February 26, 2026

Jessica Kramer
Office of Water
Environmental Protection Agency
Mail Code: 4601M
1200 Pennsylvania Ave. NW
Washington DC 20460

SUBMITTED ELECTRONIALLY

RE: AWWA and AMWA Comments on "Review of Science on Fluoride in Drinking Water: Preliminary Assessment Plan and Literature Survey" (EPA-HQ-OW-2025-3823)

Dear Assistant Administrator Kramer,

The American Water Works Association (AWWA) and the Association of Metropolitan Water Agencies (AMWA) appreciate the opportunity to comment on the Environmental Protection Agency's (EPA's) "Review of Science on Fluoride in Drinking Water: Preliminary Assessment Plan and Literature Survey" (Assessment Plan). With its potential to inform future revisions to drinking water standards for fluoride under the Safe Drinking Water Act (SDWA), this action has the potential to impact many public water systems. Many, if not most, of those systems will be small water systems that have naturally occurring fluoride in their source water.

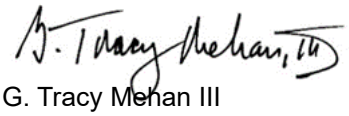
All water systems, regardless of size, strive to provide safe and reliable water supplies to the households they serve. Limited local resources must be used cost effectively to best protect public health. Poor science policy can interfere with local spending priorities well before there is a final federal risk management decision in the form of a new or revised drinking water standard. AWWA and AMWA's comments primarily focus on the following:

- Given the potential implications of EPA's analysis for drinking water standard setting under SDWA, it is important that EPA conduct an independent systematic literature review of studies rather than relying on the conclusions of existing assessments.
- EPA's analysis would be more efficient and more effectively support cohesive sound public policy if the agency were not operating within the SDWA statutory "silo" but rather engaged in an analysis of total fluoride exposure in collaboration with other federal and state regulatory agencies as well as interested stakeholders.

Please see attached AWWA and AMWA's comments on this ongoing EPA health risk assessment. If you have any questions regarding this correspondence or if we can be of assistance in some other way, please contact us at AWWA: Tracy Mehan (tmehan@awwa.org) or Rachel Gonsenhauser (rgonsenhauser@awwa.org); AMWA: Thomas Dobbins (dobbins@amwa.net) or Jessica Evans (evans@amwa.net).

Best regards,

FOR THE AMERICAN WATER WORKS ASSOCIATION



G. Tracy Mehan III
Executive Director – Government Affairs
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FOR THE ASSOCIATION OF METROPOLITAN WATER AGENCIES

Tom Dobbins
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cc: Jennifer McLain, EPA/OGWDW
Susan Euling, EPA/OGWDW/DWSED

Attachment: 1

Who is AWWA

The American Water Works Association (AWWA) is an international, nonprofit, scientific and educational society dedicated to providing total water solutions assuring the effective management of water. Founded in 1881, the Association is the largest organization of water supply professionals in the world. Our membership includes more than 4,500 utilities that supply roughly 80 percent of the nation's drinking water and treat almost half of the nation's wastewater. Our 50,000-plus total membership represents the full spectrum of the water community: public water and wastewater systems, environmental advocates, scientists, academicians, and others who hold a genuine interest in water, our most important resource. AWWA unites the diverse water community to advance public health, safety, the economy, and the environment.

Who is AMWA

The Association of Metropolitan Water Agencies (AMWA) is an organization of the largest publicly owned drinking water systems in the United States. AMWA's membership serves more than 160 million people across the United States with safe drinking water.

AWWA and AMWA Comments
on
"Review of Science on Fluoride in Drinking Water: Preliminary Assessment Plan and Literature Survey" (91 FR 3722, EPA-HQ-OW-2025-3823)

The American Water Works Association (AWWA) and the Association for Metropolitan Water Agencies (AMWA) appreciate the opportunity to comment on the Environmental Protection Agency's (EPA's) "Review of Science on Fluoride in Drinking Water: Preliminary Assessment Plan and Literature Survey" (Assessment Plan).

Holistic Risk Assessment

EPA stated in its Assessment Plan that it will not evaluate the beneficial health effects of fluoride exposure. This decision is inappropriate, as fluoride is a chemical that warrants unique, integrative management beyond the Safe Drinking Water Act's traditional toxicity assessment framework, which EPA has previously recognized. Furthermore, there are various sources of fluoride exposure beyond drinking water that should not be ignored in EPA's current analysis. In 2010 EPA evaluated sources of fluoride exposure and relative source contribution (RSC) and determined that 30-60% of exposure to fluoride can be attributed to sources other than drinking water.[1] Potential exposure sources other than drinking water include food, beverages, and dental products (*i.e.,* toothpaste), with much of the exposure to fluoride being deliberate to gain anticipated health benefits.[2]

The current policy environment includes both an active effort to add fluoride to consumer products and community water fluoridation in order to gain public health benefits. It is inappropriate to initiate a process to derive a reference dose (RfD) for toxicity, a process that typically uses very conservative assumptions, without explicit consideration of the potential for beneficial health effects. In fact, EPA previously considered data on the "nutritional benefit" of fluoride in estimating the uncertainty factor and oral RfD for fluoride, stating that the variability in epidemiological data on skeletal fluorosis combined with the data showing the benefit of fluoride exposure in preventing dental caries did not support any other approach.[3]

Absent a holistic analysis, we should expect uncoordinated policy outcomes. We have already seen that the Food and Drug Administration (FDA) in 2025 found that current fluoride levels were not of concern. FDA found that "*children taking ingestible fluoride drug products consistent with current unapproved labeling would be expected to consume fluoride below the level associated with potential adverse effects of fluoride, including dental fluorosis*."[4] This FDA analysis conducted last year at the FDA Administrator's direction took into account current fluoride levels in drinking water in the United States.

Underpinning of Hazards to be Assessed

A robust, comprehensive review of health effects information associated with fluoride exposure at levels occurring in drinking water is a key step in re-assessing the toxicity of fluoride.

<u>Consensus Lacking on Neurodevelopment Health Risk Hazard</u>

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[1] U.S. EPA (U.S. Environmental Protection Agency). (2010). Fluoride: Exposure and relative source contribution analysis. (820R10015). Washington, DC. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100N49K.PDF?Dockey=P100N49K.PDF.
[2] American Dental Association (2025). Fluoridation Facts. Available at: https://www.ada.org/resources/community-initiatives/fluoride-in-water/fluoridation-facts.
[3] U.S. EPA (U.S. Environmental Protection Agency). (2010). Fluoride: Exposure and relative source contribution analysis. (820R10015). Washington, DC. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100N49K.PDF?Dockey=P100N49K.PDF.
[4] U.S. FDA (Food and Drug Administration) Center for Drug Evaluation and Research (2025). Ingestible Fluoride Drug Products A Scientific Evaluation of Use, Benefits, and Risk in the Pediatric Population. Available at: https://www.fda.gov/media/189421/download.

In its Assessment Plan, EPA states that it has "*leveraged consensus hazard conclusions based on its critical review of the latest fluoride health science…rather than re-review the full set of literature to establish hazards for fluoride*". Based on this review, EPA states that the agency will be *"adopting well-established consensus hazard conclusions related to dental fluorosis and developmental neurotoxicity"* and, as such, *"the systematic review steps of evidence synthesis and integration are not necessary".*[5] By skipping these steps in its systematic review of health information on fluoride, EPA is inappropriately assuming that there is broad consensus that fluoride exposure poses a hazard worthy of public health policy making for two selected health endpoints, dental fluorosis and developmental neurotoxicity effects, without conducting its own synthesis of scientific evidence.

Adverse developmental neurotoxicity from fluoride exposure at relevant concentrations is neither well-established nor accepted as general consensus in the scientific community. The National Toxicology Program (NTP) report, which outside peer review has found lacking, described "moderate" confidence that high fluoride levels are "consistently associated" with lower IQ in children.[6] Said differently, the report conveys that there is enough information to warrant further study, but not a sufficient basis to set an RfD based on this health endpoint.

FDA's assessment of the available data supporting neurodevelopmental endpoints does not speak directly to the NTP report but rather to the subsequent meta-analysis by the NTP authors.[7] FDA was blunt, saying *"The evidence available to support an association between fluoride ingestion and IQ score changes is equivocal in the U.S. population."*[8] Below is an excerpt from the FDA analysis of the meta-analysis:

> *"Using pre-specified criteria for bias-risk assessment, the majority (n=52) of the studies were considered by the authors to have a high risk-of-bias (low quality). The authors conducted multiple meta-analyses based on the aggregated measurements/estimates from individual studies, if available in the study, and reported an inverse association for various analyses. For example, an association was found between increased fluoride in urine and decreased IQ scores: For every 1 mg/L increase in urinary fluoride, there was a 1.63 (95% CI: -2.33 to -0.93) IQ point decrease among studies regardless of study quality, and a 1.14 (95% CI: -1.68 to -0.61) IQ point decrease among relatively higher quality studies. There are different scientific opinions regarding the validity and implications of this meta-analysis's conclusions, with a number of researchers questioning whether it provides direct evidence to support an association between fluoride and IQ."* [footnotes removed] [emphasis added]

Health Canada's expert panel report similarly acknowledges that the linkage to neurodevelopmental effects is uncertain. The expert panel concluded that there was "*not a sufficient basis at this time to recommend a specific point of departure and health-based value for neurocognitive effects*".[9]

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[5] US EPA (2026). Fluoride [CASRN 7782-41-4] Human Health Toxicity Assessment: Preliminary Assessment Plan and Literature Survey. Available at: https://www.epa.gov/system/files/documents/2026-01/fluoride-human-health-toxicity-assessment-preliminary-assessment-plan-and-literature-survey-1-22-26.pdf.
[6] National Toxicology Program, U.S. Department of Health and Human Services (2024). NTP Monograph on the State of Science Concerning Fluoride Exposure and Neurodevelopment and Cognition: A Systematic Review. Available at: https://ntp.niehs.nih.gov/sites/default/files/2024-08/fluoride_final_508.pdf.
[7] Taylor, KW; Eftim, SE; Sibrizzi, CA; Blain, RB; Magnuson, K; Hartman, PA; Rooney, AA; Bucher, JR. (2025). Fluoride exposure and children's IQ scores: a systematic review and meta-analysis. JAMA Pediatrics 179: 282-292.
[8] FDA Center for Drug Evaluation and Research (2025). Ingestible Fluoride Drug Products, A Scientific Evaluation of Use, Benefits, and Risks in the Pediatric Population. Available at: https://www.fda.gov/media/189421/download.
[9] Health Canada (2024). Expert panel meeting on the health effects of fluoride in drinking water: summary report, June 8-9, 2023. Ottawa, ON: Health Canada. Available at: https://publications.gc.ca/site/eng/9.933047/publication.html.

Shortcomings in the NTP Report

The 2024 NTP report is not a "consensus hazard conclusion." The NTP report and a predecessor draft received external reviews conducted by a committee convened by the National Academies of Sciences, Engineering, and Medicine (NASEM). Both NASEM reviews identified shortcomings in the drafts of the NTP report, detailed below, some of which appear to remain in NTP's final report.[10] The studies on which the NTP report relies have not found a clear effect of fluoride exposure on neurodevelopmental effects and suggest that associations between elevated fluoride exposure and IQ decrements may be confounded.[11,12]

Specific shortcomings identified during NASEM's review of the NTP report include[13]:

- Issues of reproducibility and transparency of the systematic review process
- Issues with risk-of-bias analysis of animal studies
- Deficiencies in analysis of human evidence, including but not limited to:
    - Potentially biased selection of studies
    - Lack of independence of studies
    - Inconsistent application of risk-of-bias criteria
    - Insufficient and/or inconsistent evaluation of confounding
    - Possibility of exposure misclassification
    - Flawed measures of neurodevelopmental and cognitive outcome
    - Lack of rigorous statistical review
- Presentation of underlying research and NTP's protocols and evaluations of the research lacking clarity

EPA itself has described the NTP report as inadequate. In its fourth Six-Year Review of Existing Drinking Water Standards in 2024, EPA found that NTP's systematic review and meta-analysis *"are not health assessments that could be used to directly inform the derivation of a potential MCLG"* and decided to defer revision of the fluoride National Primary Drinking Water Regulation (NPDWR) due to *"emerging research published on developmental neurotoxicity after fluoride exposure"*.[14] Rather than skipping a traditional step in its systematic review process and adopting the NTP report's hazard conclusions, EPA should instead focus on conducting a comprehensive synthesis and evaluation of findings from emerging research and, to the extent possible, invest in the development of new-high quality studies.

As NTP itself did not deem any existing studies conducted in the United States to be of high enough quality to be included in its evaluation, the logical next step would be to pursue development of new, well-designed studies. None of the studies included in the report that evaluate IQ were conducted in the

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[10] National Academies of Sciences, Engineering, and Medicine (2021). Review of the Revised NTP Monograph on the Systematic Review of Fluoride Exposure and Neurodevelopmental and Cognitive Health Effects: A Letter Report. Washington, DC: The National Academies Press. Available at: https://www.nationalacademies.org/publications/26030.

[11] Aggeborn, L., & Öhman, M. (2021). The effects of fluoride in drinking water. *Journal of Political Economy*, *129*(2), 465-491.

[12] Office of the Prime Minister's Chief Science Advisor (2021). Fluoridation: an update on evidence. Available at: https://www.pmcsa.ac.nz/topics/fluoridation-an-update-on-evidence/.

[13] National Academies of Sciences, Engineering, and Medicine (2021). Review of the Revised NTP Monograph on the Systematic Review of Fluoride Exposure and Neurodevelopmental and Cognitive Health Effects: A Letter Report. Washington, DC: The National Academies Press. Available at: https://www.nationalacademies.org/publications/26030.

[14] US EPA (2024). National Primary Drinking Water Regulations; Announcement of the Results of EPA's Fourth Review of Existing Drinking Water Standards. Available at: https://www.federalregister.gov/documents/2024/07/23/2024-15807/national-primary-drinking-water-regulations-announcement-of-the-results-of-epas-fourth-review-of.

United States; studies were conducted in China, Mexico, Canada, India, and Iran.[15] This presents a limitation as many of these countries differ from the United States in their socioeconomic conditions, which can impact IQ measurement outcomes.[16] Rather than continuing forward with an uncertain premise and attempting to determine an RfD based on studies that are inappropriate, there is an opportunity for a focused research effort by the agency.

Work To-Date Does Not Reflect Broader Scientific Community

The NTP's 2024 report, the subsequent meta-analysis of epidemiological studies evaluating children's IQ scores and fluoride exposure, and EPA's draft Assessment Plan have all be conducted by a team of some of the same individuals.[17,18,19] Presumably, the same team may also be conducting the upcoming Systematic Review Protocol and the fluoride toxicity assessment that eventually follows from this action. As such, the agency is not observing broad consensus but rather the work of a limited number of analysts. A hallmark of gold standard science is the alignment of findings from independent researchers, not recasting an updated analysis several times over by the same authors.

Throughout the announcement of this action, EPA repeatedly states that its Assessment Plan is consistent with Gold Standard Science (Executive Order 14303) and promotes *"incorporation of the best available, unbiased, peer-reviewed studies through broad literature searches"*.[20] For the many reasons articulated above, AWWA and AMWA do not find that this has been accomplished and remains concerned with the limitations of the systematic literature review process laid out in the Assessment Plan. As such, EPA should start over with its systematic literature survey and comprehensively evaluate all high-quality studies and, when appropriate, invest in development of new studies, that assess the potential health risks associated with fluoride exposure in the United States to inform selection of the most sensitive health endpoint(s), rather than relying on the hazard conclusions of existing, flawed assessments.

RfDs Must be Based on Adverse Health Endpoints

EPA has previously investigated the possibility of revising the health-basis for the fluoride maximum contaminant level goal (MCLG), maximum contaminant level (MCL), and secondary MCL (SMCL) as described in the Assessment Plan (see page 2-2). The agency solicited the advice of the National Academy of Sciences as described, and NAS recommended revision of the MCLG to protect against severe enamel fluorosis and that "*additional studies … of the prevalence and severity of enamel fluorosis should be done in U.S. communities with fluoride concentrations greater than 1 mg/L*".[21] In a similar

[15] Cotruvo, J. A. (2026). Fluoridation Debate Resurfaces as NTP Revises IQ Findings. *Journal-American Water Works Association*, *118*(1), 58-59.
[16] Cotruvo, J. A. (2026). Fluoridation Debate Resurfaces as NTP Revises IQ Findings. Journal-American Water Works Association, 118(1), 58-59.
[17] National Toxicology Program, U.S. Department of Health and Human Services (2024). NTP Monograph on the State of Science Concerning Fluoride Exposure and Neurodevelopment and Cognition: A Systematic Review. Available at: https://ntp.niehs.nih.gov/sites/default/files/2024-08/fluoride_final_508.pdf.
[18] Taylor, KW; Eftim, SE; Sibrizzi, CA; Blain, RB; Magnuson, K; Hartman, PA; Rooney, AA; Bucher, JR. (2025). Fluoride exposure and children's IQ scores: a systematic review and meta-analysis. JAMA Pediatrics 179: 282-292.
[19] US EPA (2026). Fluoride [CASRN 7782-41-4] Human Health Toxicity Assessment: Preliminary Assessment Plan and Literature Survey. Available at: https://www.epa.gov/system/files/documents/2026-01/fluoride-human-health-toxicity-assessment-preliminary-assessment-plan-and-literature-survey-1-22-26.pdf.
[20] US EPA (2026). Fluoride [CASRN 7782-41-4] Human Health Toxicity Assessment: Preliminary Assessment Plan and Literature Survey. Available at: https://www.epa.gov/system/files/documents/2026-01/fluoride-human-health-toxicity-assessment-preliminary-assessment-plan-and-literature-survey-1-22-26.pdf.
[21] NRC (National Research Council) (2006). Fluoride in drinking water: A scientific review of EPA's standards. Washington, DC: The National Academies Press. Available at: https://nap.nationalacademies.org/catalog/11571/fluoride-in-drinking-water-a-scientificreview-of-epas-standards.

timeframe, 2004, the World Health Organization (WHO) found drinking water concentrations of fluoride above 1.5 mg/L carried an increasing risk of dental fluorosis.[22]

The summary does not reflect that EPA's current health advisory table utilizes EPA's Integrated Risk Information System (IRIS) RfD, 0.06 mg/kg/day, which the Assessment Plan characterizes as protective against "moderate to severe dental fluorosis" and the Health Advisory Table describes as protective of children from a cosmetic effect instead of the 0.08 mg/kg/day referenced in Six-Year Review 4 with respect to severe dental fluorosis.[23] As summarized in the Assessment Plan, an RfD of 0.08 mg/kg/day using standard EPA practice translates to an MCLG range of 0.9 – 1.2 mg/L, a range that is lower than both the NAS and WHO believe do not present a risk of severe fluorosis.

The clinical distinctions between mild, moderate, and severe dental fluorosis are meaningful in determining what level of fluoride is adverse (with a margin of safety). As described by NAS and other publications, the interaction of fluoride with enamel has different implications for dental health across that spectrum.[24,25,26] The following is a layman's summary:[27]

- "Questionable: A few very light white flecks and white spots.
- Very mild: Light white areas covering less than 25% of your tooth surfaces.
- Mild: Light white areas covering less than 50% of your tooth surfaces.
- Moderate: White or light brown areas covering more than 50% of your tooth surfaces.
- Severe: White, light brown or dark brown spots affecting all surfaces. Your teeth may also have pitting (small depressions in your tooth enamel)."

It is moderate to severe dental fluorosis that poses a dental health concern in NAS's view. EPA should not mistake "effect" or "precursor to effect" with "adverse effect".

Implications of Potential Revisions to EPA's Drinking Water Standards for Fluoride

During both its Third Six-Year Review in 2016 and Fourth Six-Year Review in 2024, EPA identified a potential MCLG of 0.9 mg/L based on severe dental fluorosis but decided not to proceed with revising the current primary drinking water standard for fluoride.[28] In neither instance did EPA judge the potential benefits in reduced severe dental fluorosis to be sufficient enough to warrant revisions to current guidance on drinking water treatment, the health advisory level, MCLG, MCL, or SMCL. In part this policy decision recognized (1) the state of the health effects science and (2) the consequences of such changes. Similar care is required in EPA's current assessment.

Fluoride Occurrence is Widespread

EPA estimated in its Fourth Six-Year Review (SYR 4) occurrence analysis that almost 4,500 systems (9% of systems subject to the current rule) would need to make operational changes, change water supplies, or install treatment to reduce fluoride levels in treated drinking water if the fluoride MCL was set at 0.9

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[22] WHO (World Health Organization) (2004). Fluoride in drinking-water. Background document for development of WHO guidelines for drinking-water quality. (WHO/SDE/WSH/03.04/96). Geneva. Available at: https://www.who.int/docs/default-source/washdocuments/wash-chemicals/fluoride-background-document.pdf.
[23] US EPA (2018). 2018 Edition of the Drinking Water Standards and Health Advisories Tables. EPA 822-F-18-001. Available at: https://www.epa.gov/system/files/documents/2022-01/dwtable2018.pdf.
[24] Iida, H., & Kumar, J. V. (2009). The association between enamel fluorosis and dental caries in US schoolchildren. *The Journal of the American Dental Association*, *140*(7), 855-862.
[25] American Dental Association (2025). Fluoridation Facts. Available at: https://www.ada.org/resources/community-initiatives/fluoride-in-water/fluoridation-facts.
[26] Wong, M. C. M., Zhang, R., Luo, B. W., Glenny, A. M., Worthington, H. V., & Lo, E. C. M. (2024). Topical fluoride as a cause of dental fluorosis in children. *Cochrane Database of Systematic Reviews*, (6).
[27] Cleveland Clinic (2024). Fluorosis. Available at: https://my.clevelandclinic.org/health/diseases/23227-fluorosis.
[28] U.S. EPA (2024). Results of the Health Effects Assessment for the Fourth Six-Year Review of Existing Chemical and Radionuclide National Primary Drinking Water Standards. EPA-815-R-24-020.

mg/L.[29] EPA's occurrence analysis does not provide a distribution of systems by size, so Table 1 was prepared from the same dataset focusing on finished water occurrence data from community water systems (CWSs).

Table 1: CWSs with Fluoride Concentrations >0.7 and 0.9 mg/L, By Size and Source Water Type (Percentage of Total Active CWSs)

Fluoride Level (mg/L)	Surface Water					Groundwater				
	≤500	501-3,300	3,301-10,000	10,000-100,000	>100,000	≤500	501-3,300	3,301-10,000	10,001-100,000	>100,000
>0.7	138 (5%)	262 (7%)	370 (17%)	647 (26%)	183 (46%)	3,365 (14%)	2,356 (24%)	996 (36%)	832 (52%)	66 (79%)
>0.9	86 (3%)	207 (6%)	262 (12%)	426 (17%)	103 (26%)	2,607 (11%)	1,889 (20%)	787 (28%)	632 (40%)	36 (43%)

Data Sources

1. U.S. EPA (2024). Six-Year Review 4 (SYR 4) Compliance Monitoring Data (2012-2019). Available at: https://www.epa.gov/dwsixyearreview/six-year-review-4-compliance-monitoring-data-2012-2019.
2. U.S. EPA (2025). Government Performance and Results Act (GPRA) Inventory Report. Available at: https://www.epa.gov/ground-water-and-drinking-water/drinking-water-performance-and-results-report.

Notes. This table reflects a cursory evaluation to summarize fluoride occurrence data from EPA's Fourth Six-Year Review. Potential limitations include the following:

1. The estimates provided in this table have not undergone formal quality assurance/quality control.
2. Estimates are for CWSs only. Data from the GPRA tool reflects active CWSs from Q4 of 2025. Six-Year Review data were collected between 2012-2019, reflecting temporal differences in the data used to calculate percentages in the table.
3. A compliance formula has not been applied to generate these estimates. Estimates of systems with elevated fluoride concentrations are raw totals aggregated from underlying the SYR 4 occurrence data.
4. The majority of samples with fluoride observed >0.7 mg/L were taken at the entry point (EP). Because the SYR 4 occurrence dataset does not provide robust data on fluoride in source waters, data summarized in this table should not be assumed to be representative of naturally occurring fluoride.

While Table 1 does not mirror EPA's compliance algorithm it illustrates the distribution of systems with fluoride concentrations above 0.9 mg/L as a function of size and source water type. The majority of the CWSs impacted, roughly 75%, would be small, groundwater systems. Given these potential implications, a robust and comprehensive review of the health science by EPA is important to assure that regulatory pressure on such systems provides a meaningful opportunity for protecting public health.

While not an aspect of the current Assessment Plan, the occurrence data from SYR 4 is not adequate to distinguish naturally occurring fluoride from community water fluoridation. U.S. Geological Survey (USGS) data on natural fluoride occurrence is primarily limited to a study of groundwater levels and that study is biased toward domestic wells.[30] It does, however, illustrate significant regional differences in the number of wells with elevated natural fluoride levels, including more frequent occurrence in aquifers and states where there is limited access to alternative water sources and opportunities for regionalization. Should

[29] U.S. EPA (2024). Chemical Contaminant Summaries for the Fourth Six-Year Review of Existing National Primary Drinking Water Regulations. EPA-815-S-24-002.
[30] McMahon, P. B., Brown, C. J., Johnson, T. D., Belitz, K., & Lindsey, B. D. (2020). Fluoride occurrence in United States groundwater. *Science of the Total Environment*, *732*, 139217.

EPA move forward to take additional steps to implement risk management actions based on this study, existing fluoride occurrence data is inadequate to inform those decisions.

Removing Naturally Occurring Fluoride

Reducing concentrations of fluoride in drinking water presents substantial feasibility and cost challenges particularly for small groundwater systems with naturally occurring fluoride. When last assessed by EPA in 2014, activated alumina was identified as the technology most readily applied to fluoride reduction.[31] Activated alumina is not a frequently used treatment technology. While specific statistics are not available, the 2006 Community Water System Survey (CWSS) reflect 10% of ground water plants and 1% of surface water plants using either ion exchange, activated alumina, or aeration.[32] Given the widespread use of aeration and ion exchange, activated alumina would be a small fraction of even this subset of water systems.

Conclusion

AWWA and AMWA appreciate the opportunity to provide input on this important action and supports a robust assessment of scientific information on health effects associated with fluoride exposure. Given the potential implications of this analysis for drinking water standard setting, it is important that EPA conduct an independent systematic literature review of studies rather than relying on the conclusions of existing assessments. If at all possible, this analysis would be much more efficient and more effectively support cohesive sound public policy if the agency were not operating within the SDWA statutory "silo" but rather engaged in an analysis of total fluoride exposure in collaboration with other federal and state regulatory agencies as well as interested stakeholders. In the past, EPA has utilized NASEM to build broader policy consensus when faced with complex science-policy decisions impacting multiple agencies' regulatory programs.

[31] U.S. EPA (2014). Removal of Fluoride from Drinking Water Supplies by Activated Alumina. Available at: https://nepis.epa.gov/Adobe/PDF/P100KFZQ.pdf.
[32] U.S. EPA (2006). 2006 Community Water System Survey. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1009JJI.txt.