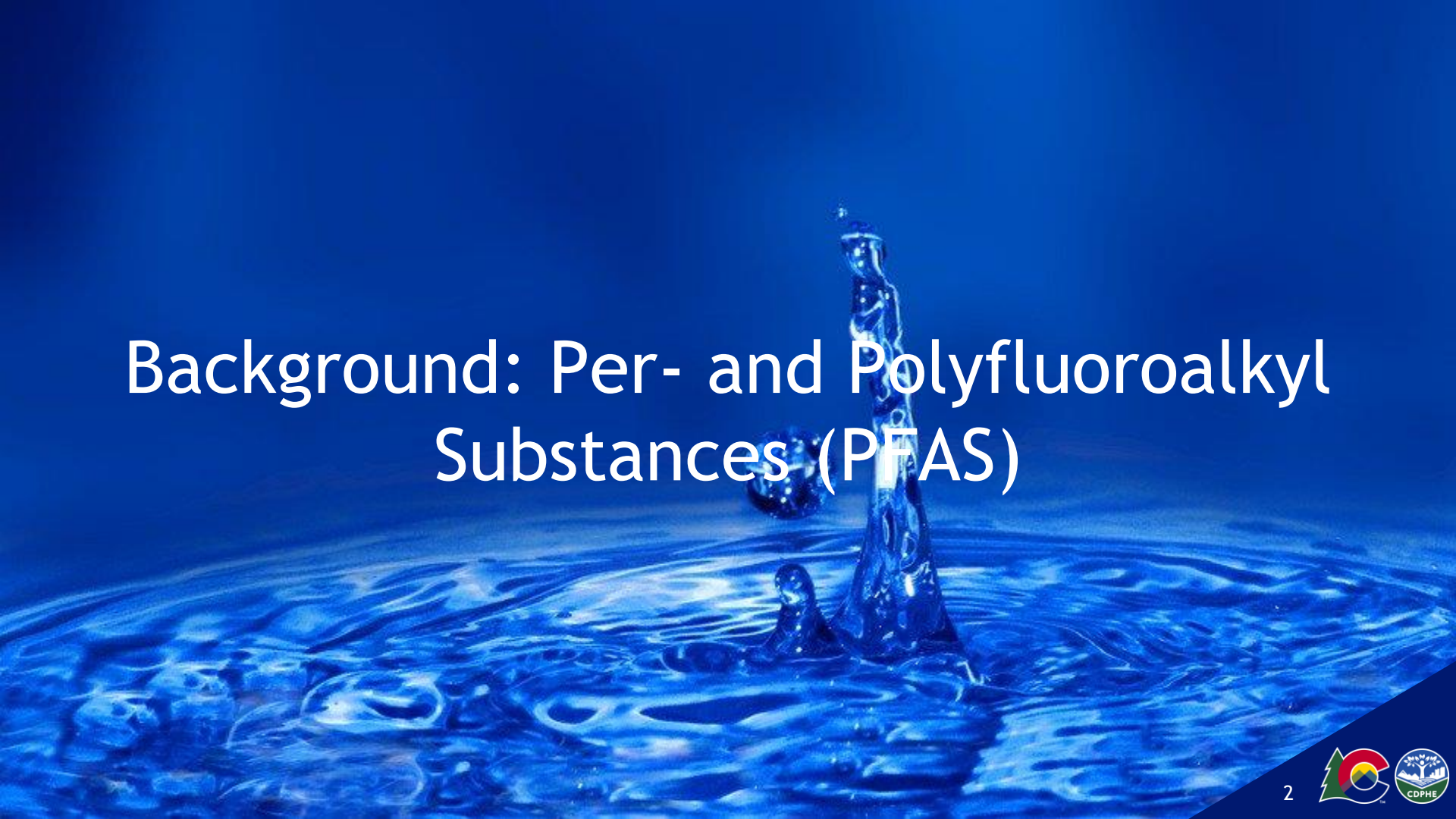
CDPHE Water Quality Control Division PFAS Update: Policy 20-1, *Policy for Interpreting the Narrative Water Quality Standard for PFAS* and SB20-218

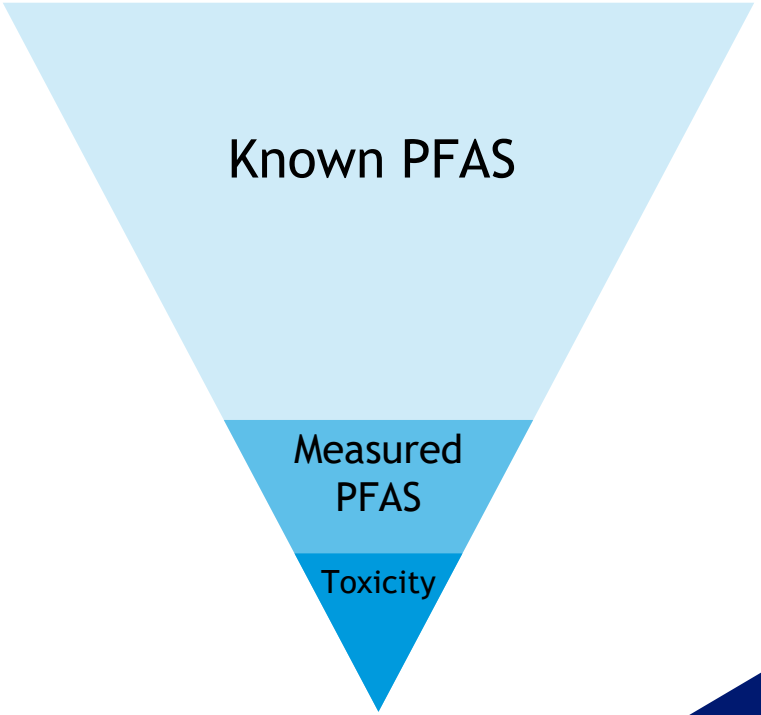
Colorado Municipal League | August 2020

Meg Parish, Water Quality Control Division Permits Section Manager

Background: Per- and Polyfluoroalkyl Substances (PFAS)

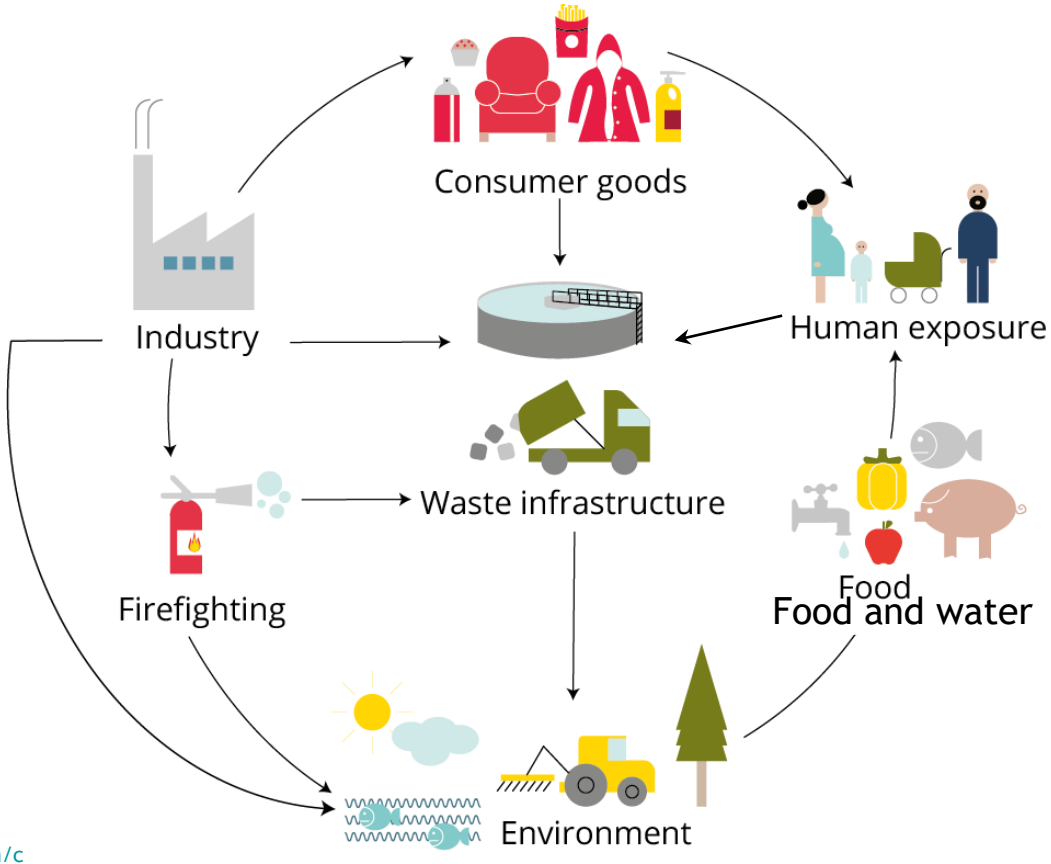


Exposure to PFAS is a serious risk to public health



Australian Government Dept of Defence: https://www.defence.gov.au/Environment/pfas/PFAS.asp

Exposure to PFAS is a serious risk to public health



European Environmental Agency
https://www.eea.europa.eu/themes/human/chemicals/emerging-chemical-risks-in-europe

Costs of Inaction

Table 1: Estimates of annual health impact-related costs (of exposure to PFAS)

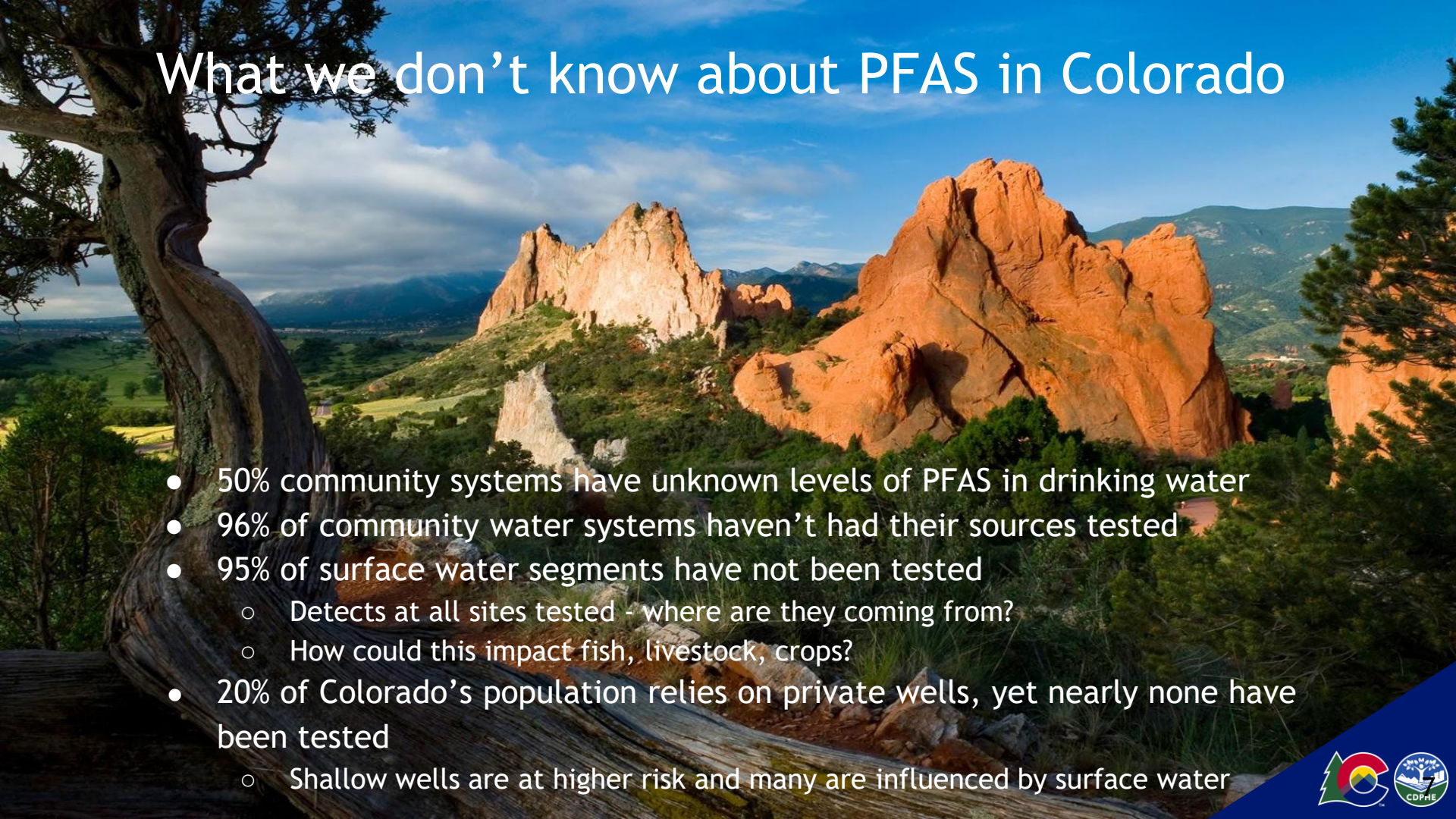
Exposure level	"Exposed" population and source	Health endpoint	Nordic countries		All EEA countries	
			Population at risk	Annual costs	Population at risk	Annual costs
Occupational (high)	Workers at chemical production plants or manufacturing sites	Kidney cancer	n.a.	n.a.	84,000–273,000	EUR 12.7–41.4 million
Elevated (medium)	Communities near chemical plants, etc. with PFAS in drinking water	All-cause mortality	621,000	EUR 2.1– 2.4 billion	12.5 million	EUR 41–49 billion
		Low birth weight	8,843 births	136 births of low weight	156,344 births	3,354 births of low weight
		Infection	45,000 children	84,000 additional days of fever	785,000 children	1,500,000 additional days of fever
Background (low)	Adults in general population (exposed via consumer products, background levels)	Hypertension	10.3 million	EUR 0.7– 2.2 billion	207.8 million	EUR 10.7–35 billion
Totals			*Nordic countries*	*EUR 2.8–4.6 billion*	*All EEA countries*	*EUR 52–84 billion*

What we know about PFAS in Colorado

- PFAS contamination of drinking water sources in El Paso, Boulder, Adams Counties
- 2020 PFAS drinking water sampling project
  - 400 water systems (50% community systems)
    - No treated drinking water above EPA health advisory (70 ppt for PFOA+PFOS)
    - 2 water systems with source water above EPA health advisory
  - 15 fire districts
    - 2 fire districts with source water above health advisory
  - 71 surface water sites
    - Detects at all sites, mouth of Sand Creek above EPA health advisory
    - Approximately 5% of segments have been tested
- PFAS levels in blood of residents from El Paso County
  - Colorado School Public Health's PFAS AWARE[1] study
  - PFOS, PFOA, and PFHxS 2-12 times higher than national levels

[1]Barton et al., 2020

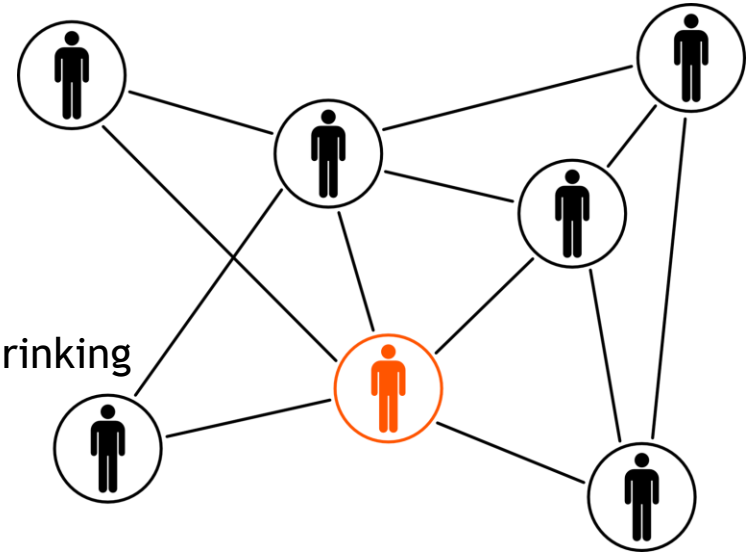
What we don’t know about PFAS in Colorado



- 50% community systems have unknown levels of PFAS in drinking water
- 96% of community water systems haven’t had their sources tested
- 95% of surface water segments have not been tested
  - Detects at all sites tested - where are they coming from?
  - How could this impact fish, livestock, crops?
- 20% of Colorado’s population relies on private wells, yet nearly none have been tested
  - Shallow wells are at higher risk and many are influenced by surface water

Overall Context: Department's PFAS Action Plan and Other State Steps

- Fire department survey
- Inventory of sites where PFAS has been found
- Groundwater remediation and cleanup
- Proper PFAS disposal
- Engaging at national level
- Drinking water protection
- Use existing regulatory authority to limit risks to drinking water
  - Policy 20-1
- Banned use of PFAS fire fighting foam
- Working with Attorney General Office on seeking compensation for remediation



Water Quality Control Commission Policy 20-1

What does the policy do?

Water Quality Control Commission Policy 20-1 provides guidance on how to implement permit monitoring requirements or conditions for Per- and Polyfluoroalkyl Substances (PFAS).

The policy sets values for a subset of PFAS, called translation levels, which informs the division on whether or not additional items are needed under the permit. These translation levels may be used to implement permit effluent limits for PFAS in Colorado Discharge Permit System permits and to develop Colorado's impaired waters list.

Full policy can be found at https://www.colorado.gov/pacific/cdphe/wqcc-policies

Link to basic fact sheet (with other links!): https://docs.google.com/document/d/1-2Ay4dJjoIRaHQRlkkOeKVW9vh-KZHhOUSHf4RI-F1I/edit?usp=sharing

How the division may use the policy

- Monitoring in permits
- Source investigations
- Effluent limits
- 401 certifications
- 303d listing recommendations

Policy's recommended translation values

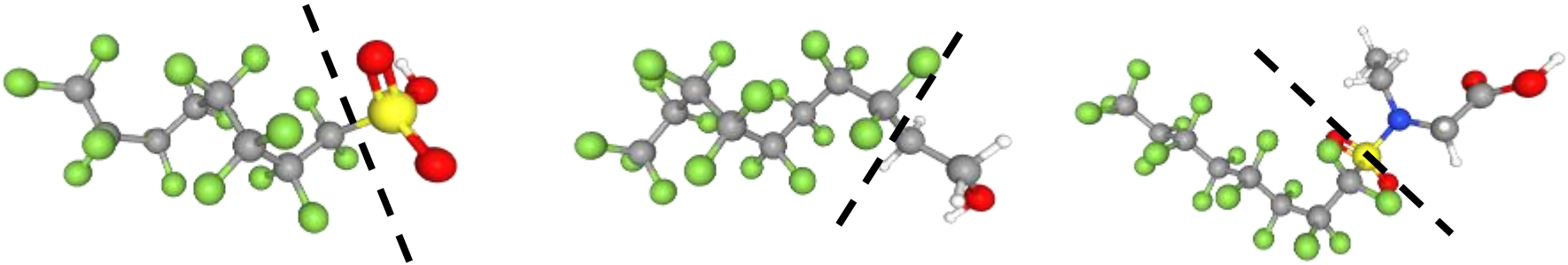
PFOA + PFOS + PFNA	PFHxS	PFBS
+ any parent compound	+ any parent compound	+ any parent compound
Developmental Toxicity	Endocrine Toxicity	Renal Toxicity
70 ng/L	**700 ng/L**	**400,000 ng/L**

Translation values include parent PFAS

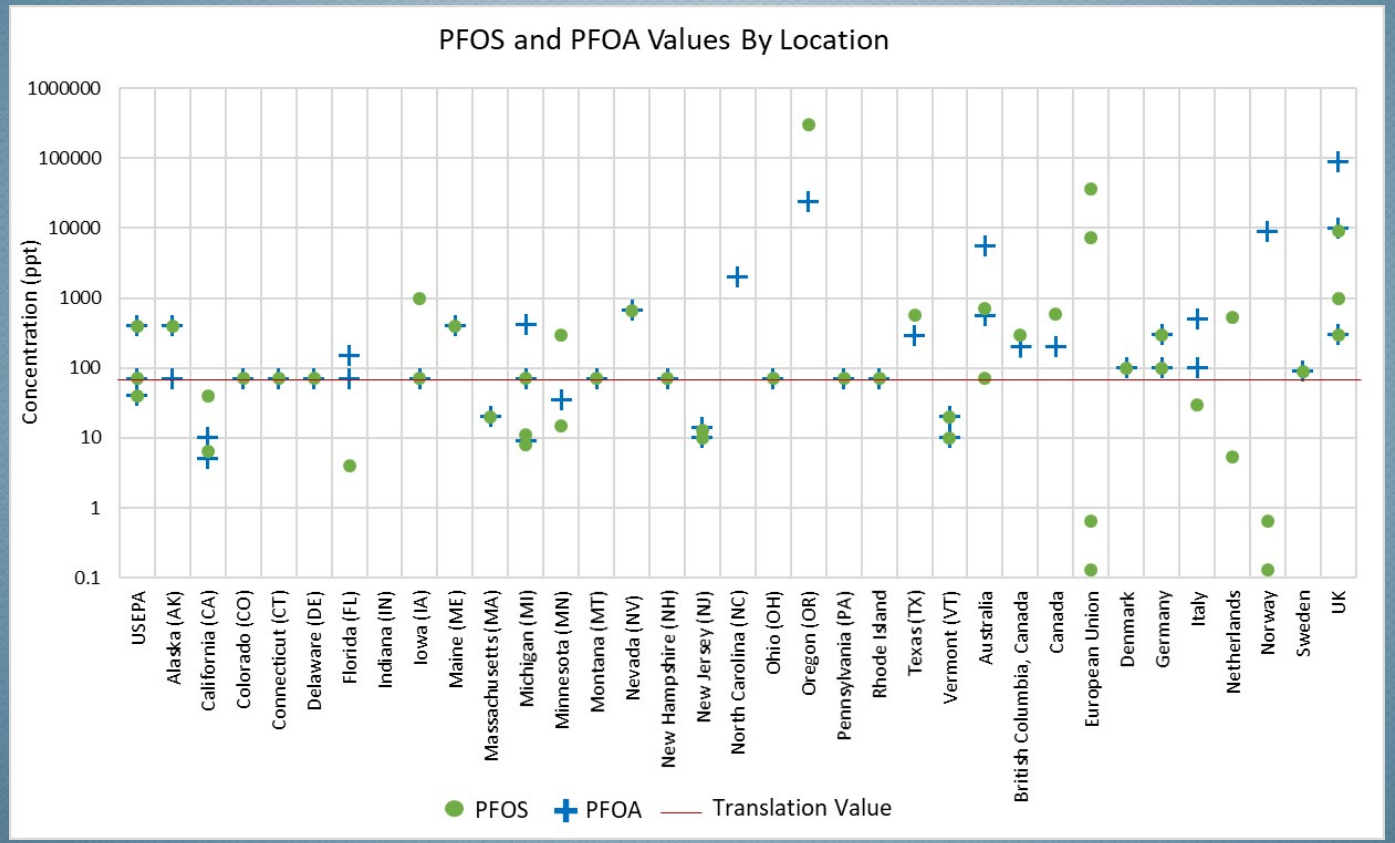
Polyfluoroalkyl substances and side-chain fluorotelomer compounds can break down into perfluoroalkyl substances.

8:2 FTS → PFOA

NEtFOSAA →
NMeFOSAA →
PFOSA/FOSA → PFOS



Policy's translation values: squarely in the middle



Laboratory methods

Policy recommended analytical approach aligns with anticipated EPA-approved method:

- Specific to analytical methods for wastewater
- Includes 25 PFAS
- Compliant with Department of Defense (DoD) quality assurance protocols
    - DoD QSM 5.1 or later [Table B-15: Per- and 214 Polyfluoroalkyl Substances (PFAS) Using Liquid Chromatography Tandem Mass 215 Spectrometry (LC/MS/MS) With Isotope Dilution or Internal Standard Quantification 216 in Matrices Other Than Drinking Water]
- Allows for comparable, replicable results

Implementation through permits: monitoring

- **Monitoring**
  - Will be focused on facilities with a likelihood of PFAS discharges to state waters
  - Will use discharger survey, locations near known sources, collection systems containing likely or known sources, and facility type
  - May come through duty to provide information letters or permit conditions
  - October 1 stakeholder meeting will address potential monitoring under the industrial stormwater general permit (COR900000)
- **Source investigation or source control**
  - May be required for WWTPs with existing pretreatment programs
    - > 5MGD and receiving industrial discharge that pass through or interfere with the operation of the POTW that discharge to/upstream of water supply segments
  - Facilities that are using PFAS and discharge to/upstream of water supply segments or groundwater
  - No source investigations for dewatering

Implementation through permits: effluent limits

- **No effluent limits for construction dewatering, short-term remediation and well development (COG080000, COG317000, COG60800)**
  - Dischargers will not have limits even if their source water sample shows an exceedance of translation values UNLESS the source water is order of magnitude higher
- **Delayed effluent limits for domestic wastewater treatment plants**
  - Most permittees where effluent limits would be needed will have 5 to 9 years before effluent limits are included in their permit in order to lower PFAS levels through source investigations and source control
  - Starting place for source investigations
    - EPA Pretreatment Program: https://www.epa.gov/npdes/national-pretreatment-program
    - WQCD FAQs: https://drive.google.com/file/d/1JJBVLsENbJ1NVuiDZ6uIF9aUq9R7elms/view
- **Long-term dewatering may include numeric effluent limits (COG318000)**
- **Industrial facilities with high PFAS levels in effluent may see numeric effluent limits**
- **No numeric effluent limits for stormwater permits**
  - BUT there may be practice-based limits

SB20-218: What does it do and how can it help?

SB20-218 Establishes the PFAS Cash Fund

These funds can be used for the following purposes:

- **Establishing and implementing a PFAS grant program.** The grant program will provide funding for the sampling, assessment, and investigation of PFAS in ground or surface water; water system infrastructure used for the treatment of identified PFAS; and emergency assistance to communities and water systems affected by PFAS.
- **Providing technical assistance** in locating and studying perfluoroalkyl and polyfluoroalkyl substances to communities, stakeholders, and regulatory boards or commissions.
- The **PFAS takeback program.** The takeback program is used to purchase and dispose of eligible materials that contain PFAS

Status as of August 2020

- The fund started collecting fees on July 1.
- It will be several months until we will have revenue projections on what size of grant program will be.
- The plan is to likely start the grant program in 2021.
- More details are coming later in 2020.

More on SB20-218

- **Reporting.** The bill also requires the department of public health and environment to report to the general assembly annually on the use of the perfluoroalkyl and polyfluoroalkyl substances cash fund and the administration of the perfluoroalkyl and polyfluoroalkyl substances grant program and takeback program.
- **No funds for standards.** SB20-218 does not provide funding or direction for the department to develop drinking water standards or numeric water quality standards. However, we do anticipate funding for toxicology staff that will be available to provide technical assistance on PFAS toxicity.


Thank you!