

**Washington Departments of Ecology & Health**

**Per-and Poly-Fluorinated Alkyl Substances (PFAS) Chemical Action Plan (CAP) Advisory Committee Meeting**

WA State Department of Ecology | Room 1A/B | 3190 160th Ave SE | Bellevue, WA 98008

Wednesday, November 1, 2017 | 9:00 am to 4:00 pm | *Meeting Documents:* [Ecology EZ View Website](#)

Facilitated by the Ruckelshaus Center (Chris Page and Kara Whitman)

**Attendees:**

**Advisory Committee Members \***

Jessica Bowman\*—FluoroCouncil  
Alissa Cordner\* (webinar)—Whitman College  
Steven Gilbert\*—Institute of Neurotoxicology and Neurological Disorders  
Doug Kelly\* (webinar)—Island County Environmental Health  
John Lovie\* (webinar)—Whidbey Island Water Systems Association  
Mary Catherine McAleer\*—Association of Washington Businesses  
Rory O'Rourke\*—King County, Water & Land Resources Division  
Don Robbins\* (webinar)—Port of Seattle, Aviation  
Erika Schreder\*—Toxic Free Future  
Heather Trim\*—Zero Waste Washington  
Abigail Welch\* (webinar)—Port Gamble S'Klallam Tribe

**Interested Parties**

Maryon Attwood, Anne Harvey—Whidbey Water Keepers  
Janet Anderson (webinar)—Integral Consulting, Inc.  
Simona Balan (webinar)—California Department of Toxic Substances Control  
Jacqui Beck—Environmental Resource Management  
Deborah Bisenius (webinar)—City of Spokane  
Holli Burt (webinar)—Step2  
Chris Generous—U.S. Navy, Naval Facilities Engineering Command  
Joseph Grogan (webinar)—Town of Coupeville  
Peter Hildebrandt (webinar)—Alcoa Inc. & the Western States Petroleum Association  
Peggy Horst (webinar)—W.L. Gore & Associates Inc.  
Danille Jorgensen (webinar)—Landau Associates  
Erika Kinno, Shirlee Tan—King County, Public Health  
Steve Korzeniowski—FluoroCouncil  
Jeff Kray (webinar), Sarah Wightman (webinar)—Marten Law  
Maureen Leahy (webinar)—Environmental Resources Management Ltd  
Kristin Marshall (webinar)—Boeing  
Grant Nelson (webinar)—American Chemistry Council  
Cheri Peele—Clean Production Action  
David Plant (webinar)—Angus International Safety Group  
Hardy Poole (webinar)—National Council of Textile Organizations  
Ivy Rosenthal-Sager, Nancy Uding (webinar), Laurie Valeriano—Toxic-Free Future

**State Agency Staff**

Elmer Diaz—WA Department of Health (DOH)  
Anne Knapp (webinar)—WA Department of Ecology (Ecology)  
Amy Leang—Ecology  
Callie Mathieu (webinar)— Ecology

Barb Morrissey— DOH  
Cheryl Niemi (webinar)— Ecology  
Brian Penttila—Ecology  
Garin Schriever (webinar)—DOH  
Kara Steward—Ecology  
Scott Torpie—DOH  
Kari Trumbull (webinar)— Ecology  
Jim White—Ecology  
Ken Zarker—Ecology

### **Welcome, Introductions, Meeting Ground Rules, and Agenda Review**

After introductions and a review of suggested ground rules, Chris Page noted a slight agenda change: Local government and non-governmental presentations will switch on the schedule. Chris explained the process for the day, highlighting the importance of state agency ownership of all final decisions for the PFAS CAP, full group dialogue on issues and challenges, and Committee input on potential recommended actions.

### **Summary of Comments on DRAFT CAP Chapters (Kara Steward)**

Some questions arose about the CAP scope; the CAP will encompass both so-called “long chain” and “short chain” PFAS (and related) compounds, and focus on Persistent Bioaccumulative Toxics (PBTs) and potential replacements for those chemicals.

Ecology has received two sets of comments on the posted draft chapters, but staff have not yet had time to work through all the comments. They will work through those comments in the next couple of weeks, but will not issue a “response to comments” document given the short time frame between now and December 2017. Brian Penttila explained that they greatly appreciate the comments submitted to date, but would like to have comments from other advisory committee members as soon as possible, to get a broader range of opinions. Ecology can send Word versions of draft chapters to Advisory Committee members if requested via email.

### **Timeline for Draft Interim and Final CAP (Kara Steward)**

Ecology will share a draft CAP section on Biosolids and Ecotoxicity on November 8<sup>th</sup> (COMPLETED). Comments on all CAP documents (previously-issued chapters and the two new sections) are due by November 17, 2017; comments after that may not make it into the Draft Interim CAP. With only one economist, Ecology cannot predict how long the economic assessment will take.

Ecology plans to issue the Interim Draft PFAS CAP in early January 2018, followed by a (minimum) 60-day Public Review, and host two public meetings during that review period. After the comment period, the PFAS CAP Advisory Committee will meet again to review public comments. More Advisory Committee meetings will be scheduled throughout 2018, during work to complete the Final PFAS CAP. The agency will also hold a public comment period after the Final CAP is published, likely in early 2019.

**ACTION ITEM:** Kara Steward to post the Biosolids and Ecotoxicity sections on the [PFAS CAP](#) site. (COMPLETE)

### **Perspective: Industry**

Jessica Bowman and Steve Korzeniowski of the FluoroCouncil presented the industry perspective on PFAS and the CAP, sharing information on the chemistry of this class of chemicals.

### **FluoroCouncil key messages:**

- FluoroCouncil supports development of a science- and risk-based PFAS CAP.
- Long-chain Per-Fluoro Alkyl Acids (PFAAs) have been found in Washington’s environment and wildlife.

- Contamination continues, through use of stockpiled products and import of products containing long-chain PFAAs.
- Short-chain PFAAs, their precursors, and fluoropolymers are not PBTs.
- Short-chain PFAAs are less frequently detected in water/sediment and are not detected in wildlife.
- The PFAS CAP should focus on long-chain PFAAs; on known PBTs found in the WA environment.
- Short-chain PFAAs, their precursors, and fluoropolymers do not present a significant risk to the environment or human health and should not be included in the CAP.

**Summary of FluoroCouncil Comments on Draft PFAS CAP Chapters:**

- The CAP should focus on long-chain PFAAs to address environmental contamination and identify and eliminate ongoing sources.
- Other PFAS (short-chains, fluoropolymers) do not contribute to long-chain levels.
- All PFAS are not PBTs, and Fluoropolymers are not PBTs and are not bioavailable.
- Only long-chain PFAAs are PBTs, and thus within the scope of the CAP program. Other PFAS (short-chain PFAAs, fluoropolymers) are not PBTs, and thus should not be included in the CAP.
- Discussing PFAS as a single class is technically inaccurate; the term “PFAS” is too broad, and the CAP chapters should not treat PFAS as a single class of chemicals.

**Committee Discussion Points (after presentation):**

- What is the financial or other responsibility of companies who make or use the chemicals to contribute to a solution for the problems?
- Polymers are not studied because they are not bioavailable.
- The lack of transparency around usage of these chemicals (based on their proprietary nature) leads to mistrust. Usage information should be available if we are to deal with the problems. Is there a way to use public disclosure laws to get information from EPA, FDA, or the state? Can we work on increasing transparency on what the industry is doing?
- There are not a lot of studies to understand the safety of short-chain PFAS-type chemicals in humans. We need studies on rates of bioelimination (versus bioaccumulation), along with degradation studies. Jennifer Field (at Oregon State University) has begun some of this work.
- Several states are in the process of updating drinking water standards for long-chain; however, none are yet known to have adopted regulations on the short-chain chemicals.
- Food Packaging:
  - Minnesota has a prohibition on perfluorinated grease barrier compounds in food packaging (<https://www.pca.state.mn.us/sites/default/files/w-ps3-27.pdf>).
  - New York recently drafted amendments to single-use food container specifications, stating that containers that do not contain perfluorinated chemicals should be used. (<https://www.ogs.ny.gov/green/y/green-purchase.asp>)
  - A subgroup of the Interstate Chemicals Clearinghouse (IC2) recently hosted a webinar on PFAS chemistry in food packaging. (<http://www.theic2.org/events>). *Related NOTE from Ecology: The IC2 Alternatives Assessment (AA) workgroup is scoping an AA for aqueous film-forming foam (AFFF).*
- Sparse data is not necessarily a rationale for not including short-chain PFAS-type chemicals. We need more data; some short-chain products have only recently come on the market, so it may take more time for them to show up in humans and the environment.
- One Committee member described up-front requirements by both EPA and FDA for new PFAS as “significant,” others responded that since the relevant data is not available, that cannot be confirmed.

**Perspective: Non-governmental Organization (Erika Schreder, Toxics Free Future; Cheri Peele, Clean Production Action)**

Erika Schreder said other CAPs have resulted in progress, but also caused regrettable “alternative” substances to be put into use. The goal is to minimize the use of PFAAs, and phase out uses where safer alternatives have been identified. The CAP should identify use sectors that result in exposure to people and where alternatives exist (such as fire-fighting foam and food contact applications). Toxic-Free Future also stated the following:

- It is important to look at applications where PFAS-type chemicals contact food, including disposal after use.
- There is known AFFF contamination of drinking water from past use, and potentially lots more contamination not yet found.
- Ecology should set a timeline to phase out specific uses; in the meantime, we need interim protections (e.g. restricting the release during equipment testing and training).
- We need a timeline for reducing or eliminating known sources with no identified safer alternatives.
- There should be drinking water standards, with a mechanism for adding compounds as they are identified.
- The CAP should include a mechanism for getting information to and from the agencies, since the agencies cannot do their jobs without this information flow.
- The CAP should include long- and short-chain, and consider them all as a full class of chemicals. Short-chains can degrade into persistent compounds.
- A Swedish chemical agency stated that all PFAAs should be addressed as a group to minimize exposure from all routes.
- We do not yet have a way to adequately assess the health risk of the chemicals.
- Waste Water Treatment Plant (WWTP)-impacted water bodies frequently contain PFOA, PFxHA, and PFPeA.
- We see a trend of moving away from long-chains to other compounds: in 2008, PFOA was the most dominant compound, now higher concentrations of other compounds are emerging.
- There are extensive unknowns; we do not know a large portion of the chemicals people get exposed to.
- HFPO-TA (Hexafluoropropylene Oxide Trimer Acid) was the dominant PFAS-type compound in fish liver and muscle (in a 2017 study - <http://pubs.acs.org/doi/pdfplus/10.1021/acs.est.7b02259>), with large increases found downstream of WWTPs. The study found it to be more bioaccumulative than PFOA.
- A 2012 report examined serum from Swedish mothers. 30% of the population of Sweden has drinking water with PFAS levels above what is considered safe for drinking water.
- Independent scientific research gets hampered by lack of information: after the oil train derailment in Quebec, AFFF was used on the fire. Chemists have been working to understand the impacts, with a study published this year. They took soil samples and found 88 different PFAAs in the soil, and could only identify 33 (no analytical standards for the other 55).

**ACTION ITEM:** Erika to email handout to Kara Steward for posting on the PFAS CAP webpage. (COMPLETE)

Link to handout: [https://www.ezview.wa.gov/Portals/\\_1962/Documents/PFAS/TFFhandout110117.pdf](https://www.ezview.wa.gov/Portals/_1962/Documents/PFAS/TFFhandout110117.pdf)

Cheri Peele provided the viewpoint from Clean Production Action (CPA). (Cheri worked for Ecology on the Mercury and PBDE CAPs.) CPA would like to see the CAP include mechanisms to protect the environment and prevent exposure. CPA is working to identify alternatives to PFAS-type chemicals, and have encountered a high level of interest. They have focused on these chemicals based on their persistence and toxicity.

CPA is looking closely at food packaging because of exposure pathways: in addition to contact with food, the packaging cannot be recycled, so is likely to end up in landfills. They have identified alternative paper coatings for grease resistance. CPA is also looking at alternatives to firefighting foams with Toxic Free Future: which

alternatives exist, if they are in use, and what potential health impacts might be. When they screen alternatives for functionality and hazard, they want to have safer alternatives and avoid regrettable substitutions. Where safer alternatives do not exist, Ecology should support their development. CPA urges Ecology to think creatively in the CAP, i.e. using the market to move the chemistry toward safer alternatives.

Laurie Valeriano (Toxic-Free Future, or TFF) said we have a great opportunity to avoid mistakes made in the past (via substitution of chemicals that proved not truly safer as alternatives). By the time we get all the data, we may be in the same situation as we were with the long-chain compounds. TFF would like to see a reasonable approach: in uses and applications with high exposure potential and high risk of entering the environment, more focused consideration should occur.

**Discussion Points (after presentations):**

- The Fire-Fighting Foam Coalition (<https://www.fffc.org/>) issued a “best practices” guidance document. State agencies can play a role beyond providing guidance on use practices; we need responsibility in how this is used.
- The International Association of Fire Fighters are calling for safer alternatives, as their membership is dying at higher rates (due to high exposure to chemicals over time). They also get exposed to other combustion products as well as firefighting foams.
- All risk areas are not the same (not all directly contact drinking water), so how does responsibility for contamination get resolved? Can the CAP give guidance until safer alternatives are found?
- The CAP should request funding for a full alternatives assessment. CPA can do a hazard assessment on up to three products, and will probably look at some alternative coatings (assuming they can get manufacturers to tell them the formulation).
- Regarding the mobility in soil of short-chains: some studies show that shorter chains move more easily in soil, and some are taken up into plants easier. Also, water treatment using activated carbon removes PFOA and PFOS, but shorter chain PFAAs break through more quickly.

**Perspective: Local Government (Rory O’Rourke, Erika Kinno, Shirlee Tan)**

King County representatives will provide technical comments on the CAP draft chapters later. Generally, King County would like to see the following addressed, based on the unique challenges facing local governments:

- These chemicals are a concern for government operations and human health, as communities are impacted by direct exposure and off-gas exposure. Keep in mind lower concentrations.
- They are concerned about the ubiquitous nature of these chemicals; once phased out, where do they go?
- They believe the CAP should cover all PFAS-type compounds due to the limited understanding of the chemicals’ impacts, fate, and transport.
- King County wants to make efficient use of everyone’s time by working upstream of the problem, rather than being reactive. In other words, we should not have to deal with these products in the waste stream, since the burden then gets placed on the community and the public.
- They would like to see the CAP seek truly safer alternatives, not regrettable substitutes. This will require adequate study, and understanding of the fate and transport of the substitutes.
- The impacts of PFAS-type chemicals must be considered through the lens of *equity and social justice*:
  - The burden of solutions should not fall on low-income populations and communities of color.
  - The CAP should use a fair and just process to minimize burden on these and other impacted communities (subsistence fishers, and those with more direct exposure).
  - There is more fast food in low-income communities, who have additive and cumulative exposure. Low-income communities also use more legacy products (via hand-me-downs, thrift store-purchased items, and less frequent replacement of old carpet, etc.). Thus, these communities have a disproportionate exposure burden to these chemicals than higher-income individuals.

- The CAP should include a range of solution options that consider all the costs: taxpayer cost, social cost, environmental cost. Solutions should be justified by this triple-bottom-line criterion.
- Guidance on public messaging: with the complexity of the chemistry, and many unknowns, the CAP should provide tools for explaining these issues to the public.
- Funding for monitoring and research: even when chemicals are phased out, there will still be concentrations in the environment and we need to fill data gaps.

***Discussion points (after presentation):***

- Equity is vital to the state agencies. Since King County has done a lot of this work, Ecology and DOH would appreciate King County's assistance to bring some richness to this in the CAP.
- Do we have data on body burden on workers and long-term health effects? A 2005 study looked at the different routes of exposure.
- For the end-of-life (disposal) issues, who should Ecology/DOH talk to? Erika Kinno said if there is a specific question, they can find the right people to assist.
- Regarding the treatment of PFASs in WWTP systems: currently, the King County WWTPs do not treat for it as no regulatory requirement exists to do so. Some studies have shown an increase in PFAS chemicals between influent and effluent, but more studies are needed on this. Likely, the precursor compounds tend to be active in biosolids. The best treatment for long-chain PFASs is granulated activated carbon.

***Categories of Issues/Challenges, with Potential Actions (Kara Steward, Ecology)***

Ecology has collected preliminary thoughts on options for the Interim Draft CAP, based on the Committee's brainstorming at its August 30<sup>th</sup> meeting and on Ecology's work on the draft chapters. The project team took what they heard at the meeting (and over the last year) to compile a list of 114 items. They grouped those ideas into three categories for today's discussion: AFFF, Drinking Water, and PFAS Source Identification.

The project team also identified categories of issues for consideration during development of the Final CAP in 2018: Addressing Key Data Gaps, Ecological Health, Human Health, and Outreach/Education.

**Challenge: AFFF**

Jim White (Ecology) noted that we do not fully understand how AFFF goes from the source into the groundwater, nor what the distribution is currently. Four categories of options for recommendations:

- **Cleanup known AFFF-contaminated groundwater and soil.** Establish cleanup levels and how to apply them and to what chemicals.
- **Identify areas at risk of potential contamination.** Survey likely AFFF users to narrow the search.
- **Ensure proper disposal of existing supplies.** Develop options for environmentally-friendly AFFF disposal.
- **Provide outreach for users, water purveyors, government, public.** on use, disposal, health, etc.

***Discussion, Questions, and Feedback to Ecology/DOH (Items in italics would require legislation)***

- *Ban current and legacy AFFFs containing PFAS (need a safer alternative first).*
- Are there contamination issues with current AFFF products?
- Set a cleanup standard for legacy use at contaminated sites.
- There are about 4,000 Group A public water systems (>10,000 connections) and about 13,000 group B public water systems; only about 200 have been tested for PFAS.
- Look at groundwater; there are fire stations everywhere.
- There is Class B (AFFF) on every Washington state ferry.
- Try to figure out how to address smaller water systems (fewer than 100 hookups), along with private drinking water wells.

- Missing from the list: outreach for water purveyors and the public, to explain the need for more funding for ongoing efforts on PFAS.
- Concern about impacts to surface water (like the Duwamish River).
- Can't chemicals be used up to a threshold at which there would be a threatened release (that level is protective of human health and the environment) – so can't AFFF be applied at a certain level before it becomes a problem? Similarly, the soil cleanup level gets set at a level at which concentrations in surface soil, vadose zone, and aquifer solids are protective of groundwater. Likewise, the petroleum cleanup level gets set at a level to protect groundwater.
- **Q.** Does DOH require testing of drinking water for chemicals where there is no drinking water standard? **A.** No, but in some cases testing results for unregulated chemicals get reported to DOH because they happen to be an analyte detected (using an approved method) for a regulated chemical. DOH can require ongoing testing and other action on unregulated chemicals.
- We need to generate funds; what funding sources are possible? *How about a fee on the sale of AFFF to help fund cleanup?*
  - Who pays for bottled water, or for the alternative water supply and filters?
  - Would the manufacturer pay this fee or the user of AFFF?
- Analytical methods: what chemicals do we test for? We need to know the chemicals used in AFFF and the methods to test for those chemicals.
- *How about requiring disclosure of chemical information for AFFF use in WA* (like what happens under the Children's Safe Products Act reporting), and *disclosure of chemicals in these products?* MSDS (Manufacturer's Safety Data Sheet) information is not enough.
- The Toxic Substances Control Act (TSCA) provides for transparency with states, though a state must meet the confidentiality requirements of the EPA data.
- *Change the regulations on chemical disclosure.*
- Focus on how to keep chemicals out of the environment – prevention is cheaper than cleanup.
- Look at Queensland (Australia) restrictions – *phase out problematic formulations, and add restrictions.*
- Do we know how the AFFF chemicals behave in chlorinated (drinking) or salt water?
- Military-specification (Mil-spec) AFFF has set a new limit of 800ppb for PFOA; forest fires use Class A; petroleum firefighting uses Class B (used to use an animal protein foam).
- The Fire Fighting Coalition (members manufacture AFFF and non-fluorinated foam) – makes non-fluorinated foams, but they do not meet Mil-spec requirements. Surrogate foams are used for training.
- FAA requires the use of foams that meet Mil-spec requirements.
- Newer formulations of AFFF must be compatible with older formulations (and with each other), as newly-purchased foam is regularly added to tanks containing older foam.
- The new Mil-spec uses short-chain PFAS and limits the presence of PFOA (to <25ppb).
- Survey AFFF practices, to understand how the product is used and how different users store it.
- Best Management Practices (BMPs) – we need proactive deployment, and to account for the cost of BMPs

## Drinking Water

**Challenges:** drinking water supplies are contaminated with PFAS in several areas of the state. The suspected cause in all cases is AFFF leached into groundwater aquifers. Many water systems have not been tested.

Options for further action can be grouped in three categories. Some are underway but need resources and clarification of the legal framework.

**Identify** drinking water exceeding health advisory levels for PFAS:

- Expand testing of untested public water systems, using a risk-based approach.

- Develop tools and outreach to facilitate testing by smaller systems and private wells.
- Develop and provide health guidance for PFAS-type compounds, based on occurrence.

**Respond** to problems identified:

- Customer notification, and technical assistance with (voluntary) mitigation.
- Investigate treatment options for removal of the range of PFASs detected in WA drinking water.

**Protect** WA drinking water from further PFAS contamination.

- Investigate and understand sources of drinking water contamination in WA.
- Implement source control based on findings.

**Discussion and Feedback to Ecology (*Items in italics would require legislation*)**

- Use a risk-based approach.
- *Enforceable standards, not just guidelines.*
- How much information exists on contamination from other sources (besides AFFF)?
- How do we identify sources and the PFAS chemistry – from landfills, WWTP (landfill leachate discharged to WWTPs), biosolids, and other uses of PFAS?
- Add: develop drinking water regulation. The Washington state Board of Health instructed DOH to set PFAS standards; will that be a standard or guidance?
- Identify and survey other product manufacturing sources, maybe using product testing. Look at:
  - Paper and paperboard manufacturer (Vancouver), do they use PFAS?
  - Are textile coatings happening in WA?
- Add to the risk map: U.S. Department of Interior/National Parks’ use of firefighting foam; superfund sites; other federal agencies’ uses: identify sites of potential pollution/cleanup.
- Identify other industry sectors that are sources (in the table in the “Uses” chapter).
- DOH should expand testing to cover the chemicals used in the AFFF.
- What about the petroleum refineries – what are they using for firefighting?
- **Q.** Do we know of any soil-sampling data from AFFF-use sites? **A.** Soils were tested in the Moses Lake training area, and the Issaquah fire department tested soils.
- How do we do this without funding, at \$500 per sample? *Suggestion:* Collect multiple water samples to get a lower rate on the analytical costs (i.e. on Whidbey Island, where they had more than 20 samples so cut the cost down to \$250 per sample).
- Is DOH coordinating with EPA on the drinking water standards?
- EPA soil cleanup standards are site specific (negotiated), not statewide.
- What are military installations doing about the water provided to their residents/users?
- Prioritize low income and equity as part of the risk analysis.
- The outreach to local health departments with specific tools is key. They will know about their own industries and potential sources.
- Outreach with specific tools will also be important to help owners of private wells. We need developed protocols for how to conduct water testing.

**Source Identification (Brian Penttila, Ecology)**

**Challenges:** The identities of PFAS chemicals, routes of exposure, and levels of exposure are poorly characterized. New data and analysis are needed to prioritize actions to protect the public and the environment.

Three categories of options: source research, analytical testing, method development.

- **Conduct additional source research:** e.g., can we better quantify the legacy PFAS load from carpets/textiles?
- **Conduct new analytical testing:** e.g., of imported products, food contact paper/packaging, and compost.



- **Conduct and/or support method development:** e.g., develop and/or employ the Total Oxidizable Precursor (TOP) assay.

#### **Discussion, Questions, and Feedback to Ecology (*Items in italics would require legislation*)**

- The CAP is missing data, especially around food packaging. Advisory Committee members should send relevant references to Ecology.
- We have enough information on food contact materials to *recommend a ban*. Add *ban PFAS in disposable food service ware* (see New York purchasing preference).
- How many legacy products are in homes that result in exposure?
- Are newer products releasing chemicals?
- Are all test methods approved?
- Food contact paper is used once and then disposed in a landfill, recycled, or composted. *Should recommend state preferential purchasing of non-fluorinated food packaging.*
- Data gap is the migration of PFAS from food contact materials to food.
- FDA testing is rigorous – requires toxicity data and migration data from food contact materials to food; however, the FDA data is not available (not transparent).
  - *Recommend phase out of PFAS for safer alternatives.*
- If the goal is to phase out the class of PFAS chemicals, then the CAP needs to show the harm. Where is that data? This is a data gap. The FDA standard is to do no harm; where is the data showing harm?
- What about cosmetics? There is little data in the “Uses” chapter. PFAS in cosmetics is a non-essential use (implied support for recommending a *ban on PFASs in cosmetics*).
- *Follow the OECD and limit PFOA and its precursors to 25ppb.* [COMMENT (from Committee review of meeting notes): “I think this is supposed to refer to EU, not OECD. EU PFOA restriction is 25ppb for PFOA; 1,000ppb for PFOA-related chemicals.”]
- Stop chasing the problem, spend \$ on the solution: prevent exposure and releases to the environment.
- Instead of having *government responsible for providing data showing harm, industry should provide the data showing the chemistry is safe.* FluoroCouncil members submitted data to FDA and EPA that is considered proprietary (cannot even see what the questions were in the risk analysis). We need data review by state agencies to make the information, and risks, transparent. [ADDENDUM (from Committee review of meeting notes): “Not all data is proprietary. There is substantial data that has been published in peer reviewed publications and non-published data available on company website (linked from FC’s website.”)]
- Recommend an alternatives assessment to identify truly safer alternatives.
- Ask EPA and FDA to participate in this process.
- *Add a labelling requirement on products containing PFAS-type chemicals.*
- *Stop imports of PFAS-containing products.*
- *Legislative ban on long-chain PFAS.*

#### **Dialogue on Interim CAP: What is Missing?**

- Issue of legacy products (e.g., AFFF stockpiles) and how to deal with them.
- Actions to address imported products and how we deal with their cumulative impact in waste streams.
- How to address other sources where long chains have been found (beyond AFFF), e.g. carpet, textiles, semiconductors, paper, refineries, and metal plating. Also look at “general” PFAS releases.
- More information on food packaging as a source of PFAS both to the environment and human exposure.
- Look at industrial uses of PFAS-type compounds in Washington state.
- Can the state offer amnesty to those entities with existing stocks of AFFF (such as “if you know you have it, give it to us and we will safely dispose of it”)? NOTE: the problematic AFFF may not be obvious to the user. AFFF will be on the label (if it says “Lightwater” it is old/legacy) – Industry could provide brands.

- State procurement law to prioritize (or buy only) PFAS-free food packaging (see New York or Minnesota).
- Work with the Northwest Green Chemistry Center and other green chemistry program(s) to find safer green alternatives. Can we establish or tap existing grants/funds (e.g. Puget Sound – National Estuary Program funds)?
- The CAP should include a timeline and plan for alternatives assessment for firefighting foam and textiles.
- State actions should align with Federal specifications. Some programs may need long lead times before changes can be made (FAA and Mil-spec move slowly).
- Gauge sampling methodologies, and recommend coalescing samples to avoid background contamination.
- Inventory of existing PFAS in commerce should include the supply chain. There may be stockpiles between the manufacture and the product shelves.
- CAP should address impacts to wildlife, especially endangered species.

**Other Issues for Potential Inclusion in 2018 Final CAP:**

- Ecological Risks, including impacts to wildlife and bioaccumulation in fish.
- Ongoing monitoring and research needs funding. CAP should identify funding to fill data gaps.
- Standards for WWTPs: recommend special testing (the Mercury CAP did this), limits on transfer to biosolids, source control on many products not discussed earlier. CAP should have recommendations related to biosolids (land application), landfills, and composting.
- Address other products, e.g. industrial floor wax, polishing products, leather treatment.
- Final CAP should discuss sources in urbanized areas such as the fluoropolymers used in autos, lubricants; car waxes and washes.
- Talk to Washington Department of Fish and Wildlife about Mussel Watch, which could be an opportunity to add a PFAS analysis.
  - NOTE: contacted WDFW about mussel watch; tested for PFAS chemicals in the 2012/13 effort; only one detection of PFAS from 18 composite mussel samples. The results are not yet published. Upcoming 2017/18 mussel testing will not include PFAS.

**Question: Do the chapters contain enough information to support the proposed interim options?**

- When reading the chapters, they did not always match up with the presentations from the last meeting. Make sure the key information from the presentations is in the chapters.
- Chapters should list EPA-approved methods, federal preemption, and recommend an alternative analysis.
- Chapters should include why the chemical is particularly useful for a specific application, to prioritize the most useful applications.
- Take into consideration that these get used because entities do not have alternatives—when they do, they switch. Some companies are also desperately trying to find replacements for some of these chemicals.

**Next Steps:**

- Comments on Draft Interim CAP Chapters due by November 17<sup>th</sup>.
- Prioritization (Nov. to Dec. 12): the CAP team will prioritize the list of options under consideration using criteria such as effectiveness, technical feasibility, cost, public support, and state authority.
- A preliminary economic analysis will begin for selected items.
- The project team will review actions and economic analysis with the Advisory Committee at its meeting on December 12<sup>th</sup>.

**Then next PFAS CAP Advisory Committee Meeting will be held on December 12, 2017. Tentative time from 9:00 a.m. to 1:00 p.m. Location to be determined.**