National Drinking Water Advisory Council (NDWAC)

December 6-7, 2018

Location:
U.S. Environmental Protection Agency Headquarters
1200 Pennsylvania Avenue NW
William Jefferson Clinton (WJC) South
Room ARS6226 NETI
Washington, DC 20004

MEETING SUMMARY

Meeting Objectives/Desired Outcomes:

- *Update the Council on the Office of Ground Water and Drinking Water (OGWDW) Program activities, the Standards and Risk Management Division s, and the Drinking Water Protection Division programmatic activities, including the Lead and Copper Rule (LCR) revisions, the Contaminant Candidate List (CCL), the Unregulated Contaminant Monitoring Rule (UCMR), and the Agency Health-Based Measure.*
- *Learn about and discuss America's Water Infrastructure Act (AWIA) including changes to the Drinking Water State Revolving Fund (DWSRF) and Consumer Confidence Reports (CCRs).*
- *Discuss and learn about new grant programs under the Water Infrastructure Improvements for the Nation (WIIN) Act including the Lead Testing in School and Child Care Program Drinking Water Grant and assistance for small and disadvantaged communities.*
- *Discuss additional topics of interest to the Council and provide any advice and recommendations to the U.S. Environmental Protection Agency (EPA).*

DAY 1

A. Opening and Welcome

Tracey Ward, the Designated Federal Officer (DFO) for the National Drinking Water Advisory Council (NDWAC) opened the public meeting[1] and highlighted NDWAC's role as an independent expert federal advisory committee chartered under the authority of the Federal Advisory Committee Act (FACA). The NDWAC or "Council" is empowered under the Safe Drinking Water Act (SDWA) and provides independent advice to the U.S. Environmental Protection Agency (EPA) Administrator on drinking water and ground water issues. The NDWAC consists entirely of special government employees appointed to their positions by the EPA Administrator making them subject to all applicable ethics laws and implemented regulations. EPA has determined that advisors participating in this meeting have no

[1] See Attachment A for a list of NDWAC members and Attachment B for a list of meeting attendees

financial conflicts of interest or appearance of a lack of impartiality under the ethics regulations[2], as they relate to the topics of this meeting.

FACA and EPA policies require NDWAC meetings to be announced to the public in the *Federal Register*; any substantive deliberations and interactions with EPA and the public are to be conducted in open sessions where a DFO is present to ensure that the requirements of FACA are met. In accordance with FACA, the public had an opportunity to provide verbal comments during the meeting during the public comment period on Friday, December 7 from 9:15-10:00 am, as long as they had registered in advance of the meeting or registered on-site on December 6. Ms. Ward noted that written comments could also be submitted and would be posted on EPA's NDWAC website and circulated to Council members. A meeting summary would be prepared after the meeting and posted on the NDWAC website[3] after being certified by the NDWAC Chair, Carrie Lewis.

Ms. Lewis thanked attendees and noted that the Council included four new members:

- Alexandra Campbell-Ferrari, The Center for Water Security and Cooperation;
- Saeid Kasraei, Maryland Department of the Environment;
- James Proctor, II, McWane, Incorporated; and
- Macaroy "Mac" Underwood, Birmingham Water Works Board.

Ms. Lewis stated that the NDWAC consists of 15 representatives from public, state and local agencies, and private groups with a common interest in safe drinking water, public health and sharing their expertise with EPA. The Council then introduced themselves and identified their organizational association[4].

Dennis Lee Forsgren, Jr., Deputy Administrator of EPA's Office of Water (OW) attended the meeting on behalf of David Ross, Assistant Administrator of EPA's OW. Mr. Forsgren thanked the Council for their willingness to serve and underscored their importance to the EPA and the opportunity they provide for engagement. Mr. Forsgren noted new initiatives including America's Water Infrastructure Act (AWIA), which introduces over 30 new programs, and upcoming changes to the Lead and Copper Rule (LCR). Mr. Forsgren looks forward to working with the Council on the upcoming programs and initiatives.

When Mr. Ross later joined the meeting, he thanked the Council for their service. He noted that AWIA was a great development and he was interested in hearing feedback, thoughts, and suggestions from the Council.

During his introduction, Dr. Peter Grevatt, the Director of the Office of Ground Water and Drinking Water (OGWDW), noted the tremendous importance of drinking water to the American people. Issues around water are often very complex and personal, something that is made more apparent when water

[2] The ethics regulations are specified in the Code of Federal Regulations, Title 5, Part 2635
[3] NDWAC website: http://epa.gov/ndwac
[4] See Attachment A for a list of NDWAC members

sector challenges hit a community. Dr. Grevatt stated that many of the Council members have long careers working in different aspects of the water sector and EPA often looks to NDWAC for advice. The NDWAC is a diverse group, with every member bringing expertise, and has played an important role in many EPA decisions.

B. EPA Office of Ground Water and Drinking Water (OGWDW) Program Update

Dr. Grevatt provided a program update for EPA's OGWDW and highlighted priority areas, which are discussed below.

1. <u>Per- and Polyfluoroalkyl Substances (PFAS)</u>

The EPA has developed Drinking Water Health Advisories (HAs) for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). The PFOA and PFOS HAs have illuminated drinking water challenges that are important for EPA to focus on.

Dr. Grevatt was asked to lead the efforts on PFAS at EPA. He noted that PFAS affect every part of the environment and almost every part of the economy, as their use is tremendously broad. PFAS are found in many consumer products, including clothing. PFAS are persistent compounds; they have remarkable surfactant properties and are resistant to thermal degradation. These properties, which make PFAS so useful in firefighting foams, also make them a challenge when they enter the environment, and many communities struggle to address this challenge.

In May 2018, more than 40 state and territory representatives attended the PFAS National Leadership Summit[5] in Washington, DC to contribute to the discussion around PFAS. During the summit, former EPA Administrator Scott Pruitt identified four broad areas for action:

- Explore steps related to potentially identifying a maximum contaminant level (MCL) for PFOA and PFOS.
- Explore the steps surrounding the listing of PFOA and PFOS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This action is particularly important, as EPA has the authority to clean up CERCLA hazardous substances and recover costs from responsible parties.
- Develop groundwater cleanup recommendations for PFOA and PFOS at contaminated sites; this work is currently underway.
- Develop toxicity values for two additional PFAS: perfluorobutane sulfonic acid (PFBS) and GenX chemicals. The draft toxicity assessments[6] are open for public comment until January 22, 2019.

[5] For more information about the PFAS National Leadership Summit, visit: https://www.epa.gov/pfas/pfas-national-leadership-summit-and-engagement

[6] Information on EPA's draft toxicity assessments for PFBS and GenX can be found at: https://www.epa.gov/pfas/genx-and-pfbs-draft-toxicity-assessments

Following the PFAS National Leadership Summit, Dr. Grevatt and Jennifer McLain, OGWDW Deputy Director, attended a number of community engagement meetings[7] and tribal forums. They used these opportunities to talk to communities affected by PFAS and to hear from people who need support from EPA. Dr. Grevatt also testified before Congress regarding PFAS. These events are emblematic of the concern that these compounds have generated in some communities.

EPA is developing an Action Plan for PFAS, which is expected to be released in early 2019. PFAS is a top priority for the EPA OW, as well as for the EPA Acting Administrator Andrew Wheeler. Dr. Grevatt noted that PFAS present tremendous challenges in some communities; however, there are many communities for which other issues take precedence. The collective task for the NDWAC is to determine how best to move forward to respond to the full breadth of drinking water challenges.

Mr. Forsgren responded that PFAS should be considered a "hyper-local, national issue." Vast parts of the United States remain unaffected by PFAS contamination; however, PFAS is an incredibly important issue in affected areas, the number of which continue to grow.

EPA included six of the PFAS compounds in the third Unregulated Contaminant Monitoring Rule (UCMR). EPA samples every large system under the UCMR, and the Agency found PFOA and PFOS above HA limits in 1.3% of sampled drinking water systems. This percentage may seem small; however, for those communities that are impacted, this contamination is a significant challenge. Some states have taken regulatory action at levels below the national drinking water HAs. This continues to be an area of ongoing work and remains important.

2. America's Water Infrastructure Act (AWIA)

Dr. Grevatt characterized AWIA as the broadest mandate that EPA has received since the 1996 amendments to the SDWA. AWIA greatly expands EPA's responsibility and authorizes a number of programs. Some of these programs require appropriations to implement, while the remainder are mandated regardless of appropriations.

The 32 programs that AWIA authorizes will be helpful in strengthening the water enterprise across the water sector, including implementing EPA's priorities. AWIA modifies the Water Infrastructure Finance and Innovation Act (WIFIA) from a pilot program to a permanent program. WIFIA creates a very low-cost mechanism for large projects to be implemented without a very large investment on the part of the American people.

[7] For more information about EPA's PFAS community engagement, visit: https://www.epa.gov/pfas/pfas-community-engagement

3. Perchlorate

In 2017, EPA conducted a peer review of the analysis EPA undertook in response to recommendations from the Science Advisory Board's (SAB) to assess the impacts of perchlorate exposure and thyroid hormone levels at different life stages. In 2018 EPA undertook a peer review of the second stage of the process including the model and resulting interpretation of how thyroid hormone level changes result in adverse health d outcomes. This step is integral to developing a Maximum Contaminant Level Goal (MCLG). After a thorough process, the peer review panel found that EPA's modeling effort was fit for the purpose of developing a proposed perchlorate regulation. The Agency is under order to develop this regulation and has filed a motion requesting a six-month extension for the proposed rule deadline.

4. Lead Update

Dr. Grevatt acknowledged the importance of the NDWAC's role in updating the LCR and praised the quality and insight of the Council's recommendations to EPA. Before the NDWAC offered its recommendations to EPA, identifying and replacing lead service lines (LSLs) was not a clear discussion point, and this became a turning point in discussions on the LCR. The Agency continues to revise the proposed rule "Use of Lead Free Pipes, Fittings, Fixtures, Solder and Flux for Drinking Water," also known as the "Lead Free" rule before it is promulgated as final.

5. Water Infrastructure Improvements for the Nation (WIIN) Act

The WIIN Act has an interesting intersection with AWIA in terms of grant programs, and authorizes three new grant programs for $50M:

- Assistance for small and disadvantaged communities;
- Reducing lead in drinking water, including replacement of LSLs; and
- Lead testing in school and child care program drinking water.

EPA announced the availability for funding for the Lead in Schools and Childcare grant on September 11, 2018, and distributed letters to states and tribal nations to determine interest in participation. EPA requested that prospective grantees submit their letters of intent by January 2019. (Note that this deadline was later extended to February 2019 due to changes in several states' Governors.

EPA recently updated the "3Ts" for reducing lead in drinking water as follows:

- Training;
- Testing; and
- Taking Action.

This guidance is designed to support the needs of schools and local communities, and to offer educators the tools to discuss issues and take action.

6. NDWAC Questions and Comments

Meeting attendees provided the following feedback regarding the program update on OGWDW:

- Howard Neukrug asked how he should answer questions he receives about PFAS, such as questions from citizens concerned about PFAS in their wells.
    - Dr. Grevatt responded that this is a very important question. People who have private wells and those who are served by public systems are expressing concern that PFAS is in their drinking water. PFOA and PFOS are being detected in water, and states and the Agency for Toxic Substances and Disease Registry (ATSDR) may have different approaches to this issue. EPA's approach to these questions is to acknowledge the concerns and reiterate that they are working diligently to understand the issue the best they can. The Agency's first commitment is to serve the needs of states and local communities. They are working with other federal entities and are continuing to work with communities to understand these compounds. Although there is not a simple answer, EPA is working on risk communication and doing everything possible to support state and local communities.

- Mr. Neukrug reported that Pennsylvania signed into law a ruling that provides the financial and legal mechanisms for Pennsylvania's private water utilities (please confirm with Howard that this is correct) to replace residential-owned LSLs through public funds. This was a simple rule that allowed the spending of public money on private property.
    - Dr. Grevatt responded that joint ownership of LSLs in most communities is between public and private entities, and that one of the biggest issues has been the question of equity, as people have very different needs and priorities. Some people do not have the resources to replace their privately-owned pipes, so the different approaches that states and utilities are taking are very important. Some communities and states have taken action that allowed this funding issue to be resolved. Lead pipes are not the only source of lead exposure, and people are sometimes exposed through other means (e.g., paint, dust). Lead is a very important issue and transparency is valuable.
    - Mr. Forsgren responded that different states take different approaches to addressing this issue. More states are likely to consider adopting Pennsylvania's method, but not all states, territories, and the District of Columbia may have the legal framework to do so. Some states have proposed a rule for sellers to disclose LSL locations in a given home upon sale. Steps such as these may generate self-corrections in the market in many ways, similar to its self-correction in response to other health risks. This is a very complex problem that will likely need to be addressed through multiple means, and not every legislative solution will work in every location.

- Ms. Lewis thanked Dr. Grevatt for his leadership.

C. Drinking Water Protection Program Update

Anita Thompkins, director of the Drinking Water Protection Division (DWPD), welcomed and thanked those in attendance. Ms. Thompkins provided updates regarding the Agency health-based measure, infrastructure, collaborative oversight, lead in schools, source water protection, and ground water protection. Key points from her presentation are below. To view the full presentation, please see the public meeting materials and documents listed on EPA's website at: https://www.epa.gov/ndwac/ndwac-meeting-december-6-7-2018.

1. Agency Health-Based Measure

EPA has set a data driven goal to reduce the number of community water systems (CWSs) that are out of compliance with health-based standards to 2,700 by Fiscal Year (FY) 2022. This target represents a 25% reduction (from the baseline of 3,600 identified in 2017). There are almost 50,000 CWSs. As of October 2017, 3,508 (7%) CWSs were out of compliance with at least one health-based standard in the previous 12 months. This is not just a small system issue and health-based violations can be seen in small, medium, and large systems; however, more than half of the health-based violations in FY17 were seen in systems serving 500 persons or less. In FY18, the number of CWSs with health-based violations was reduced to 3,408. When looking at the challenges that water systems face, the Stage 2 Disinfectants and Disinfection Byproducts Rule (DBPR) accounts for 30% of the violations. The Ground Water Rule also represents a large percentage of the violations.

CWSs need varying types of support. Some water systems may need compliance assistance prior to enforcement actions and others may need to develop partnerships with other water systems. The HQ and the regions developed action plans to identify approaches to achieve the target. The actions are at a national level and include goals to generate data analysis and evaluation tools needed for HQ , Regions, and state primacy agencies to identify system commonalities and address health based compliance challenges; provide targeted national training and technical assistance to address common challenges identified among those systems with health-based violations; and integrate PWSS, Drinking Water State Revolving Fund (DWSRF), capacity development and operator certification implementation to ensure that vulnerable systems remain in compliance. In order to recognize the 25% reduction goal, it is important not only to return systems to compliance, but also to keep the compliant systems in compliance. Targeting training, promoting the adoption of best practices and partnerships are all ways to work towards the 25% reduction goal.

2. Infrastructure

The DWSRF[8] and PWSS[9] Programs work hand-in-hand to ensure public health protection and SDWA compliance through capacity development, operator certification, partnerships, technical assistance, SDWA implementation, infrastructure and asset management. This can be a challenge at the state level because the DWSRF and PWSS programs may be in different offices. The state PWSS program sets priorities for the DWSRF program. The SDWA requires that infrastructure projects be prioritized for projects based on risk to human health, compliance, and systems most in need.

Not all drinking water problems can be fixed with new or improved infrastructure. The problems sometimes highlight the need for a new operator or asset management. To address barriers to compliance and project movement, states can apply DWSRF set-aside funds[10] (non-infrastructure assistance) to a broad range of related issues. The capitalization grant allows states flexibility to take up to 31% for set-asides and the average set aside that states use is about 16%. Set-asides can be used towards activities such as project readiness, water system restructuring, data management and sustainability. Each set-aside is tailored to specific programmatic outcomes, but the activities conducted using each set-aside often overlap. States are encouraged to look at other cash flow modeling and leverage more resources. It is a balancing act to ensure that fund inflows balance as much as possible with fund outflows. As EPA moves forward with the health-based measure by 2022, they want to work with states to use cash flow modeling to understand what is happening and get more projects.

3. Collaborative Oversight

In an effort to support the health-based measure, EPA initiated a deep dive into Stage 2 DBPR. About 30% of the health-based violations are associated with the Stage 2 DBPR. EPA worked jointly with state partners (including Indiana, Kentucky, North Dakota, and Pennsylvania) to evaluate Stage 2 compliance challenges and understand/share lessons learned and best practices. Results of this effort will be integrated as part of EPA's future training and outreach efforts. Next steps include:

- Conducting outreach to all states (via the Association of State Drinking Water Administrators [ASDWA]) to capture any additional best practices;
- Generating a final report by Spring 2019 that incorporates the national data analysis, lessons learned and existing resources and training; and
- Developing a website that provides highlights of the deep dive analysis and links to relevant EPA guidance materials.

[8] For more information about the DWSRF, visit : https://www.epa.gov/drinkingwatersrf
[9] To learn more about PWSS Programs, see: https://www.epa.gov/dwreginfo/public-water-system-supervision-pwss-grant-program
[10] More information on the use of DWSRF set-asides is available at: https://www.epa.gov/dwcapacity/use-drinking-water-state-revolving-fund-dwsrf-set-asides

4. Lead in Schools

There is no federal law requiring the testing of drinking water in schools and child care facilities except for those owned and operated by a water supply system, which have to comply with the SDWA. There are 7,000 public water systems that include child care and school facilities. EPA recently revised the 3Ts toolkit[11] for reducing lead in drinking water in schools and child care facilities. The revised 3Ts are: Training, Testing, and Taking Action. The updated toolkit includes new resources such as templates schools can use for communication.

5. Source Water Protection

Source water protection can be a cost effective and proactive solution for drinking water communities. To understand source water protection and how it can make a difference, EPA has collaborated across programs and offices, including regional offices and state water programs, and through Clean Water Act/SDWA coordination. The EPA also worked with the United States Geological Survey (USGS) to develop the Drinking Water Mapping Application to Protect Source Waters (DWMAPS), an online mapping tool that helps state and utility drinking water professionals in concert with other state and local mapping tools to update their source water assessments and protection plans[12]. DWMAPS can also be used to locate drinking water providers and potential sources of contamination. The EPA continues to collaborate with the Natural Resources Conservation Service and developed a new pilot program with them this year. The EPA has also conducted Source Water Protection Workshops in a number of states through partnerships with the Forest Service and other sister agencies.

6. Ground Water Protection

The EPA is exploring more opportunities to partner with states and provide solutions, as communities are stressed, and extreme weather events occur. The EPA is looking at produced water and opportunities for reuse and recycling to get water back into the system. One of these opportunities is produced water from the oil and gas industry. In 2018, the EPA entered a Memorandum of Understanding (MOU) with the State of New Mexico to clarify the existing regulatory and permitting frameworks regarding wastewater from oil and natural gas extraction activities and how it can be used for other purposes. The EPA and the State of New Mexico released a draft white paper[13] and are accepting public comments until December 10, 2018. EPA is also conducting a nationwide study and a white paper will be released in early 2019.

---

[11] More information, including the revised 3Ts Toolkit Materials and an interactive map of state drinking water testing in schools and child care facilities, can be found on EPA's website at: https://www.epa.gov/dwreginfo/3ts-reducing-lead-drinking-water-schools-and-child-care-facilities

[12] For more information on DWMAPS, and to access the tool, visit: https://www.epa.gov/sourcewaterprotection/drinking-water-mapping-application-protect-source-waters-dwmaps

[13] More information on the MOU and white paper can be found on EPA's Website at: https://www.epa.gov/newsreleases/epa-new-mexico-announce-new-website-detailing-draft-white-paper-oil-and-natural-gas

7. NDWAC Questions and Comments

- James Salzman asked if the CWSs that are persistently in violation (approximately 740) were mostly small systems.
    - Ms. Thompkins noted that she would have to look into this further but assumes that they would be small systems. This is the area where EPA is working with colleagues in the Office of Enforcement and Compliance Assistance and they are planning a national compliance initiative.
    - Mr. Forsgren noted that getting a system back into compliance is very important. . Enforcement case building often means that a system remains out of compliance, and EPA wants to use tools to get them back in compliance.
    - Ms. Thompkins stated that OGWDW has three specific goals and is looking to generate data to send to the regions and states to understand the trends and provide national training and technical assistance.

- Ms. Lewis asked if a health-based violation was an MCL exceedance.
    - Ms. Thompkins stated that a health-based violation is an MCL exceedance and there are also treatment technique violations. EPA is also tracking systems that have action-level exceedance under the Lead and Copper Rule.

- William Alley noted that he was curious about the roles of the Regions. In Ms. Thompkins's presentation, there was a high cluster of health-based violations in New Mexico.
    - Ms. Thompkins responded that the Regions have worked with states to develop action plans. As EPA finds out more information, they can determine what actions should be taken. Action plans can be shared with other Regions and states.

- Mr. Proctor noted that for small systems that struggle to comply, consolidation and partnerships are potential pathways to work through this. There was a provision in AWIA that created a door to that opportunity. He also noted that there were some statewide initiatives that would outlaw private utility ownership.
    - Ms. Thompkins responded that AWIA has opened doors. Consolidation does not always have to be privatization and having more tools available will be helpful.
    - Mr. Underwood stated that at Birmingham Water Works, they try to help smaller utilities by making sure they are in compliance and providing help. He noted that EPA is working with peer to peer groups where larger systems adopt smaller.
    - Ms. Thompkins echoed Mr. Underwood's statements and noted that sharing expertise, operators, accounting, and billing is helpful.
    - Mr. Forsgren stated that EPA is trying to find ways to facilitate smaller systems banding together (not necessarily consolidating) to qualify for infrastructural projects that they might not have otherwise. One example of that is Indiana's WIFIA loan application.

- Mr. Forsgren noted that the bridge model that Ms. Thompkins discussed during the infrastructure portion of her presentation also applies to the Clean Water State Revolving Fund. The EPA would like systems to get to a point where they are in front of capital needs, and not acting based on threat of enforcement action by federal or state regulators.
    - Mr. Neukrug stated that this was great to hear. The biggest issue on the drinking water side is that money is going to Combined Sewer Overflows (CSOs) and the communities do not have a chance to suggest rebuilding a water plant or investing in assets.

D. Standards and Risk Management Program Update

Eric Burneson, SRMD Director, presented updates on the Division's regulatory evaluation of emerging contaminants and priority drinking water regulations. Key points from the presentation are below. To view the full presentation, please see the public meeting materials and documents listed on EPA's website at: https://www.epa.gov/ndwac/ndwac-meeting-december-6-7-2018.

1. Regulatory Analysis

The first step of the SDWA Regulatory Process is the development of a Contaminant Candidate List (CCL). The fourth CCL (CCL 4) was published on November 17, 2016 and contained 97 chemicals or chemical groups, and 12 microbial contaminants[14]. EPA published a *Federal Register* (FR) Notice requesting public nominations for contaminants for EPA to consider including on CCL 5. The comment period closed on December 4, 2018, and the final CCL publication deadline is December 2021.

The fourth UCMR (UCMR 4) was published in December 2016. It identified 30 contaminants, including ten cyanotoxins and cyanotoxin groups, three dibutyl phthalate (DBP) groups, nine pesticides, two metals, three alcohols, and three synthetic organic contaminants (SOCs), that are to be monitored by large water systems and a representative group of small water systems between 2018-2020[15], totaling approximately 5,000 systems. By the end of December 2018, samples will have been collected from at least one third of the systems and sent for analysis. The remainder of monitoring will be conducted over the next two years. Unlike most drinking water regulations, this UCMR is part of the federal direct-implementation program, whereby EPA partners with states that may implement the rule to the extent that they wish. EPA is engaging with public water systems and laboratories to collect and report the UCMR Occurrence Data[16]. In May 2018, EPA published health-based "reference concentrations" for those contaminants whose health effects values have been issued. Reference concentrations are non-enforceable values; these provide context for UCMR 4 contaminants so that comparisons can be made, and decisions will not be based on the presence or absence of a contaminant.

[14] More information about CCL 4 can be found on EPA's website: https://www.epa.gov/ccl/contaminant-candidate-list-4-ccl-4-0
[15] More information on UCMR 4 can be found on EPA's website: https://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule
[16] More information about UCMR Occurrence Data can be found on EPA's website: https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule

EPA completed its regulatory determinations for the CCL 3 contaminants in January 2016. EPA is currently evaluating contaminants on the CCL 4, including PFOA and PFOS, for the fourth regulatory determination cycle. As part of this cycle, EPA continues to consider whether there is a meaningful opportunity for health risk reduction by regulating strontium in drinking water. The CCL 4 FR Notice[17] lists data availability for each of the contaminants on the CCL at the time of publication. EPA plans to issue final regulatory determinations for CCL 4 contaminants by January 2021.

SDWA requires EPA to review existing National Primary Drinking Water Regulations (NPDWRs) every six years and revise them, if appropriate. EPA published the third Six-Year Review (SYR3) on January 11, 2017. This review was the first to address microbial and disinfection byproduct regulations and included a detailed review of 76 NPDWRs. Of these 76 NPDWRs, eight were determined to be candidates for regulatory revision. EPA has begun work on the fourth Six-Year Review (SYR4) by proposing an information collection request (ICR)[18] to support the action. SYR4 is required to be published in January 2023.

2. Rule Development/Revision

In 2011, EPA decided to regulate perchlorate and determined that it may have adverse health effects. The compound competitively inhibits the uptake of iodide by the thyroid, and impaired thyroid function has been linked to delayed development and decreased learning capability in infants and children. In accordance with SDWA, EPA requested comment from the SAB prior to proposing an MCLG and NPDWR for perchlorate. In 2013, the SAB recommended that EPA "derive a perchlorate MCLG that addresses sensitive life stages through physiologically-based pharmacokinetic/pharmacodynamic modeling" (PBPK/PD). The Agency collaborated with U.S. Food and Drug Administration (FDA) to address SAB recommendations regarding data collection and the review and development of PBPK/PD models to relate perchlorate exposure to biological effects "downstream" from the inhibition of iodide uptake. In January 2018, EPA completed a two-step expert peer review of a highly innovative state-of-the-science set of quantitative tools to evaluate neurodevelopmental effects that could arise from drinking water exposure to perchlorate. EPA is evaluating occurrence, treatment technologies, analytical methods, and cost and benefits of regulation. EPA is preparing a proposed NPDWR for perchlorate for public review and comment and has sought an extension to the October 31, 2018 deadline to propose the perchlorate regulation. The consent decree due date for a final rule is December 19, 2019.

The proposed "Lead Free" Rule was published in the FR on January 17, 2017, followed by a public comment period, which closed on May 17, 2017. The proposed rule sought to make conforming changes to existing drinking water regulations based on the Reduction of Lead in Drinking Water Act and included new requirements to assure that individuals purchasing, installing, or inspecting potable water

[17] More information about the CCL 4 FR Notice can be found at the FR website: https://www.federalregister.gov/documents/2016/11/17/2016-27667/drinking-water-contaminant-candidate-list-4-final

[18] More information about SYR4 ICR can be found on EPA's website: https://www.epa.gov/dwsixyearreview/six-year-review-4-drinking-water-standards-information-collection-request

systems can identify lead free plumbing materials. As of 2014, any pipefitting had to meet the new definition of lead free (0.2% lead). Prior to this, 8% lead was considered to be in compliance. EPA is working to address issues such as how manufacturers can demonstrate their compliance and which products might be exempt. The Agency continues to evaluate comments and plans to promulgate the final rule in 2019.

EPA sought and received extensive input on potential revisions to the LCR from the NDWAC, states, tribes, and local governments. In December 2015, the NDWAC provided extensive and significant recommendations[19] for revisions to the LCR, and Federalism and Tribal consultations[20] were completed in March 2018. EPA is considering revisions to LSL replacement programs, Corrosion Control Treatment (CCT) requirements, transparency and public education requirements, and tap sampling requirements. EPA expects to publish proposed LCR revisions for public review and comment in 2019.

3. Stakeholder Support/Guidance (non-regulatory)

The May 2018 EPA PFAS National Leadership Summit included representatives from over 40 states, tribes, and territories; 13 federal agencies; congressional staff; associations; industry groups; and non-governmental organizations (NGOs). EPA has also held PFAS-related community engagements, tribal engagements, site visits, and roundtables in nine locations across the country. The Agency received more than 118,000 comments through the public docket and is currently developing a PFAS Action Plan using information gained from the summit, community engagements, and public docket. Under the UCMR 3 EPA found that 1.3% of water systems that measured had PFOA and or PFOS levels exceeding the HA levels, and approximately 4% of systems measured at least one of the six PFAS at quantifiable levels.

EPA has continued to provide technical assistance to stakeholders to assist them in preparing for and responding to events where elevated concentrations of cyanotoxins are found in drinking water. This assistance includes help with messaging that could be used in public announcements to inform the public of cyanotoxin levels. EPA also supported Harmful Algal Bloom (HAB) regional workshops and tabletop activities between 2015 and 2018. The Agency has promoted availability of tools[21] that can support local and regional actions, including:

- Improved analytical methods (EPA Methods 544, 545, and 546) for algal toxins (2015, 2016);
- Water Treatment Optimization for Cyanotoxins (2016);

[19] More information about NDWAC recommendations for LCR revisions can be found on EPA's website: https://www.epa.gov/dwstandardsregulations/ndwac-recommendations-administrator-long-term-revisions-lead-and-copper-rule

[20] More information on LCR Federalism consultations can be found on EPA's website: https://www.epa.gov/dwstandardsregulations/lcr-federalism-consultation

[21] Tools for Addressing the Risks of Cyanotoxins in Drinking Water can be viewed in the EPA video: https://www.youtube.com/watch?v=kt0FdDXl2oU&feature=youtu.be

- The Drinking Water Cyanotoxin Risk Communication Toolbox[22] (2017); and
- HAB and Drinking Water Fact Sheets (2016).

4. NDWAC Discussion, Questions, and Comments

Council members provided the following feedback regarding the Standards and Risk Management Program Update:

- Mr. Alley asked about the status of hexavalent chromium (chromium-6), 1,2,3-Trichloropropane (TCP), and 1,4-Dioxane.
  - Mr. Burneson responded that a drinking water standard exists for total chromium. One concern has been chromium's oxidation chemistry; it can convert from trivalent chromium into hexavalent chromium (Chromium-6) in a water system. Chromium-6 is a concern based on health effect evaluations. A critical factor is the frequency and level of Chromium-6 in drinking water. EPA included chromium-6 and total chromium on the UCMR 3. Chromium-6 was found in many places around the country. OGWDW is awaiting the Agency's completion the Agency's IRIS risk assessment for chromium-6 to be able to determine whether a new regulation is needed for chromium-6.
  - 1,2,3-TCP is another unregulated contaminant on the CCL 3 and CCL 4. It is found in the 1% range in water systems that have been tested under UCMR 3.
  - 1,4-Dioxane is a carcinogen and is also on the CCL 4. It was also included in the UCMR 3 monitoring and was found to be above the health reference level in between 6-7% of the systems tested.

- Mr. Neukrug noted that many changes are taking place with respect to wastewater. Regarding drinking water, stakeholders are becoming better at meeting the expectations of reducing numbers, but asset management continues to be an issue. He stated that there is nothing encouraging the next level of treatment.
  - Mr. Burneson responded that the SDWA provides for the Agency to undertake the MCL process to regulate contaminants but that if the Agency concludes that it is not technologically or economically feasible to measure the contaminant it would be possible to promulgate a treatment technique. He acknowledged the idea of writing regulations for known contaminants in a manner that addresses unknown contaminants, but identified challenges such as technological limitations and financial barriers.

- Randy Moore asked for clarification on EPA's determination that 1.3% of water systems had PFAS levels exceeding the HA levels, and approximately 4% of systems had any one of the six

[22] EPA's Drinking Water Cyanotoxin Risk Communication Toolbox can be accessed at: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-cyanotoxin-risk-communication-toolbox

PFAS at quantifiable levels. He asked whether the types that were characterized were all-inclusive.

- Mr. Burneson responded that EPA measured six of the thousands of compounds, and some of the terminology related to these compounds is loosely defined. Many of the newer compounds in commerce are shorter chain PFCs that are believed to be less persistent in the body, but much remains to be learned. EPA is developing an approach in the PFAS Management Plan for the Agency and communities to make decisions about this large suite of compounds.

- June Anne Swallow asked whether any one aspect of the proposed Lead and Copper Rule development has been particularly challenging.
  - Mr. Burneson responded that all aspects have been challenging, but LSL replacement may be the most challenging issue. Most of the lines have shared ownership and removing half of a line may increase risks more than taking no action would. LSL replacement is the most significant cost-driver—in the range of billions of dollars—and this presents major challenges.

E. America's Water Infrastructure Act (AWIA): Changes to the Drinking Water State Revolving Fund (DWSRF)

Ms. Thompkins provided an overview of AWIA[23] and changes to the DWSRF. Ms. McLain noted that the EPA has not yet decided how the new programs and changes will be implemented and is still working to understand the congressional mandates and waiting to hear about appropriations. This presentation covered initial thinking and both Ms. Thompkins and Ms. McLain would like to hear the NDWAC's thoughts on the legislation. Key points from the presentation are below. To view the full presentation, please see the public meeting materials and documents listed on EPA's website at: https://www.epa.gov/ndwac/ndwac-meeting-december-6-7-2018.

1. <u>America's Water Infrastructure Act (AWIA) Changes</u>

The changes brought about by AWIA give a lot of flexibility to the states. The changes will allow loan programs to be leveraged together. AWIA changes to the DWSRF Law (SDWA Section 1452) include:

- Reauthorizes the DWSRF and increases authorized amounts to $1.174 billion in FY19, $1.3 billion in FY20, and $1.95 billion in FY21.
- Extends the max DWSRF loan amortization to 30 years (from 20) or 40 years (from 30), or useful life (whichever is shorter) for disadvantaged communities.
- Extends repayment initiation from 12 to 18 months after project completion.
- Codifies Davis-Bacon for DWSRF-funded construction projects.

[23] For more information regarding AWIA, visit: https://www.congress.gov/bill/115th-congress/senate-bill/3021/text

- Makes the American Iron and Steel (AIS) requirement permanent until FY23. This change gives certainty to the manufacturing community that the program will be here for the next five years.
- Additional subsidy for state-defined Disadvantaged Communities must be between 6% and 35% of cap grant, if enough Disadvantaged Communities (up from current floor of 0% and max of 30%). Some states do not have a definition in place for Disadvantaged Communities and they have until FY19 to come up with state defined criteria.
- Expands use of 15% set-aside for source water protection: allows funding for delineating and assessing source water protection areas (current authorization ended in 1997) and updating existing assessments.
- Future EPA drinking water needs surveys must include an estimate of replacement costs for all LSLs, both public and private portions.
- Requires the EPA to collect state best practices on DWSRF administration and disseminate them to states within three years.

Ms. Thompkins also reviewed additional changes that AWIA brings. These changes include:

- Requires the U.S. Government Accountability Office (GAO), within one year, to conduct a study of state or local environmental requirements that may be substantially equivalent to existing federal cross-cutting requirements of the DWSRF.
- Authorizes $100M in supplemental DWSRF capitalization grants to water systems impacted by natural disasters since January 1, 2017, in order to assist underserved areas in returning to or improving compliance with SDWA requirements.
- Creates new, competitive Drinking Water System Infrastructure Resilience and Sustainability grant program for FY19 and FY20; authorizes $4M per year.
- Creates new grant program for pre-1988 drinking water fountain monitoring and replacement, with priority given to areas of economic need. Authorizes $5M for FY19-FY21.
- Creates new competitive EPA grant program to provide assistance to public water systems, educational institutions, or NGOs to develop or deploy innovative water technologies. Authorizes $10M in both FY19 and FY20.

2. <u>Next Steps</u>

EPA is working with the Office of General Counsel (OGC) and will put together an implementation plan. EPA also issued an AIS-specific AWIA memorandum[24].

F. NDWAC Discussion of the State Revolving Fund (SRF)

Ms. Lewis opened the discussion of the SRF and requested NDWAC members' perspectives on extended term financing and the additional subsidy.

[24] To view the memorandum, visit: https://www.epa.gov/cwsrf/application-american-iron-and-steel-requirements-drinking-water-state-revolving-fund-4

- Mr. Kasraei asked whether the LSL issue will be incorporated into the allocation for state-defined disadvantaged communities.
    - Ms. Thompkins responded that the Drinking Water Needs Survey is part of the Drinking Water SRF allocation process. OGWDW is working with the Office of General Council to ensure that they have understood the intent of the relevant AWIA language.
    - Mr. Kasraei responded that a consequence will be that resources are taken from some states and given to others.

- Mr. Moore stated that once the state determines the definition for disadvantaged communities, the allocation process begins, and the communities can comply. He asked whether any discussion had taken place around simplifying the application process. The process is so administratively burdensome that many small utilities and municipalities do not necessarily have the wherewithal to complete it.
    - Ms. Thompkins responded that sometimes the process is a barrier to entry, so the EPA is looking to states to use their set-asides to help their communities with the process. The EPA also encourages peer to peer mentoring and is working with the U.S. Department of Agriculture (USDA) to develop a preliminary engineering report that can be used across multiple agencies.
    - Mr. Salzman responded that states often have undercapitalized funding mechanisms. California has a small funding pot that was available for water systems, and most of the money has remained unused.

- Ann Marie Chischilly pointed out that the definition of "disadvantaged" may become a factor in states where the state and the tribe have a contentious relationship. She also asked what steps are being taken to assist with completing applications for resources.
    - Ms. Thompkins responded that EPA needs to determine how to provide a community that will support small systems through the process, and that she will raise this issue to the states. Some states may have available funding or technical assistance that communities are unaware of but could leverage. States that have had success in supporting smaller systems could provide peer-to-peer mentoring to other states.

- Ms. McLain stated that several states DWSRF programs do not have a definition for disadvantaged communities, and EPA is working with those states to provide guidance and help them establish definitions for adoption. She also noted that different definitions across states can complicate the issue.

- Wilmer Melton pointed out that coordinating systems to share the burden of the process could allow them to get more use out of the funds. Instead, many systems are currently deciding to use conventional financing.

- Mr. Melton strongly supported adding LSLs to the EPA drinking water needs surveys. He asked whether LSL replacement costs would be divided into regions and areas, as economic and structural configurations vary, even between neighborhoods.
    - Ms. Thompkins agreed with Mr. Melton's assessment of the location variability and responded that the EPA is in the initial stages of addressing those issues, including consulting with OGC. She acknowledged that the drinking water needs survey is a major undertaking for the states, and it has implications for resource allocation. Ms. Thompkins will accept written questions that NDWAC members may have and submit them to OGC.

- Ms. Pillsbury asked what the expectations are, in terms of quantification, and how affects the 1% states.
    - Mr. Proctor responded that extension of payment terms can make loans more affordable but reducing the costs of utilities may be a more sustainable solution. Many of the small utilities may not fully understand their costs of operations because they do not fully understand their water losses. Asking these utilities to deploy new technology is difficult without an accurate cost-benefit analysis, which can only be conducted when the real costs are understood.
    - Mr. Proctor asked whether there is a possibility to offer technical assistance in these grants to conduct water loss or water leak audits. Utilities' improved understanding of their finances might help them qualify. California has passed a statute mandating water leak audits and providing the specific technical assistance might be a proactive step.
    - Ms. Thompkins responded that she will convey Mr. Proctor's suggestion to her office and determine whether it can be incorporated.

- Ms. Swallow reiterated that the administrative burden of applying for loan can be off-putting for small and medium systems, and the lack of technical and financial capability cannot be overstated for the very smallest water systems. They may have no interest in loans or any funding that requires repayment, which is another reason that funds are not getting out to the small systems.

- Ms. Campbell-Ferrari asked whether there has been an examination of state-level definitions of disadvantaged communities to determine whether anyone is excluded. She also asked why a single definition is not being used.
    - Ms. Thompkins responded that EPA has the definitions in intended use plans.
    - Ms. Thompkins also responded that part of the reason for state-by-state definitions is that every state is different and has different median household incomes. Furthermore, within individual cities, there are pockets of disadvantaged communities that the cities and states are aware of.

- Mr. Underwood noted that SRF money in Alabama typically goes to the smaller utilities. However, many large cities have disadvantaged communities that also need assistance. Mr. Underwood identified the need to support both smaller and larger systems and suggested separating them so that they both receive attention.

- Ms. Lewis requested that EPA conduct the analysis of the state versus the federal wage, because water districts end up paying the higher of the two wages in each instance. She was glad to hear about the increase in authorized amounts for the DWSRF. She noted that in Portland, the state allowed them to use Clean Water SRF money to replace water mains that were within the project limits of a combined sewer overflow separation project. Ms. Lewis also stressed the importance of workforce development and noted that grant money towards it would be helpful.
    - Mr. Melton echoed Ms. Lewis's thoughts on workforce development. He noted that the Department of Labor and Department of Veterans Affairs have programs and wondered if it was possible to partner.
    - Ms. Thompkins responded that EPA had MOUs with both the Department of Labor and Department of Veterans Affairs.

G. America's Water Infrastructure Act (AWIA): Consumer Confidence Reports (CCRs)

Ms. Thompkins continued the overview of AWIA and discussed changes to CCRs. Key points from the presentation are below. To view the full presentation, please see the public meeting materials and documents listed on EPA's website at: https://www.epa.gov/ndwac/ndwac-meeting-december-6-7-2018.

1. Consumer Confidence Report (CCR) Rule Revisions

AWIA requires changes to the content, form, manner, and frequency of CCRs. EPA has two years to put these changes in place and will be consulting with stakeholders during the process. AWIA's changes to CCRs include:

- CWSs serving >10,000 persons must deliver CCRs biannually.
- Increase the readability, clarity, understandability, accuracy of information and risk communication of CCRs.
- Allows electronic delivery.
- CWSs must include additional information on corrosion control efforts, and any lead action level exceedances that required corrective action.

H. NDWAC Discussion of Consumer Confidence Reports (CCRs)

Ms. Lewis presented a series of questions related to CCRs, and the NDWAC responded as follows:

- Discussion questions:

- How can EPA increase the readability, clarity, and understandability of the CCRs?
- How can EPA improve the accuracy of the information presented and risk communications in the CCRs?
- Does "biannually" mean the same report twice per year? Or will rolling averages be used?
- Do you have any feedback to share regarding electronic delivery of the CCRs?

- Mr. Neukrug reported that a recent study showed that 40% of Philadelphians drink bottled water at home, the majority of whom are lower income residents, people of color, and immigrants. He cited the reasons for high bottled water consumption as lack of trust and as a matter of habituation. The CCR is full of information, but the message should be direct and simple: the water is safe to drink, and it will be safe for the next 12 months. Residents' acceptance of this message is a function of trust.
    - Ms. Thompkins asked what the impetus was for conducting the study. Mr. Neukrug responded that Philadelphia Water has been conducting annual customer surveys for 30 years, but the surveys lacked quality, so a university statistician conducted a more scientifically sound study. Mr. Neukrug will send the study report to Ms. Thompkins.
    - Mr. Neukrug added that the CCR is the mandated tool for communicating. He noted that perception of threat of water contamination varies broadly from city to city, but the universal needs for the message are transparency and the ability to demonstrate to all citizens what is in the water.

- Mr. Kasraei asked why residents would trust the CCR.
    - Mr. Neukrug responded that perhaps the utility should not be the entity providing the information. PennEnvironment was chosen to provide the information for the study, as they bring a very different perspective as compared to the utility. The Philadelphia Water Department is educating its community groups, then having PennEnvironment educate the community, and then determining which methods are effective.

- Ms. Swallow inquired about the origin of the biannual report requirement. She also noted that the reports are very dense and difficult to read. In terms of risk communications, the message would ideally be simple such as, "The water is safe," but there is no shared understanding of what "safe" means. Ms. Swallow suggested providing several paragraphs that give basic facts on how drinking water is regulated, with the goal of building understanding over time.
    - Mr. Neukrug raised the issue that some residents have LSLs and that their tap water is not safe to drink.
    - Dr. Vincent Hill offered that communications science and behavioral science should be considered when developing future risk communications, and there are multiple approaches to communicating with the public more effectively. If the same information is provided every six months, people will begin to ignore it. The biannual reporting

requirement can serve as an opportunity to communicate in an engaging way, and perhaps could be delivered via a more trusted entity.
    - Ms. Chischilly responded that trust of the system among tribal nations tends to be very tainted. One Navajo Nation community discovered that their drinking water contained extremely elevated concentrations of uranium and arsenic, and that this information had not been disclosed to them for years. Further, 18,000 in the Navajo Nation have no running water at all. For many in these communities, a CCR is meaningless, as they have no choice but to drink any water that is available.

- Mr. Moore noted that the impetus behind the CCR is to build confidence and trust and noted the importance of determining how to earn trust where it is currently lacking.

- Mr. Moore pointed out several other reasons that residents may choose bottled water over tap water. The bottled water industry uses a marketing approach, while CWSs do not. Many people believe that bottled water is healthier than tap water, and others choose bottled water for convenience. Mr. Moore suggested that the CCR be used as a marketing tool to show consumers the value of tap water, and it should build customer confidence. Mr. Moore asked how CWSs might acquire and maintain this confidence.
    - Mr. Alley responded that San Diego, CA and Longmont, CO have marketed water effectively. He suggested that regulators offer CWSs latitude with respect to how the CCRs are prepared. He suggested keeping the reports short and including links where consumers can find additional information.
    - Mr. Salzman suggested that CWSs should share information on successful approaches, as some utilities have this piece under control, while others are attempting to reinvent the wheel.
    - Ms. Campbell-Ferrari commented that when she sees the term “understandability” she thinks of “relatability.” As an example, when floodwater levels are presented in terms of height on a body (e.g., up to the ankle, knee, waist) rather than units of measurement, people are able to relate to and better understand the information. CWSs can make information about drinking water relatable. Ms. Campbell-Ferrari also suggested that CWSs invite people into their drinking water facilities and bring the facilities to them in a central and easily accessible location such as a town center, where they can engage in activities such as tap water testing and taste tests.

- Mr. Kasraei noted two issues emerging from the discussion: whether people will read the CCR, and if they do read it, whether they will understand it. Mr. Kasraei asked what the intended message of the CCR is. Customers are notified of any violations, but many customers do not know what the contaminants are or their implications. The mandatory language in the CCRs does little to explain these issues to communities. Mr. Kasraei asked whether the purpose of the CCR is to show the value of tap water or to let consumers know what they are drinking.

- Ms. Swallow acknowledged that suggestions to make CCRs more interesting and understandable have been excellent but pointed out that only a very small percentage of CWSs have the capability to execute the ideas. The remaining CWSs will need a template.
    - Mr. Salzman suggested that EPA could provide a resource that lists the 20 best templates.

- Marilyn Christian pointed out that, even with a template, CCRs would still need to include extensive mandatory information. All of the utilities that Ms. Christian serves complain that no one reads the CCRs.

- Ms. Lewis noted that it is unfortunate that the suggested themes for improving CCRs will be layered on top of a report that councilmembers do not believe works very well. CWSs will need to account for various physical and cultural ways of communicating with communities.

- Ms. Lewis clarified that "provide" means "make available," while "deliver" means "give." This distinction is important in the context of how AWIA is implemented.

- Mr. Neukrug suggested that CWSs should continue to issue CCRs within the confines of the regulatory requirements, and then determine other methods to build trust and provide effective communication. The CCR may not be the tool to accomplish these steps, but other avenues can be identified.

- Mr. Underwood stated that a biannual CCR requirement is a bit too frequent. Birmingham, AL also faces challenges with delivering CCRs to individuals in apartment complexes that share a single water meter.

DAY 2

A. Opening Remarks

Ms. Lewis opened the second day of the meeting by thanking the councilmembers for returning and thanking Ms. Thompkins and Mr. Burneson for their presentations on Day 1. Ms. Lewis stated that the NDWAC received the minutes from the previous meeting, which will be finalized and put into the public record in the near future. Ms. Lewis reviewed the Day 2 agenda and summarized the discussion from Day 1.

B. Public Comment Period

During the final session on Day 2, December 7, 2018, the Council members heard public comments from registered commenters. Comments that were received in writing were circulated to Council members. The comment period was extended from five to ten minutes. The comments are summarized below:

1. William (Bill) Hirzy (NTEU, Ch. 280)

Bill Hirzy noted that he was a former EPA employee and expressed his concern about the practice of fluoridation of water. Dr. Hirzy noted that during his time at EPA he was a union officer and became concerned about fluoride toxicity. He believes that the current MCL and MCLG of 4.0 mg/ L for fluoride is not appropriate and does not protect public health. He also expressed his frustration with continually bringing these concerns to EPA. Dr. Hirzy referenced papers and studies that demonstrated intelligence quotient (IQ) drops in children that were exposed to fluoride. He referenced a paper that was published in September 2017 that compared women exposed to high and low levels of fluoride and found that pregnant women exposed to high levels had offspring with lower IQs. Dr. Hirzy urged EPA to end the process of water fluoridation.

2. Robin Lewis (Fluoride Action Network)

Robin Lewis noted that she is the Environmental Justice Director at the Fluoride Action Network. She proposed that EPA reconsider water fluoridation. Robin Lewis stated that she believes that water fluoridation is an environmental injustice and that it is done without community consent. She expressed concern that dental fluorosis disproportionately effects low-income and communities of color and that avoiding fluoridated tap water is not affordable. She noted that these communities are also often suffering the effects of lead. Robin Lewis urged EPA to support outreach programs that provide the proper education surrounding nutrition and dental hygiene, rather than fluoridating water.

3. Chuck Chaitovitz (U.S. Chamber of Commerce)

Mr. Chaitovitz noted that it was an honor to attend and stated that he was from the U.S. Chamber of Commerce's Environmental Affairs and Sustainability team. He noted that the Environmental Affairs and Sustainability team has the opportunity to play an important role in policy debate going forward. The U.S. Chamber of Commerce launched a business task force on water policy to represent the interests of the community and elevate water. Mr. Chaitovitz reviewed the five priority issues including:

1. Funding and Finance: He commended Congress and EPA for the $4 billion reauthorization under AWIA but noted that there is more work to be done. Mr. Chaitovitz also mentioned the potential to expand WIFIA authority.
2. Regulatory Streamlining and Flexibility: Mr. Chaitovitz noted that there was lots of great discussion during the meeting and that his team would have great interest in contributing to the dialogue, including PFAS and the lead and copper rule.
3. Technology Innovation and Adoption
4. Small Communities and Small Companies: These communities have unique needs.
    - On World Water Day in March 2019, the U.S. Chamber of Commerce will cohost an event called the Small Communities Water Dialogue to bring businesses, state, and local chambers into the discussion on rural water systems and economic disparities across the country. Mr. Chaitovitz encouraged those in attendance to get involved.

- Mr. Chaitovitz also noted that the U.S. Chamber of commerce participated in a meeting with USDA in California. This meeting helped to align investments in rural communities in California. USDA and the state water resources control board are committed to fund the next pipeline of project that did not meet the mark for funding from the SRF, rural development funding, or other programs in CA. The meeting looked to identify these projects and work to bring different funding solutions.

5. Resilience: Mr. Chaitovitz noted that there is a connection between what communities and companies can do to prepare for next natural disaster.

Mr. Chaitovitz noted that in AWIA, there is a requirement for EPA, USDA and the U.S. Department of Health and Human Services (HHS) to study intractable water systems and identify the challenges for compliance. He would like to work with those in attendance on that process.
Mr. Chaitovitz also brought up integration. He wondered how, especially in small communities, funding could be thought of more holistically and in an integrated fashion across drinking water, wastewater, and storm water. He noted consent decrees from CSOs are affecting the ability of some communities to invest. Mr. Chaitovitz urged the group to think about barriers that are stopping them from their work and how all the groups can collaborate.

C. New Grant Programs under the Water Infrastructure Improvements for the Nation Act (WIIN)

Ms. Thompkins provided an overview of the WIIN Act and reviewed the three new grant programs for which Congress appropriated funding in the spring of 2018. Key points from the presentation are below. To view the full presentation, please see the public meeting materials and documents listed on EPA's website at: https://www.epa.gov/ndwac/ndwac-meeting-december-6-7-2018.

1. <u>Lead Testing in School and Child Care Program Drinking Water Grant</u>

Congress appropriated $20M for non-competitive grants to states, with a 6.4% Tribal set-aside and no match requirement. The purpose of this grant is to provide assistance to local educational agencies in voluntary testing for lead contamination in drinking water at schools and child care programs in low-income communities. EPA announced this grant on September 21, 2018 by sending letters of request to state governors and tribal leaders and copying state and tribal public health and environmental offices. The letters asked whether the states and tribes intended to participate, and if so, which agency or office would write the program. EPA has requested responses by January 11, 2019 and will conduct several outreach webinars before that deadline. Please note that this deadline was later extended to February 2019 due to changes in several states' Governors.

EPA will use its grant allocation formula, but with consideration for factors such as change in population, poverty exposure, and focus on children at risk. Once EPA knows which states and tribes will participate, the Agency will use the allocation formula to disburse funds to the entities that will use the grant. The grant recipients must use EPA's 3Ts guideline or a state regulation that is equally or more stringent and make public the results of testing that is conducted using grant money. There is no safe level of lead, so

the goal is to achieve the lowest contamination level possible. This program does leave a gap in achieving this goal, as it is for lead testing and not remediation.

2. Assistance for Small and Disadvantaged Communities

Congress appropriated $20M for non-competitive grants to states, with a $400,000 tribal set-aside and a match requirement of 45%. The focus of the grant is on projects that include infrastructure and technical, managerial, and financial training and assistance to facilitate compliance with NPDWRs. This is the only one of the three grants to expand the scope of projects and activities to include other unregulated contaminants outside of lead. EPA expects to issue the grant announcement, guidance, and requirements in 2019. Grant funds will be disbursed to the states' DWSRF programs, so the states will need to use the DWSRF formula and develop a separate intended use plan that focuses on small and disadvantaged communities.

3. Reduction in Lead Exposure

Congress appropriated $10M for competitive grant, with a $1M tribal set-aside and a 20% match requirement. The grant focuses on providing funding to reduce lead in drinking water systems, including replacing public LSLs and providing financial assistance to homeowners for private LSL replacement. EPA will solicit this grant as a Request for Application (RFA) and that will be open to a broad group of eligible entities. The Agency expects to announce the RFA and related guidance in 2019. EPA is currently developing criteria for scoring proposals for this grant and welcomes the NDWAC's perspective on ideas for potential criteria.

D. NDWAC Discussion of New Grant Programs under WIIN

After presenting the New Grant programs under WIIN, Ms. Thompkins presented a series of questions related to the new grant programs under WIIN, and the NDWAC responded as follows:

- Discussion Questions:
    - How can we support schools and child care facilities in the next steps – carving a path forward towards remediation?
    - With respect to the WIIN Act grants required 45% match, does the council foresee a recommended approach for funding and financing partnerships which may be able to support a match to meet these community needs?
    - The WIIN Act grant requires that there is no partial LSL replacement allowed as an eligible project. Language in the act states "As we're developing the RFA for the competitive grant, what approach should be communicated or suggested in the guidance to promote partnerships between municipalities and private homeowners so that project applications can successfully meet the requirements of the grant program? Are their stakeholders currently providing some best practices or proactive steps that can be included as resources or examples via the guidance?

- Mr. Moore wondered how schools should move toward remediation after testing for lead. He noted that during the discussion on Day 1, it was mentioned that private utilities (please confirm with Howard Neukrug that this is correct) in Pennsylvania are able to recover the cost of lead pipe removal for the customer. If there was a regulatory movement that allowed for private utilities to recover some of the costs associated with remediation in schools, more would be interested. Mr. Moore noted that some utilities often do not own all portions of a service line. He noted that it could be possible to work with state regulatory agencies to recover costs.

- Mr. Melton noted that on the public side, they try to partner with schools on projects. A challenge often arises because behind a meter is often private property. Funds are paid for on the public side through tax dollars and it is often a challenge to do more behind the service line. Mr. Melton brought up concerns if both the utility and school are using federal dollars (including Community Development Block Grant [CDBG]). He also noted that a 45% match was higher than most he has seen and that it has typically been more around 20%. This could be a challenge for smaller communities and stated that population size could be considered.
    - Ms. Thompkins noted that WIIN allows the 45% match to be waived due to affordability at the EPA Administrator's discretion. In response to CDBG, Ms. Thompkins noted that once money leaves the U.S. Department of Housing and Urban Development (HUD), it is no longer considered federal and can be matched. Ms. Thompkins noted that EPA has been working with USDA and they have another grant program that deals with housing and remediation. EPA would like to develop resources that can fill in the gaps on remediation.
    - Mr. Melton noted that schools would be reaching out to the counties and there are public school systems, private school systems, and charter schools. This could be burdensome to determine where the funding will come from.

- Ms. Chischilly noted that there were public schools on reservations as well as water systems lead by the Indian Health Service. She noted that the United South and Eastern Tribes (USET) has a water operator training and suggested tapping into their knowledge to get information out to the tribes. She also stated that the $400,000 in tribal set-asides does not leave much for each tribe, as there are 573.

- Mr. Kasraei stated that Maryland has started lead testing in schools and has completed one year. He noted that they sometimes find that the lead is related to fixtures, not the service line. He wondered if there was funding that could help with that. He also commented on the 45% match and asked if investment by the state could be part of the match. Mr. Kasraei also asked if there was any chance for states that already invested prior to these requirements to recoup some of the costs.
    - Ms. Thompkins thanked Mr. Kasraei for his comments and noted that AWIA includes a $5M authorization for pre 1998 drinking water fountains.

E. Open Discussion of Additional Topics of Interest

1. <u>Health Advisories</u>

Ms. Lewis opened the discussion by clarifying the differences between HAs and MCL/MCLG:

- HAs are advisory values, while MCLs are enforceable standards;
- HAs define risk-based values for carcinogens, while MCLGs for carcinogens are always 0 mg/L.
- Some HAs are designed for short-term exposure (e.g., one- and ten-day HAs), while MCLGs are designed to be protective for all life stages over a lifetime of exposure.

Ms. Lewis stated that in December 2016, EPA charged the NDWAC with questions that would help identify additional recommendations related to the HA process. The charge questions were as follows:

- What information should EPA consider when determining when to develop or revise an HA?
- What factors should EPA consider when prioritizing HAs? How can EPA meaningfully involve stakeholders and consider their input?
- What factors should EPA consider when developing HAs? How and when is status communicated to key stakeholders, including states and utilities?
- What are core components that EPA can consider including in the HA?

The NDWAC summarized the Subgroup's responses to the questions, and Ms. Lewis submitted them to Administrator Pruitt and received a response. The most substantial determination that the Subgroup made was that meaningful input from stakeholders was important. The Subgroup wanted to determine a method to obtain stakeholder input that EPA could review but was not required to respond to, and made several important observations:

- The meaningful input will occur when EPA shares with the stakeholders where they are in the development process;
- EPA would need to take into account the fragility of the public trust as it relates to drinking water; and
- Public trust issues highlight the need for clear and effective risk communication.

Ms. Lewis stated that in the April 2018 letter to the EPA Administrator, the Subgroup asked EPA to update their HA process and specify key points for input. She then asked for updates from NDWAC members and their discussion is summarized below.

- Mr. Burneson pointed out that EPA has not initiated or issued new Health Advisories since the NDWAC made its recommendations but that the Agency intends to fully consider NDWAC recommendations as the Agency evaluates and issues Health Advisories in the future.

- Dr. Jamie Strong stated that EPA has initiated a multiyear HA modernization effort to respond to NDWAC's recommendations, including:

- Revising the table of existing HAs: In March 2018, EPA updated the table and added HAs that have been completed since 2012, including those for cyanotoxins, PFOA, and PFOS[25].
- Collecting and compiling feedback on user experiences: This effort includes conducting interviews with states, tribes, and groups such as ASDWA. EPA is open to suggestions from the NDWAC about whom they should interview.
- Development of an electronic table, including links to underlying assessments.
- Development of more plain language summaries and ensuring that the most important information is summarized for users.

- Dr. Strong reported that EPA is not currently developing new HAs, but the Agency initiated an assessment of GenX and PFBS. EPA engaged with stakeholders and federal partners before conducting the assessment, as well as during the peer review process. The assessments were recently released for public comment and were accompanied by a plain language factsheet and supporting documents.
  - Ms. Pillsbury responded that she does not believe that NDWAC suggested that EPA should not be developing HAs. She was the chair of the Subgroup and was very clear about what the NDWAC could advise to EPA. She also noted that while public involvement in the process is a positive step, each state will likely use the reference dose differently once it is established.
  - Mr. Burneson thanked Ms. Pillsbury for her comment. He clarified that EPA has not published HAs, not because the Agency received advice not to do so, but rather because they are still developing underlying toxicity values.

- Mr. Salzman asked how the public consultations affect the timeline for developing assessments.
  - Dr. Strong responded that it does delay the process. EPA completed initial toxicity assessments for GenX chemicals and PFBS very quickly, but completion of the draft documents took approximately six months. However, these documents were stronger because of the consultations.

- Ms. McLain stated that Dr. Strong and her team developed their toxicity values at a rapid pace, while working closely with federal and state partners. She noted that this is an excellent example of a product that was developed with strong science as well as federal and state partner engagement. The NDWAC's recommendations were important in EPA's consideration of the forward process. She clarified that EPA understands that the NDWAC did not recommend that the Agency not develop HAs; however, EPA took to heart the Council's recommendations from a broader perspective. NDWAC recommendations can be applied more broadly to risk communications in general. These recommendations may not necessarily be incorporated into CCRs, but they could provide a springboard to begin addressing issues of public confidence in

[25] The 2018 Edition of the Drinking Water Standards and Health Advisories Tables can be viewed on EPA's website at: https://www.epa.gov/dwstandardsregulations/2018-drinking-water-standards-and-advisory-tables

drinking water and determining how to build trust. This could be accomplished in part through risk communications and in part through other EPA efforts that are underway.

- Mr. Moore stated that he recently attended a conference where private utilities raised concerns about HAs. He noted that utilities take HAs very seriously and are concerned with altering their programs to comply with HAs. Mr. Moore suggested placing more emphasis on the definition of HAs so that communities and utilities understand that utilities may not need to adjust their programs each time one is released.

2. <u>Additional Concerns</u>

- Mr. Alley stated that 43 million people in the United States rely on private wells for their water supply. PFAS has affected many people who live next to a facility such as an Air Force base or manufacturing plant, and risk communication is challenging.

- Ms. Swallow believes that poorly protected water sources continue to be approved for new water systems because they are serving small business in village centers that do not otherwise have service. Neither Ms. Swallow nor the small businesses have leverage to induce large water systems to extend service lines to these areas, and this is an issue that she continues to struggle with.

F. Closing Remarks and Agenda Topics for Next Meeting

Before the meeting ended, the Council members provided any final comments and outlined agenda topics for the next meeting. Comments are summarized below:

- Mr. Burneson noted that over the course of the meeting, EPA has outlined a number of activities that are taking place during FY19. He stated there will be opportunities to update the Council on perchlorate, lead and copper, and the progress on the CCL.

- Dr. Hill noted his appreciation for being part of the process and thanked the council and EPA. He noted that the discussions have been very encouraging from a public health perspective. Dr. Hill stated that investments in water and sewer infrastructure are investments in public health, and improving how water is obtained, treated, and delivered is of critical importance to the health and well-being of communities. Resilience, preparedness, response to outbreak, and understanding how communities are impacted are all important to public health. He noted that September marked the 110th anniversary of the 1st municipal system that was chlorinated and that it was important to recognize what water systems looked like back then. Chlorination and sanitation resulted in a massive reduction of waterborne diseases and CDC has recognized chlorination as one of the great accomplishments of the 20th century. Dr. Hill stated that there are still ongoing challenges including infectious disease and chemicals. CDC is in the process of

developing a comprehensive estimate (including recreational water and drinking water) of the annual burden of waterborne diseases in the U.S. and hopes to report on this next year. Many of these diseases are not enteric and include biofilm associated pathogens, *Legionella*, and *Pseudomonas*. He is also looking forward to partnering with EPA, WEF, utilities, and others to understand the impacts of low-pressure events and those that cause a loss of service on public health. Dr. Hill thanked the group for the encouraging conversation.

- Mr. Alley brought up the discussion about potable reuse and stated that this would be a good topic to discuss in the future.

- Mr. Moore stated that he appreciated EPA's efforts to make this country one of the best. He reminded EPA of the importance of involving private utilities and making sure they have the opportunity to participate in the discussion.

- Ms. Swallow noted that she appreciated the discussions, particularly on the topics of HAs and lead.

- Ms. Lewis thanked EPA and the members.

- Ms. Christian stated that partnerships with private entities and schools and communities was an important topic of discussion. She is currently dealing with lead-based paint and private entities want to help. She noted that communities with businesses often are interested in partnerships. Ms. Christian stated there was a need for a mechanism to let these partnerships happen and asked if something could be done nationally to facilitate these partnerships.

- Ms. Chischilly noted that there have not been good reports coming out about Indian water. She thought it would be great to have one report as a baseline to see what is happening and start a conversation on what to do next. There is a huge gap between each Tribe and having the report could facilitating working together. Ms. Chischilly noted that some of the grants discussed were great, but that the match will be too much for many of the tribes and they will not be able to meet it. They may pass on the grants because of this. She would like to work with the National Tribal Water Council to help get information on what is needed.

- Ms. Ward thanked the council and everyone who participated. She noted that three members had terms that were expiring on December 15th – Mr. Salzman, Ms. Christian, and Mr. Neukrug. She also expressed thanks to the four new board members.

- Mr. Salzman stated that he was grateful to participate. He shared three topics of interest for the next meeting: direct potable reuse, small water systems and shrinking cities, and a joint presentation with OECA on CWSs and health-based violations.

- Ms. Pillsbury would be interested in hearing more about states and using WIFIA dollars through SRF. She noted that states might not be aware of this opportunity and she would like to hear more about how this can work. Ms. Pillsbury also noted that it would be interesting to discuss increasing temperatures, intense rainfall, and resiliency. EPA is trying to achieve greater compliance with health-based standards and many states are having issues with byproducts that they have not had before. It could be interesting to talk about things that are predictable with health-based standards and weather events.

- Ms. Thompkins thanked the Council for the great conversation and noted that she would be taking their thoughts back to her office. She is looking forward to the next meeting to provide an update on progress and status on the health-based measure and small system challenges.

Ms. McLain closed the meeting by thanking the Council and everyone in attendance. She echoed Dr. Hill's comments about the importance of public health. She noted that maybe some of the reason for a loss of public trust was because the public is seeing the connection between drinking water and public health, and some events have caused concern. The door is open to keep the connection alive in the public, to keep the value of drinking water in mind, and to build on trust. The NDWAC meeting has been very helpful, particularly with AWIA, and there are many topics to cover for the next meeting. She noted that the conversation provides EPA with many things to think about and thanked the Council for their input. Ms. McLain stated that EPA will continue outreach to stakeholders and thanked the Council for their input, ideas and service.

ATTACHMENT A

NDWAC Meeting

List of NDWAC Members and Liaisons

December 2018

NDWAC Members
Carrie M. Lewis (Acting Chair): General Manager, Portland Water District
William Alley: Director of Science and Technology, National Ground Water Association
Alexandra Campbell-Ferrari: Co-Founder and Executive Director, The Center for Water Security and Cooperation
Ann Marie Chischilly: Executive Director, Institute for Tribal Environmental Professionals, Northern Arizona University
Marilyn Christian: Manager, Environmental Health Programs, Harris County Public Health and Environmental Services
Saeid Kasraei: Administrator, Maryland Department of the Environment
Wilmer Melton, III: Director, City of Kannapolis
Randy A. Moore: President, Iowa American Water
Howard M. Neukrug: Principal, CASE Environmental LLC
Sarah Pillsbury: Administrator, Drinking Water and Groundwater Bureau, New Hampshire Department of Environmental Services
James M. Proctor, II: Senior Vice President and General Counsel, McWane, Incorporated
James Salzman: Donald Bren Distinguished Professor of Environmental Law, Bren School of Environmental Science and Management, University of California, Santa Barbara
June Anne Swallow, P.E.: Chief, Rhode Island Department of Health, Center for Drinking Water Quality
Macaroy “Mac” Underwood: General Manager, Birmingham Water Works Board
Liaisons
Vacant – Looking for Replacement
Dr. Vincent Hill, Ph.D., PE: Acting Branch Chief, Waterborne Disease Prevention Branch, Division of Foodborne, Waterborne and Environmental Disease, Centers of Disease Control and Prevention

ATTACHMENT B

NDWAC Meeting

List of Attendees

December 6-7, 2018

First Name	Last Name	Affiliation
Collis	Adams	New Hampshire Department of Environmental Services
Zaineb	Alattar	U.S. Environmental Protection Agency
Ryan	Albert	U.S. Environmental Protection Agency
William	Alley	National Ground Water Association
Philippe	Bartholn	Kohler Co.
Lara	Beaven	Inside EPA
Eric	Bissonnette	U.S. Environmental Protection Agency
Kyle	Blasch	U.S. Air Force
Sarah	Bradbury	U.S. Environmental Protection Agency
Miranda	Brannon	U.S. Air Force
Eric	Burneson	U.S. Environmental Protection Agency
Alexandra	Campbell-Ferrari	The Center for Water Security and Cooperation
Tim	Cansler	Cansler Consulting
Thomas	Carpenter	U.S. Environmental Protection Agency
Chuck	Chaitovitz	U.S. Chamber of Commerce
Ann Marie	Chischilly	Institute for Tribal Environmental Professionals
Marilyn	Christian	Harris County Public Health and Environmental Services
Gary	Cohen	International Ultraviolet Association
Cathy	Davis	U.S. Environmental Protection Agency
Alyssa	Edwards	U.S. Environmental Protection Agency
Victoria	Ellenbogen	U.S. Environmental Protection Agency
Peter	Grevatt	U.S. Environmental Protection Agency
Honorata	Hansen	Association of Public Health Laboratories
Carolyn	Hanson	The Environmental Council of the States
Andrea	Heiden	Northeast-Midwest Institute
Vincent	Hill	Centers of Disease Control and Prevention
William	Hirzy	NTEU, Ch. 280
Amit	Kapadia	U.S. Navy
Saeid	Kasraei	Maryland Department of the Environment
Mike	Keegan	National Rural Water Association
Matthew	Klasen	U.S. Environmental Protection Agency
Kevin	Letterly	Association of State Drinking Water Administrators
Carrie	Lewis	Portland Water District
Robin	Lewis	Fluoride Action Network
Raymond	Mak	U.S. Air Force
Jennifer	McLain	U.S. Environmental Protection Agency

First Name	Last Name	Affiliation
Wilmer	Melton	City of Kannapolis
Randy	Moore	Iowa American Water
Howard	Neukrug	CASE Environmental LLC
Sarah	Pillsbury	New Hampshire Department of Environmental Services
James	Proctor	McWane, Incorporated
Carl	Reeverts	Eastern Market Metro Community Association
David	Ross	U.S. Environmental Protection Agency
James	Salzman	University of California, Santa Barbara
Stephanie	Schlea	Association of Metropolitan Water Agencies
David	Schultz	Bloomberg Environment
John	Sheehan	Michael Best
Brynne	Storsved	U.S. Environmental Protection Agency
Jamie	Strong	U.S. Environmental Protection Agency
June Anne	Swallow	Rhode Island Department of Health
Anita	Thompkins	U.S. Environmental Protection Agency
Macaroy	Underwood	Birmingham Water Works Board
Diane	VanDe Hei	Association of Metropolitan Water Agencies
Steve	Via	American Water Works Association
Edward	Viveiros	U.S. Environmental Protection Agency
Tracey	Ward	U.S. Environmental Protection Agency
Wendi	Wilkes	Association of State Drinking Water Administrators
Andrew	Winkler	Bipartisan Policy Center

ATTACHMENT C

NDWAC Meeting

Agenda

DAY 1: Thursday – December 6, 2018		
9:30 – 10:00	Registration	Tracey Ward (DFO)
10:00 – 10:15	Welcome and Introduction	Tracey Ward (DFO) Carrie Lewis (Chair)
10:15 – 10:30	Opening Remarks	David Ross (OW AA) Peter Grevatt (OGWDW Director)
10:30 – 11:15	OGWDW Program Update	Peter Grevatt (OGWDW Director)
11:15 – 12:00	Drinking Water Protection Program Update • Improving Compliance with Capacity Development, Water System Partnerships, and Technical Assistance	Anita Thompkins (DWPD Director)
12:00 – 1:15	Lunch	Everyone
1:15 – 2:00	Standards and Risk Management Program Update • Regulatory Evaluation of Emerging Contaminants and Priority Drinking Water Regulations	Eric Burneson (SRMD Director)
2:00 – 2:30	America's Water Infrastructure Act (AWIA) • Changes to the Drinking Water State Revolving Fund	Anita Thompkins (DWPD Director)
2:30 – 3:00	NDWAC Discussion of the SRF	Carrie Lewis (Chair)
3:00 – 3:15	Break	Everyone
3:15 – 3:45	America's Water Infrastructure Act (AWIA) • Consumer Confidence Reports	Anita Thompkins (DWPD Director)
3:45 – 4:15	NDWAC Discussion of CCRs	Carrie Lewis (Chair)
4:15 – 4:30	Closing Remarks	Carrie Lewis (Chair) Jennifer McLain (Deputy Director)

DAY 2: Friday – December 7, 2018		
9:00 – 9:15	Opening Remarks	Carrie Lewis (Chair)
9:15 – 10:00	Public Comment Period	Tracey Ward (DFO)
10:00 – 10:30	New Grant Programs under the Water Infrastructure Improvements for the Nation Act (WIIN)	Anita Thompkins (DWPD Director)
10:30 – 11:00	NDWAC Discussion of New Grant Programs under WIIN	Carrie Lewis (Chair)

DAY 2: Friday – December 7, 2018		
11:00 – 11:45	Open Discussion of Additional Topics of Interest	Carrie Lewis (Chair)
11:45 – 12:00	Closing Remarks and Agenda Topics for Next Meeting	Carrie Lewis (Chair) Jennifer McLain (Deputy Director)