

Draft PFAS Chemical Action Plan

EPA R10—Regional Tribal Operations Committee

November 19, 2020

Lauren Tamboer, Department of Ecology

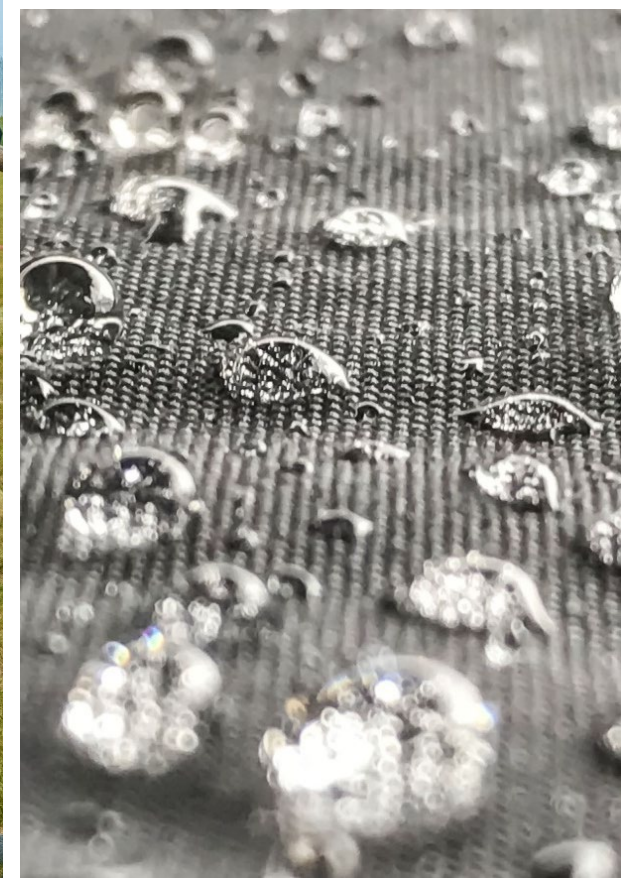
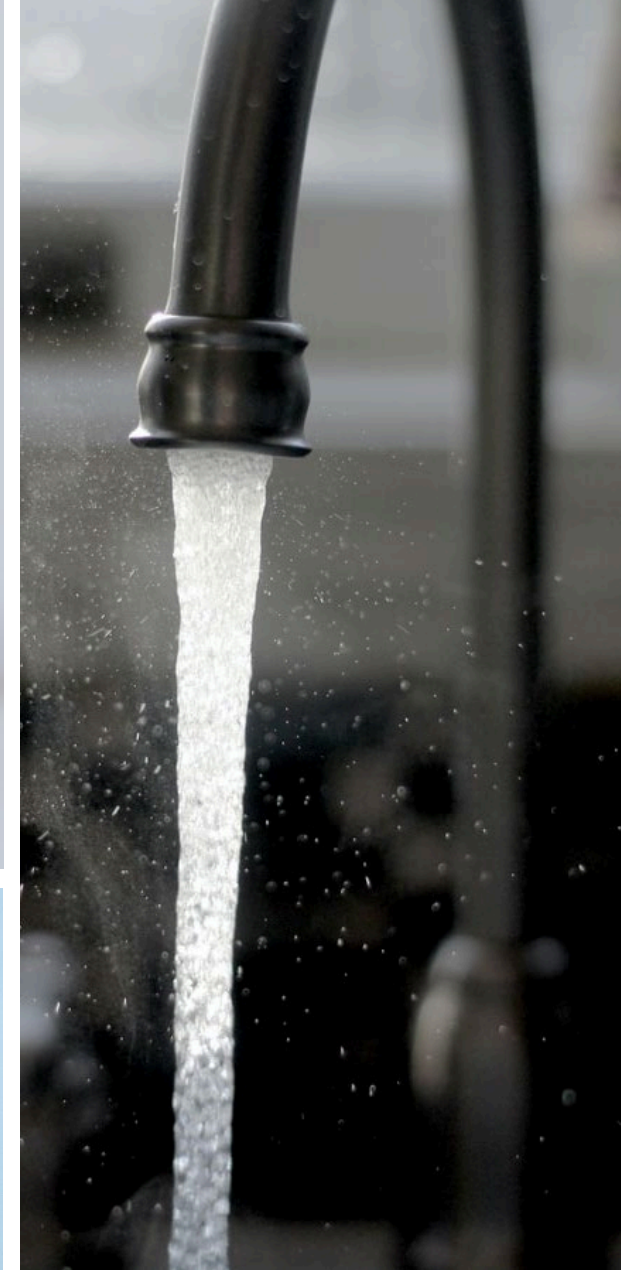


Today's presentation

- **PFAS Chemical Action Plan**
- **Draft PFAS CAP overview**
- **Contacts and additional information**

Why PFAS?

- Used in many everyday products
- Persist in the environment
- Nearly everyone is likely exposed to PFAS
- Harmful effects
- Replacement products not well understood
- Complex response to contamination issues





Chemical Action Plans

WAC 173-333-340

- **A Chemical Action Plan (CAP):**

“...identifies, characterizes, and evaluates... uses and releases of a Persistent Bioaccumulative Toxin (PBT)... and recommends actions to protect... human health or the environment.”

- Ecology and Department of Health partner to prepare CAPs.

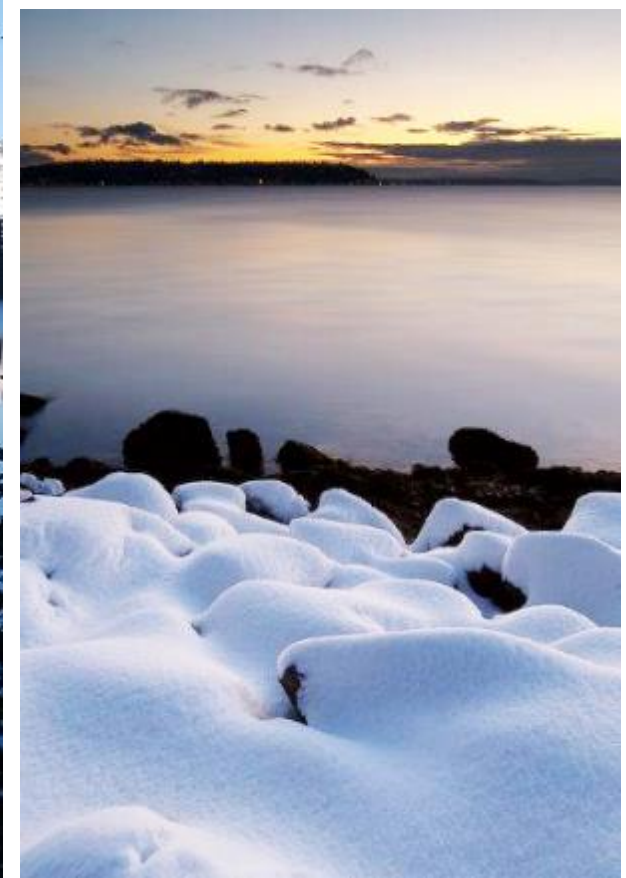
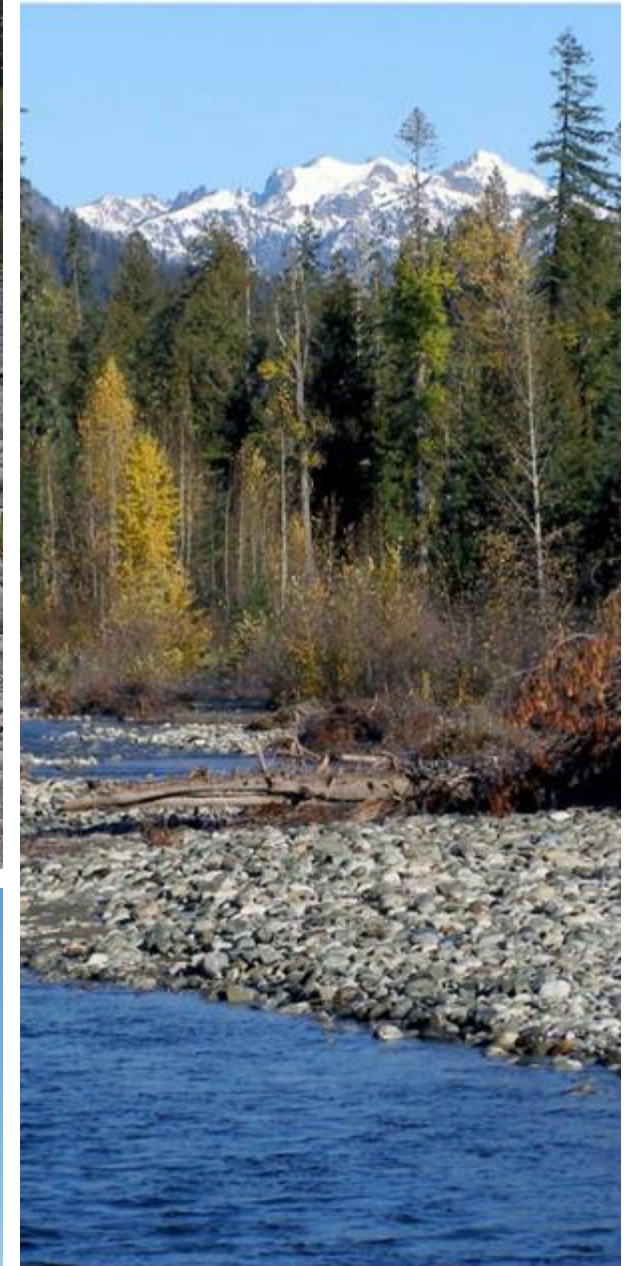
Draft PFAS CAP Public Comment

Comments accepted
through
January 4, 2021:

- eComment form
- Email/mail-in

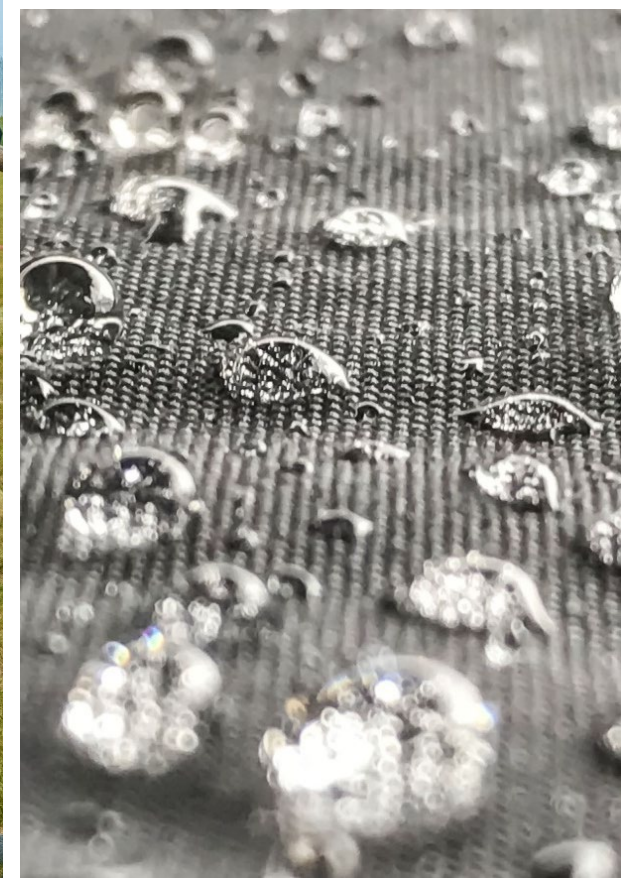
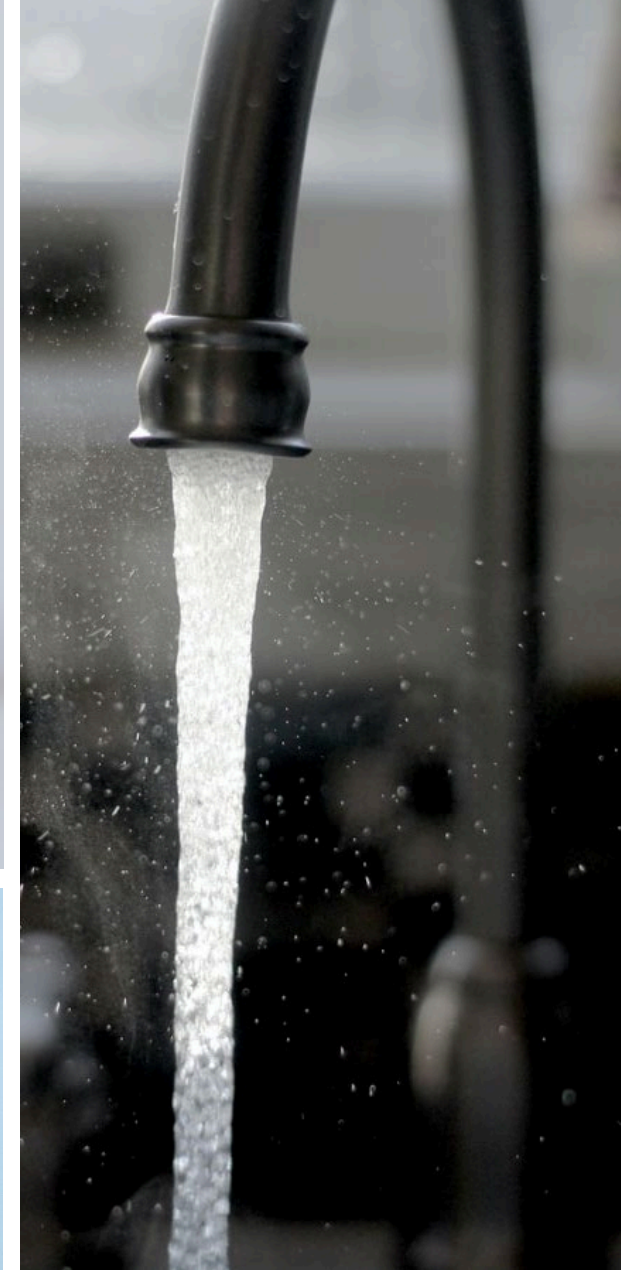
PFAS CAP website:

<https://www.ezview.wa.gov/?alias=1962&pageid=37105>



Other PFAS activity

- Development of the CAP => evolution of our knowledge
- Legislation, rulemaking, implementation
 - Safer Products for Washington
 - PFAS food packaging alternatives assessment
 - Firefighting Agents
 - Drinking water rulemaking (in progress)

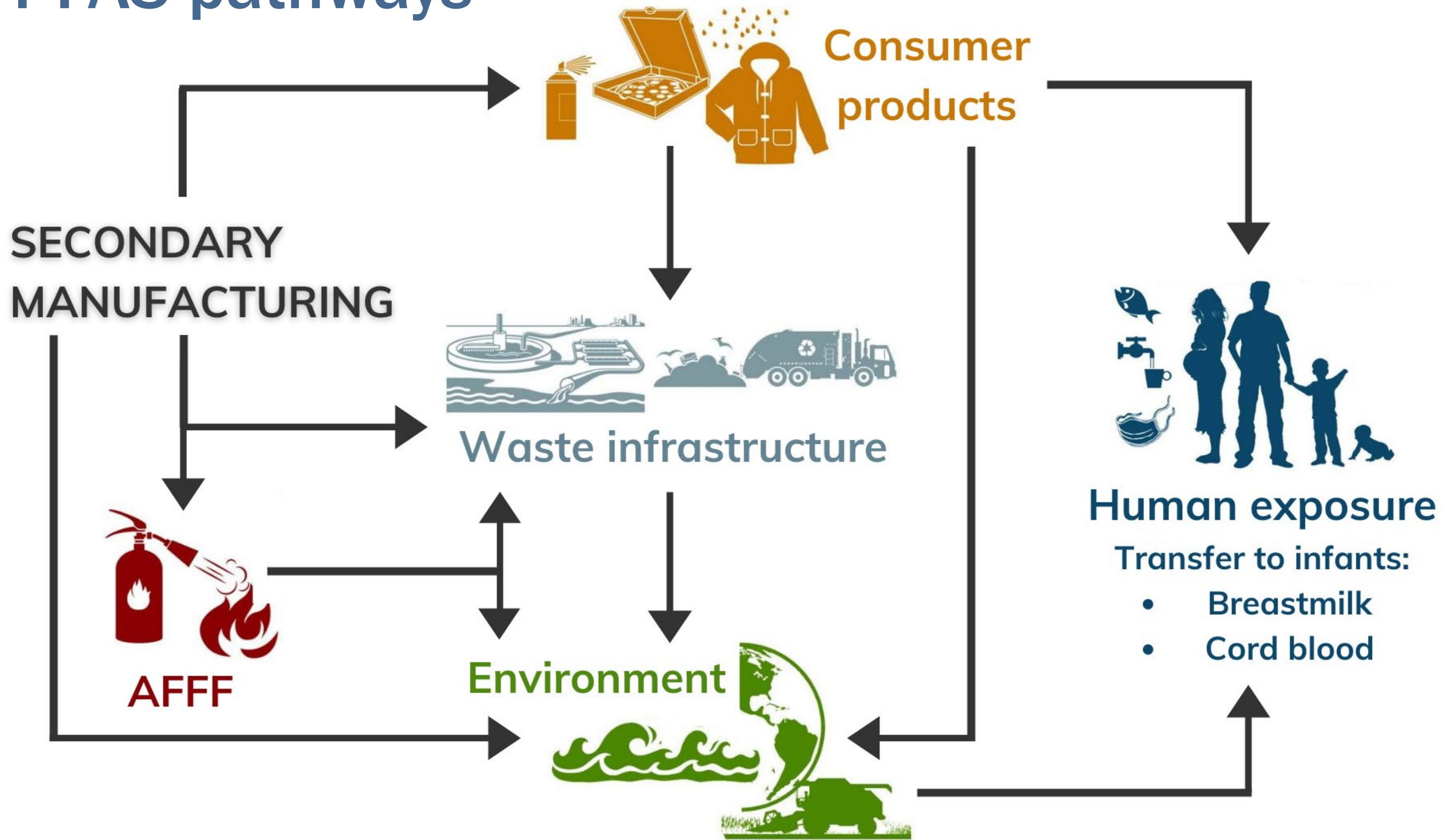




Draft PFAS CAP Overview



PFAS pathways



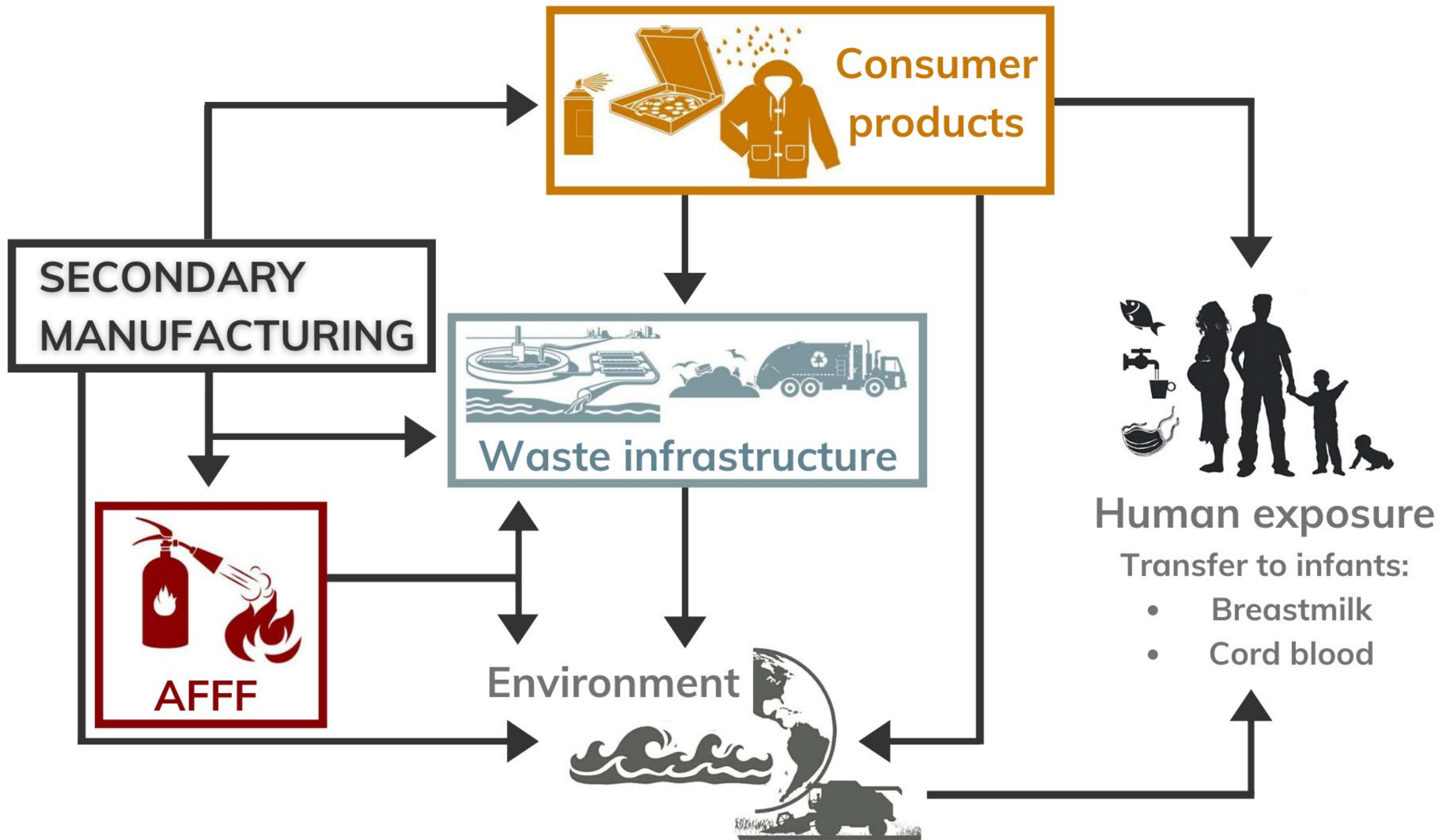
Adapted from Sunderland et al. (2019) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/>



Draft CAP for Public Comment

- Draft CAP
- App 1: Chemistry
- App 2: Analytical methods
- App 3: Sources and uses
- App 4: Fate and transport
- App 5: Ecotoxicology
- App 6: Occurrence
- App 7: Health
- App 8: Biosolids
- App 9: Regulations
- App 10: Economic analysis

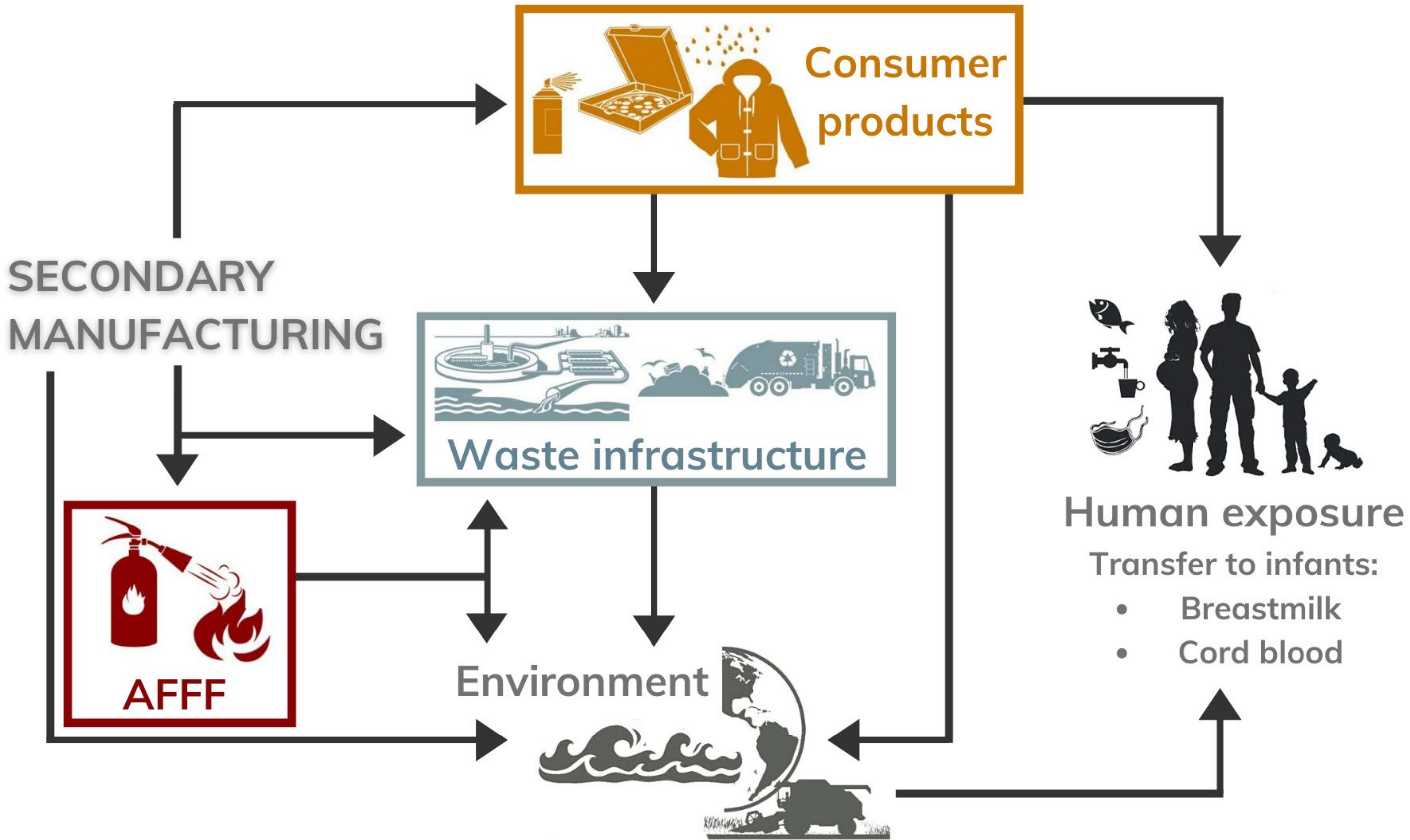
1. Chemistry + 2. Analytical methods



Adapted from Sunderland et al. (2019): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/>



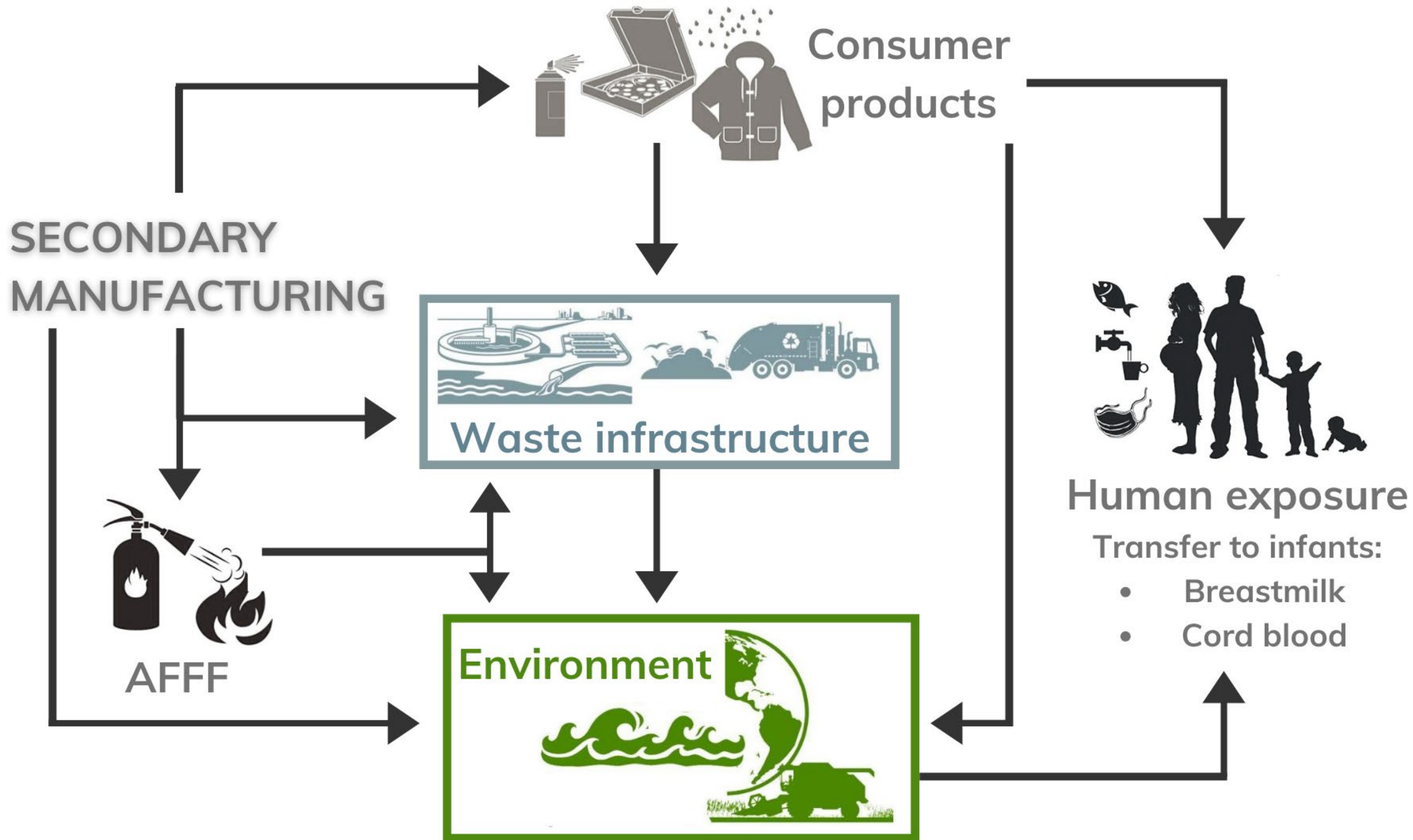
3. Sources and uses



Adapted from Sunderland et al. (2019): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/>



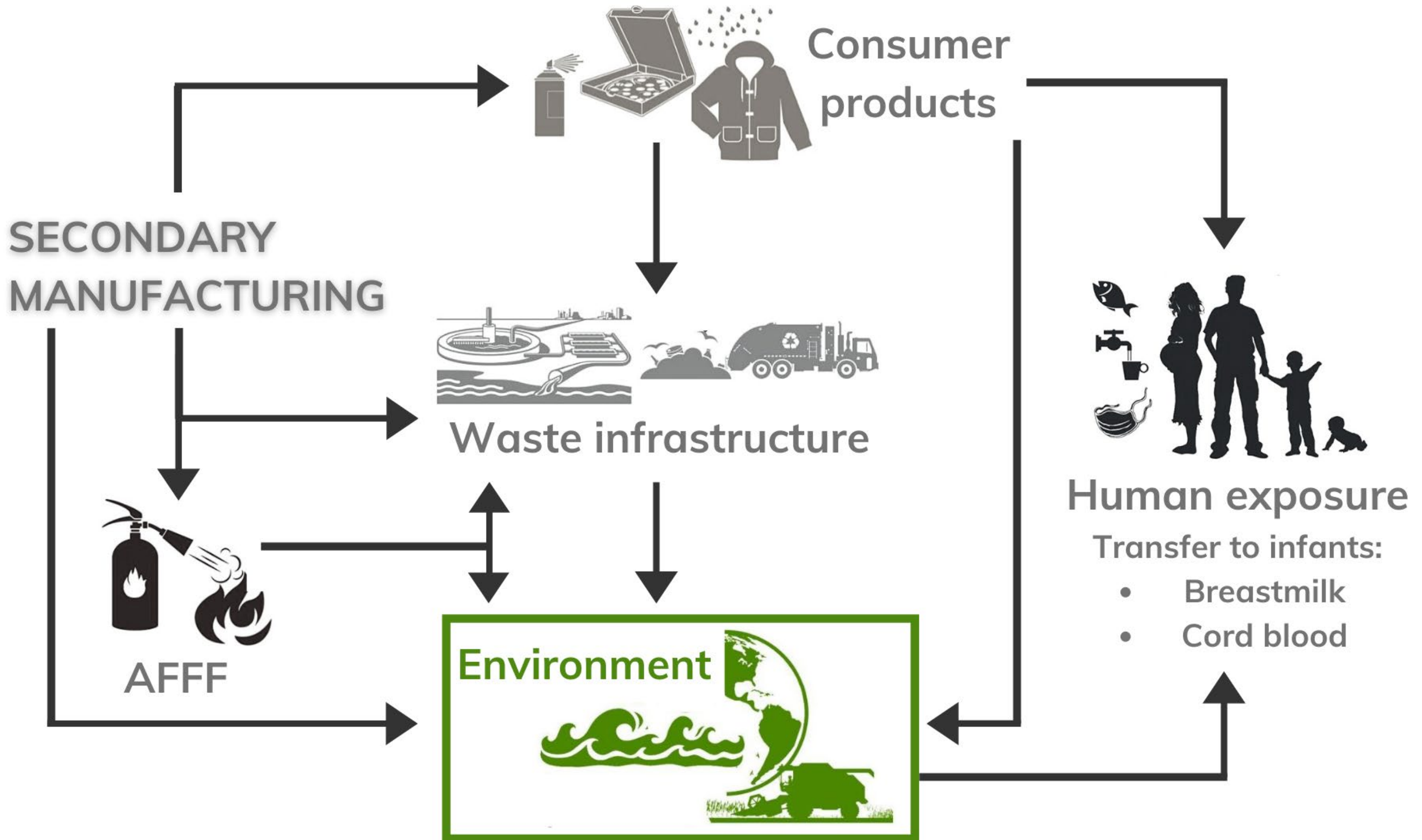
4. Fate and transport



Adapted from Sunderland et al. (2019): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/>



5. Ecotoxicology + 6. Environmental occurrence

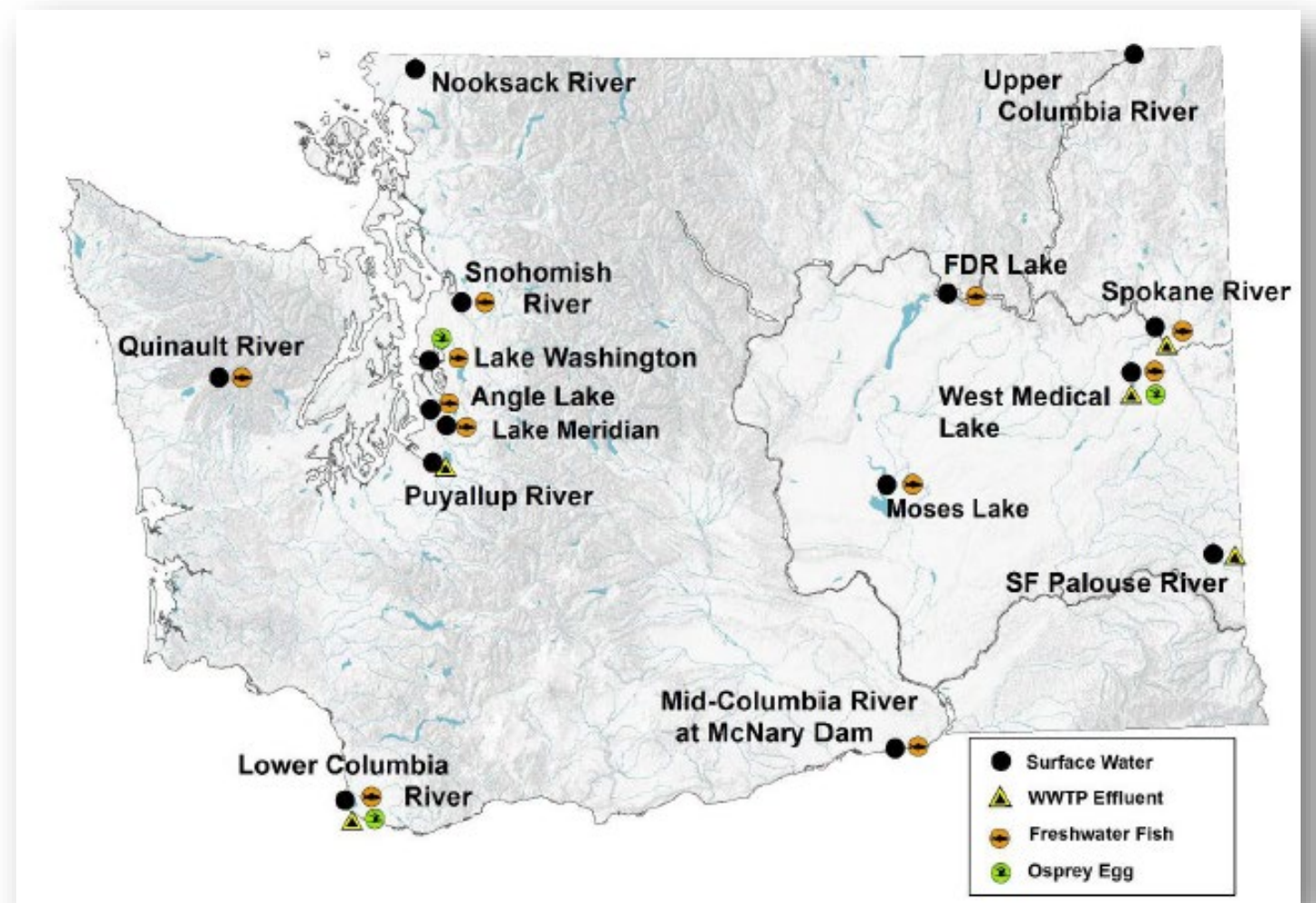


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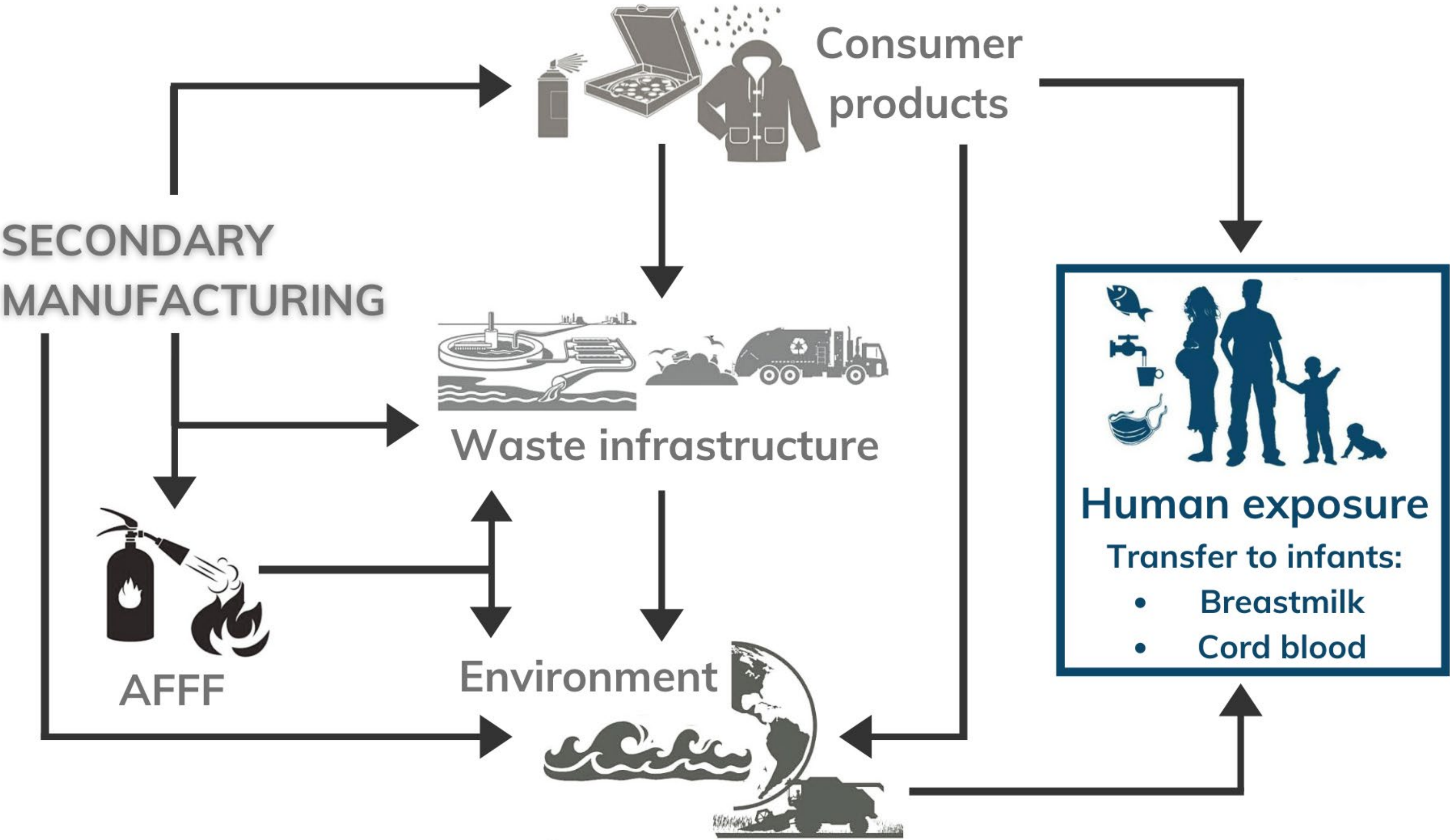


Appendix 6: Environmental Monitoring Data

- 2008, 2016, 2018
 - surface water (spring/fall)
 - WWTP effluent (spring/fall)
 - freshwater fish fillet and liver
 - osprey eggs
- Marine biota 2012-2020
 - Mussels
 - Puget sound fish: salmon, herring, sole & sculpin

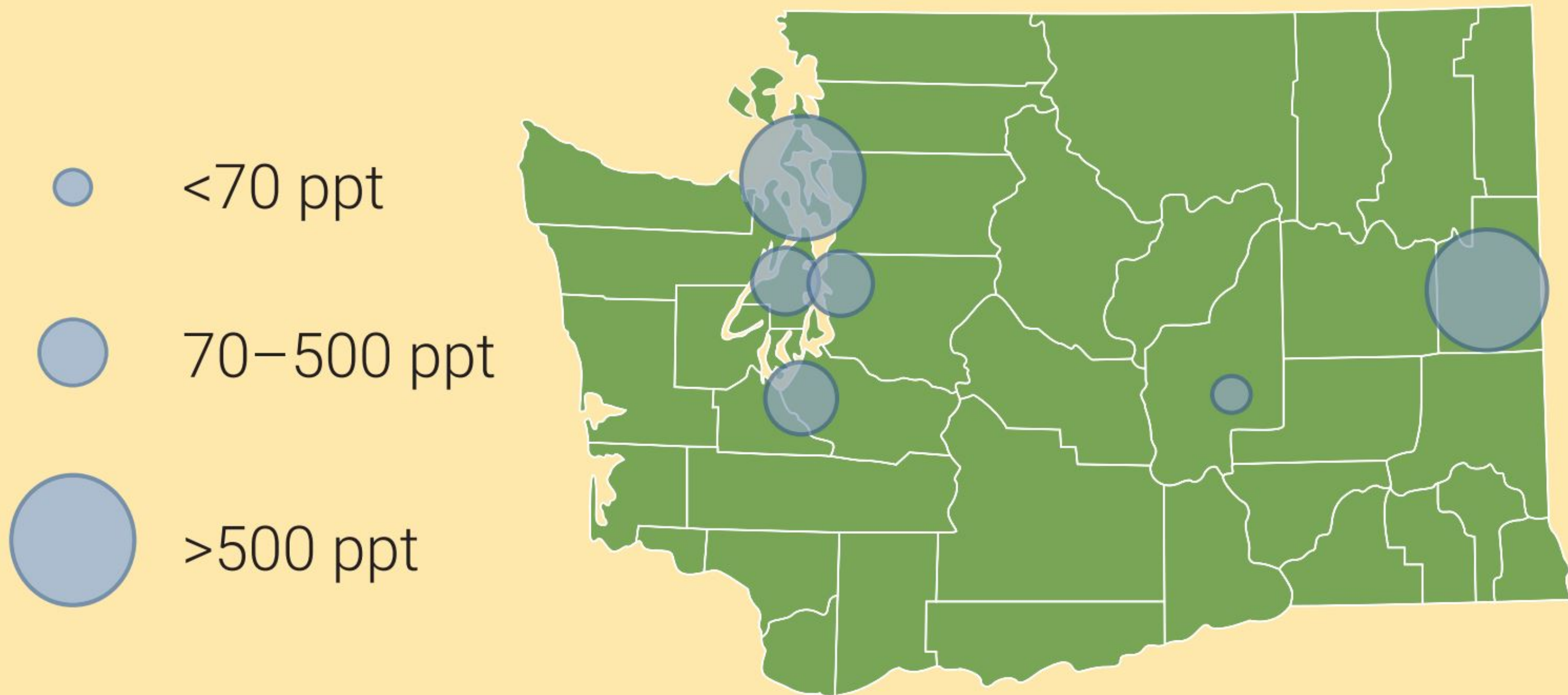


7. Health



Adapted from Sunderland et al. (2019): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/>

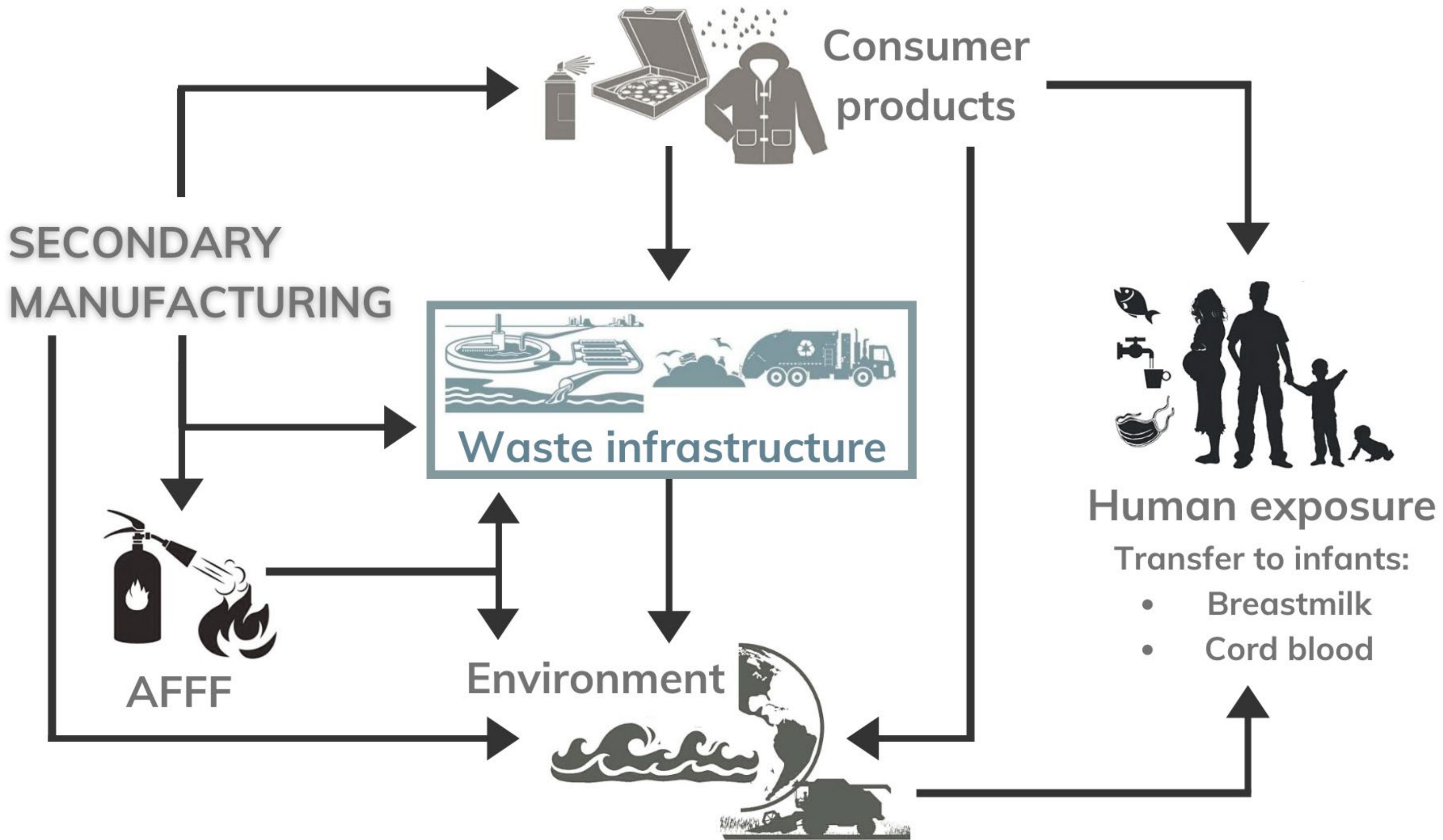
Appendix 7: Drinking Water Monitoring Results



Source: Washington State Department of Health



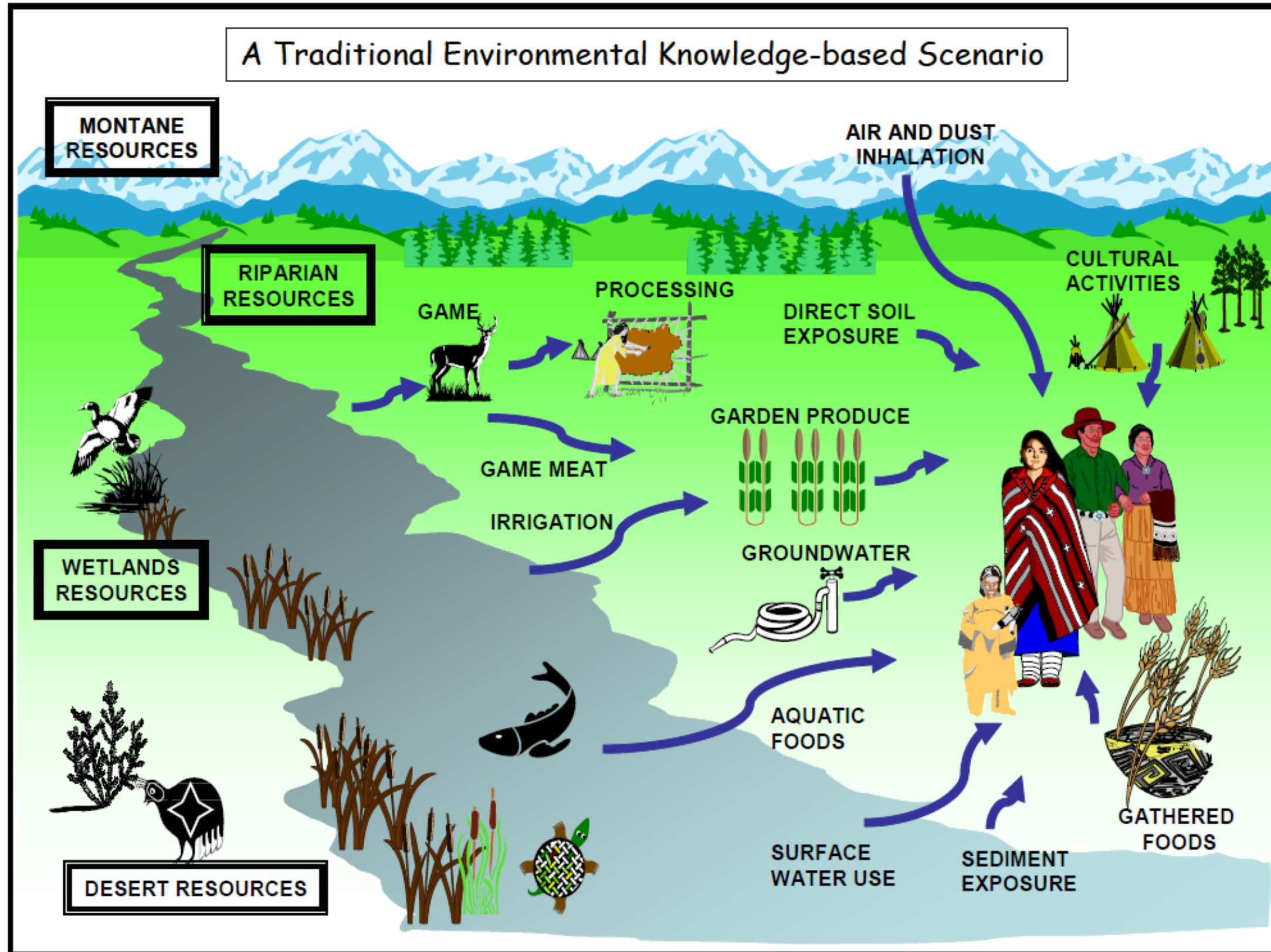
8. Biosolids



Adapted from Sunderland et al. (2019): <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6380916/>



Tribal considerations



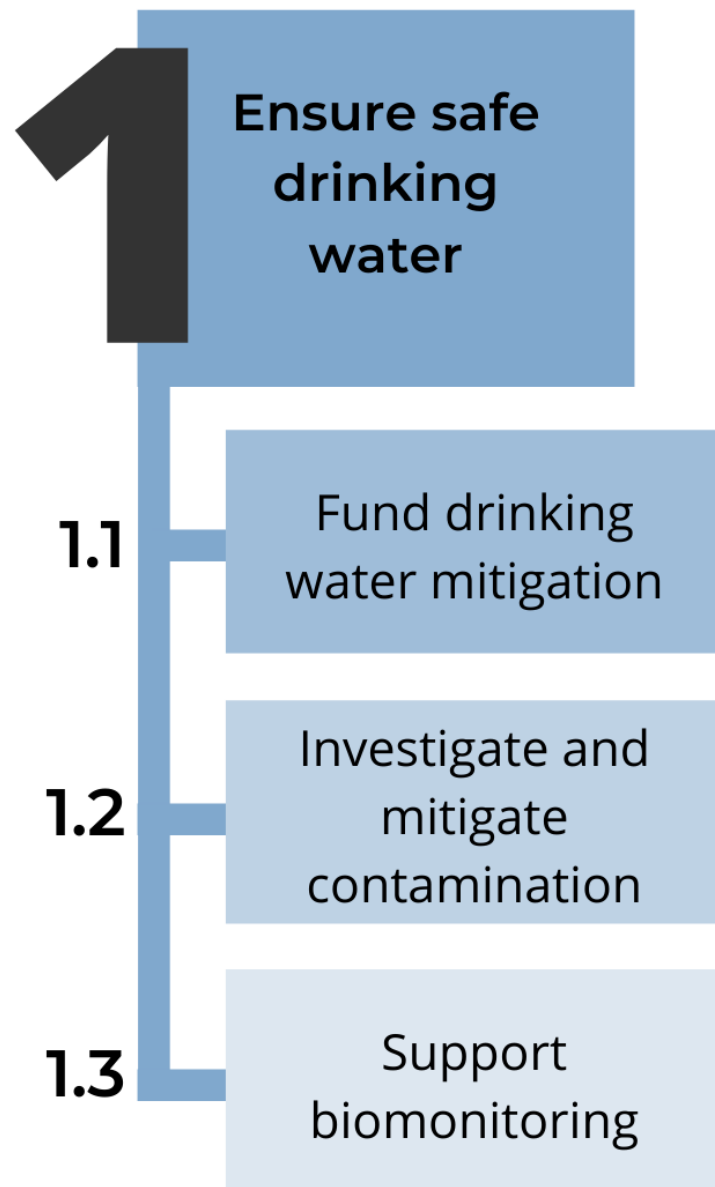
Source: Harper et al., 2007

https://health.oregonstate.edu/sites/health.oregonstate.edu/files/research/pdf/tribal-grant/exposure_scenario_and_risk_guidance_manual_v2.pdf

Draft PFAS CAP Recommendations



1. Ensure safe drinking water



1.1 Funding for drinking water mitigation

- Work across agencies to find mitigation funding
- Responsible parties identified, reimburse costs

1.2 Technical support, site investigation and mitigation

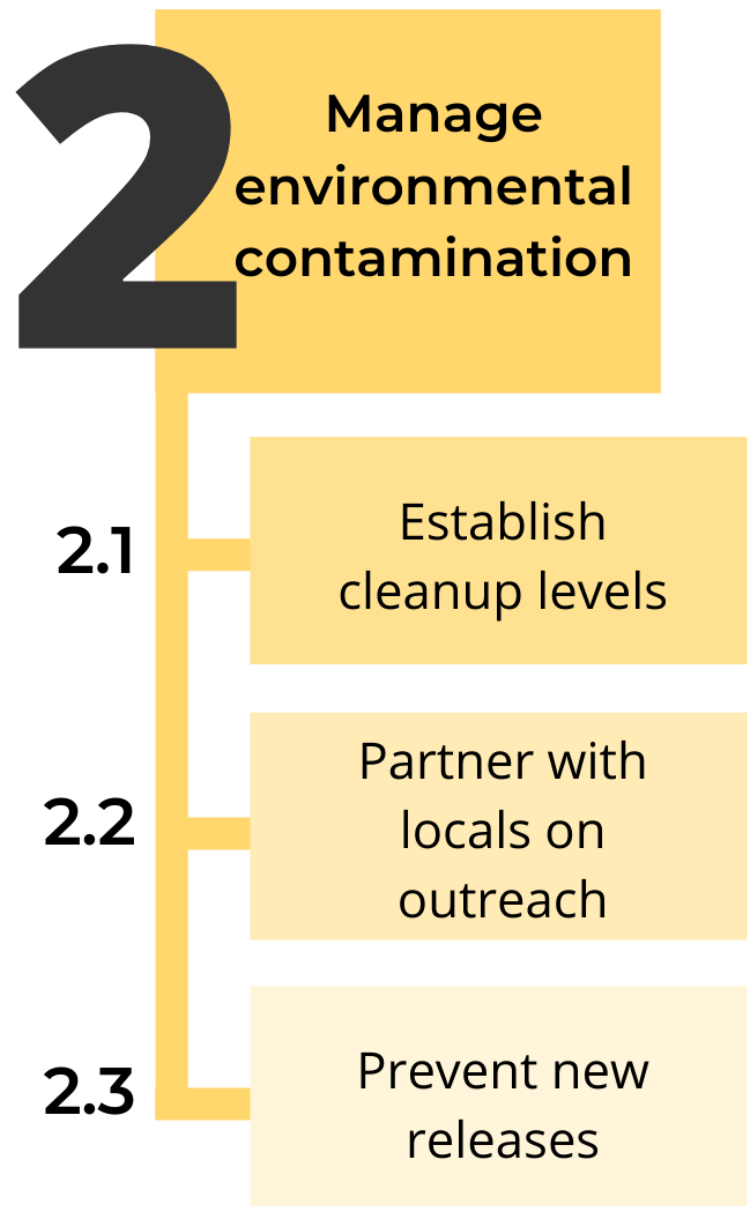
- Ecology collaborates to understand contamination
- DOH provides drinking water mitigation assistance
- Ecology targets Safe Drinking Water Action Grants
- Ecology investigates surface and groundwater
- “Fingerprinting” chemical identities

1.3 Support biomonitoring

- Support subsidized biomonitoring
- Participation in epidemiological studies



2. Manage environmental contamination



2.1 Establish clean-up levels for soil and groundwater

- Develop PFOS/PFOA cleanup levels based on Health's drinking water standards
- Explore methods for investigation and clean-up
- Provide information to interested parties

2.2 Partner with Local Organizations

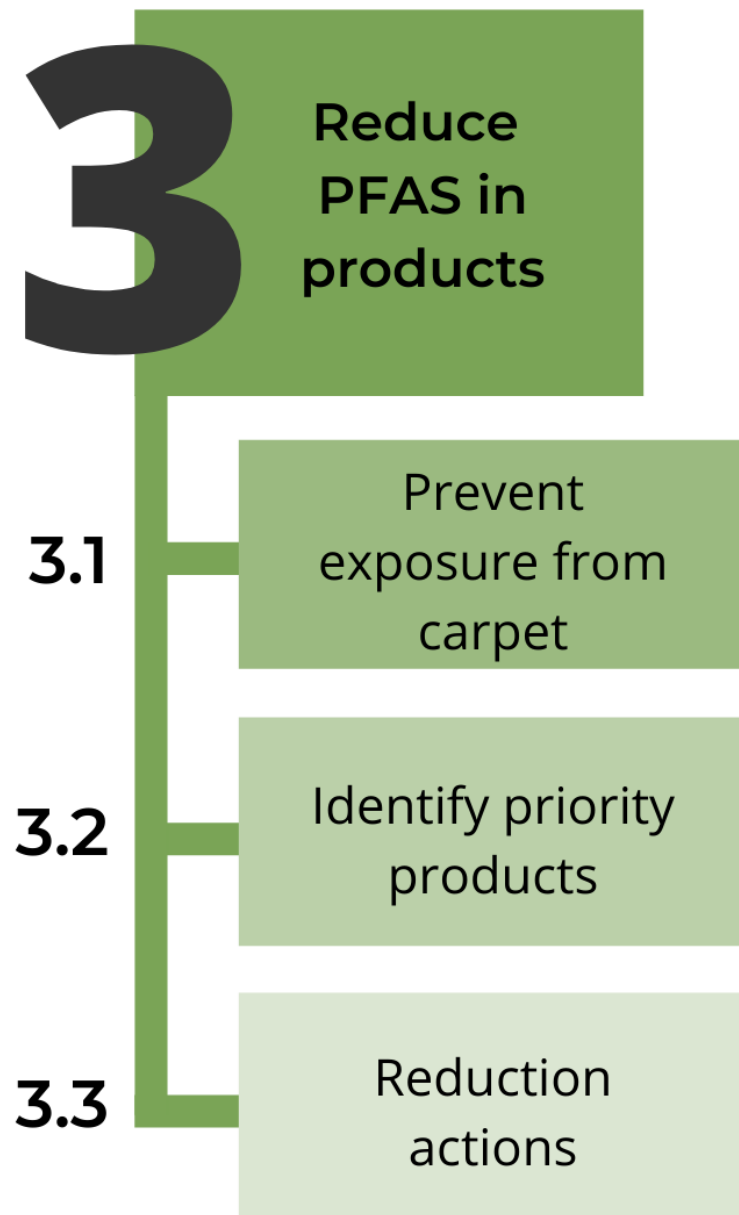
- Identify and distribute funding to local health departments and local organizations

2.3 Prevent AFFF and manufacturing process releases

- Work proactively to eliminate releases
- AFFF: Best management practices for containment, disposal/replacement
- Industry: identify use; opportunities for replacement, proper waste management



3. Reduce PFAS in products



3.1 Carpet, upholstery, after-market treatments

- Continue work under Safer Products for Washington
- Purchasing policy for PFAS free products, swap-out

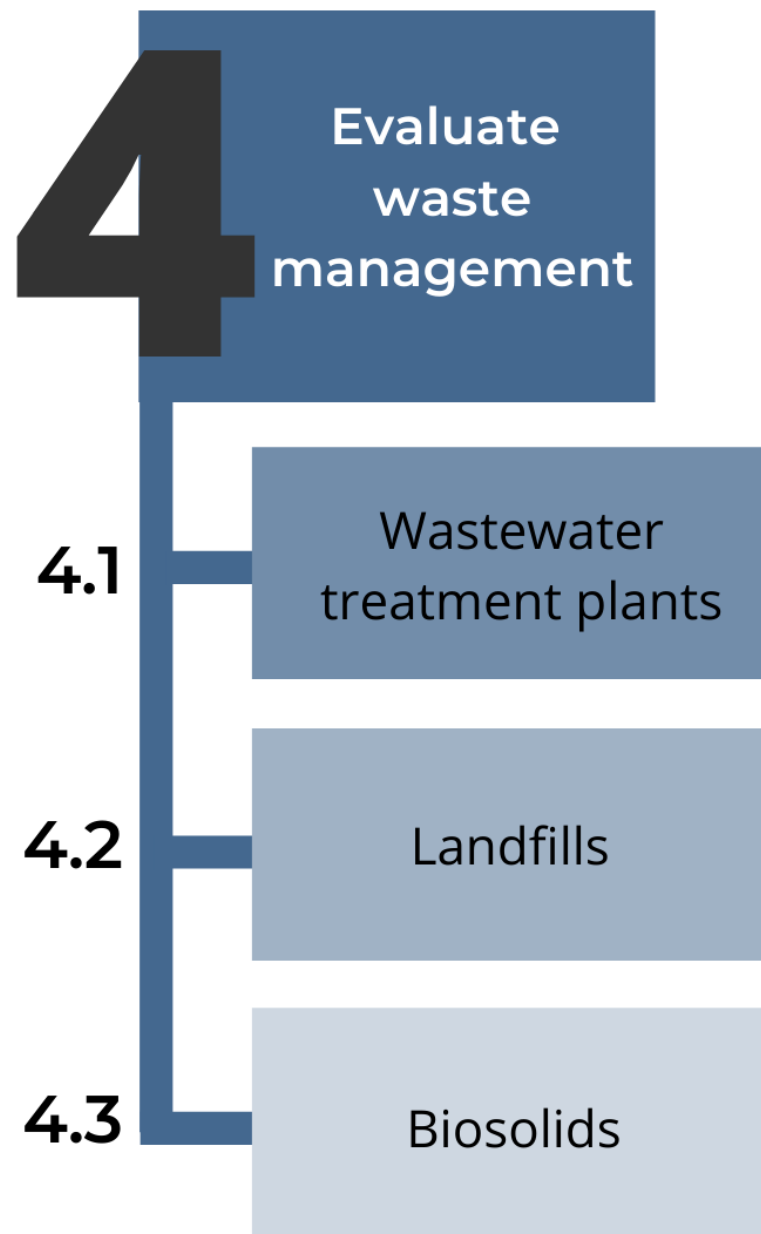
3.2 Consider other sources in 2nd Safer Products cycle

- Engage with overburdened communities
- Assess availability/feasibility of safer alternatives

3.3 Implement other reduction actions

- Propose restrictions under Chapter 70.365 RCW
- Gather information/reduce exposures for overburdened communities
- State purchasing preference for PFAS-free textiles, furniture, paints
- Propose ban on import/sale of phased-out long-chain PFAS

4. Evaluate waste management



4.1 PFAS in waste water treatment

- Study discharges to WWTPs
- Consider additional industrial monitoring requirements

4.2 Sample landfill leachate

- Study to sample landfills and identify contributing waste streams
- Consider monitoring for PFAS in leachate

4.3 Evaluate biosolids management

- Accredited laboratories/use EPA validated analysis methods
- Investigate land application sites, get biosolids data
- Evaluate realistic exposure pathway and risk models



CAP Implementation:

- Product testing
- Landfill leachate study
- Surface water/source assessments
- Surface water standards
- Clean-up standards
- WWTP influent/effluent sampling

PFAS CAP Contacts

Irina Makarow, CAP lead

- 360-407-6250
- irina.makarow@ecy.wa.gov

PFAS CAP website

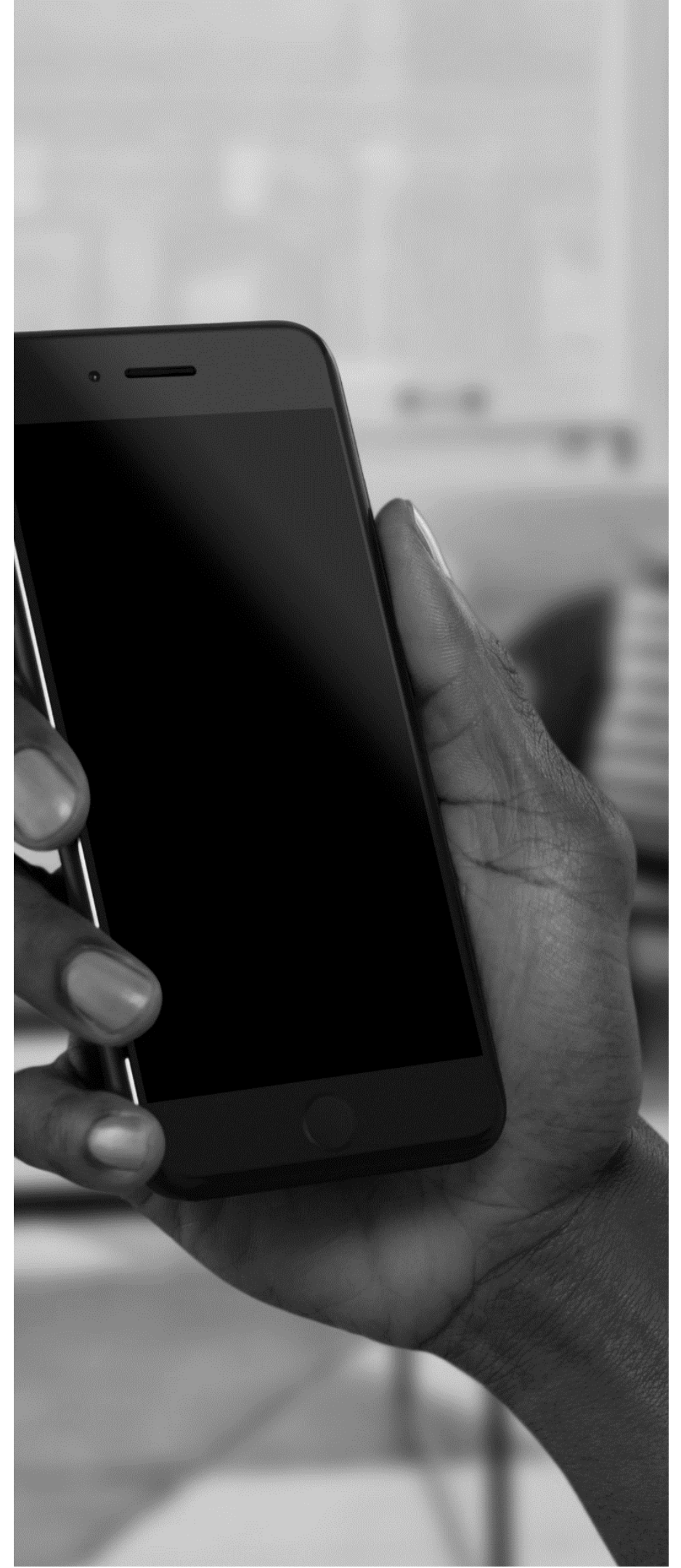
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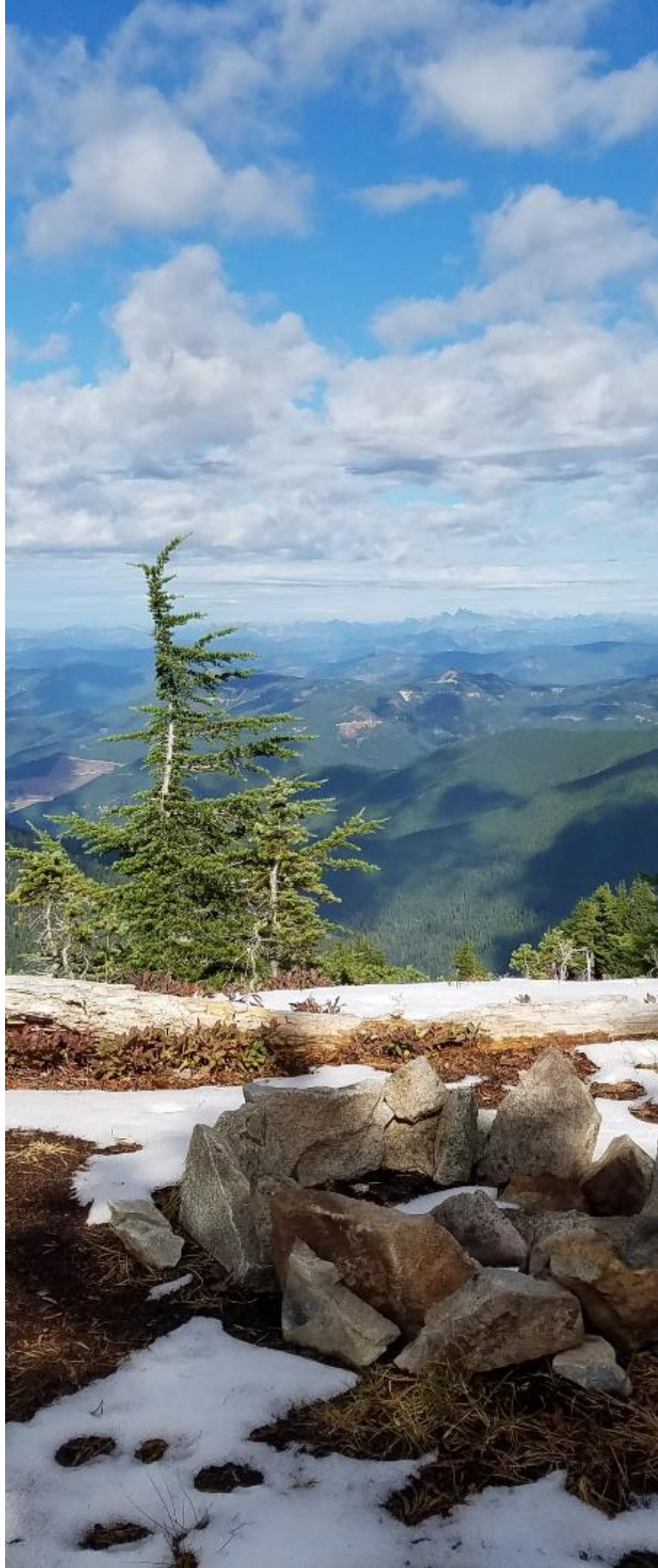
PFAS CAP email list

<http://listserv.ecology.wa.gov/scripts/wa-ECOLOGY.exe?A0=CHEMICAL-ACTION-PLAN>

Agency Web Pages

- Ecology: <https://ecology.wa.gov/PFAS>
- DOH:
<https://www.doh.wa.gov/CommunityandEnvironment/Contaminants/PFAS>





Additional Information

PFAS Chemical Action Plan

<https://www.ezview.wa.gov/?alias=1962&pageid=37105>

Firefighting Agents Law, RCW 70A.400

<https://ecology.wa.gov/Waste-Toxics/Reducing-toxic-chemicals/Addressing-priority-toxic-chemicals/PFAS/Toxics-in-firefighting>

PFAS in Food Packaging, RCW 70A.222

https://www.ezview.wa.gov/site/alias_1962/37610/pfas_in_food_packaging_alternatives_assessment.aspx

Pollution Prevention for Our Future Act/
Safer Products for Washington, RCW 70A.350

https://www.ezview.wa.gov/site/alias_1962/37555/safer_products_for_washington.aspx

Washington State Department of Health

<https://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/RegulationandCompliance/RuleMaking>