Report of the Consumer Confidence Report Rule Revision Working Group to the National Drinking Water Advisory Council

November 22, 2021

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1. Introduction

The National Drinking Water Advisory Council (NDWAC) Consumer Confidence Report (CCR) Rule Revision Working Group, or CCR^3 WG, deliberated on targeted issues associated with the revisions to the Consumer Confidence Report Rule. This report includes summaries of the group's discussion and recommendations to the NDWAC.

2. Background on the Consumer Confidence Report Rule Revisions and the Working Group Charge

2.1. CCR Background

The Consumer Confidence Report (CCR) rule is considered the centerpiece of public right-to-know for the Safe Drinking Water Act (SDWA). CCRs provide valuable information about local drinking water quality to customers of community water systems. The original CCR rule was promulgated in 1998 following a mandate in the 1996 amendments to the SDWA. The type of information in the report includes:

- The lake, river, aquifer, or other source of the drinking water.
- A brief summary of the risk of contamination of the local drinking water source.
- The regulated contaminant found in local drinking water.
- The potential health effects of any contaminant detected in violation of an EPA health standard.
- An accounting of the system's actions to restore safe drinking water.
- An educational statement for vulnerable populations about avoiding *Cryptosporidium*.
- Educational information on nitrate, arsenic, or lead in areas where these contaminants may be a concern.

CWSs must deliver CCRs no later than July 1 each year, and the reports must contain data collected during, or prior to, the previous calendar year. CCRs are one of several ways CWSs communicate with their customers.

Section 2008 of America's Water Infrastructure Act of 2018 (AWIA) amends the SDWA Section 1414(c)(4) concerning the CCR Rule to mandate that EPA issue revised regulations to improve the readability, understandability, clarity, and accuracy of CCRs; require biannual delivery of CCRs for large systems; and allow electronic delivery of CCRs. AWIA also amended SDWA section 1414(c)(4)(B) to require that CWSs include information on their corrosion control efforts and identify any lead action level exceedances for which corrective actions were required in their CCRs.

2.2. NDWAC CCR3 Working Group

EPA asked for advice and recommendations from the NDWAC (or the "Council") on targeted issues related to revisions to the CCR Rule, as required by AWIA. In particular, EPA asked for advice and recommendations on:

- Addressing accessibility challenges, including translating CCRs and meeting Americans with Disabilities Act (ADA) requirements.
- Advancing environmental justice and supporting underserved communities.

- Improving readability, understandability, clarity, and accuracy of information and risk communication of CCRs.
- CCR delivery manner and methods, including electronic delivery.

The NDWAC Consumer Confidence Report Rule Revision Working Group, or CCR^3 WG, held virtual meetings to develop recommendations for the Council's consideration. The CCR^3 WG carefully considered the four charges listed above and developed recommendations for the NDWAC when CCR^3 WG members reached consensus. When they did not reach consensus, the CCR^3 WG provided alternatives and explained the advantages and disadvantages of each approach.

The CCR^3 WG members were selected based on the expertise and experience needed to provide balanced advice to the NDWAC on issues related to CCR Rule revisions. The CCR^3 WG includes selected members of the NDWAC and also includes select members from the Children's Health Protection Advisory Committee (CHPAC) and the National Environmental Justice Advisory Committee (NEJAC). Representatives of public interest groups, risk communication experts, the States, public water systems, environmental groups, and other interested parties are included in the CCR^3 WG in accordance with SDWA section 1414(c)(4)(A). The members of the CCR^3 WG and their affiliation are shown in the Table 1 below:

Table 1. Members of the CCR^3 NDWAC Working Group

Working Group Member	Title and Affiliation
Yolanda Barney[1]	Environmental Program Manager, Navajo Public Water System Supervision Program, Navajo Nation Environmental Protection Agency
John Brady[1]	Deputy Director, Operations & Engineering, Central Coast Water Authority
Alexandra Campbell-Ferrari[1]	Co-Founder and Executive Director, The Center for Water Security and Cooperation
Shellie Chard[1]	Director, Water Quality Division, Oklahoma Department of Environmental Quality
Michael Hansen, PhD	Senior Scientist, Consumer Reports
Jana Littlewood[1] CCR^3 WG Chair	National Rural Water Association, Board of Directors—Alaska Representative
Olga Naidenko, PhD[2]	Vice President for Science Investigations, Environmental Working Group
Benjamin Pauli, PhD[3]	Associate Professor of Social Science, Kettering University
Jennifer Peters[1]	National Water Programs Director, Clean Water Action/Clean Water Fund
Jeffrey Szabo[1]	Chief Executive Officer, Suffolk County Water Authority
Sridhar Vedachalam, PhD	Director of Water Equity, Environmental Policy Innovation Center, Washington, D.C.
Taka Wiley	Health Communication Specialist, the Centers for Disease Control and Prevention's (CDC) National Center for Environmental Health (NCEH) and the Agency for Toxic Substances and Disease Registry (ATSDR)

1. NDWAC Member
2. CHPAC Member
3. NEJAC Member

2.3. Working Group Procedures

The CCR³ WG held 17 sessions to discuss the charges to the NDWAC and prepare draft recommendations. The first session was a general orientation meeting, and the following nine sessions focused the discussion on how to address the charges from EPA. In these sessions, the CCR³ WG also listened to presentations by experts on risk communication, corrosion control, and other issues surrounding CCRs such as methods of delivery to inform the discussion about those topics. Over the following five sessions, the CCR³ WG discussed recommendations and voted on draft recommendations addressing each charge. On October 12, 2021, the CCR³ WG presented draft recommendations to the NDWAC and received comments and input from the NDWAC. Following the presentation, the CCR³ WG held two final sessions to discuss the comments they received from the NDWAC and the public. During these two sessions, the CCR³ WG modified and agreed upon the recommendations for the NDWAC.

The CCR³ WG reached consensus on recommendations when the members could all "live with" the language of the recommendation. When consensus on a particular topic or recommendation was not reached, the members of the CCR³ WG developed options that reflect the different points of view, with arguments for and against each non-consensus recommendation provided for NDWAC consideration.

This report provides the CCR³ WG's final recommendations to the NDWAC. The NDWAC, in turn, will provide advice on these issues to EPA. EPA will consider the NDWAC's advice in developing a proposed rule for public comment and will report back to the NDWAC on its response to the recommendations. The proposed rule may include elements not discussed by the CCR³ WG and NDWAC.

The report is organized by the four charges EPA gave to the NDWAC. Each section includes a summary of the CCR³ WG discussion and their consensus and non-consensus recommendations. The report includes the arguments for and against each non-consensus recommendation.

3. Addressing Accessibility Challenges, Including Translating CCRs and Meeting Americans with Disabilities Act (ADA) Requirements

The first charge to the NDWAC specifically focused on accessibility challenges, including translating CCRs into languages other than English and meeting ADA requirements. For the purposes of the CCR Rule revision, the working group discussed accessibility as the quality of being easily used or accessed by people with disabilities or adapted for use by people with disabilities. Another area of discussion was the ability of non-English speaking consumers to access CCRs in languages they understand.

3.1. Summary of Discussion

Several CCR³ WG members emphasized that the contents of electronically delivered documents must be "eminently searchable" to make electronic CCRs as easy to access as possible. The members stressed that any unsearchable document would fail government standards of accessibility and as a result, the group focused on developing a list of items that could enhance implementation guidance and support. The CCR³ WG members also discussed several examples of guidance tools and resources that can help systems develop reports that meet accessibility guidelines and that can be easily translated by online translation tools. The group agreed that CCRs should meet basic accessibility thresholds, but members expressed concern that water system staff may not have the resources or expertise to develop CCRs with accessibility features. Members suggested that guidance from EPA on basic accessibility thresholds and implementation could help alleviate this concern. Additionally, members agreed that EPA should develop guidance based on the best available accessibility techniques and should update this guidance

as technology changes. A few CCR³ WG members raised concern about cost and burden of accessibility requirements on small water systems. Some members suggested that EPA provide implementation support in the form of translation services for small water systems.

The CCR³ WG also discussed the accessibility challenges consumers may face when accessing or reading their CCR, such as difficulty reading text in a small font. They noted that accessibility guidelines may not address every situation, and that water systems may need to make reports available to consumers in formats that address specific issues. The CCR³ WG members discussed ways to address uncommon accessibility requests but agreed that water systems could use their discretion to address any unique accessibility issues in their community. The group discussed that, at a minimum, water systems should make a "reasonable attempt" to provide CCRs in an accessible manner and agreed that EPA should provide guidance about what measures would constitute a "reasonable attempt" in this context. Some members expressed concern that water providers could be held to unreasonably high standards and that guidance from EPA on what qualifies as a "reasonable attempt" could address that concern.

The CCR³ WG discussed the need for EPA to define "large portion of non-English speaking residents" as a minimum threshold of the population served by the water system that speaks the same non-English language. Some members raised concerns that this threshold would lead to only the largest non-English speaking community receiving a translation of the CCR and would potentially exclude communities that speak other languages. This threshold could exclude many non-English speaking residents, especially in large systems serving more than 100,000 people where residents may speak many different languages. CCR³ WG members that were in favor of developing a threshold argued that a national threshold minimum for providing translation could provide consistency across the country while allowing Primacy Agencies to identify circumstances where a more stringent standard, and therefore the publication of a translated CCR, is warranted.

Further considerations for improving access for non-English speakers included requiring information about how to access CCRs in another language on the front page of the report, providing directions for customers on how to use online translation tools, and providing contact information for translation assistance. The CCR³ WG members discussed who should bear the burden of providing translation services to non-English speakers. Several members expressed concern that small water systems may not have the resources to hire translation services, and some members were concerned that requiring Primacy Agencies to provide translation services would be overly burdensome. Some members suggested that water systems could use online translation tools to reduce the burden of developing translated CCRs, but other members expressed concern about the ability of these online translation tools to accurately translate information in the report. These members argued that much of the information in CCRs is technical, and that online translation tools may not properly translate the nuances of CCR information. The group generally agreed that online translation tools are not adequate substitutes for professional translators, but that these tools can be viewed as part of the solution to provide translated CCRs to consumers.

3.2. Consensus Recommendations

1. CCRs could be improved by following basic accessibility guidelines. Rather than a change to the rule, this recommendation is for EPA to address accessibility through implementation guidance and support. Implementation support could include a suite of tools or resources such as:
    a. Materials that explain the basic features of an "accessible" document.

   b. Guidelines or standards for improving accessibility and making them readily available to water systems. EPA should identify and develop, when appropriate, the most appropriate guidelines. Examples of guidelines and tools include:
      i. The World Wide Web Consortium's (W3C) Web Accessibility Initiative (WAI) Web Content Accessibility Guidelines (WCAG 2.0).
      ii. Recommendations of available online translation tools and guidelines for developing text that can be easily translated by online translation tools.
      iii. Standards established under Section 508 of The Rehabilitation Act of 1973.
      iv. Usability.gov
      v. Plain Writing Act of 2010. Resources available at: https://www.plainlanguage.gov/guidelines/
   c. Basic thresholds of accessibility, such as searchable text in electronic documents, tags, color distinction, alternate text, captions, bookmarks in electronic documents, navigable Table of Contents, etc.
   d. EPA audits of a small but representative set of CCRs (of small and large systems) every year to understand adherence to these standards and refine its guidance to water systems and Primacy Agencies based on the audit findings.

2. The specific needs of communities served by water systems vary greatly from water system to water system. Therefore, any guidelines or changes to the rule that address accessibility must allow water systems flexibility to communicate with their customers in a way that is most appropriate and effective.

3. The CCR³ WG recommends that for water systems serving 100,000 or more people, the rule should define "large portion of non-English speaking residents" as a minimum threshold (to be established by EPA) of the population served by the water system speaking the same non-English language. The rule should also give Primacy Agencies the authority to establish a lower threshold or identify other situations in which a translated copy of the CCR is needed or appropriate. Any group speaking a non-English language that meets the threshold should have a high-quality translated copy of the report available to them. The reasons for this approach include:
   a. Providing consistency across the country through the adoption of a national threshold.
   b. Limiting any additional translation requirements to large water systems would avoid potential burdens to small water systems.
   c. Allowing Primacy Agencies to set a lower threshold would allow for flexibility to meet the specific needs of communities in cases when the threshold should be lower.

4. EPA should provide implementation support in the form of translation services for small water systems that may lack the financial resources to pay for translation of their CCR. High quality translation services can be very expensive and a financial burden to small water systems, and this type of support from EPA would help small systems better serve their non-English-speaking populations. At a minimum, EPA should develop translations, as needed, of all required and example language provided in the rule and of any EPA templates.

5. Whenever possible, water systems should enlist a certified translator to develop translated copies of the CCR or evaluate a CCR translated using an online translation tool, when a translated copy is needed. When that is not possible, water systems should develop online versions of CCRs in a format that can be translated using online translation tools. Water systems should use online guides to develop CCRs in a way that improves accuracy of translation tools that may be used on CCRs. Water systems could provide directions to customers on how to use online translation tools. These directions can be provided on the water system's website along with a phone number of a water system contact who could provide assistance with this process.

6. The CCR³ WG developed additional recommendations to improve access to CCRs by non-English speakers. For example:
    a. Require that information about accessing CCRs in another language is placed in a uniform, easily accessible location, such as the front page. This information could be improved by including the name or title of the person to contact at the water system for translation assistance.
    b. Consider/Develop guidance with examples of tools or data sets that could help inform the water system about the composition of water customers in terms of the language they speak (such as Census data on proficiency levels).

7. CCR³ WG members recognized that water systems may have customers with unique needs with respect to accessibility. For example, some customers may need large font copies of the CCR. For these types of needs not addressed by general accessibility guidelines, the CCR³ WG recommends the following revision to the rule (in **bold** text):
    a. 141 CFR 155(e): Each community water system must make its reports available to the public upon request, **make a reasonable attempt to provide the CCR in a format that addresses accessibility issues in the community, and provide an accessible format to anyone who requests accessibility accommodations**.

    EPA should provide guidance to systems about accessible formats and tools that would help systems meet the requirement of "reasonable attempt."

4. Advancing Environmental Justice and Supporting Underserved Communities

EPA asked the NDWAC to provide advice and recommendations on how to advance environmental justice and better support underserved communities. EPA defines environmental justice, on the agency's Office of Environmental Justice website, as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."

4.1. Summary of Discussion

The CCR³ WG discussed the role that Primacy Agencies should play in assisting underserved communities. Some members suggested that Primacy Agencies could support underserved communities by helping water systems develop their CCRs or serve as alternative resources to help consumers access important information about the quality of their drinking water.

The CCR³ WG also discussed that the majority of members of many underserved communities may be renters, making them less likely to receive the same CCR information that billpaying customers who own

their homes receive through direct delivery. The CCR³ WG discussed options to improve access to CCRs by renters or non-billpaying customers and to encourage water systems to undertake more effective good-faith efforts to reach those customers. Several members of the CCR³ WG had concerns about the limitations of information that landlords pass to renters and stated that water systems can ensure renters are able to access CCRs by delivering postcards that alert them when CCRs are available. Those CCR³ WG members believed that CCRs could help water systems improve how they serve low-income customers who may not directly receive water bills.

The CCR³ WG discussed the merits of requiring CCR templates and tools like the CCR iWriter to assist water systems in underserved communities. Some members advocated for CCR templates or toolkits because these water systems may not have sufficient staff or expertise to develop their own CCRs. These CCR³ WG members stated that the rule should encourage Primacy Agencies to adopt templates and EPA should create a toolkit with questions or topics to consider when water systems are developing their CCRs.

The CCR³ WG discussed whether CCRs should include additional information about the water system, such as upcoming projects and the financial health of the system. Some members believed that this information would empower consumers to advocate for themselves, as they would gain more information about the CWS and an understanding of why the water system makes certain operational decisions. Other members believed that providing financial information is beyond the purpose of the CCR. They noted that some information, such as water system financial statements, are often available to consumers upon request. Some water systems also post financial reports on their websites, which include this type of information.

4.2. Consensus Recommendations

1. The CCR³ WG recommends that the rule recognize the important role of the Primacy Agency in assisting underserved communities. The rule should encourage Primacy Agencies to be engaged in the CCR process for systems serving underserved communities (e.g., systems that are geographically isolated, have economic hardships, or have a lack of access to safe water supply). Examples of ways Primacy Agencies can engage with underserved communities include:
    a. Help ensure accuracy and completeness of compliance information reported in the CCR.
    b. Provide technical assistance to systems in developing their CCRs and understanding the concepts and information in the CCRs.
    c. Serve as an alternative resource to water systems and be available to answer questions from customers, including providing informational resources that help customers to read their CCR.
    d. Develop guidance documents, support materials, or workshops.
    e. Ensure that underserved communities know who their decision-makers are and have contact information for those decision-makers.

    Changes to the CCR Rule to address these concerns should:

    a. Be flexible.
    b. Recommend that Primacy Agencies coordinate responses to the public with the water system.
    c. Be accompanied by funding if EPA imposes specific mandates on Primacy Agencies.

2. The rule should improve access to CCRs by renters and non-bill-paying customers. For example, water systems can deliver postcards to every household within that water system (e.g., service addresses and billing addresses) alerting them to the fact that the CCR is available. Postcards should provide easy access to the full report such as by providing a link or QR code that would take customers directly to an online version of the CCR. This could be especially important for low-income customers who do not receive water bills and communications the water system provides through bills.

3. Many underserved communities with limited staffing and financial resources use the CCR iWriter or other templates to generate their CCRs. The rule should encourage Primacy Agencies to make templates available to water systems that would like to use a template. This will reduce the burden of CCR development on water systems that have limited resources.
    a. Templates, including the CCR iWriter, could be improved by providing suggested content if a water system meets certain conditions (e.g., geographically isolated, experiencing drought, experiencing source water problems, etc.).
    b. To supplement templates, EPA should create a guide or toolkit with questions and topics/themes for water systems to consider in developing the CCR. This guide would help water systems think through what and how information should be included. In addition, the guide or toolkit can help water systems assess whether their CCR has been effective at relaying information to their underserved communities.

4.3. Non-Consensus Recommendations

1. The CCR Rule should encourage water systems to include more information about the overall health of their water system in their CCRs. For example, describing upcoming projects, explaining rate changes, and factors driving the system's financial health.
    a. Arguments in favor of the recommendation:
        i. Gives context to customers for why particular decisions are made.
        ii. Informs customers about their system's water quality challenges and what they can do at the household level.
        iii. Helps customers advocate for themselves.
    b. Arguments against the recommendation:
        iv. Information unrelated to water quality (primarily financial health) does not belong in CCRs.
        v. The additional information may not speak to the water system's compliance status or targeted compliance levels.
        vi. Funding and financial health differ between public and private systems – private water systems may not want their system's finances in their CCRs.

5. Improving Readability, Understandability, Clarity, Accuracy of Information, and Risk Communication of CCRs

EPA's third charge to the NDWAC focused on information comprehension, specifically on improving the readability, understandability, clarity, and accuracy of the information and risk communication provided by CCRs. Information provided to the working group included studies done by researchers at Virginia

Tech University, the American Water Works Association, and EPA's Office of Ground Water and Drinking Water.

5.1. Summary of Discussion

CCR³ WG members discussed factors that prevent customers from understanding CCR material, such as the report's length, complexity, and occasional lack of transparency. To address these issues, CCR³ WG members proposed including a summary page at the beginning of the document that conveys important water quality information. CCR³ WG members stated that a summary could highlight important information like the water quality of the water system, any violations or exemptions, and potentially water sampling information. CCR³ WG members also agreed that the summary page should begin with a statement detailing the values that the water system holds. Some CCR³ WG members voiced concern about including excessive information in the summary page. Other members explained that the summary page should give the readers enough information to decide what specific information about the water system they would seek. CCR³ WG members recommended including contact information of staff at the water system and Primacy Agency as an additional resource for consumers to learn more about water quality issues in their service area.

Several members recognized that CCRs are complex documents containing highly technical information, and that explaining scientific concepts and terminology in a simple and accurate manner is challenging. They also noted that it is difficult to convey the level of concern or risk associated with these concepts. The group discussed several consumer-friendly methods for communicating scientific concepts. The CCR³ WG agreed that it is important to develop clear messaging and stated that the CCR should provide consumers with the story of the system's water quality without providing excessive information that does not enhance consumer's understanding of local water system. To avoid lengthy and complex CCRs, the CCR³ WG discussed resources available to the public that CCRs can reference for more information, such as the CDC's Agency for Toxic Substances and Disease Registry's ToxFAQs sheet.

Several members of the CCR³ WG stated that the units contained in CCRs are often unclear and difficult to understand in the context of water quality and the health risks that contaminants pose. Some members stated that metaphors, such as those that compare the concentration of contaminants in the water supply to a drop of water in a swimming pool, are effective ways to explain the meaning or scale of the units. Metaphors also could be used to convey the risk associated with potential contamination. For example, using successive coin flips to explain the probability of rare events. Other members believed that these metaphors may not provide consumers with an understanding of what the contaminant level means for their safety, or that consumers would view these metaphors as an attempt to understate the hazards posed by contaminants. Some CCR³ WG members felt that CCRs should do a better job of conveying context for terms and definitions to help consumers learn more about their levels of risk.

CCRs use different units to express contaminant concentrations than other technical resources (like lab results), and some members raised concern that this discrepancy may confuse consumers who search for additional information outside of the CCR. They also stated that this discrepancy could erode consumers' trust in the accuracy of CCR information. Other CCR³ WG members stated that the units used in CCRs are useful because they communicate differences in health risks posed by contaminants at low concentrations.

CCR³ WG members also disagreed about whether CCRs should clarify that legal standards are a compromise between acceptable health risks posed by contaminants and the feasibility of addressing

contamination. Several members explained that the CCR is meant to inform consumers about compliance status, not to explain the process of setting maximum contaminant levels or state why a water system is not regulating certain contaminants, while other members thought clarifying this information would help consumers draw their own conclusions about the water quality.

The members of the CCR³ WG agreed that water systems should use best practices from existing guidelines to improve risk communication in their CCRs. The CCR³ WG discussed options such as using the CDC's CCI to evaluate CCRs; using easily understandable, common language such as that recommended in the Plain Writing Act; using the "SALT" framework (Strategy, Action, and Learning and is supported by Tools) as a guide; and defining uncommon terms for CCR readers.

Several CCR³ WG members were concerned about the unbalanced burden that some of these best practices would put on smaller water systems. Both financially and technically, larger systems have more capacity to provide clarity for readers. The CCR³ WG discussed strategies for larger water systems to improve the clarity of their CCRs, such as breaking information down by service area.

The CCR³ WG also were concerned about ways to ensure the accuracy of CCRs. The group stated that any water systems reissuing a CCR to correct any inaccuracies or data errors should include information about why the CCR was reissued and what had been corrected. The CCR³ WG members concluded that this would improve transparency and trust with their customers.

The CCR³ WG also discussed several topics related to corrosion control. The members recognized that clear communication about corrosion is important for building trust with consumers. The group also discussed the merits of distinguishing corrosion control from other lead treatment, and they recognized the challenge of communicating this information clearly in a CCR without creating confusion and without making the CCRs more complex. Discussion topics raised by the CCR³ WG members include the burden developing clear language for this complex topic can place on small systems; whether it would be helpful or confusing for water systems to include information about corrosion control when no corrosion control was required; whether systems should include a concise interpretation of the lead and copper results in CCRs; and how much detail the CCR should include about lead and copper sampling locations and how those locations were selected. Some members raised privacy concerns about including a list of sites where action levels were exceeded if it included homes.

5.2. Consensus Recommendations

1. CCRs could include a summary page to convey important information and key messages upfront in the document in a simple, clear, and concise manner. The summary should use plain language and simple statements. The remaining CCR would walk through the necessary detailed scientific information to elaborate on the high-level messages in the summary. The summary could include information such as:
    a. A value statement that explains why the water system is sending the CCR.
    b. A general description of quality of water and whether the water system is meeting Safe Drinking Water Act Standards.
    c. A statement that clarifies where samples were taken to assess water quality; clarifies how water quality changes through the distribution system and in homes; describes how the water system monitors for those water quality problems and actions to protect water quality. The statement should clarify that most samples are not taken in homes

and encourage water systems to direct homeowners to resources that can help them address water quality issues related to internal plumbing.

d. Identification of violations, exemptions, and exceedances; description of causes of those violations, exemptions, and exceedances; measures taken by the water system to address those violations, exemptions, and exceedances; what action the water system will take to prevent these violations, exemptions, and exceedances in the future.
e. Discussion of any unique circumstances that affect the water system (drought causing higher concentrations of arsenic in wells, for example). The summary should include enough context to explain causes for the water conditions.
f. Contact information of important resources. For example, contact information can include a member(s) of the Primacy Agency, experts that could provide information on treatment facilities, and technical staff who could conduct home visits. The CCRs could describe additional information that is available, who has expertise in those areas, and who to contact for more information. Some related suggestions included:
    i. Contact information of the Primacy Agency (e.g., name, phone number, email address).
    ii. Contact information for experts at the water system for more information or opportunities which may include treatment facility and laboratory tours, home visits, or similar opportunities offered by the water system.
    iii. Information about other resources available on different topics. These may include documents that provide information about risk management plans, drought response plans, and other similar planning documents.
g. An introductory paragraph or column that provides a table of contents or a discussion on "how to read this document." The purpose of these elements is to help the customer read and understand the information in the CCR.

2. CCRs contain a great deal of highly technical information. CCRs could be improved by developing clear and simple messages, streamlining the document to guide readers through a "story," and avoiding overloading readers with too much information. If readers are interested in learning more, CCRs could link to additional technical information that can be found in other resources. For example, CDC's Agency for Toxic Substances and Disease Registry's (ATSDR) ToxFAQs and additional information provided by the Primacy Agency.

3. CCRs could communicate numbers and standards in a way that is more meaningful to the public. CCRs mainly use three units of measurement (parts per million, parts per billion, and parts per trillion) for several regulated contaminants. These units of measurement may not be meaningful to consumers. The working group recommends strategies to help consumers understand these and other units of measurement and their related risk:
    a. Real-world examples or analogies of CCR units to help the public understand their scale.
    b. If using examples or analogies to illustrate units, the same analogy should be used to communicate the comparison of the contaminant level and the public health goal and/or standard. Otherwise, it can be misleading or generally uninformative from the perspective of risk.

   c. In addition to describing units, the CCR should also clarify the risks associated with contaminant concentrations, making real world comparisons when possible and appropriate. For example, comparing risk levels to risks associated with everyday activities for example, a one in a million risk is equivalent to tossing a coin 20 times and having it land on heads every time.
   d. CCRs should clarify the meaning of terms and definitions that are related to units of measurement. For example, clarify the meaning of an MCL, how it differs from the MCLG, and why.

4. Readability, understandability, and clarity can be generally improved by encouraging systems to use the following best practices:
   a. Evaluate CCRs using the CDC's Clear Communication Index. CCRs should be set at a reading level and CCI score recommended by EPA. EPA's recommendations should be based on CDC guidance on the CCI.
   b. Use common language that is easy to understand. The rule could reference resources such as the Plain Writing Act. Trainings, examples, and guidelines are available here: Home | plainlanguage.gov.
   c. Use the SALT framework (Strategy, Action, Learning, supported by Tools) as a guide for improving risk communication.
   d. Order contaminants in the table in a way that brings the most important issues to the reader's attention (e.g., listing exceedances and violations at the top of the table, remaining contaminants in alphabetical order). Symbols can also be used to convey important information as long as they are easy to interpret and clearly defined.
   e. Define terms that are not user friendly (e.g., cross-connection, green sand filter) in ways that are understandable in day-to-day language.

5. CCRs could improve risk communication about the quality of water by:
   a. Including a guide on acute versus chronic issues and the respective risks of each.
   b. Providing information on how the concentrations of drinking water contaminants have changed over time (have they been getting worse or better?). This can help customers understand the general health of the water system.
   c. Including a statement about contaminants that are tested but not detected and providing access to that list upon request.
   d. Describing risk related to unregulated contaminants (e.g., PFAS) and if available, provide information about where to find more information about related EPA health advisories.
   e. Clarifying what the CCR tells a customer (system-wide water quality) and what it does not (quality of water coming out of tap). It should be clear about what the limitations are for in-house water quality and what could affect water coming out of the tap.
   f. Communicating risks that could affect access to a safe drinking water supply in the future and potential protection measures. This may be especially important for geographically isolated communities, water systems with high economic burdens, and/or those that do not have alternative water supplies.

6. Large water systems could help readers identify information most relevant to them by breaking out information by zone or service area.

7. If a CCR has included an inaccuracy (a data error or other type of error), the CCR should be corrected and reissued as quickly as possible, consistent with SDWA requirements. The revised CCR should include information about why it was reissued and what has been corrected.

8. The working group recommends that EPA:
    a. Revise, simplify, and clarify health effects language for contaminant detections at 40 CFR 141.154 and in Appendix A to Subpart O of Part 141, with specific attention to Cryptosporidium, Lead, Arsenic, Nitrate and TTHM. EPA should use available tools such as CDCs CCI to inform the revisions.
    b. Revise, simplify, and clarify required language at 40 CFR 141.153(h)(7). EPA should use available tools such as CDCs CCI to inform the revisions.
    c. Revise, simplify, and clarify definitions at 141.153(c). EPA should use available tools such as CDCs CCI to inform the revisions.
    d. Update all outdated references, such as those at 40 CFR 141.153(d)(4)(v) and 141.154(e).

9. The accuracy of at least the contaminant data in CCRs could be verified by the Primacy Agencies to improve customer confidence. This could be handled by auditing all CCRs or through auditing a random sample of CCRs.

10. The AWIA amendments to the SDWA require that CCRs directly address corrosion control efforts. In response to this new requirement, the working group recommends that water systems report the following in their CCRs.

    a. For systems that are not required to have corrosion control treatment, the CCR should indicate why no treatment is needed (e.g., the system is monitoring corrosion and knows that corrosion control is not needed). When the system is monitoring corrosion, the CCR should describe those monitoring activities in a clear and concise manner.
    b. CCRs should include a concise interpretation of the lead and copper results including:
        i. The total number of service connections in the system and a statement that sample sites are selected based on highest risk and that not all service connections are sampled.
        ii. A description of the corrosion control treatment (CCT) utilized at every system for which corrosion control is required.
        iii. A statement of what the defined Optimum Water Quality Parameters are for the selected CCT in the CCR.
        iv. A description of relevant water quality parameters.
        v. A description of when the lead was detected, what actions the water system took, how long it took to address, and what the system is doing to prevent this from happening again.

    EPA should develop example language for each of the situations above. This will support small water systems that may have difficulty developing their own language.

5.3. Non-Consensus Recommendations

1. CCRs could communicate numbers and standards in a way that is more meaningful to the public.
    a. Consider removing the requirement to convert data into CCR units.
        i. Arguments in favor of the recommendation: Converting data into units for the purpose of the CCR can lead to confusion when people read other information (like lab results) and see other units used. This could lead readers to question whether the information in the CCR is accurate.
        ii. Arguments against the recommendation: Some contaminants cause higher health risks at lower concentrations compared to other contaminants. CCR units help communicate those differences. It is very easy to confuse orders of magnitude when there are several zeroes right of the decimal.
    b. CCRs could clarify that legal standards (MCLs) are a compromise between what is an acceptable health risk and what is financially and technically feasible.
        i. Arguments in favor of the recommendation: This clarity will help people understand the context of those terms and what they mean for public health.
        ii. Arguments against the recommendation: The purpose of the CCR is to inform consumers about compliance status. It is not the purpose of the CCR to explain the process of setting MCLs, which can be very complex. Expanding on some of these issues could overly complicate the CCR.

6. CCR Delivery Manner and Methods, Including Electronic Delivery

The fourth charge focused on delivery manner and methods, including electronic delivery. The current CCR Rule requires water systems to mail or otherwise directly deliver a CCR to each customer. Systems may use mail, email, or other electronic delivery methods that otherwise directly deliver CCRs and must make a "good faith" effort to reach non-billpaying consumers, like posting CCRs in public places or delivering CCRs through community organizations. The rule also requires systems to make CCRs available upon request and water systems serving greater than 100,000 persons must post their CCRs on the internet. EPA's 2013 memorandum "Safe Drinking Water Act- Consumer Confidence Report Rule Delivery Options" clarifies the requirements of the CCR rule associated with the delivery of the CCR. The AWIA amendments to SDWA require biannual delivery of CCRs by water systems that serve 10,000 or more people.

6.1. Summary of Discussion

The CCR^3 WG discussed the intent and purpose of the proposed biannual CCRs. Some members of the CCR^3 WG believed that the same report should be sent twice a year, while others believed that the second report should reflect updated water quality information.

The first group of members believed that sending the same CCR twice each year would reach more customers than a single report, especially new residents, but that sending two different CCRs could confuse readers. They also raised concerns that developing biannual CCRs with different content would place a significant burden on water systems and Primacy Agencies.

The second group of members argued that adding an addendum would help customers remain informed about contaminants that are sampled on different schedules, and it would keep them up to date on the

status of their system's water quality. Some of the members further argued that there should be entirely new CCRs delivered every six months, delivered in the same format. The CCR³ WG was unable to reach consensus on this issue.

For water systems that post their reports online, several CCR³ WG members stated that the water systems should be required to keep the report online and available to customers for as long as possible to improve readership among customers and improve access to historic CCRs. For example, some members stressed that ready access to past CCRs could give consumers historical context of their water system and their water quality. This access will help consumers understand how water quality issues have changed over time and whether the water system is treating water better or differently than in the past. Some members, however, raised concern that requirements to post CCRs online for long durations would place a burden on water systems that do not have websites that are able to host these files. In particular, they noted that if an online records retention requirement was applied to small systems, it could even discourage these systems from posting online versions of their CCRs. Ultimately, the CCR³ WG members agreed that an online records retention requirement of three years would be consistent with the current records retention requirement in the CCR Rule and would not be overly burdensome to water systems.

The CCR³ WG members also discussed how EPA and Primacy Agencies could support water systems in meeting online records retention policies. Some members noted that EPA and Primacy Agencies could post CCRs online on behalf of small water systems. A few members raised concerns about the burden that would place on Primacy Agencies and the challenge it would present in maintaining current information on the website. To reduce this burden, some members suggested encouraging, rather than requiring, Primacy Agencies to post information on their websites, as well as encouraging Primacy Agencies to include information on their websites when CCRs become available and directing consumers to contact their water systems to review their CCRs.

The CCR³ WG also deliberated over the best ways to use the electronic delivery options outlined in EPA's 2013 memorandum. The group discussed delivering CCRs via text messages with opt-in or opt-out options. They also discussed the possibility of delivering CCRs through social media. Several members expressed concern about using social media as a primary means of delivery and noted that social media should be used to enhance existing delivery methods rather than replace them. The group also raised concerns about cybersecurity and phishing problems that could arise from electronic forms of delivery. These members noted that delivery methods should remain in trusted channels of communication to avoid these problems.

Some CCR³ WG members noted that the role and scope of CCRs should be clarified and defined before developing recommendations about what should be included within it. Specifically, they emphasized that CCRs are part of a suite of consumer information mechanisms that water systems use to provide information to the public about their drinking water. They discussed the scope of CCRs in relation to the PN Rule and noted that urgent information, such as notifications of NPDWR violations, is distributed by public notice. The scope of CCR in relation to other public notice methods, like tiered public notices, shaped the opinions of several CCR³ WG members regarding the role of the CCR and the recommendations they developed.

Several CCR³ WG members emphasized the need to ensure that CCRs are delivered to non-billpaying consumers and emphasized the role that landlords or property owners play in delivering information to those water users. They suggested that the rule be revised to include modifications that ensure mailing

postcards or CCRs to service addresses, as well as to include QR code postings in public areas. Additionally, several members believed that EPA should improve and consistently update their CCR webpage to help consumers find information, but there was much deliberation on the frequency at which updates must be made.

6.2. Consensus Recommendations

1. CCR³ WG members recommend that if a water system posts its CCR online, the CCR should be posted online for a minimum of 3 years with the intent to comply with the records retention requirements at 40 CFR 141.155(h) to provide customers with more context and history of their system and its changes. This would eliminate the burden of trying to manually search for past information since these CCRs would be in a centralized location. The most current CCR should be prominently displayed to avoid any confusion as to which is the current CCR.

2. The CCR³ WG recommends that EPA reduce the burden on small systems by posting their CCRs online on their behalf (or links to their CCRs). The CCR³ WG also recommends that the rule encourage Primacy Agencies to post their water systems' CCRs on the Primacy Agencies' websites or, at a minimum, post information on the Primacy Agency's website to encourage customers to contact their water systems to review their CCRs.

3. EPA should improve/update its "Find Your Local CCR" webpage. On an annual basis, EPA should update links to the CCRs or to the webpages that host the CCRs. EPA should add additional search terms to help both bill paying and non-bill paying customers find their CCRs.

4. Electronic delivery options outlined in EPA's 2013 memorandum, "Safe Drinking Water Act-Consumer Confidence Report Rule Delivery Options," could be expanded and include the following options:
    a. Deliver CCRs via text message link with the option to opt-out of text deliveries. working group members noted that younger generations look at their phones quite often and would be more likely to read CCRs if they were delivered via text message.
    b. Electronic CCRs should be developed in formats compatible with smartphones and other types of personal devices (e.g., tablets). In addition, the "direct URL to CCR" requirement in EPA's 2013 memorandum should be clarified to accommodate different online navigation features that could be used to develop an online CCR.
    c. Electronic delivery should occur through a trusted means of communication that is acceptable to the customer and water system to minimize cyber security issues (such as phishing or spreading misinformation).
    d. The rule should clarify that advertising the availability of the CCRs (such as through social media) should be encouraged but should not be considered a form of "delivery."

5. The rule requires water systems to directly deliver a copy of the CCR to each bill-paying customer. It also requires the system to make a "good faith effort" to reach non-bill-paying customers. The CCR³ WG recommends:
    a. The existing language in the rule at 40 CFR 144.155(b) could be expanded to include examples of more modern outreach efforts (such as social media options). The CCR³ WG recommends that modifications (**in bold**) made to the text below.

i. 40 CFR 141.155(b): "*The system must make a good faith effort to reach consumers who do not get water bills, using means recommended by the primacy agency. EPA expects that an adequate good faith effort will be tailored to the consumers who are served by the system but are not bill-paying customers, such as renters or workers. A good faith effort to reach consumers would include a mix of methods appropriate to the particular system such as: Posting the reports on the Internet; mailing to postal patrons in metropolitan* ***areas including mailing postcards or CCRs directly to the service address (in addition to the billing address, as required under the direct delivery requirement); posting a QR code in public places that links directly to the CCR;*** *advertising the availability of the report in the news media* ***and through direct texts to residents****; publication in a local newspaper; posting in public places such as cafeterias or lunch rooms of public buildings; delivery of multiple copies for distribution by single-biller customers such as apartment buildings or large private employers;* ***providing a direct link to CCRs on water bills;*** *delivery to community organizations****; and holding public forums****.*"

6. Water systems could improve their CCRs by gathering input from customers. They could achieve this by providing customers with contact information (such as a phone number) to directly contact their system with feedback regarding the format, readability, accessibility, etc. of the CCR they received. The water system can incorporate input at its discretion. Some examples for soliciting feedback from customers include:
    a. At the bottom of the CCR, the system could include a link or QR code to a survey (which asks the customers questions to understand whether they think the CCR is clear, and accessible) or a quiz/game (which would ask questions about the content of the CCR to give the system a sense as to how much the customer actually understood from the CCR, and therefore how clear and accessible it is).

7. The CCR Rule should be revised to include "standard distribution language" similar to what is included in the Public Notification Rule to encourage broader distribution of the notice, specifically encouraging landlords to provide CCRs to renters (40 CFR 141.205(a)(10) and (d)(3)). EPA could consider this recommendation when developing implementation support (e.g., guidance for landlords, and condominium HOAs).

8. The CCR Rule should encourage water systems to deliver CCRs to local community organizations and to consumers who regularly use the water but do not live within the water system's service area (e.g., people who work or go to school in a service area that is different from where they live). Water systems could provide a way for local community organizations and consumers to "opt in" to be added to the mailing list to receive CCRs on a regular basis.

9. For biannual CCRs, each CCR should contain the following information to avoid confusion about the information provided in each report:
    a. Include brief language that clarifies that the CCR is a federal requirement and that they must be delivered biannually for systems serving 10,000 or more people.
    b. Specify the time period covered by the specific CCR.

c. If two identical CCRs are delivered each year, the second report should clearly state that the information contained in the CCR is identical to the information in the first CCR.

6.3. Non-Consensus Recommendations

1. CCR³ WG members disagreed on the purpose of the biannual CCR delivery. Specifically, the group disagreed on whether the second CCRs should contain the same content as the first or have different content. The group developed two potential recommendations:
    a. Both CCRs for a given year should contain identical information with the goal of increasing readership of the CCR.
        i. Arguments in favor of the recommendation:
            1. Sending the same CCR twice would reach more customers, particularly new residents of a service area.
            2. Other mechanisms may be used to provide current water quality data to customers more effectively (e.g., public notification, community outreach).
            3. Other resources are available to provide up-to-the-minute data on water quality if customers are interested (e.g., Drinking Water Watch).
        ii. Arguments against the recommendation:
            1. Sending the same report twice would not provide customers with the most up to date information about the quality of their water.
            2. Sending the same report twice may be viewed as a waste of resources.
    b. CCRs should be issued once every six months and should reflect the most current water sampling data collected by the water system.
        i. Arguments in favor of the recommendation:
            1. This approach would provide customers with the most up to date information about the quality of their water, which they believe is consistent with the intent of the changes in AWIA.
        ii. Arguments against the recommendation:
            1. Delivering two CCRs with different content each year could confuse readers.
            2. It would be a large burden for water systems and Primacy Agencies to develop a CCR "update" every six months.
            3. This approach may be inconsistent with the intent of the AWIA amendments to improve clarity of the CCRs and would not improve access to CCRs relative to the first opinion.