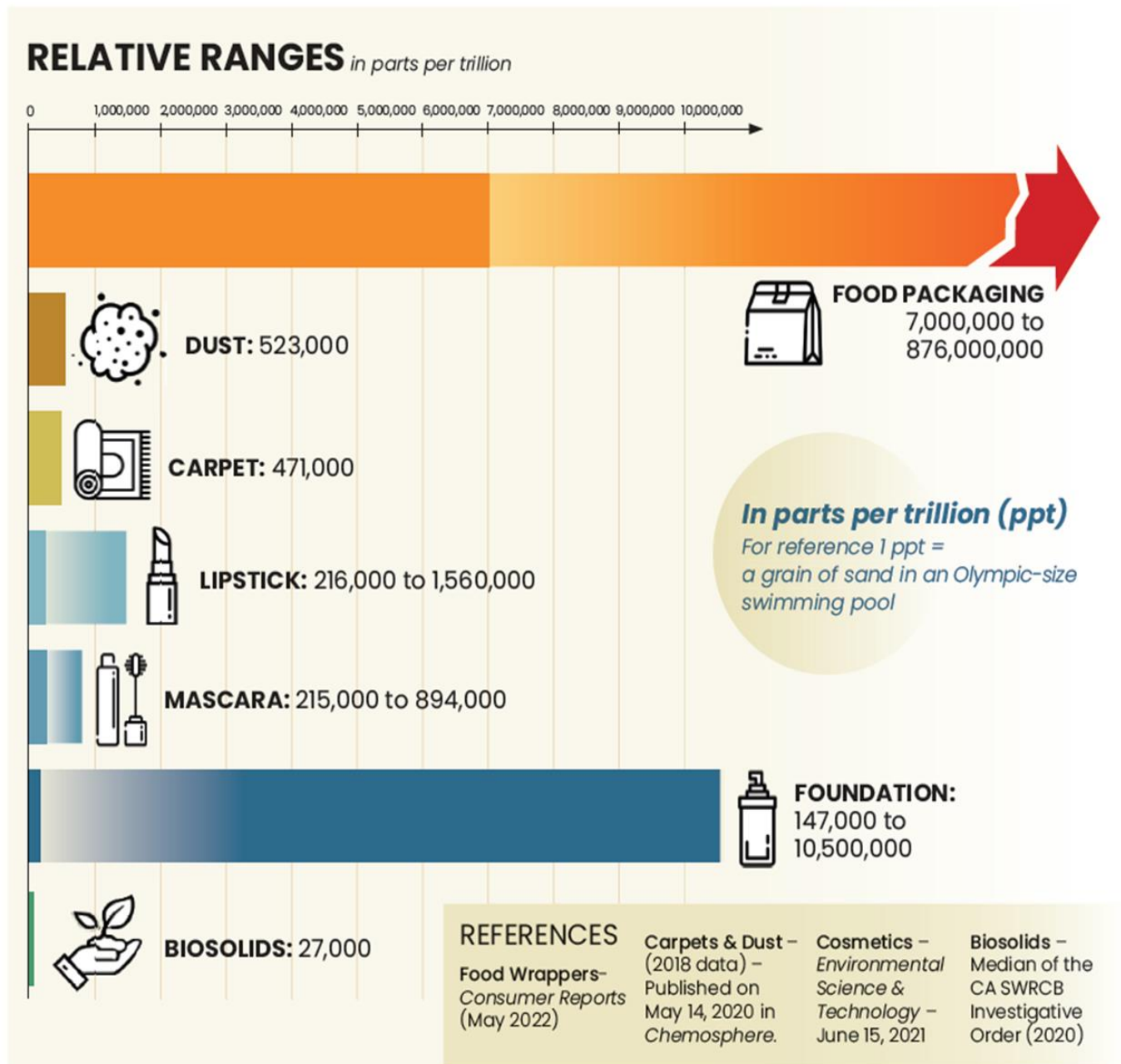
Decreased vaccine response in children



Increased risk of high blood pressure or pre-eclampsia in pregnant women

*Source: ATSDR website

PFAS comes from upstream sources



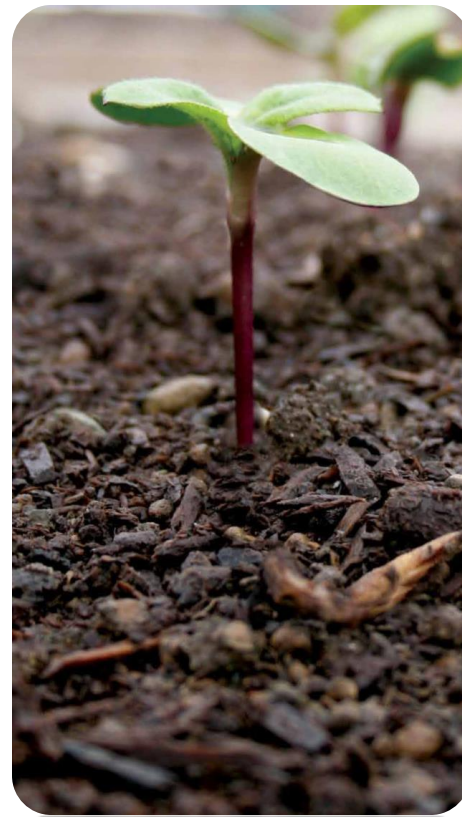
*graphic courtesy of California Association of Sanitation Agencies



PFAS and wastewater

WTD programs where PFAS is a concern

- Industrial Waste
- Biosolids
- Recycled Water
- NPDES Permitting
- Sediment Management
- Technology Assessment
- Planning



Industrial Waste

- Critical role in identifying any dischargers
- Regulating any discharges
- Compliance with new pretreatment regulations possible



Biosolids

- PFAS tend to partition to solids over liquids
- Possible pathways after land application
 - Groundwater
 - Plant uptake
- No reliable data on biosolids, yet
- High potential for public concern
- Potential for new regulation



Recycled Water

- Sampling of Brightwater and South Plant RW indicate concentrations relatively low
- No action limits for irrigation water
- Samples at or below state drinking water action limits



Sediment Management

- PFAS are hazardous substances under Model Toxics Control Act
- Will need to be addressed in sediment cleanup plans

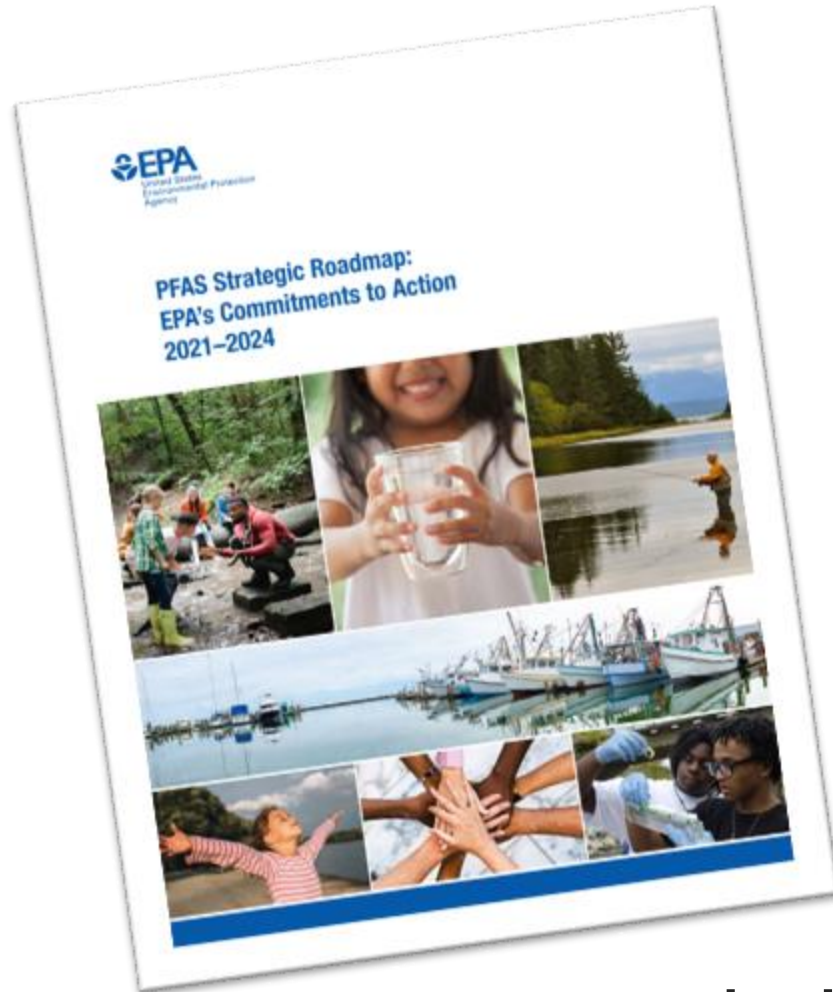


Technology Assessment

- Coordinating sampling for independent researchers at WTD treatment plants
- Evaluating treatment technologies



Upcoming Regulations & Planning



Federal



State

Best first step - Source Control

- Source control is identified priority on every level—from EPA to DNRP
- Some state action to ban PFAS from products
- Shared need across agency and jurisdictional lines
- Coordination with King County Hazardous Waste Management Program



Treatment Options

- Most PFAS treatment technologies separate out but don't destroy
- Staff is conducting a survey of available technologies
- Need to quantify inputs and sources to our system as first step



King County PFAS Coordination Group

- Subject matter experts from various county departments
- Tracking, developing and implementing policy, actions, and work to eliminate PFAS and reduce impacts
- Working to identify, prioritize, reduce and control sources, exposures, and risk from PFAS to environment and people in King County



Questions?

Erika Kinno, Research & Policy
Resource Recovery, King County



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