



**The webinar will begin shortly.**

**Draft PFAS Chemical Action Plan**

Friday October 23, 2020

10:00 a.m.

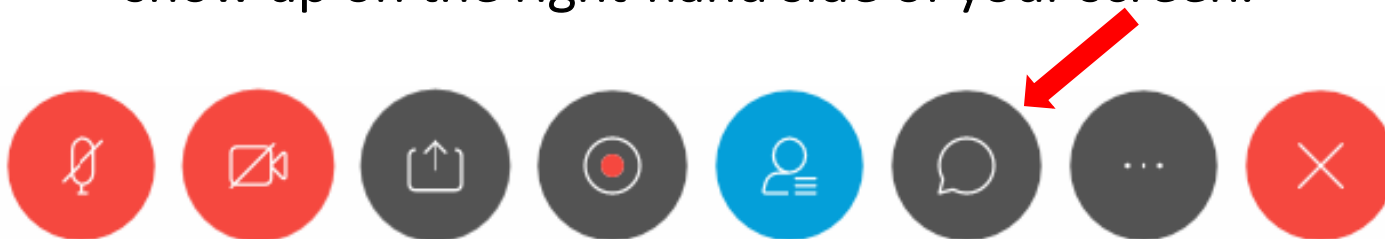


# How to Use WebEx

At the bottom of your screen, you will see the following options.

If you experience technical issues please send your message to the host using the Chat feature.

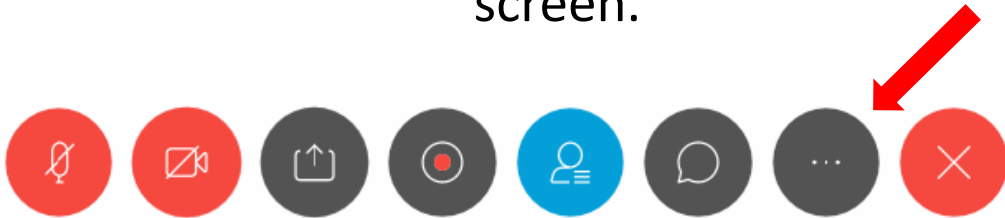
To submit a comment or question, please use the Chat feature as well. Click on the conversation bubble and the chat box will show up on the right-hand side of your screen.



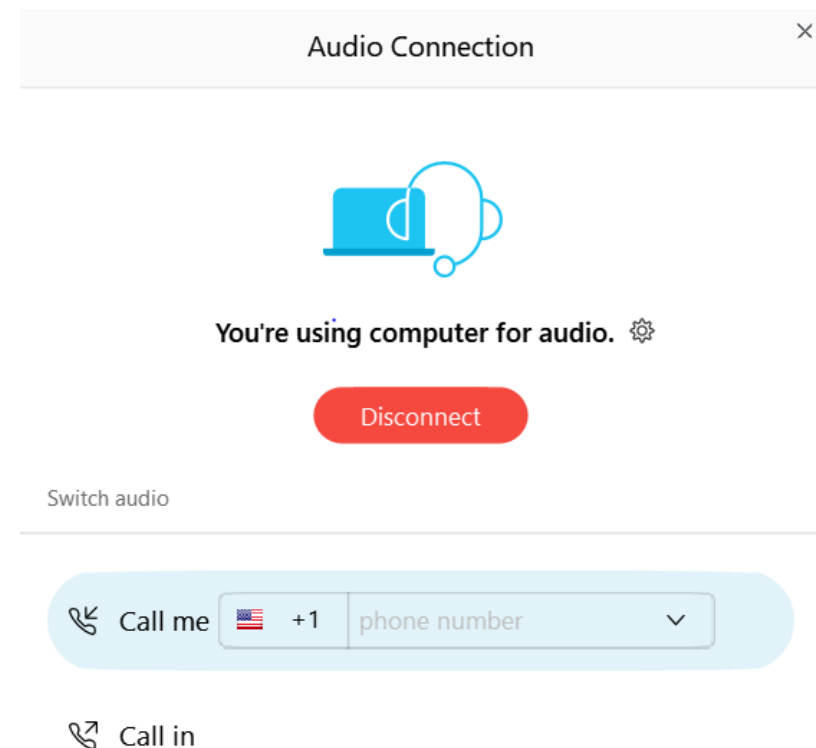
# “Call Me” or “Call Using Computer”

To join to audio, we recommend the "Call Me" option.

- Click on the three dots at the bottom of your screen.



- Click "Audio Connection" and a box will appear with options for how to connect.

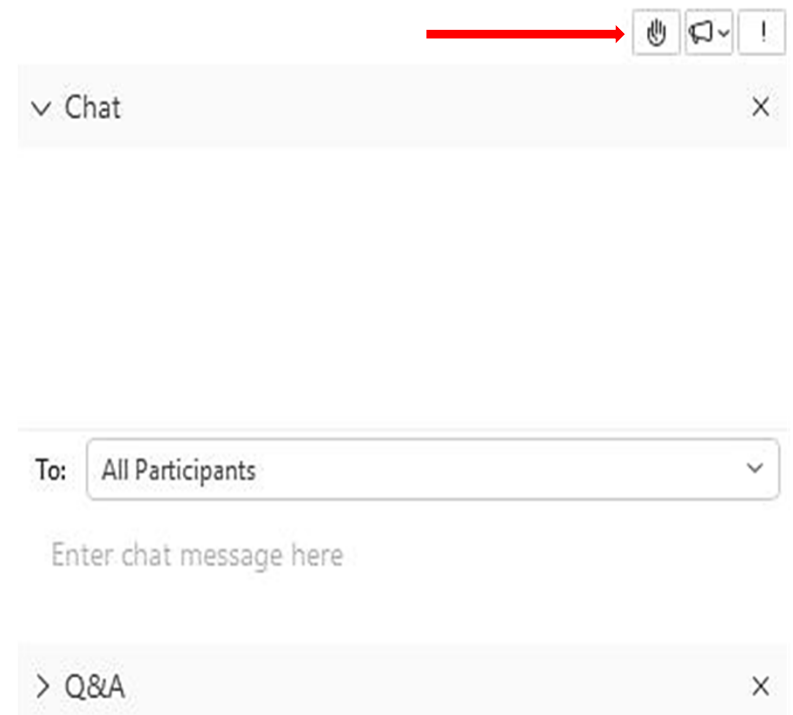


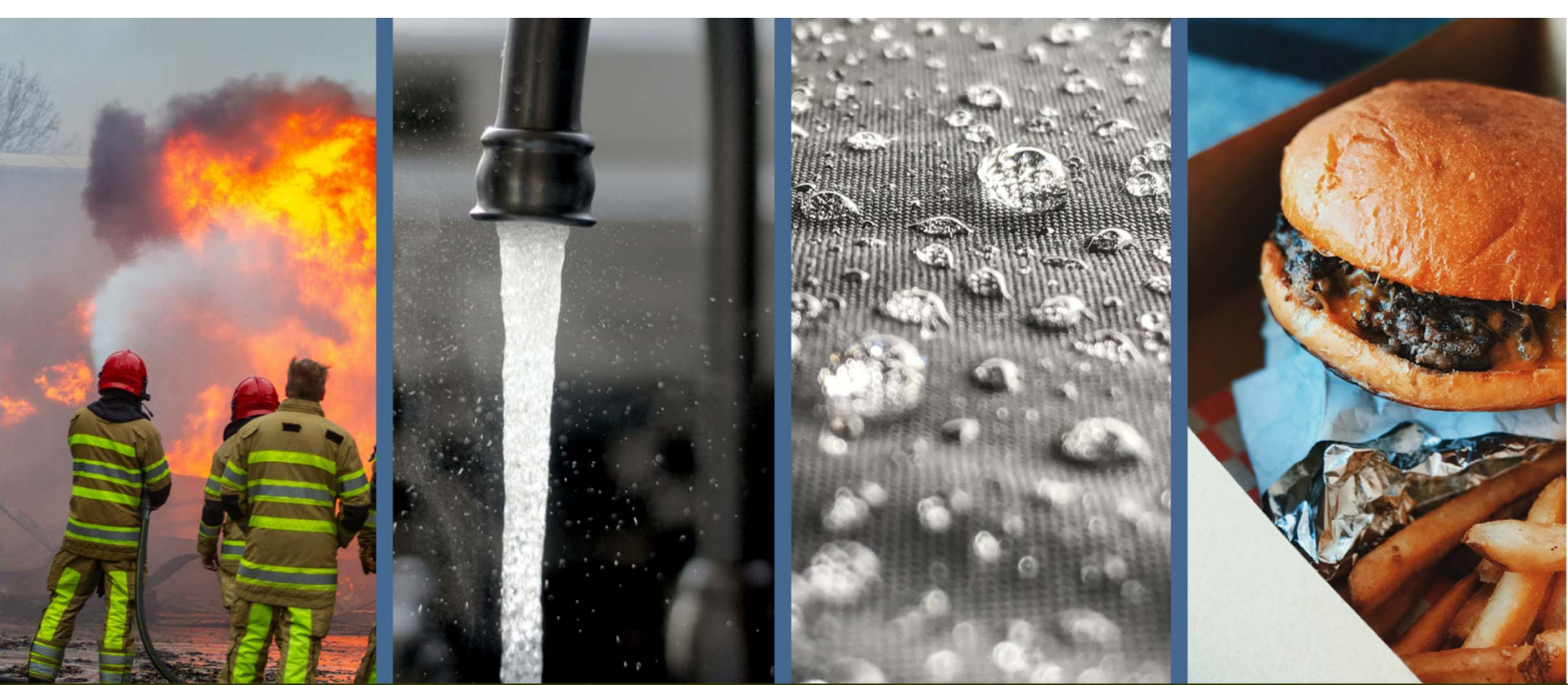
**Access presentation slides here:**

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

# Raise Your Hand Feature

- On the right side of your screen, above the chat box, you will see a hand.
- To use the raise your hand feature please click once on the hand.
- After you have spoken please lower your hand by clicking on the hand once more.





# Draft PFAS Chemical Action Plan Update

Friday, October 23, 2020  
10:00 a.m.



# Today's webinar

- 1 Introduction
- 2 Draft PFAS CAP issuance
- 3 CAP revisions since 2019
- 4 Next Steps
- 5 Advisory Committee questions
- 6 Public questions

# Introductions

## Agency Staff

### Ecology (HWTR)

- Irina Makarow, Chemical Action Planner
- Ken Zarker, Reduce Toxic Threats Program Manager
- Maria Blackshear & Megan Smith, webinar coordination
- Lauren Tamboer, Communications Consultant
- Rae Eaton, AA Specialist
- Kimberly Goetz, Legislative Liaison
- Erich Ebel, Media Relations

### Health

- Barbara Morrissey, Health Toxicologist

# Advisory Committee

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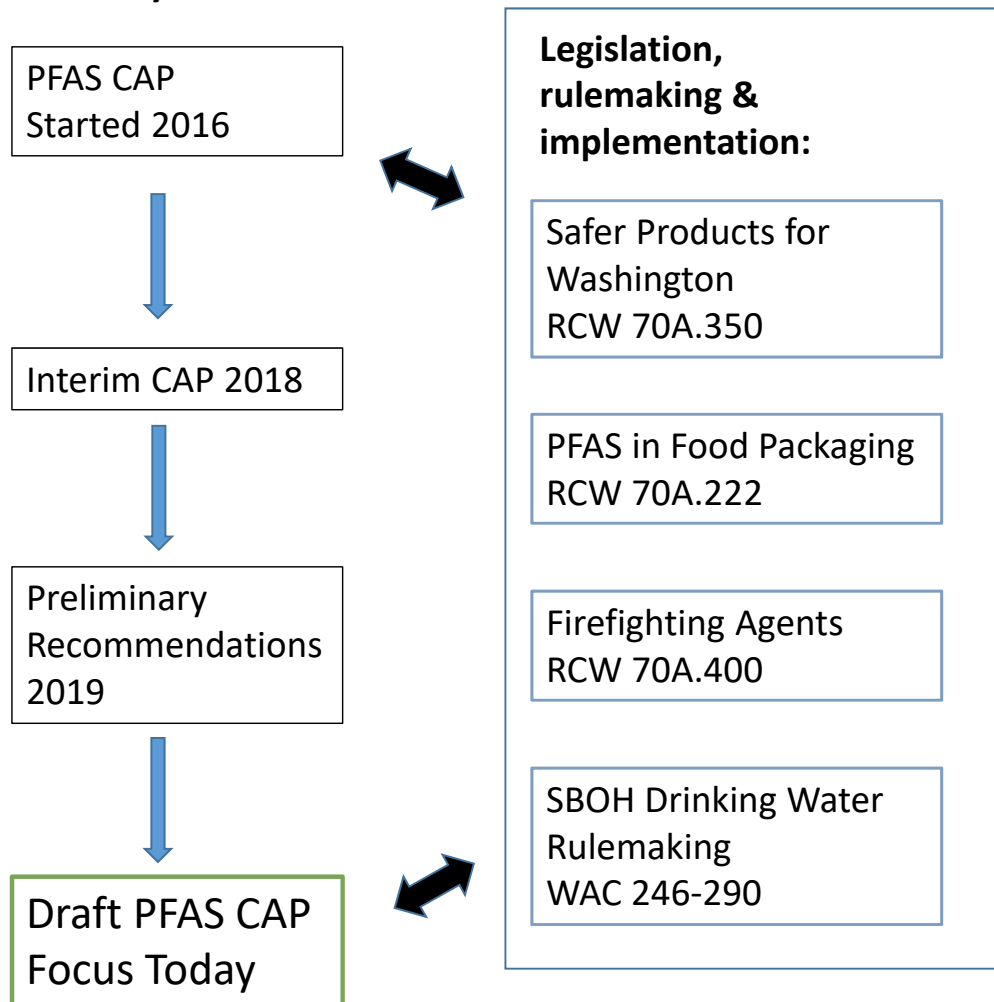
- Informal Roll-Call

- Agency for Toxic Substances and Disease Registry
- American Chemistry Council
- Association of Washington Business
- City of Issaquah
- Clean Production Action
- Green Science Policy Institute
- Institute of Neurotoxicology & Neurological Disorders
- Island County Public Health
- King County Department of Natural Resources and Parks
- Washington State Patrol, Fire Training Academy
- Naval Facilities Engineering Command Northwest
- Outdoor Industry Association
- Port Gamble S'Klallam Tribe
- Port of Seattle Aviation
- Port of Seattle Fire Department
- Toxic-Free Future
- University of Washington
- Whidbey Island Water Systems Association
- Whitman College
- Zero Waste Washington



# Today's Focus

## Advisory:



- 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)
- Start consideration of Draft CAP



# Draft PFAS CAP Issuance



# CAP Process: Public Comment





# WAC 173-333-430(6)

## Public Comment Requirements

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### Methods of notice:

- WSR notice October 7, 2020.
- Ecology website
- Sent notice to interested persons via multiple mailing lists & interested organizations

### 60-day public comment period

- Closes December 7, 2020
- E-comment, mail-in

### Conduct public comment webinars:

- November 12, 18, 19
- Registration via PFAS CAP EZ view page

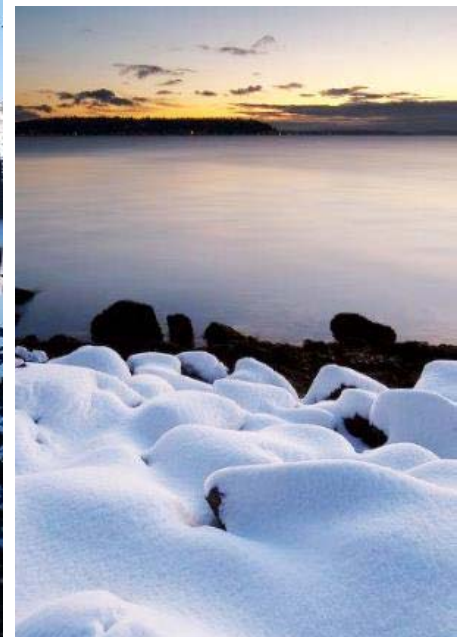
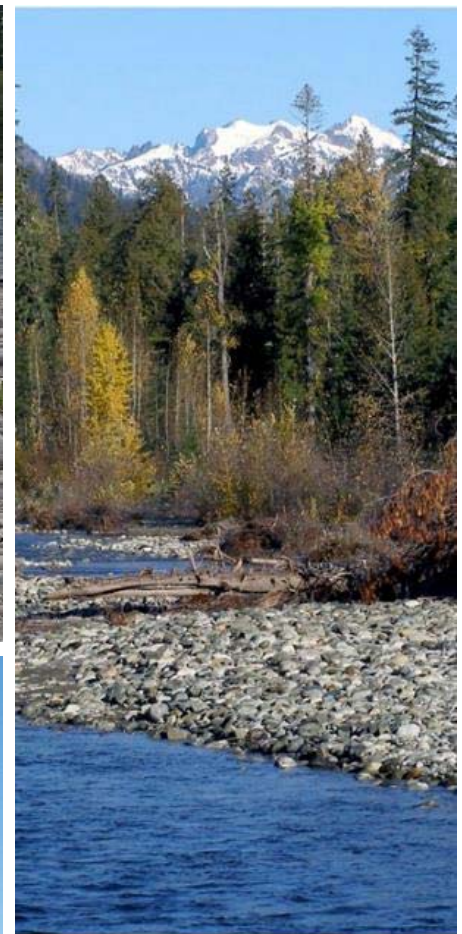
# Public Comment Webinars

- Thursday  
November 12, 2020  
2 PM
- Wednesday  
November 18, 2020  
6 PM
- Thursday  
November 19, 2020  
2 PM

## Register on-line

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

Search for “Ecology Draft PFAS  
Chemical Action Plan”





# CAP changes since 2019



# 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

# Revisions Summary

## Draft CAP

### Executive Summary

- Brief overview of PFAS issue
- Recommendations proposed
- Other work being completed now

### Main Body

- PFAS assessment summary
- Recommendations:
  - evolution since 2018
  - work happening now
  - recommendations
  - Updated cost and funding source
- CAP process overview & next steps

## Appendices

### Consistent Organization

- Beginning: Findings & introduction
- End: Data gaps and recommendations

### Updates

- 2019 Advisory Committee comments
- New data available since 2019
- New scientific information available since 2019



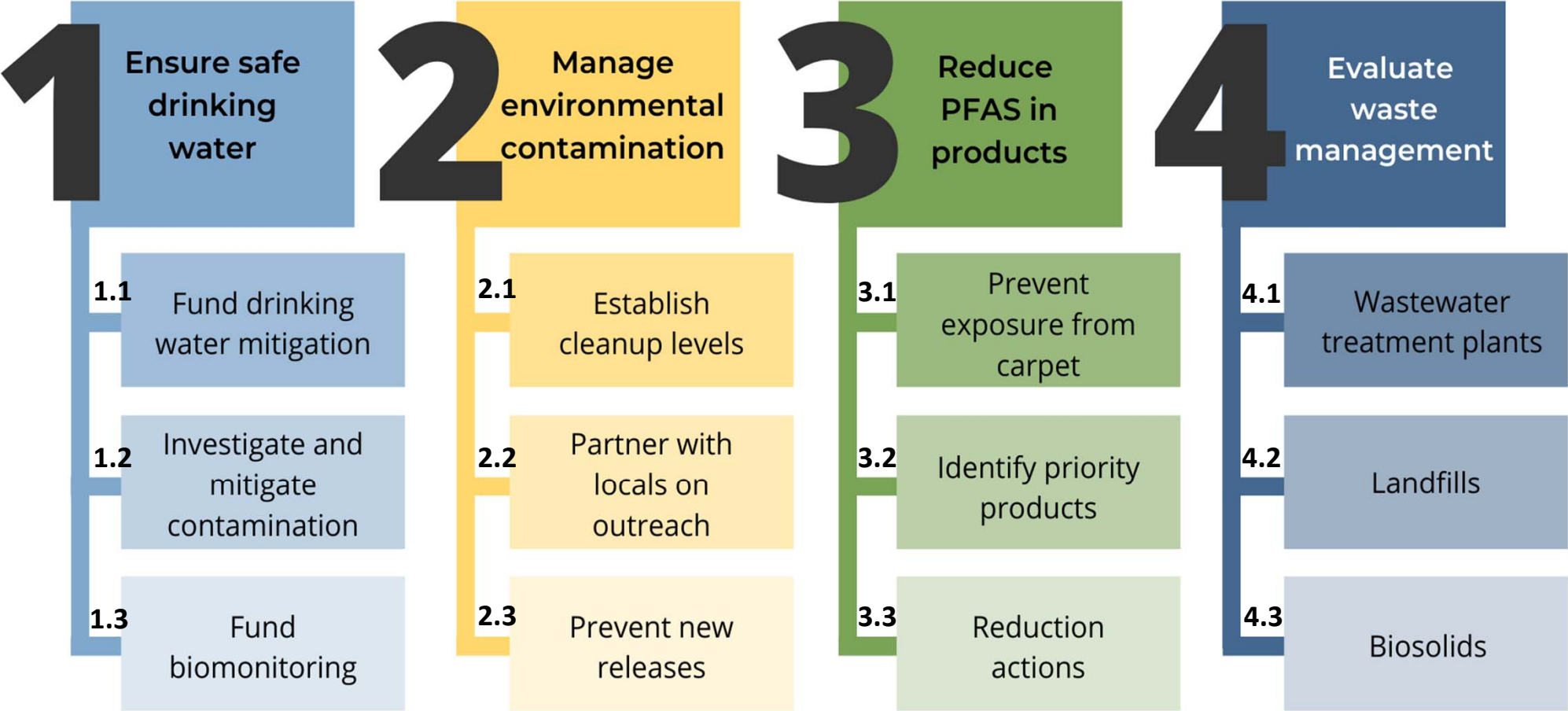


# CAP Recommendation Update

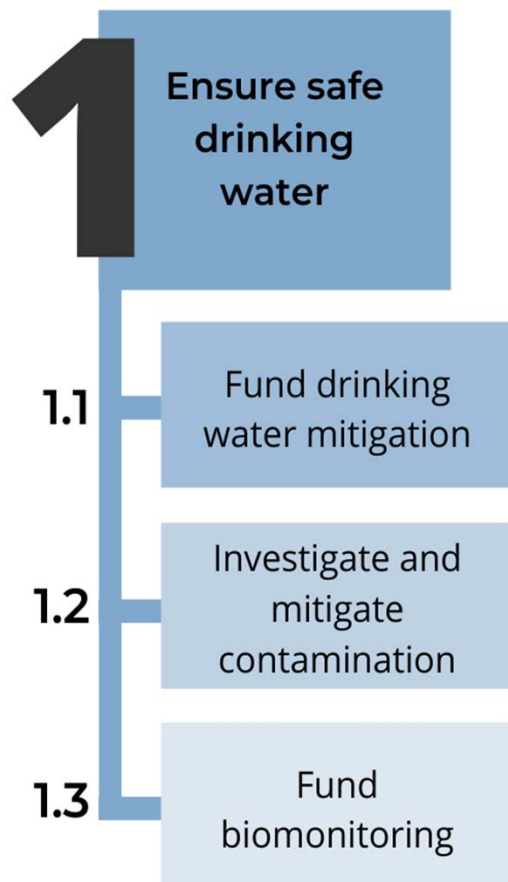
*Only substantive changes summarized today.  
Editorial changes and updates have been  
made throughout.*



# PFAS CAP Preliminary Recommendations (2019)



# PFAS CAP Preliminary Recommendations (2019)



## 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

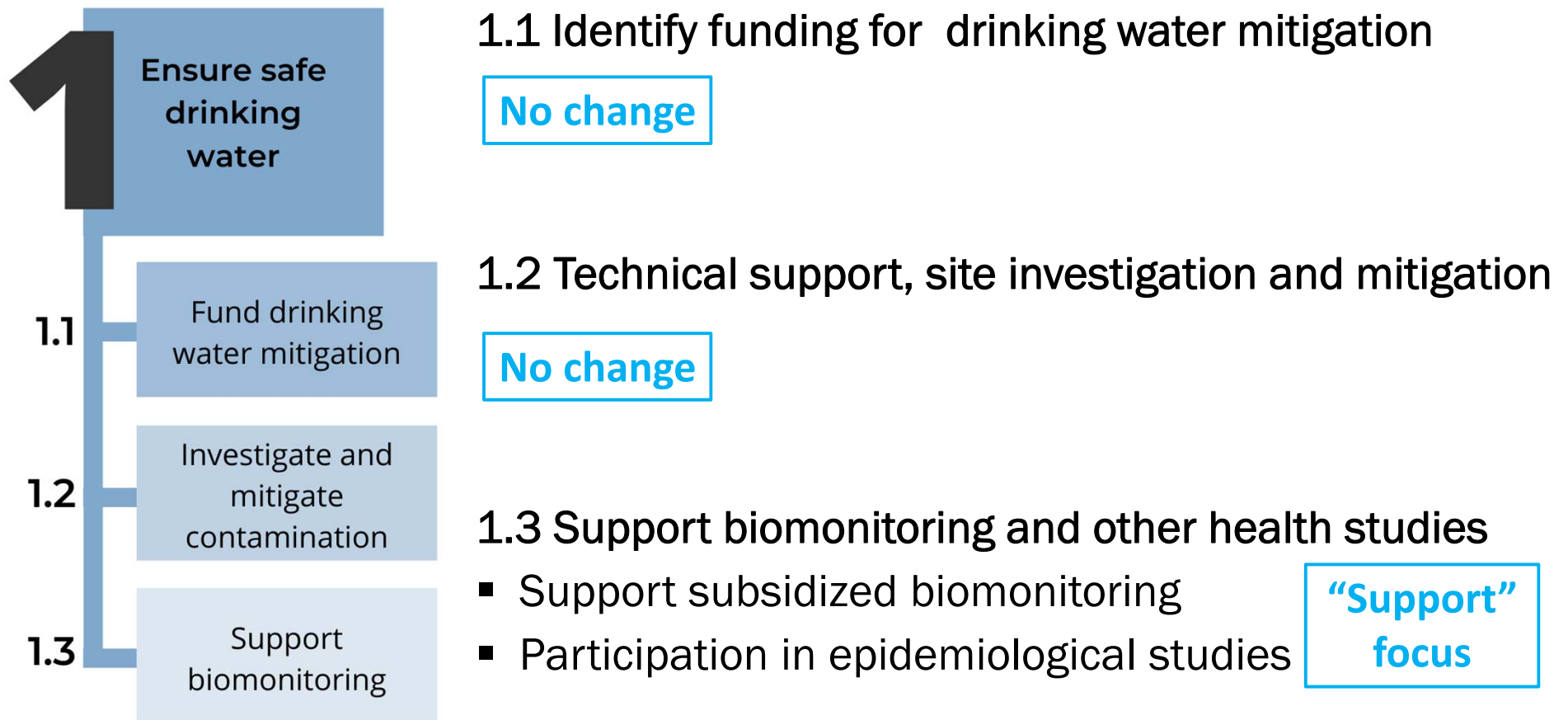
- Ecology collaborates to understand contamination
- DOH provides drinking water mitigation assistance
- Ecology targets Safe Drinking Water Action Grants
- Ecology investigates surface and groundwater
- “Fingerprinting” chemical identities

## 1.3 Funding for biomonitoring

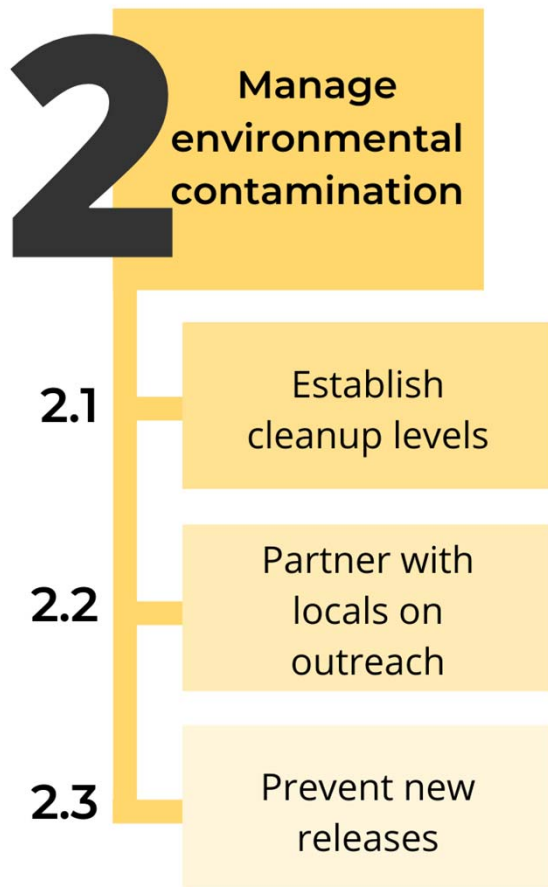
- DOH seeks funding for subsidized biomonitoring
- Participation in epidemiological studies



# Draft PFAS CAP Recommendations (2020)



# PFAS CAP Preliminary Recommendations (2019)



## 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

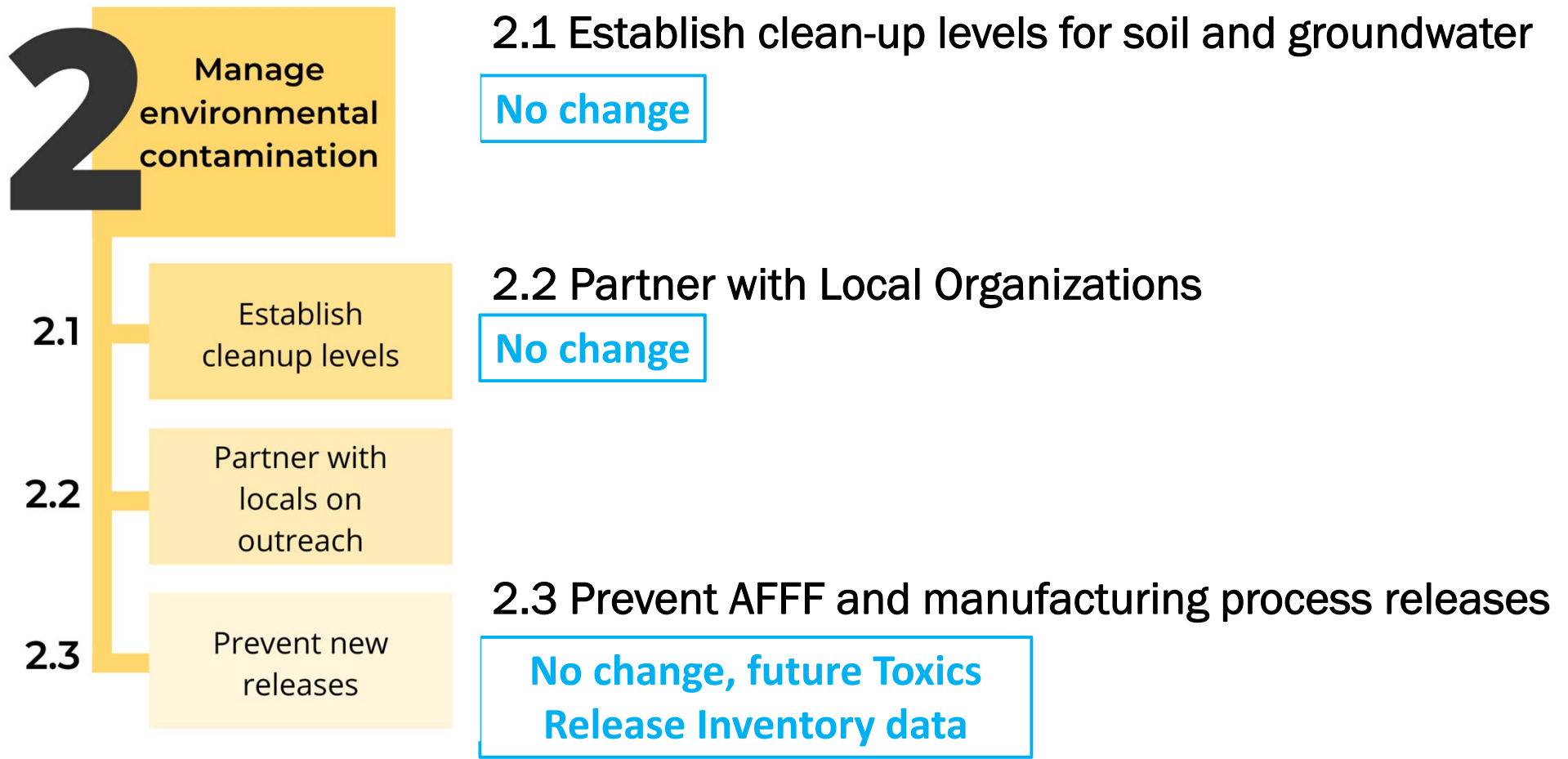
## 2.2 Partner with Local Organizations

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

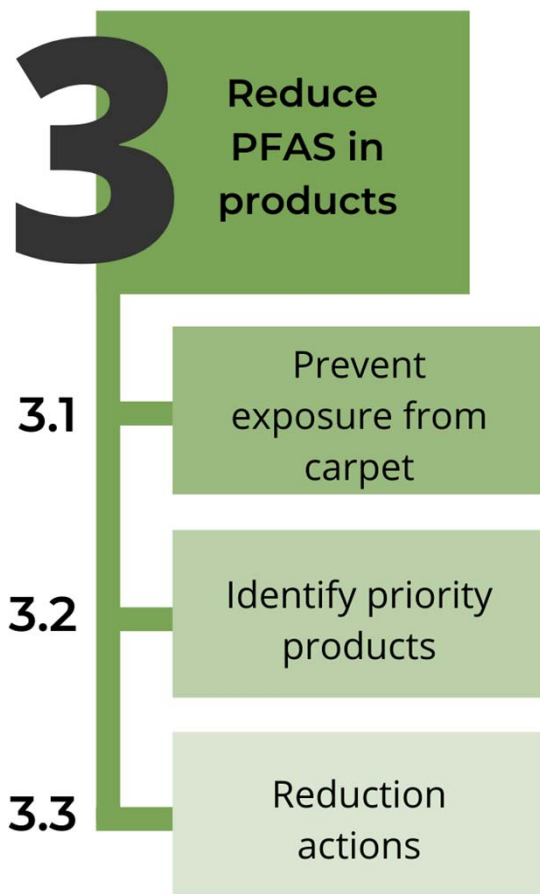
## 2.3 Prevent AFFF and manufacturing process releases

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

# Draft PFAS CAP Recommendations (2020)



# PFAS CAP Preliminary Recommendations (2019)



## 3.1 Reduce exposure from carpet/care products

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

## 3.2 Identify priority consumer products

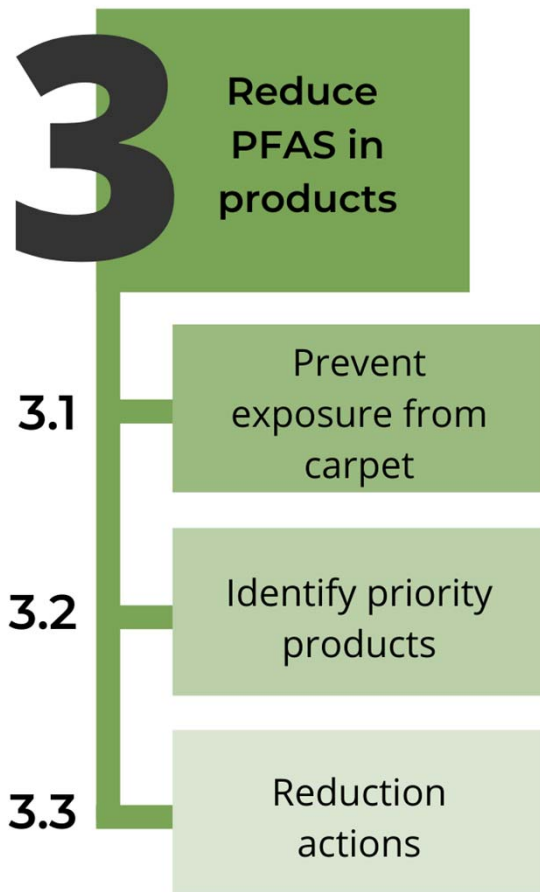
- Assess amount of PFAS in products and potential for exposure
- Collect information from manufacturers

## 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

# Draft PFAS CAP Recommendations (2020)

Reflect Actual  
and Future  
SPWA Work in  
3.1, 3.2 and 3.3



## 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 2<sup>nd</sup> Safer Products cycle

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

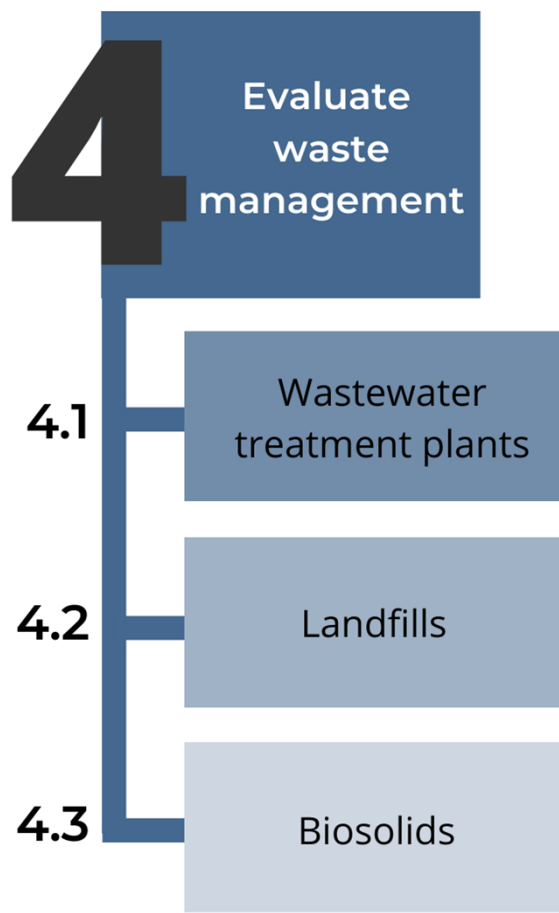
## 3.3 Implement other reduction actions

- Propose restrictions under Chapter 70.365 RCW

Last 3  
bullets, no  
change



# PFAS CAP Preliminary Recommendations (2019)



## 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



# Draft PFAS CAP Recommendations (2020)

## 4 Evaluate waste management

4.1 Wastewater treatment plants

4.2 Landfills

4.3 Biosolids

### 4.1 PFAS in waste water treatment

No change – study being planned

### 4.2 Sample landfill leachate

Study under way

### 4.3 Evaluate biosolids management

No change





## CAP Appendix Updates

*Only substantive changes summarized.  
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made throughout.*





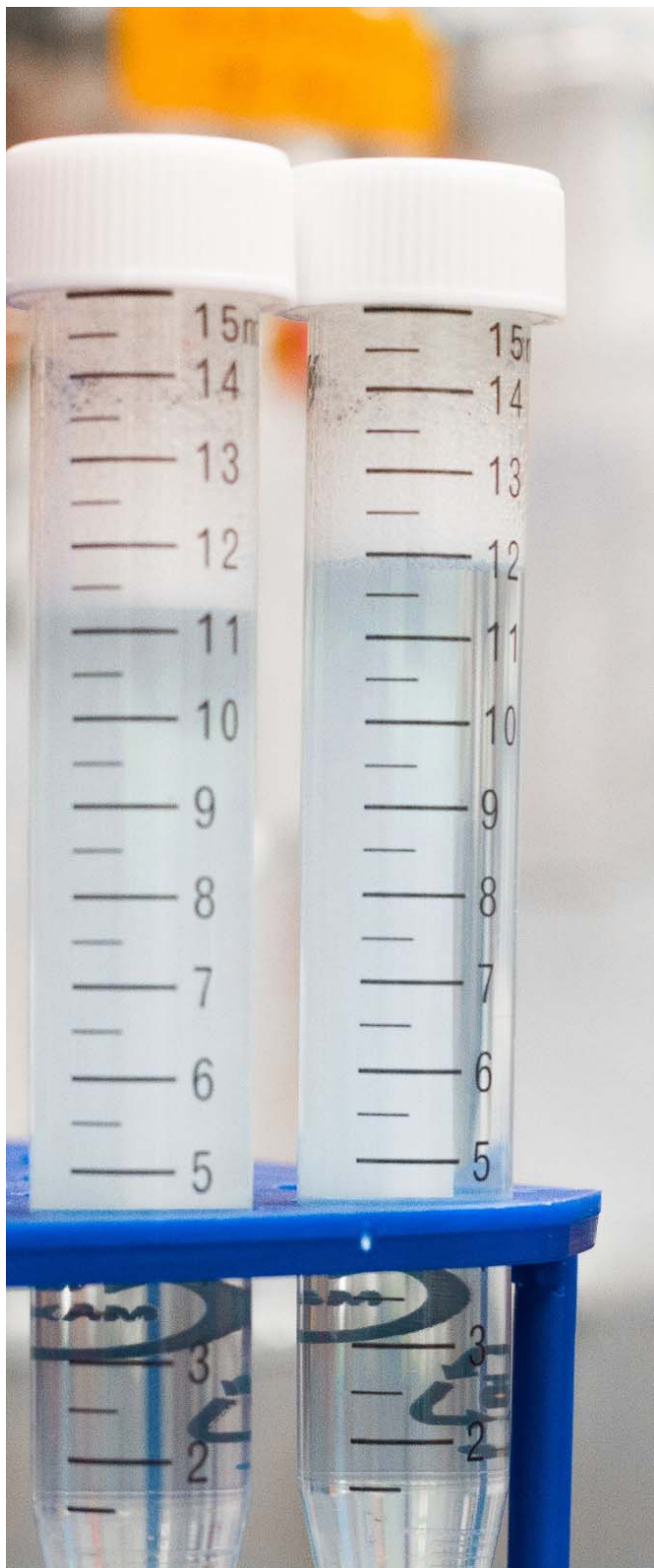
## Appendix 1: Chemistry

“Tightened up”

- Substantially reflects the 2019 “Chemistry Chapter”
- Relies more on other publicly available information about PFAS chemistry
- Added information about solubility
- Detailed text about surfactant properties was removed

Associated Recommendations in CAP:

- None



## Appendix 2: Chemical Methods

“Updated”

- Substantially reflects the 2019 “Analytical Methods” Chapter
- Status of various methods updated
- Method descriptions revised where new information is available
- Method limitations highlighted

Associated Recommendations in CAP:

- None



## Appendix 3: Sources and Uses

“Data Updated”

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- Updated volumes of AFFF historically held
- Used more recent data was from ESD employment and landfilled products datasets
- Updated data quantifying potential manufacturing sources
- Updated content and organization of certain sections (e.g. WWTP)
- Added discussion about PFAS in compost

### Associated Recommendations in CAP:

- 2.3: PFAS AFFF releases and manufacturing
- 3.1, 3.2, 3.3: PFAS in Products
- 4.1, 4.2: Landfills and Wastewater Treatment



## Appendix 4: Fate and Transport

“Updated”

- Content substantially reflects the 2019 “Fate and Transport” Chapter.
- Detailed bioaccumulation discussion has been moved to Appendix 6.2
- Added overview of long term PFAS management options

### Associated Recommendations in CAP:

- 2.1, 2.2: Clean-up standards, technical assistance and communication support



## Appendix 5: Environmental Occurrence

### “New Data”

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- The content substantially reflects the 2019 “Environment” Chapter.
- Included new monitoring data collected by Ecology in 2018
- Added a Marine Biota subsection (provided by Washington Department of Fish and Wildlife)

### Associated Recommendations in CAP:

- None





## Appendix 6: Ecological Toxicology

“Updated”

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- The content substantially reflects the 2019 “Ecological Toxicology” Chapter.
- All bioaccumulation discussions were moved/combined here.

### Associated Recommendations in CAP:

- Incorporate activities into future environmental monitoring



## Appendix 7: Health

“Revised and updated”

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- Re-organized
- Updated scientific literature
- Workplace exposure discussion
- Updated status/drinking water data from known contamination areas

### Associated Recommendations in CAP:

- 1.1, 1.2 and 1.3: Drinking water mitigation funding, technical assistance and biomonitoring support



## Appendix 8: Biosolids

“Updated”

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- The content substantially reflects the 2019 “Environment” Chapter
- Minor editing to address Advisory Committee comments

**Associated Recommendations in CAP:**

- 4.3: PFAS in biosolids



## Appendix 9: Rules & Regulations

“Updated and tightened up”

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- The content substantially reflects the 2019 “Regulations” Chapter
- Identified EPA and DOD activities since 2019
- Added SNUR/New Chemical Review discussion
- Removed other state/international regulatory descriptions

**Associated Recommendations in CAP:**

- None



## Appendix 10: Economic Analysis

“Minor revisions”

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- The content substantially reflects the 2019 “Economic Analysis” Chapter
- Updated references regarding response/remediation costs

Associated Recommendations in CAP:

- None



# Next Steps



# Next Steps

## Issuing the Final CAP

October –  
November  
2020

### Receive Comments

- Conduct comment webinars
- Receive comments
- Additional Committee Briefing?

December –  
February  
2020

### Prepare Final CAP

- Review comments
- Additional analysis if necessary
- Prepare response to comments
- Prepare Final CAP
- Engage with Advisory Committee

Spring 2021

### Issue Final CAP



# Advisory Committee Questions

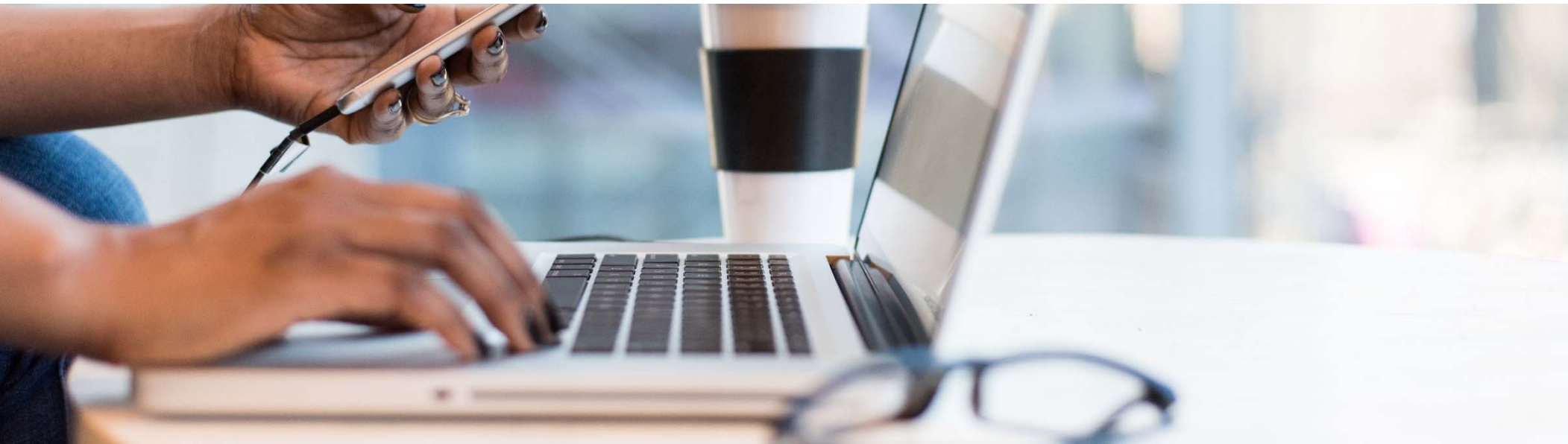
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<http://hwtr.ecology.commentinput.com/?id=j4eJD>







## Public Questions

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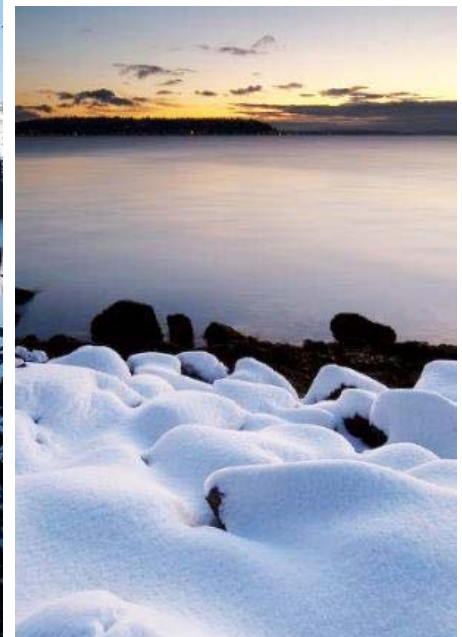
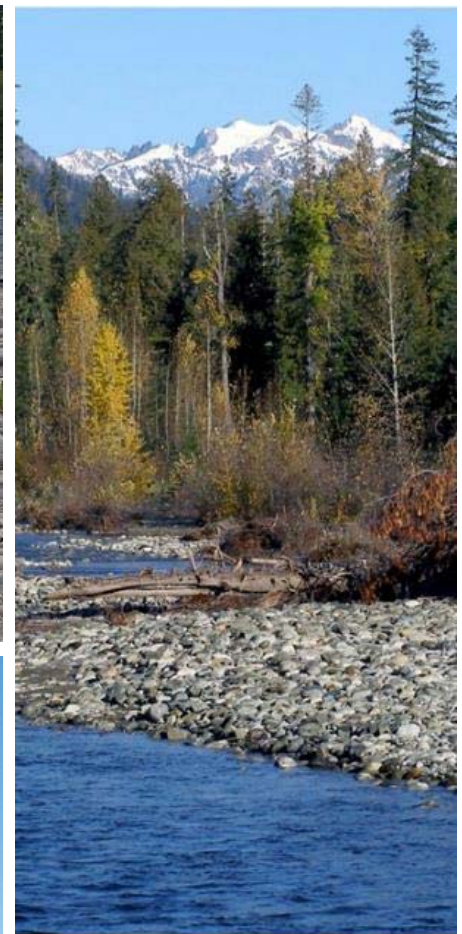
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Chemical Action Plan”



# PFAS CAP Contacts

## Irina Makarow, CAP lead

- 360-407-6250
- [irina.makarow@ecy.wa.gov](mailto:irina.makarow@ecy.wa.gov)

## PFAS CAP website

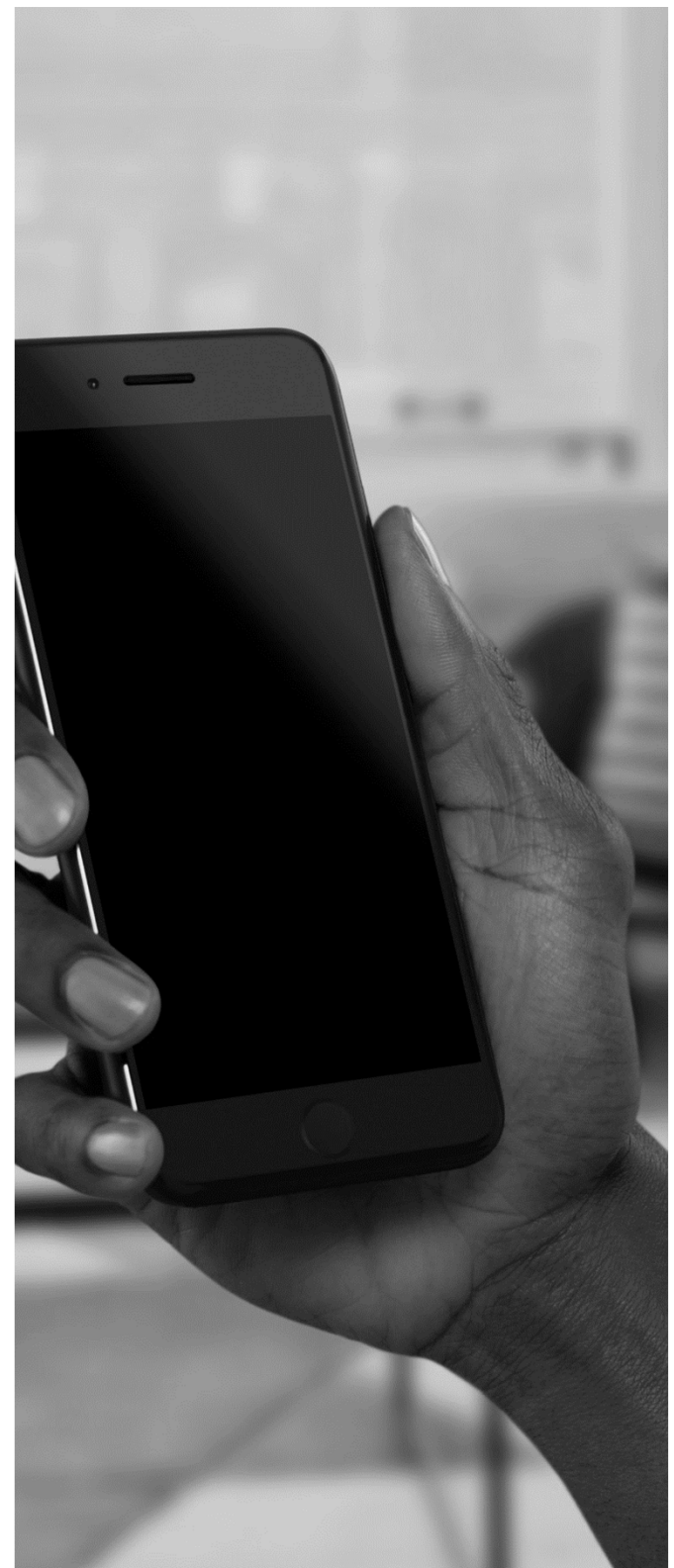
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## PFAS CAP email list

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

## Agency Web Pages

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



**Thank you for your time!**