Virginia PFAS Workgroup Meeting

Hosted by the Virginia Department of Health (VDH) - Office of Drinking Water
109 Governor Street, Richmond, VA 23219

WebEx (Virtual)
Tuesday, October 20, 2020
2:00 p.m. – 5:00 p.m.

AGENDA

Subject	Time
Connect to WebEx and Meeting Instructions	1:45 – 2:00 PM
Call to Order Meeting Overview	2:00 – 2:05 PM
Welcome Remarks	2:05 – 2:15 PM
PFAS Workgroup Member Introductions	2:15 – 2:45 PM
Workgroup Guidelines & Review of Goals	2:45 – 3:45 PM
BREAK	3:45 – 3:55 PM
VDH PFAS Status Updates & Approach - Discussion	3:55 – 4:25 PM
Open Forum/Discussion	4:25 – 4:45 PM
Public Comment Period	4:45 – 4:55 PM
Conclude meeting (Next Proposed Meeting Time)	4:55 – 5:00 PM

Virginia PFAS Workgroup
Webinar – via WebEx
2:00 pm, Tuesday October 20, 2020

Meeting Summary (DRAFT)

Workgroup Members /Alternates Participating:
Jillian Terhune (City of Norfolk, Dept. of Public Utilities, waterworks serving > 50,000 consumers)
David Jurgen (City of Chesapeake, waterworks serving > 50,000 consumers)
Jamie Hedges (Fairfax Water, waterworks serving > 50,000 consumers)
Mike Hotaling (Newport News, waterworks serving > 50,000 consumers)
Mike McEvoy (Western Virginia Water Authority, waterworks serving > 50,000 consumers)
Jessica Edwards (Loudoun Water, waterworks serving > 50,000 consumers)
Geneva Hudgins (VA AWWA (alternate), advocacy group)
Russ Navratil (VA AWWA, advocacy group)
Christian Volk (Virginia American Water, waterworks serving > 50,000 consumers, private company)
John Aulbach (Aqua Virginia, waterworks serving < 50,000 consumers)
Dan Hingley (Aqua Virginia (alternate), waterworks serving < 50,000 consumers)
Mark Estes (Halifax Co Service Authority, waterworks serving < 50,000 consumers)
Wendy Eikenberry (Augusta County Service Authority, waterworks serving < 1,000 consumers)
Andrea Wortzel (Mission H2O, advocacy group)
Paul Nyffeler (Aqua law, for Steve Herzog (Virginia Water Environment Association, advocacy group))
Steve Rissoto (American Chemistry Council, manufacturer with chemical experience)
Henry Bryndza (DuPont (retired), manufacturer with chemical experience)
Anna Killius (James River Association, environmental organization)
Erin Riley (James River Association, environmental organization)
Philip Musegaas (Potomac Riverkeeper Network, environmental organization)
Mike Town (Virginia League of Conservation Voters, environmental organization)
Jeff Steers (Virginia Department of Environmental Quality)
Robert Edelman (Virginia Department of Health, Office of Drinking Water)
Dwight Flammia (Virginia Department of Health, State Toxicologist)
Noelle Bissell (Virginia Department of Health, New River Health District)
Tony Singh (Virginia Department of Health, Office of Drinking Water, Workgroup Lead)

Guests:
Emily Francis (interested member of the public)
Pat Bradley (Richmond Public Utilities)
Kelly Ryan (Virginia American Water)
Laura Bauer (Virginia American Water)
Julie Henderson (Virginia Department of Health, Office of Environmental Health Services)

ODW Staff Supporting the Meeting:
Dwayne Roadcap (Virginia Department of Health, Office of Drinking Water)
Nelson Daniel (Virginia Department of Health, Office of Drinking Water)
Christine Latino (Virginia Department of Health, Office of Drinking Water)

1. Call to Order, Meeting Overview

ODW Deputy Director Tony Singh, PhD, PE, called the meeting to order at 2:00 pm. Dr. Singh welcomed everyone, went over technical details about the web-based meeting format, and provided an overview of the agenda (attached). Nelson Daniel reminded participants that this is a public meeting and Freedom of Information Act (FOIA) requirements apply, including public notice, recording minutes, and not conducting workgroup business with 3 or more members gathered without proper public notice.

2. Welcome Remarks

State Health Commissioner Norman Oliver, MD, thanked and welcomed workgroup members. He stressed the importance of the tasks outlined in HB586 and pointed out that the Safe Drinking Water Act requires EPA to continue the process for regulation development, but EPA has not yet established standards for PFAS. He reiterated that everyone is here because the General Assembly has established a requirement to develop standards.

3. PFAS Workgroup Member Introductions

Workgroup members and meeting guests introduced themselves and the organization or group they are representing, their work experience related to "PFAS in Drinking Water," and their perspective on the topic.

4. Workgroup guidelines and review of goals

a. Dr. Singh used a presentation (attached) to provide information and prompt discussion throughout the meeting.
b. Dr. Singh presented objectives in HB586 that the workgroup will follow:
    i. Determine the occurrence of PFAS in drinking water throughout the Commonwealth;
    ii. Identify possible sources of PFAS contamination; and
    iii. Evaluate existing approaches to regulating PFAS.
    iv. The workgroup may develop recommendations for specific maximum contaminant levels (MCLs) for:
        1. Perfluorooctanoic acid (PFOA)
        2. Perfluorooctane sulfonate (PFOS)
        3. Perfluorobutyrate (PFBA)
        4. Perfluoroheptanoic acid (PFHpA)
        5. Perfluorohexane sulfonate (PFHxS)
        6. Perfluorononanoic acid (PFNA)
        7. And other PFAS "as deemed necessary."
c. Dr. Singh noted that the scope of the work will be focused on drinking water, beginning at the source (intake) and may include groundwater and surface water sources.
d. Dr. Singh described the proposed workgroup composition and showed a map of locations of workgroup members. He explained that workgroup members are expected to

participate and contribute at workgroup meetings (quarterly) and participate with at least one subgroup, with a commitment of 5-10 hours per month.

e. Regarding process, Dr. Singh asked for comments about the structure of the workgroup and procedures (naming a chair and, possibly a vice-chair (no comments), developing bylaws (members did not feel this would be a valuable exercise given the time constraints in HB586), procedures (members suggested keeping meetings somewhat informal, similar to the procedure the Waterworks Advisory Committee follows), and forming subgroups (members supported).

f. Dr. Singh suggested the workgroup form 4 subgroups, discussed basis for each, and asked workgroup members to indicate their interest and willingness to participate in each:
   i. Health, toxicology, regulatory – what are models, how are they different, impacts for regulation, framework for regulation (Dwight Flammia, Jillian Terhune, Kelly Ryan, Stephen Herzog)
   ii. PFAS occurrence and monitoring – how best to utilize resources to get data to make decisions, what did other states do for sampling, can they be used in VA with given resources? (Anna Killius, Erin Reilly, Wendy Eikenberry, Jeff Steers, John Aulbach, Kelly Ryan, David Jurgens, Mike McAvoy, Dwight Flammia)
   iii. Virginia policy & regulatory action – different MCLs in different states – focus on Virginia-specific regulatory actions, what happens, when, etc. (Philip Musegaas, Jamie Hedges, Anna Killius, Jillian Terhune, Erin Reilly, Wendy Eikenberry, Mark Estes, John Aulbach, Russ Navratil, Kelly Ryan, Jessica Edwards, Mike McAvoy)
   iv. Public education, community outreach – to provide information/education to the general public. Members thought this subgroup could be important once there are results from sampling, but that this is not a priority at this time. Members instead recommended an alternative subgroup (see below). (Mark Estes, David Jurgens, suggestion to add Navy representative)
   v. Members recommended forming a subgroup to consider treatment technology and costs as they will be important considerations based on the level of contamination that may exist and any MCLs that are developed. (Jamie Bain Hedges, Wendy Eikenberry, Mark Estes, Russ Navratil, Chris Harbin, Kelly Ryan, Jessica Edwards, Mike McAvoy)
   vi. Members of the public may be included in subgroups; workgroup members may be involved with more than one subgroup based on interests, available time, etc.
   vii. The proposal is for the workgroup to meet quarterly (with 3 more meetings; adding additional meetings in 2021 as needed to complete the requirements in HB586); subgroups would meet monthly to focus on specific issues and tasks.

g. Dr. Singh discussed communications with other organizations, VDH leadership, and the public. He noted that the workgroup has to comply with FOIA requirements and members need regular updates. ODW staff will work to identify an appropriate file-sharing platform for workgroup members and develop a file structure to collect, store, and disseminate information. ODW will post meeting information on Town Hall (www.townhall.virginia.gov). ODW presented a tentative schedule and locations for

future workgroup meeting. One member pointed out that business travel is not allowed by his organization.

5. **VDH PFAS status updates** (see Dr. Singh's presentation)

   a. Dr. Singh provided an overview of Perfluoroalkyl Substances (PFAS) in slides 23-26, reviewed a PFAS contamination map from the Environmental Working Group, and reviewed EPA's regulatory determination process for PFOA and PFOS. He pointed out that eight states have already established their own standards or health advisories for PFAS.
   b. Dr. Singh presented an overview of the legislation passed in the 2020 Session of the General Assembly. HB586 requires the State Health Commissioner to convene a PFAS workgroup. HB1257 requires VDH to establish MCLs for PFOA, PFOS, and other PFAS compounds, 1-4-Dioxane, and Chromium (VI) and a status report by November 1, 2020. See slide 32 and the text of both bills for more details.

6. **Approaches to data collection**

   a. ODW obtained no new funding from the General Assembly to support the required workgroup and related sampling in the PFAS occurrence study.
   b. VDH has funding from EPA of roughly $145,000 to study emerging contaminants. Some of the funding from EPA will be used for sample collection and analysis for HB586. ODW is currently working with EPA to obtain approval of a required Quality Assurance Project Plan. This funding is likely not sufficient for a detailed or comprehensive investigation of PFAS occurrence.
   c. A portion of the funding will be used for a literature review and other administrative tasks. ODW proposed to engage researchers at a university to do the research since workgroup members have limited time and the amount of research is significant. The university would compile the findings and summarize them for the workgroup. Members suggested communicating with other states about their research and testing and expressed a need for the literature review to begin shortly.
   d. Dr. Singh present three potential PFAS Sampling/Monitoring Studies and a hybrid:
      i. Sampling at the largest waterworks in the state – suggested 17 waterworks (because they serve a large population of consumers):
         1. The extent of sampling (at the water source water and/or entry point to distribution system) would depend on the budget – this will show treatment effect at those waterworks
         2. Final decision depends on how many samples we would take at each waterworks, the number of seasonal samples, etc.
         3. ODW will compile a list of the largest waterworks in the state, but has not discussed the possibility of conducting a study with any of them.
         4. Members asked which waterworks would be involved and their geographic distribution. They suggested the workgroup should consider as broad a

geographic spread as possible. Another comment – members of workgroup represent smaller communities, smaller waterworks and suggest getting a more diverse representation of waterworks.

ii. Sampling based on potential for PFAS contamination
    1. Potentially a better geographic distribution
    2. Currently based on risk maps that ODW is developing, in conjunction with work that DEQ has done (see presentation – note that maps are preliminary and, to some degree, suggest large-scale capabilities; they are not refined enough at this point to be determinative)
    3. Requires refinement of methods to assess level of risk – such as distance from potential source of contamination, etc. ODW and DEQ have not identified any specific parameters at this point
    4. Jeff Steers discussed what DEQ is doing (see attached presentation)
        a. DEQ is identifying potential areas of PFAS impact and concern.
        b. This information could inform heat maps and sample site selection for the PFAS occurrence study.
        c. DEQ is looking at industries with potential, both current and past, to discharge air and water emissions of PFAS. This includes industrial dischargers through Publicly Owned Wastewater Treatment Works (POTWs) and places where aqueous firefighting foam has been used.
        d. DEQ has concerns about biosolids, air emissions, and incineration of trash.
        e. DEQ has no funding for water quality monitoring.
        f. DEQ has the authority to ask for PFAS sampling as part of discharge monitoring requirements.

iii. Sampling major water supplies (see presentation)

iv. Hybrid approach
    1. Involves sampling both water sources and entry points at water treatment plants
    2. Members asked about sampling water sources since the MCLs will be for finished water. Mr. Daniel discussed the language in HB586 and its requirement to consider the source of contamination.

v. Members commented that the general lack of funding and support from the legislature limits the scope of the study.

e. ODW is not considering a statewide approach – there isn't sufficient financial support

7. <u>Public comment period</u>

No one from the public offered comments.

8. <u>Conclude meeting</u>

a. Dr. Singh reviewed the next steps (slide 44) and requested input for future workgroup meetings (slide 45).
b. ODW staff will compile meeting minutes and post meeting information on Town Hall.
c. Dr. Singh concluded the meeting at 5:00 pm.

PFAS Workgroup Meeting
October 20, 2020
Attachments and PowerPoint Presentations

Establishing Regulatory Limits for PFAS in Virginia Drinking Water

First Virginia PFAS Workgroup Meeting

Tony Singh, Dwayne Roadcap, and Nelson Daniel

Virginia Department of Health

October 20, 2020

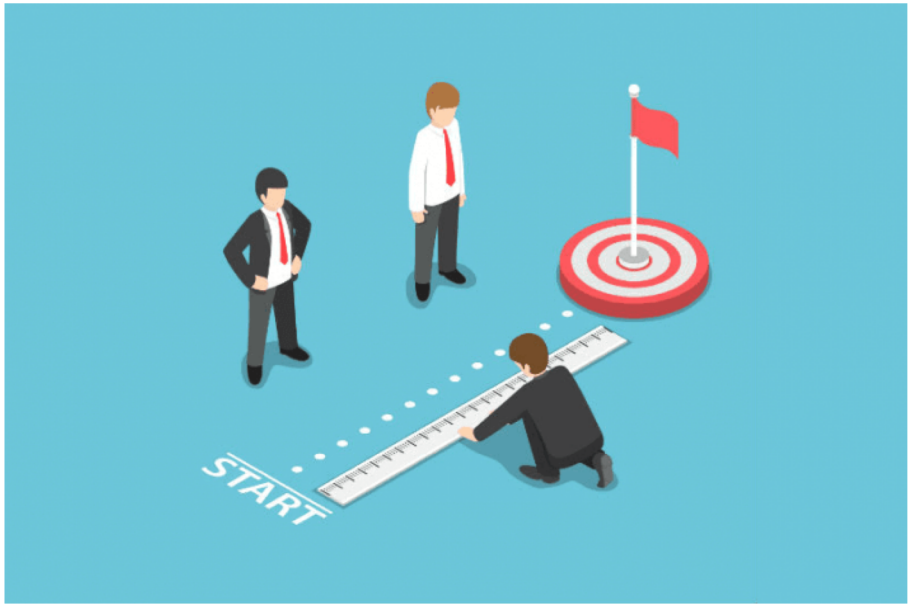
PFAS Workgroup Meeting Overview

Meeting Overview

- Where we are; Where we want to be (Goal)
- Approach/methodology to get there
- Meeting Agenda

Ground Rule/Housekeeping Items

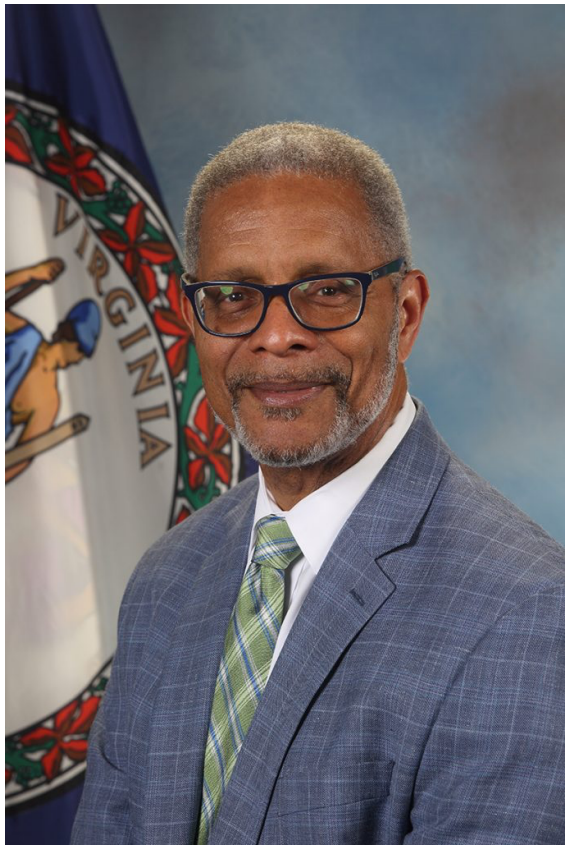
- Technology issue
- Active participation
- Suggestions/constructive comments
- Your Biographies
- FOIA requirements



Opening Remarks – Dr. M. Norman Oliver

Prior to his appointment as the State Health Commissioner, Dr. Oliver served as VDH's Deputy Commissioner for Population Health. Dr. Oliver served as the Walter M. Seward Professor and Chair of the Department of Family Medicine at the University of Virginia School of Medicine. Dr. Oliver worked with others in the health department, other state agencies, and healthcare systems across the state to improve the health and well-being of all citizens of the Commonwealth. He remains committed to a cross-agency and multi-sector approach to implementing population health initiatives.

Dr. Oliver attended medical school at Case Western Reserve University, where he also obtained his Masters degree in medical anthropology. He trained in family medicine at Case, and he then practiced broad-spectrum family medicine in rural Alaska for 2 years before joining the UVA Department of Family Medicine in 1998.



Workgroup Member Introductions

Name

Representing organization

Work experience related to the topic – “PFAS in Drinking Water”

Your take/perspective on the topic – “PFAS in Drinking Water”

Newport News
Where Great Things Are Happening

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

AQUA
An Essential Utilities Company

THE CITY OF NORFOLK

MISSION H2O Virginia

WESTERN VIRGINIA WATER AUTHORITY
540.853.5700 | info@westernvawater.org

Chesapeake VIRGINIA

VWEA
Virginia Water Environment Association

James River ASSOCIATION

American Chemistry Council

Fairfax Water

POTOMAC RIVERKEEPER NETWORK

American Water Works Association
VirginiaSection

HALIFAX COUNTY Virginia

VIRGINIA LEAGUE OF CONSERVATION VOTERS

VIRGINIA AMERICAN WATER

New River HEALTH DISTRICT

LOUDOUN WATER

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

VCASA

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

HB586

Patron: Delegate Guzman (GA 2020)

- The State Health Commissioner to convene a PFAS workgroup,
- Conduct a detailed investigation on current literature and what other states are doing,
- Conduct PFAS occurrence study at no more than 50 waterworks and source waters,
- May develop MCL guidelines
- **Timeline**: December 01, 2021

Potential Issues: No state funding

HB1257

Patron: Delegate Rasoul (GA 2020)

- Establish MCLs for PFOA, PFOS, and other PFAS compounds, 1,4-Dioxane, and Chromium (VI)
- Provide status report by 11/1/20
- Provide detailed report by 10/1/21
- Effective Date: 1/1/22

Potential Issues:

- No comprehensive PFAS,1,4-dioxane, or Cr(VI) occurrence data in VA
- No funding

Virginia PFAS Workgroup

- Objectives, Scope
- Workgroup Structure
- Workgroup Member Expectations
- Workgroup Functioning
- Workgroup Communication
- Workgroup Logistics
- Schedules – Workgroup, Sub-groups

Virginia PFAS Workgroup - Objectives

Determine the occurrence of PFAS in drinking water throughout the Commonwealth,

Identify possible sources of PFAS contamination, and

Evaluate existing approaches to regulating PFAS.

Six specific PFAS, including:

- Perfluorooctanoic acid (PFOA)
- Perfluorooctane sulfonate (PFOS)
- Perfluorobutyrate (PFBA)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorohexane sulfonate (PFHxS)
- Perfluorononanoic acid (PFNA)

Other PFAS “as deemed necessary”

Virginia PFAS Workgroup - Objectives

May develop recommendations for specific maximum contaminant levels (MCLs) for:

- Perfluorooctanoic acid (PFOA)
- Perfluorooctane sulfonate (PFOS)
- Perfluorobutyrate (PFBA)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorohexane sulfonate (PFHxS)
- Perfluorononanoic acid (PFNA)

And other PFAS “as deemed necessary”

Virginia PFAS Workgroup - Discussion

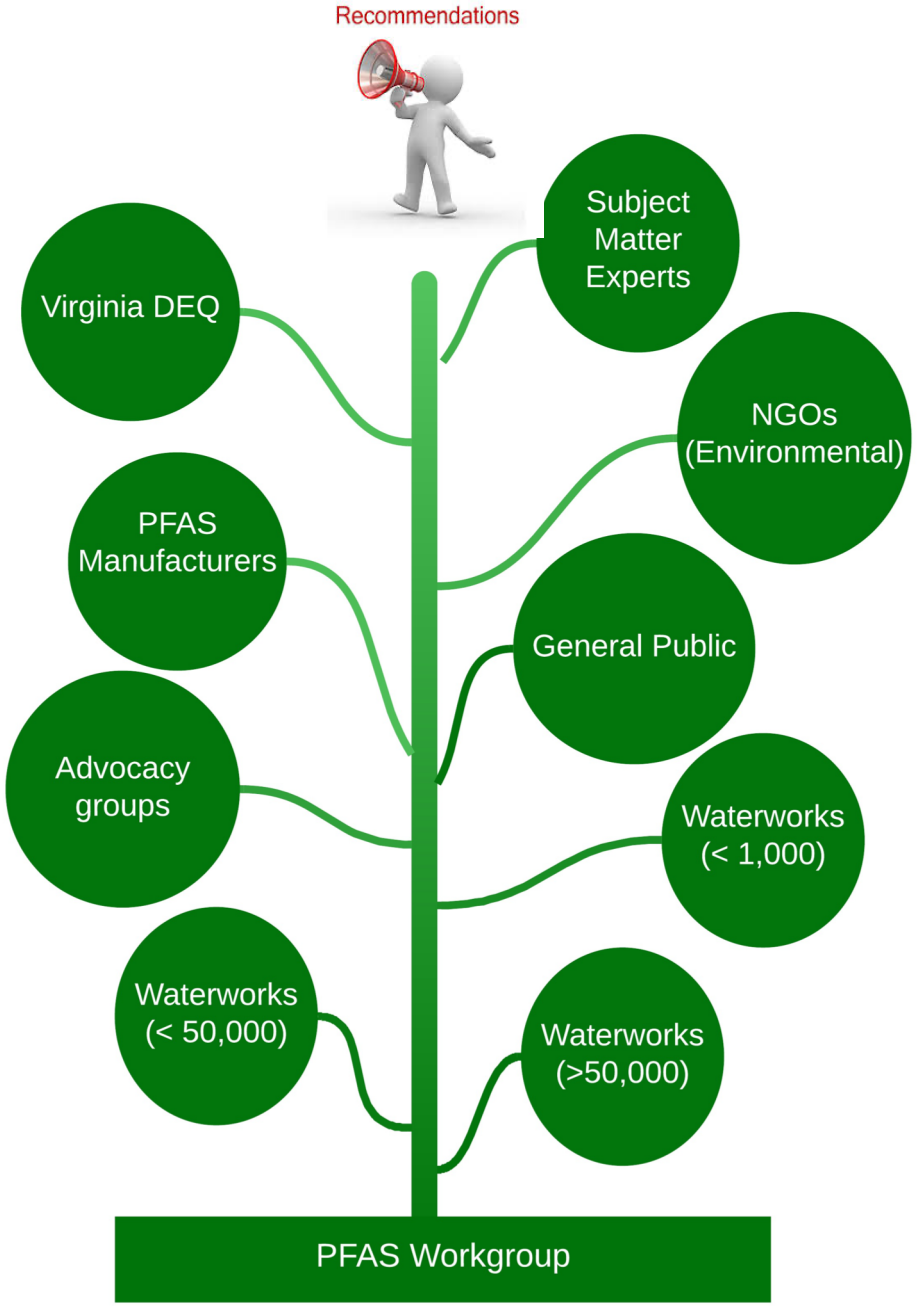
Scope: PFAS contamination in Drinking Water (including source waters)

PFAS Workgroup Composition

ODW reached out to stakeholders via:

- Waterworks Advisory Committee (WAC),
- VA Water/Wastewater Agency Response (VA WARN) meetings
- Other VDH communications

Proposed - Workgroup



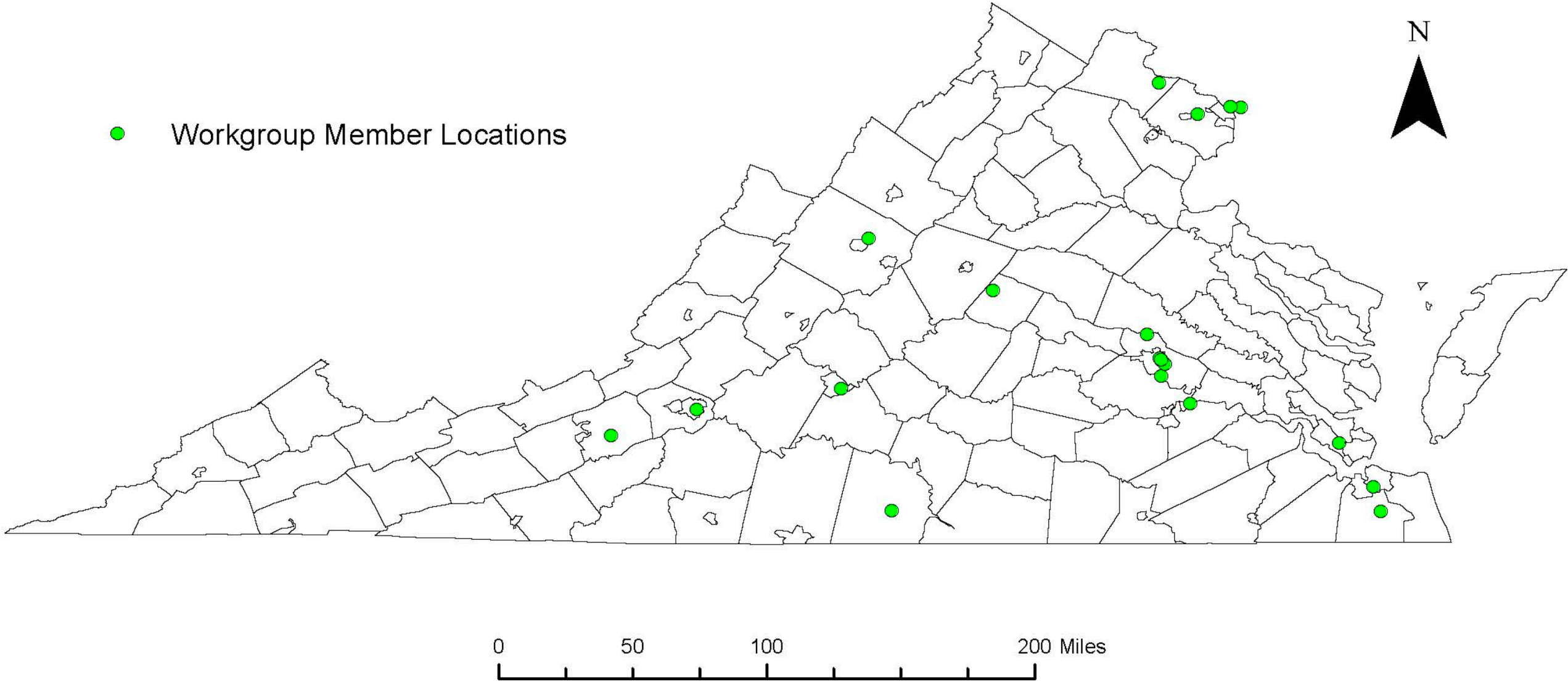
4 people - Community waterworks that serve >50,000 persons.*
1 person - Community waterworks that serves < 50,000 persons.*
1 person - Community waterworks that serves < 1,000 persons.*
2 people - Advocacy groups that represents waterworks in VA.

1 person - A manufacturer with chemistry experience.
2 people - Non-governmental environmental organizations.
1 person – A consumer of public drinking water.

1 person - ODW's technical staff
1 person - Commonwealth of Virginia State Toxicologist.
1 person - VDH local health department (District Health Director)
1 person - The Virginia Department of Environmental Quality (DEQ).

***At least one representative from community waterworks will be from a private company that operates waterworks.**

Geographical Coverage



PFAS Workgroup Member Expectation

- Possess knowledge / expertise in “emerging contaminants in the environment”
- Participate and contribute to the topic of interest (PFAS and emerging contaminants in drinking water) at meetings (3 - 4 hours)
- Commitment of 5-10 hours per month to study, review, interpret and develop new documents / guidelines / recommendations
- Participate and contribute to at least one sub-workgroup

Virginia PFAS Workgroup -Proposed Structure

Do We need Chair or Vice Chair for the group?

Forming sub-groups

- volunteer, participate in more than one

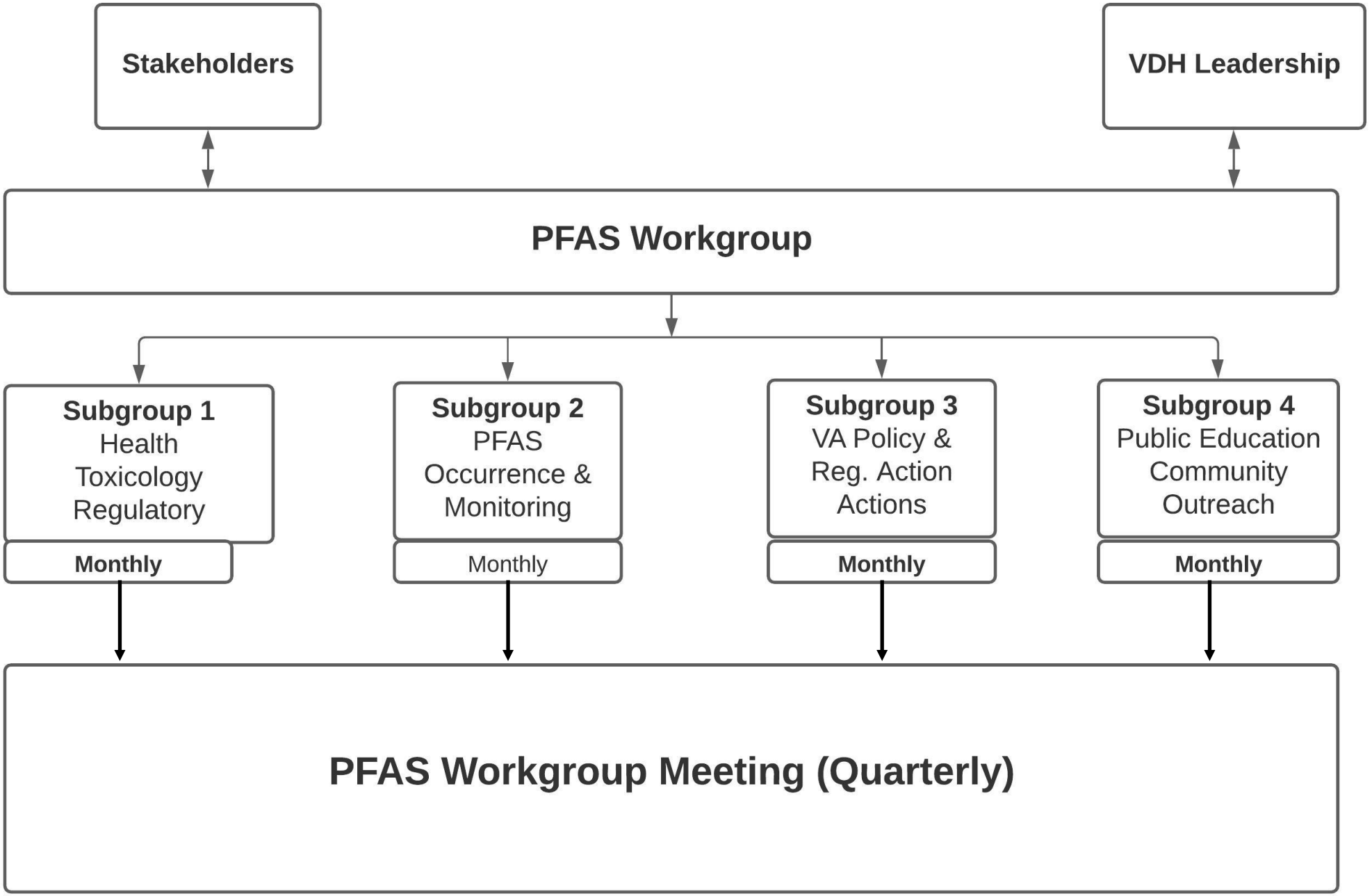
Who will report back findings from the smaller sub workgroup?

- ODW representative on each sub-group

Shall we come up with bylaws?

How will we proceed with the decisions?

Proposed PFAS Sub-workgroups



Virginia PFAS Workgroup – Sub-Groups

- Health, Toxicology, Models
  - What is happening in other states
- PFAS Occurrence & Monitoring
  - DEQ and VDH data to identify sampling locations
- Va. Policy and Regulatory Actions/Approaches
  - How the above data/info could be used for Virginia?
- Public Education, Community Outreach
  - Best ways to communicate this process and PFAS results

Workgroup Proposed Communication Plan

Proposed Communication Plan discussion:

Workgroup Proposed Outcome

Outcomes, FOIA Requirements & Discussion

Virginia PFAS Workgroup - Discussion

Scope: PFAS contamination in Drinking Water (including source waters)

Meeting Frequency: Quarterly (proposed)

- October 2020
- January 2021
- April 2021
- July 2021

Proposed - Workgroup Logistics

Data sharing – An electronic file sharing platform (Google Drive or Box etc.)

Facilitation - A facilitator will assist with quarterly meetings

Meeting information on Town Hall (www.townhall.virginia.gov).

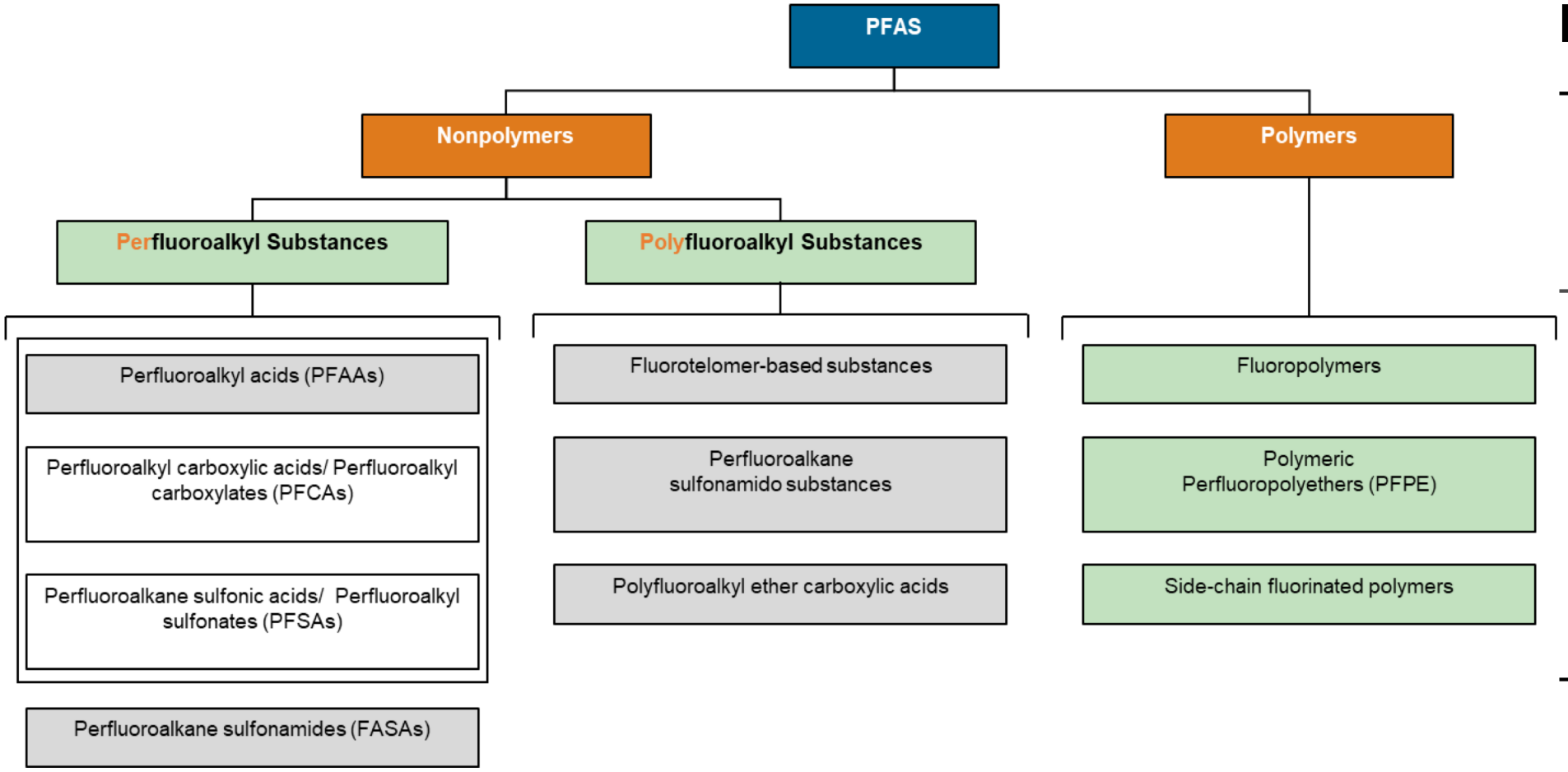
Admin support – Office of Drinking Water (ODW) staff

Meeting Information –

Meeting #	When (Tentative)	Where
1	October 2020	Virtual
2	January 2021	Richmond (or Virtual)
3	April 2021	Tidewater (or Virtual)
4	July 2021	Northern Virginia
5 (if needed)	October 2021	Southwest Virginia

VDH Status Updates at 3:45pm

PFAS Family

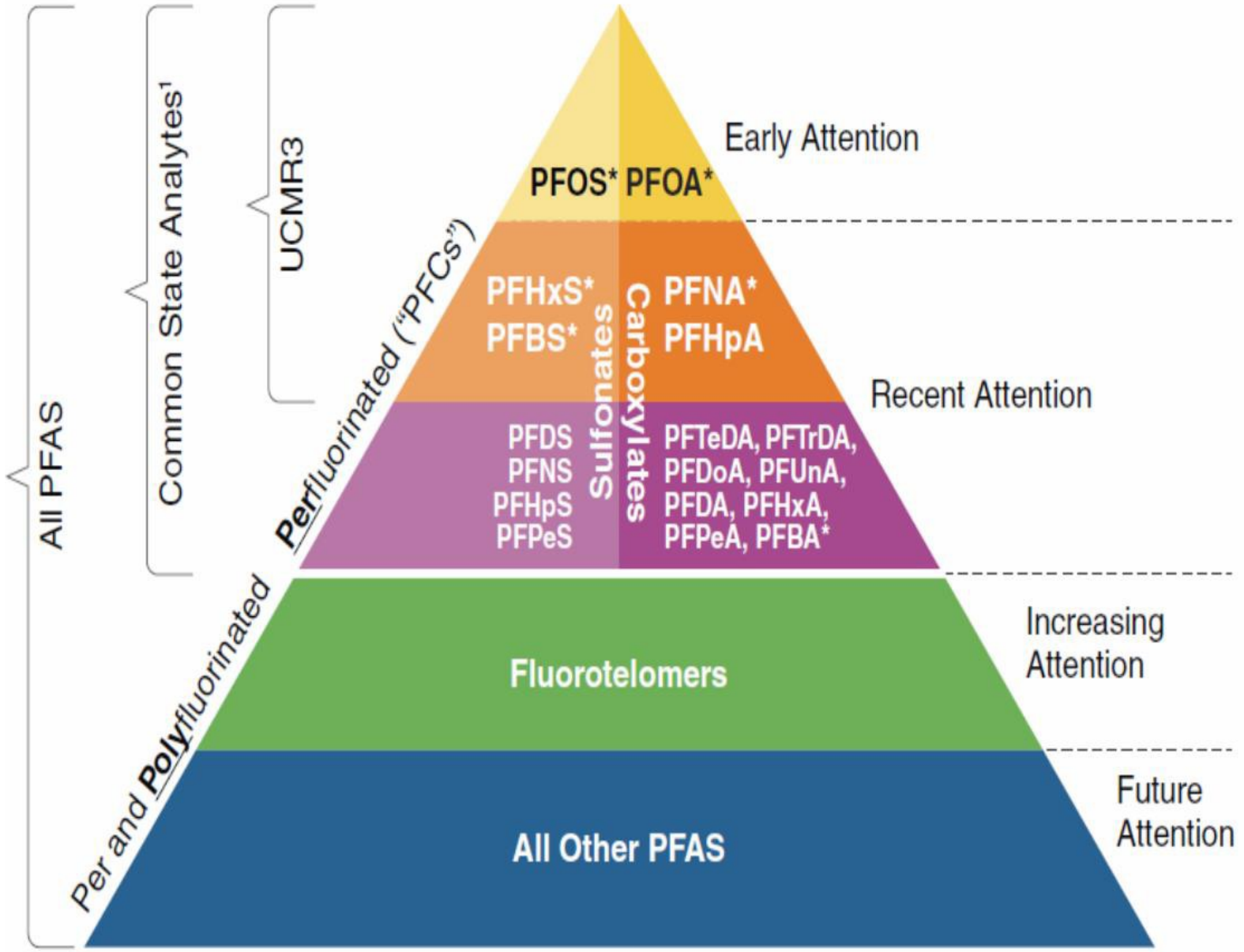


Facts

- PFAS family may contain about 5,000-10,000 compounds (USEPA 2018)
- at least one of the six PFAAs listed in UCMR3 were detected in 194 out of 4,920 PWSs tested (~4%), which serve about 16.5 million people in 36 states and territories (Hu et al. 2016)
- Analytical methods can detect only 20-30 (unapproved methods upt (70 - 80)

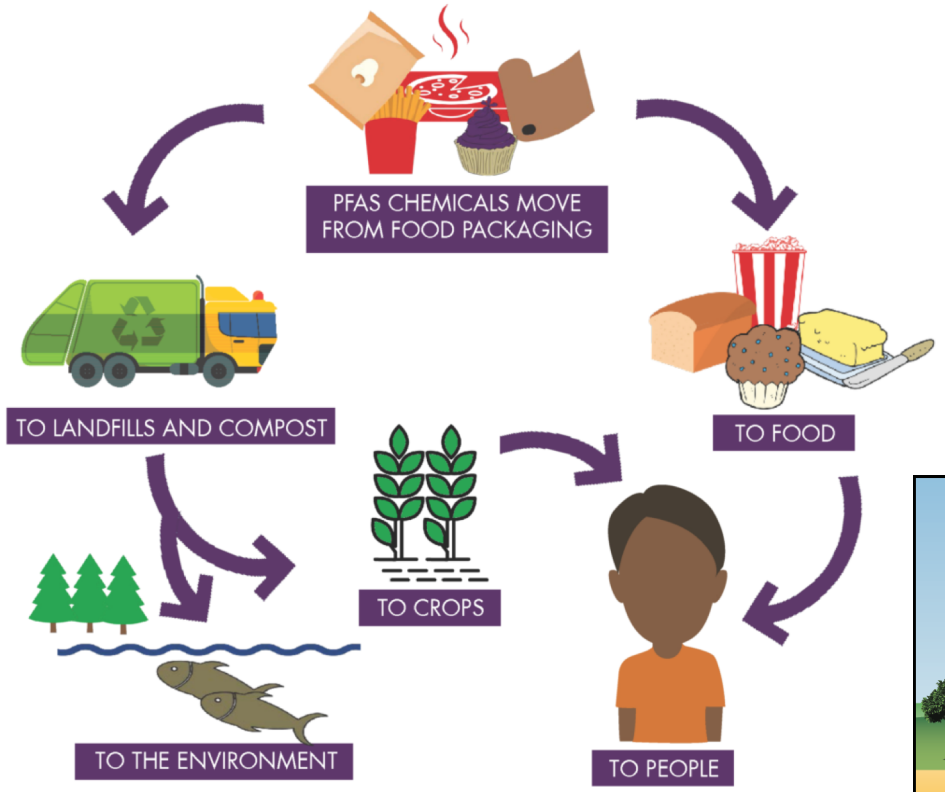
Credit: ITRC PFAS Report

Per-and Poly Fluoroalkyl Substances (PFAS)



 * Most commonly detected PFAS in drinking water

Per- and Polyfluoroalkyl Substances (PFAS)



Drinking water – surface water or groundwater

Biota – fish and shellfish

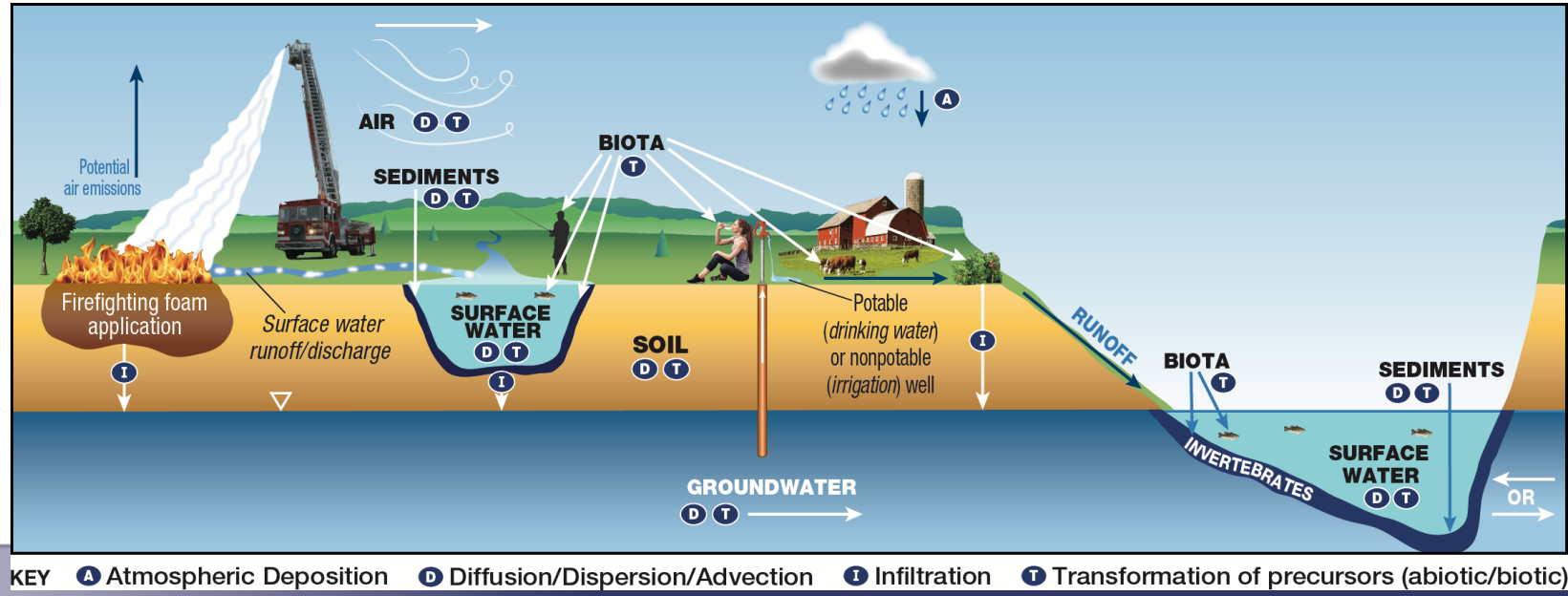
Biosolids – uptake in livestock and plants

Landfill – potential to impact groundwater

Food – Food products and packaging

Industrial - Commercial products found in home

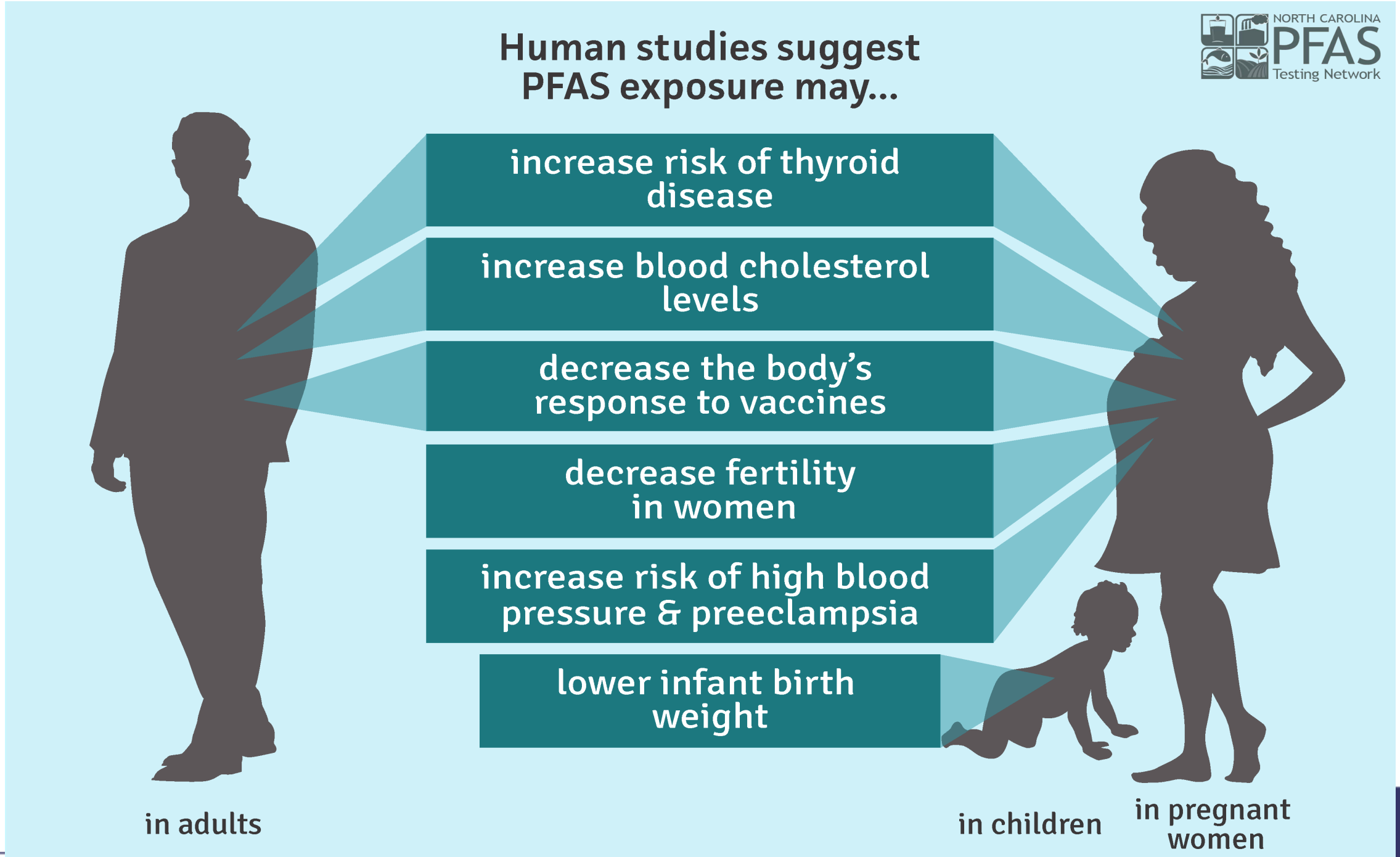
Proximity - Living next to industry that uses PFAS



 Credit: ITRC

Credit: www.Toxicfreefuture.org

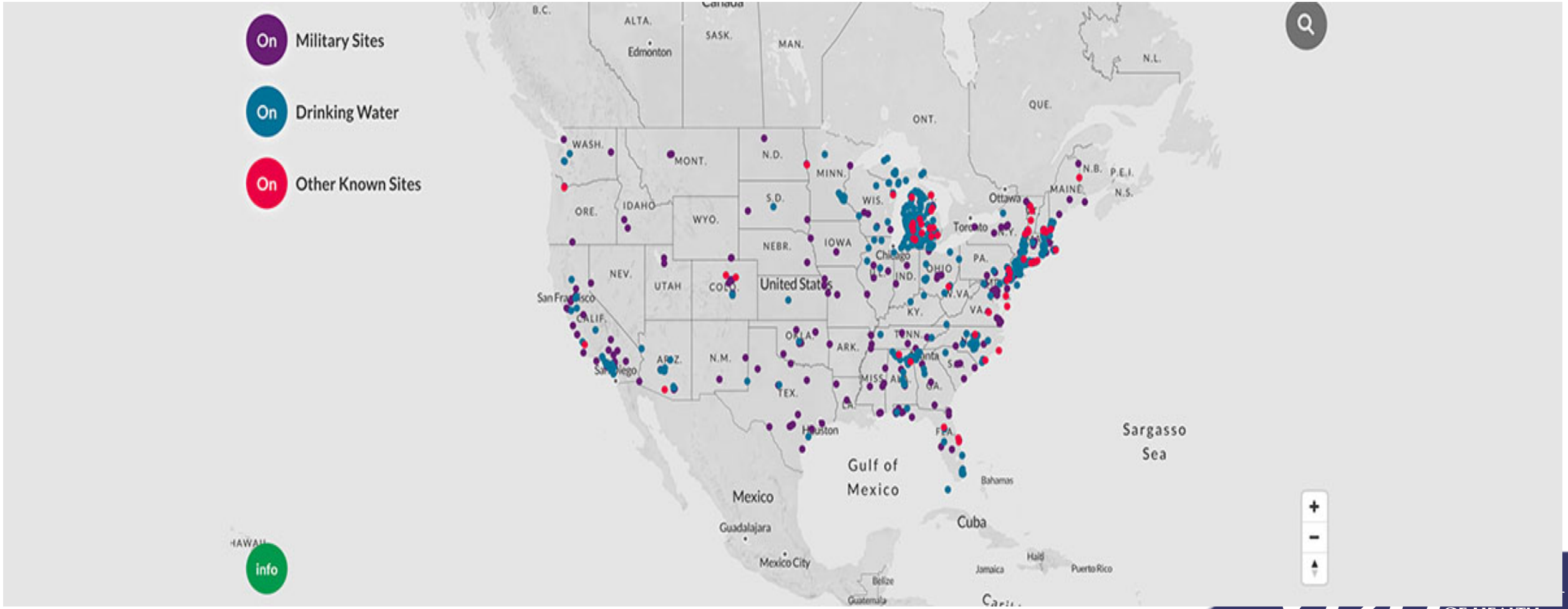
PFAS Health Effects



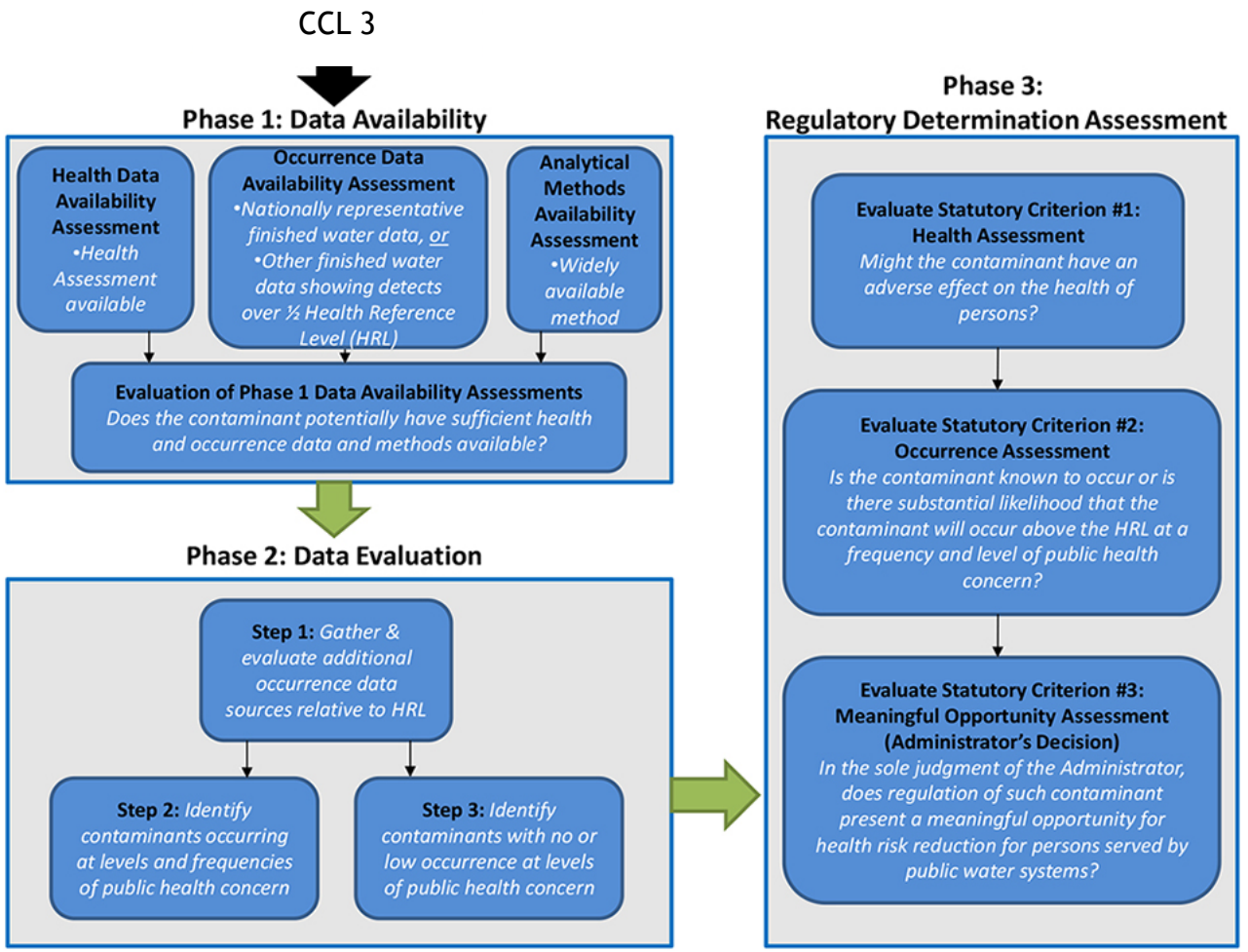
Information sourced from Agency for Toxic Substances and Disease Registry | *Additional health effects have been reported and those highlighted demonstrate a range of potential effects.*

PFAS - If you Sample it, you will find it

PFAS detection in water supplies serving more than 110 Million people



EPA PFAS Regulatory Determination for PFOA & PFOS



States With Numerical PFAS Limits

Washington

- Banned in firefighting foam and food packaging
- Proposed drinking water standard

Vermont

- 20 PPT (PFAS)
- Drinking water health advisory for 5 PFAS

Massachusetts

- 70 PPT (PFAS)
- State guidance for concentrations of 5 PFAS in drinking water

New Jersey

- Set PFNA standard at 13 ppt
- Weighing proposed standards for:
  PFOA at 14 ppt
  PFOS at 13 ppt

California

- 14 PPT (PFOA)
- 13 PPT (PFOS)
- Drinking water notification guidance

Colorado

- PFOA/PFAS listed as hazardous waste
- 70 PPT (Combined PFOA/PFOS)
- Groundwater quality standard for El Paso County only

Minnesota

- 35 PPT (PFOA)
- 27 PPT (PFOS)
- Health-based guidance values

Michigan

- 70 PPT (Combined PFOA/PFOS)
- State standard for concentrations in drinking water

Bloomberg Environment

- New Jersey
- Connecticut
- Maine
- Michigan
- Pennsylvania
- Colorado
- California
- Massachusetts

VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

PFAS – We still need to learn more

- Scientific evidence/ Better understanding of human health effects
- Ecological toxicity information
- PFAS occurrence data in soil, water and air in Virginia

PFAS in Virginia Drinking Water

Office of Drinking Water
Safe Drinking Water for a Healthy Virginia

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

Recap

HB586

Patron: Delegate Guzman (GA2020)

- Form a PFAS workgroup,
- Conduct a detailed investigation on current literature and what other states are doing,
- Conduct PFAS occurrence study at no more than 50 waterworks and source waters,
- May develop MCL guidelines
- **Timeline**: December 01, 2021

Potential Issues: No State funding

HB1257

Patron: Delegate Rasoul (GA2020)

- Establish MCLs for PFOA, PFOS, and other PFAS compounds, 1,4-Dioxane and Chromium (VI).
- Provide status report by 11/1/20
- Provide detailed report by 10/1/21.
- Effective Date: 1/1/22

Potential Issues:

- No comprehensive PFAS,1,4-dioxane, or Cr(VI) occurrence data in VA
- No State funding

Office of Drinking Water - Priorities

HB586 Implementation require –

(1) Form a PFAS Workgroup

(2) A literature review on what other State have done on regulating PFAS

(3) PFAS Sampling/Monitoring study

(4) Workgroup Recommendations

Funding & Resources

HB586 Deliverables –

- Reports Due 12/01/2021
- Recommendation to the Board of Health on PFAS MCLs

ODW - Funding & Resources

- Received limited funding from EPA to some sampling and administrative costs; state match will be in-kind time and effort for emerging contaminants work
- Work with the EPA on documentation preparing/processing
- This funding may not be sufficient for a detailed investigation

Resources

- ODW staff (Dwayne Roadcap, Nelson Daniel, Robert Edelman, Christine Latino, Kyle Fuller, and Tony Singh)
- Analytical Laboratory
- Administrative support

PFAS Activities

- Form a Workgroup
- Conduct a detailed investigation on current literature and what other states are doing,
- Conduct PFAS occurrence study at no more than 50 waterworks and source waters,
- Develop MCL guidelines/recommendations

- Completed ✓
- Proposed - Conduct via a State University ($10k)
- Proposed a preliminary study design
- **Not yet started**

Proposed PFAS Sampling/Monitoring Study

Approaches based on:

- Available funding → number of sampling sites
- Maximum public health risk reduction
- Proximity to potential PFAS contamination

Proposed strategy (depends on budget):

1. Largest waterworks (17) in Virginia serve appx. 4.5 million consumers
2. Sampling – based on potential for PFAS contamination – VDH - DEQ data/risk maps
3. Major water supplies – James River, Potomac River, etc.
4. Hybrid approach
5. Statewide comprehensive PFAS occurrence study (Not considering in this study)

1. Sampling Select Large Waterworks

- Sampling at the entry points to the distribution from 17 VA large waterworks
- Utilities licensed professional to collect samples, FRB and ship it back to the Lab for analysis (No cost to the utility; shipping included)
- Sampling instructions and guidance will be provided

Pros:

- Maximum Public Health risk reduction (Serve >4.5 Million people)
- Can leverage sampling effort with existing resources
- Other resource limited waterworks can utilize this funding

Cons:

- Larger systems have a lot of resources to do their PFAS sampling

2. Sampling Potential High PFAS Risk Waterworks

- Sampling at the entry points to the distribution
- Utilities licensed professional to collect samples, FRB and ship it back to the Lab for analysis (No cost to the utility; shipping included)
- Sampling instructions and guidance will be provided

Pros:

- Maximum risk reduction in the Commonwealth drinking water supplies
- Can generate valuable data on potential statewide PFAS sampling study

Cons:

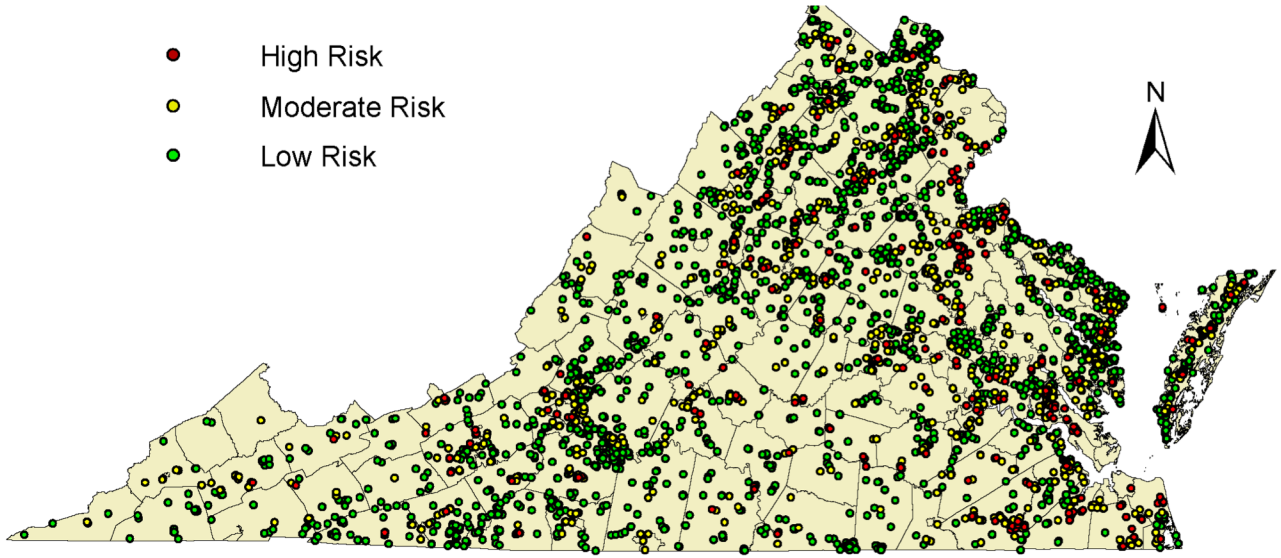
- Funding may not be sufficient
- May require extra preparation work

Potential PFAS Contamination Risk Maps

- Focus on “community” waterworks
- Prioritize based on risk due to proximity to certain activities:
  - Landfills
  - Airports
  - Industrial sites
  - Military usage and discharge of fire fighting foams
- Known or suspected contamination
- Unconfined aquifers (higher risk of contamination)
- Any previous available data

Preliminary PFAS Contamination Risk Maps

- Collaborative effort with Virginia DEQ

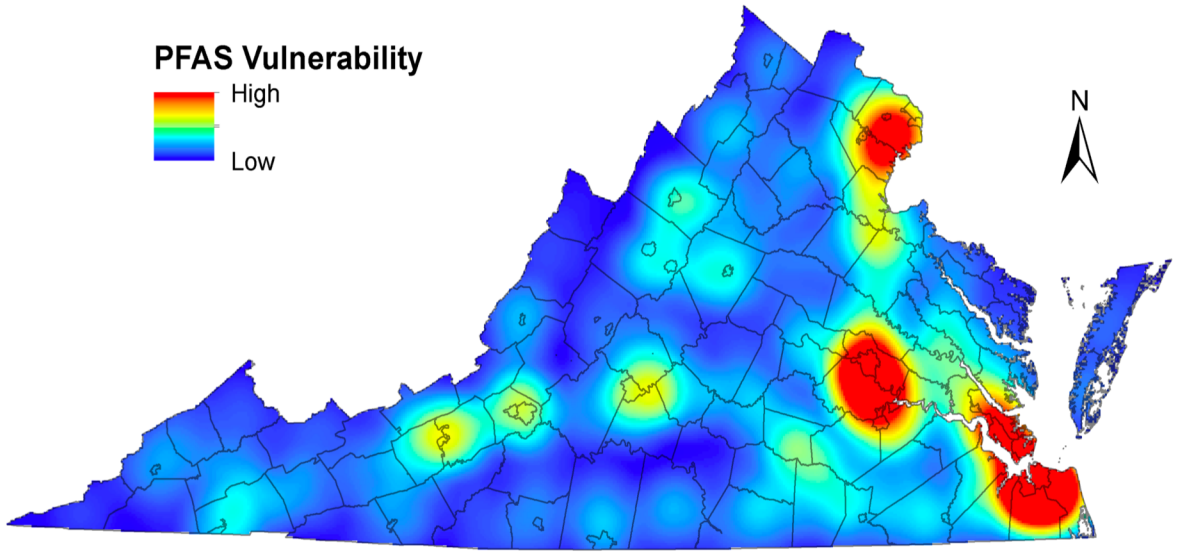


Office of Drinking Water
Safe Drinking Water for a Healthy Virginia

0 25 50 100 150 200 Miles

Virginia Department of Health - Office of Drinking Water
This map shows the risk posed by PFAS sources to water sources in Virginia based on the water source's proximity to surrounding PFAS sources.

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment



Office of Drinking Water
Safe Drinking Water for a Healthy Virginia

0 20 40 80 120 160 Miles

Virginia Department of Health - Office of Drinking Water
PFAS Density Map showing the areas at highest risk of PFAS contamination based on clusters of PFAS contaminant sources

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

3. Sampling Major Water Sources

- Sampling at the water intakes to the Waterworks
- Utilities licensed professional to collect samples, FRB and ship it back to the Lab for analysis (No cost to the utility; shipping included)
- Sampling instructions and guidance will be provided

Pros:

- One source water (river or aquifer) can serve multiple waterworks
- Information can be used for other purposes such as recreation, aquatic life, groundwater contamination etc.
- Can potentially lead to the identification of the PFAS source

Cons:

- Treatment processes may remove the PFAS in treated drinking water
- Limited budget; this may require more resources

4. Hybrid Approach

- Sampling at the 17 large + select high PFAS risk waterworks + select source waters (as dictated by the available budget)
- Waterworks can volunteer to participate at the reduced rate ($ per sample)
- More ideas from the Virginia PFAS Workgroup

Pros:

- More waterworks and source waters can be covered
- Can generate more valuable information on the PFAS occurrence in VA drinking water
- Better understanding will lead to better recommendations

Cons:

- Difficult to design and manage such hybrid study

Proposed - Workgroup Expected Outcomes

1. A report summarizing literature review on the PFAS regulatory framework/methodologies followed in other US states, and Virginia PFAS occurrence results*
2. Recommendations to the Board of Health on regulating PFAS in VA drinking water
3. Recommendations on the PFAS MCL concentrations*

August 2020 – January 2021

- Form a Virginia PFAS workgroup and facilitate meetings
- Research/investigate other state's actions to establish MCLs for PFAS
- Discuss approaches applicable to Virginia
- Conduct PFAS sampling study in Virginia drinking water

What to expect in next ????

- Virginia PFAS Workgroup Meeting minutes
- Workgroup Member Biographies
- Subgroup assignments and signup
  - Schedule and conduct subgroup meetings? ODW will be involved
- Reviewing PFAS Sampling Plans
- Electronic file sharing system invite
- PFAS Webpage review (I will check with VDH-OIM)

Think About ….

- What would you like to see in next Workgroup meeting?
  - Expert speakers on the PFAS in Drinking Water?
  - What other States have done in this regard?
- What are your thoughts to making these Workgroup meeting more effective?
- What are your ideas and suggestions for the PFAS sampling study?
- If COVID19 situation didn't improve, our next meeting could be virtual as well.

Have any Question, Comment or Suggestion, contact Us

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DEQ Power Point Presentation.

What is DEQ's Role?

- As a support Agency to EPA at CERCLA sites, DEQ is following the lead of EPA & adhering to PFAS strategies as they unfold
- Virginia is the lead Agency overseeing ongoing remedial action at DuPont Spruance
- Support VDH efforts
- Identify potential historic and ongoing releases to air land and water (surface and ground)

DEQ

Comprehensive Plan to Address PFAS/PFOA

- Characterizing the extent of the problem
- Prioritizing areas of concern for future study
- Review of need for effluent monitoring by permitted dischargers
- Interagency discipline team addressing potential public health impacts to Virginians including environmental impacts, and development of a statewide communications plan

DEQ

DEQ PFAS/PFOA Strategies

- Goal- *to identify potential "hot spots" contributing to surface and ground water contamination from discharges and air emissions*
- Review known direct and indirect dischargers cataloging permitted facilities with certain Standard Industrial Classification (SIC) codes that are linked to PFAS usage. (currently underway- identified over 1000 discharges and emissions)
- Evaluate the potential for pollutants which may be present in VPDES permitted industrial and POTW discharges.
- Working with VDH, inventory and map high potential discharges near public water intakes.

DEQ

DEQ PFAS/PFOA Strategies (continued)

- Using SIC codes, develop working list of sources with the greatest potential impacts to human health and the environment from the presence of PFAS compound that may be present in facility air emissions

- Use fire training information from the Virginia Department of Fire Programs to identify active and historic uses of firefighting foams and their possible impact to nearby public water intakes and drinking water wells.

- Initiate a PFAS 101 training for DEQ to educate staff on this issue. While most staff have heard of PFAS, very few understand how it may impact their individual programs

- Based upon research strategies identified above, partner with a Virginia university to conduct ambient water quality and fish tissue studies on possible impacts to water and aquatic resources.

DEQ PFAS/PFOA Strategies (continued)

- Review existing statutory authorities and make recommended changes to require, as appropriate, the sampling of wastewater discharges and biosolids for certain PFAS compounds

- Conduct surveys of possible sources including wastewater dischargers, air sources and firefighting training facilities to understand historic and current use of PFAS/PFOA

- Working with VDH, develop a statewide risk communication plan

DEQ

Next Steps

- VADEQ intends to conduct a desktop review of all permitted dischargers who may have current or historical use of PFAS/PFOA. We are using Standard Industrial Categories (SIC) codes identified in EPA's recent Toxic Release Inventory (TRI) rule to filter possible sources from direct and indirect dischargers.

- After possible sources are identified, VADEQ intends to conduct surveys to collect additional information of historic and current uses of these compounds. We would expect local utilities to conduct surveys of their industrial users on our behalf.

- Upon receipt and review of the surveys, VADEQ will meet with utilities and industrial direct dischargers to review the results to clarify next steps.

- The Department anticipates requiring the development of a monitoring plan for potential sources based on the survey results.

DEQ

Next Steps (continued)

- While VADEQ may in the future conduct ambient water quality monitoring for PFAS/PFOA, there are no current plans. Future monitoring will be informed by source self-monitoring.

- VADEQ anticipates completion of the desktop review by September 30, 2020. We plan on completing discussions with utilities and direct industrial dischargers during December 2020. Surveying of potential sources will occur during the 1st quarter of 2021.

- VADEQ is available to conduct a special stakeholder session with VAMWA and VMA to explain our PFAS/PFOA strategies. This may occur during September 2020. VADEQ will be presenting this information at this year's Water Jam.

References

- epa.gov/pfas/basic-information-pfas
- ecos.org/pfas/
- pfas-1.itrcweb.org/
- astswmo.org/tag/pfas/
- www.atsdr.cdc.gov/pfas/index.html
- acwa.com/resources/pfas-communications-and-education-toolkit/
- health.state.mn.us/communities/environment/hazardous/topics/pfcs.html
- michigan.gov/pfasresponse/

DEQ

Questions

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DEQ

VIRGINIA ACTS OF ASSEMBLY -- 2020 SESSION

CHAPTER 611

An Act to require the Commissioner of Health to convene a work group to study the occurrence of perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), perfluorobutyrate (PFBA), perfluoroheptanoic acid (PFHpA), perfluorohexane sulfonate (PFHxS), perfluorononanoic acid (PFNA), and other perfluoroalkyl and polyfluoroalkyl substances (PFAS) in the Commonwealth's public drinking water; report.

[H 586]

Approved April 2, 2020

Be it enacted by the General Assembly of Virginia:

1. *§ 1. That the Commissioner of Health shall convene a work group to study the occurrence of perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), perfluorobutyrate (PFBA), perfluoroheptanoic acid (PFHpA), perfluorohexane sulfonate (PFHxS), perfluorononanoic acid (PFNA), and other perfluoroalkyl and polyfluoroalkyl substances (PFAS), as deemed necessary, in the Commonwealth's public drinking water and may develop recommendations for specific maximum contaminant levels for PFOA, PFOS, PFBA, PFHpA, PFHxS, PFNA, and other PFAS, as deemed necessary, for inclusion in regulations of the Board of Health applicable to waterworks. Such work group shall include representatives of waterworks owners and operators, including owners and operators of community waterworks, private companies that operate waterworks, advocacy groups representing owners and operators of waterworks, consumers of public drinking water, a manufacturer with chemistry experience, and such other stakeholders as the Commissioner of Health shall deem appropriate. The Office of Drinking Water of the Department of Health shall provide administrative and technical support for the work group. In completing its work, the work group (i) shall (a) determine current levels of PFOA, PFOS, PFBA, PFHpA, PFHxS, PFNA, and other PFAS, as deemed necessary, contamination in the Commonwealth's public drinking water, provided that in making such determination of current levels, the Department of Health shall sample no more than 50 representative waterworks and major sources of water; (b) identify possible sources of such contamination, where identified; and (c) evaluate existing approaches to regulating PFOA, PFOS, PFBA, PFHpA, PFHxS, PFNA, and other PFAS, as deemed necessary, in drinking water, including regulatory approaches adopted by other states and the federal government, and (ii) may develop recommendations for specific maximum contaminant levels for PFOA, PFOS, PFBA, PFHpA, PFHxS, PFNA, and other PFAS, as deemed necessary, to be included in regulations of the Board of Health applicable to waterworks. The work group shall report its findings and recommendations to the Governor and the Chairmen of the House Committees on Agriculture, Chesapeake and Natural Resources and Health, Welfare and Institutions and the Senate Committees on Agriculture, Conservation and Natural Resources and Education and Health by December 1, 2021.*

VIRGINIA ACTS OF ASSEMBLY -- 2020 SESSION

CHAPTER 1097

An Act to amend and reenact § 32.1-169 of the Code of Virginia, relating to drinking water; maximum contaminant levels; perfluoroalkyl and polyfluoroalkyl substances and other contaminants.

[H 1257]

Approved April 10, 2020

Be it enacted by the General Assembly of Virginia:

1. That § 32.1-169 of the Code of Virginia is amended and reenacted as follows:

§ 32.1-169. Supervision by Board.

A. The Board shall have general supervision and control over all water supplies and waterworks in the Commonwealth insofar as the bacteriological, chemical, radiological, and physical quality of waters furnished for human consumption may affect the public health and welfare and may require that all water supplies be pure water. In exercising such supervision and control, the Board shall recognize the relationship between an owner's financial, technical, managerial, and operational capabilities and his capacity to comply with state and federal drinking water standards.

B. The Board shall adopt regulations establishing maximum contaminant levels (MCLs) in all water supplies and waterworks in the Commonwealth for (i) perfluorooctanoic acid and perfluorooctane sulfonate, and for such other perfluoroalkyl and polyfluoroalkyl substances as the Board deems necessary; (ii) chromium-6; and (iii) 1,4-dioxane. Each MCL shall be protective of public health, including of vulnerable subpopulations, including pregnant and nursing mothers, infants, children, and the elderly, and shall not exceed any MCL or health advisory for the same contaminant adopted by the U.S. Environmental Protection Agency. In establishing such MCLs, the Board shall review MCLs adopted by other states, studies and scientific evidence reviewed by such states, material in the Agency for Toxic Substances and Disease Registry of the U.S. Department of Health, and current peer-reviewed scientific studies produced independently or by government agencies.

2. That the provisions of this act shall become effective on January 1, 2022.

3. That the Department of Health shall report to the Chairmen of the Senate Committee on Education and Health and the House Committee on Health, Welfare and Institutions on the status of research related to MCLs, the review of which is required by subsection B of § 32.1-169 of the Code of Virginia, as amended by this act, by November 1, 2020, and shall submit a final report to the Chairmen of the Senate Committee on Education and Health and the House Committee on Health, Welfare and Institutions by October 1, 2021, detailing the MCL regulations established by the Department of Health.