Appendix E: Compilation of Public Comments from the Docket

NATIONAL WATER REUSE
ACTION PLAN
DRAFT

Appendix E: Compilation of Ideas/Actions from the Public Docket and List of Commenters

The EPA opened a public docket (EPA-HQ-OW-2019-0174) to collect early input and ideas to inform development of the draft Action Plan. The Agency posted a document titled *Discussion Framework for Development of a Draft Water Reuse Action Plan* (Appendix A) to provide context and details for reference during the comment period.

This appendix provides an index to navigate public comments; it also provides a high-level overview of ideas and actions from public input. To gain a full appreciation for the depth of thinking behind each input, readers are encouraged to review the relevant comment in the docket. The full comment submittals are available for review online at the following location: https://www.regulations.gov/docket?D=EPA-HQ-OW-2019-0174.

Disclaimer

The actions included below are not listed in order of significance and are not necessarily presented verbatim. The list of actions is not intended to be exhaustive.

Index of Comments from the Public Docket

The public docket, which was open from April 18 to July 1, 2019,[1] received 55 submissions,[2] many of which were very thoughtful and detailed. On aggregate, 530 pages of material were shared, averaging more than nine pages per submission.

The comments received represent the opinions and ideas from a broad set of organizations and entities. For example, the Association of State Drinking Water Administrators (ASDWA) and the Association of Clean Water Administrators (ACWA) submitted joint comments that reflect the interests of the state Clean Water Act (CWA) and Safe Drinking Water Act (SDWA) authorities, while the National Association of Clean Water Agencies (NACWA) submitted comments in representation of the wastewater community. As well, the WateReuse Association (WRA) submitted a convening report (Appendix F), signed by the heads of six water and wastewater associations, that presents key outcomes from two WRA-led workshops on the draft WRAP with more than 100 total participants. Representatives from communities, industry, academic institutions, and individuals also contributed comments to the public docket.

The following table presents public comments in order by docket ID number (small to large). Each full comment can be accessed by clicking the docket ID number.

Docket ID Number	Date Posted	Commenter	Affiliation
EPA-HQ-OW-2019-0174-0003	5/10/2019	Anonymous	—
EPA-HQ-OW-2019-0174-0004	5/10/2019	Zohreh Movahed	WATEK Engineering Corporation

[1] Submissions shared following the closing of the docket were manually uploaded by the EPA with permissions from the entities.

[2] The docket tally indicates that 56 comments were received; however, one was a test submission and was therefore not published.

Docket ID Number	Date Posted	Commenter	Affiliation
EPA-HQ-OW-2019-0174-0005	5/10/2019	David Kujawski, Vice President, Process Engineering	Refinery Wastewater Associates
EPA-HQ-OW-2019-0174-0006	5/10/2019	David Kujawski (continuation from 0005)	Refinery Wastewater Associates
EPA-HQ-OW-2019-0174-0007	5/21/2019	Abril Herrera	Rio Plaza
EPA-HQ-OW-2019-0174-0008	5/21/2019	Nitesh Dullabh	2POD VENTURES
EPA-HQ-OW-2019-0174-0009	5/21/2019	Emily Remmel, Director of Regulatory Affairs	NACWA
EPA-HQ-OW-2019-0174-0010	5/28/2019	Mark Millan	Data Instincts
EPA-HQ-OW-2019-0174-0011	6/11/2019	Kim Dirks, Senior Director, Environmental Services	Tyson Foods, Inc.
EPA-HQ-OW-2019-0174-0012	6/12/2019	Anonymous	U.S. Chamber of Commerce Business Task Force on Water Policy
EPA-HQ-OW-2019-0174-0013	6/12/2019	Matt Sigler, Technical Director	Plumbing Manufacturers International
EPA-HQ-OW-2019-0174-0014	6/12/2019	Anonymous	Sustainablewater.com
EPA-HQ-OW-2019-0174-0015	6/21/2019	David Sedlak, Deputy Director	National Science Foundation's Engineering Research Center for Re-inventing the Nation's Urban Water Infrastructure (ReNUWIt)
EPA-HQ-OW-2019-0174-0016	6/25/2019	Diane VanDe Hei, Chief Executive Officer	Association of Metropolitan Water Agencies
EPA-HQ-OW-2019-0174-0017	6/25/2019	A.R. Rubin	NCSU-BAE, A. R. Rubin and Associates
EPA-HQ-OW-2019-0174-0018	6/25/2019	Anonymous	—
EPA-HQ-OW-2019-0174-0019	6/26/2019	Pinar Balci, Assistant Commissioner, Bureau of Environmental Planning and Analysis	New York City Department of Environmental Protection
EPA-HQ-OW-2019-0174-0020	7/2/2019	Natalie Mamerow	American Society of Civil Engineers
EPA-HQ-OW-2019-0174-0021	7/2/2019	Anonymous	—
EPA-HQ-OW-2019-0174-0022	7/2/2019	Evelyn Rivera Ocasio, President	American Association of Sanitary and Environmental Engineering (AIDIS-Puerto Rico)
EPA-HQ-OW-2019-0174-0023	7/2/2019	Lori Traweek	Gulf Coast Authority
EPA-HQ-OW-2019-0174-0024	7/2/2019	Anonymous	—
EPA-HQ-OW-2019-0174-0025	7/2/2019	Sandeep Burman, Manager, Drinking Water Protection Section, Environmental Health Division	Minnesota Department of Health

Docket ID Number	Date Posted	Commenter	Affiliation
EPA-HQ-OW-2019-0174-0026	7/2/2019	Garland Erbele, State Engineer	North Dakota Office of the State Engineer
EPA-HQ-OW-2019-0174-0027	7/2/2019	Bruce Thompson, President	American Exploration and Production Council
EPA-HQ-OW-2019-0174-0028	7/2/2019	Brian A. Perkovich, Executive Director	Metropolitan Water Reclamation District of Greater Chicago
EPA-HQ-OW-2019-0174-0029	7/2/2019	Cynthia Koehler, Executive Director; Clarence E. Anthony, Executive Director	WaterNow Alliance; National League of Cities
EPA-HQ-OW-2019-0174-0030	7/2/2019	Siva Sarathy, Senior Scientist, Research and Development	Trojan Technologies
EPA-HQ-OW-2019-0174-0031	7/2/2019	Anonymous	Clean Water Action and Clean Water Fund
EPA-HQ-OW-2019-0174-0032	7/2/2019	Pat Sinicropi, Executive Director	WateReuse Association et al.
EPA-HQ-OW-2019-0174-0033	7/2/2019	Martha Tremblay, Department Head, Technical Services Department	Sanitation Districts of Los Angeles County
EPA-HQ-OW-2019-0174-0034	7/2/2019	Kelley Gage, Director of Water Resources	San Diego County Water Authority
EPA-HQ-OW-2019-0174-0035	7/10/2019	Ben Perlman, President	Smart Water Group
EPA-HQ-OW-2019-0174-0036	7/10/2019	Stan Hazan, Senior Director, Regulatory Affairs	NSF International
EPA-HQ-OW-2019-0174-0037	7/10/2019	Scott Thompson, Executive Director	Oklahoma Department of Environmental Quality
EPA-HQ-OW-2019-0174-0038	7/10/2019	Nichole Saunders, Senior Attorney	Environmental Defense Fund
EPA-HQ-OW-2019-0174-0039	7/10/2019	Edward A. Clerico, CEO Emeritus	Natural Systems Utilities
EPA-HQ-OW-2019-0174-0040	7/10/2019	Anonymous	Florida Department of Environmental Protection
EPA-HQ-OW-2019-0174-0041	7/10/2019	J. Alan Roberson, Executive Director; Julia Anastasio, Executive Director	ACWA; ASDWA
EPA-HQ-OW-2019-0174-0042	7/10/2019	Peter DeMarco	Plumbing Industry Leadership Coalition
EPA-HQ-OW-2019-0174-0043	7/10/2019	Darren W. Gore, Assistant City Manager	Murfreesboro, Tennessee, Water Resources Department
EPA-HQ-OW-2019-0174-0044	7/10/2019	Amy Emmert, Senior Policy Advisor	American Petroleum Institute

Docket ID Number	Date Posted	Commenter	Affiliation
EPA-HQ-OW-2019-0174-0045	7/10/2019	Wenonah Hauter, Executive Director	Food & Water Watch
EPA-HQ-OW-2019-0174-0046	7/10/2019	Daniel Cole	International Association of Plumbing and Mechanical Officials
EPA-HQ-OW-2019-0174-0047	7/10/2019	Peter DeMarco (same comment as 0049, with additional signatory)	Plumbing Industry Leadership Coalition
EPA-HQ-OW-2019-0174-0048	7/10/2019	G. Tracy Mehan, III, Executive Director	American Water Works Association
EPA-HQ-OW-2019-0174-0049	7/10/2019	Anonymous	Metropolitan North Georgia Water Planning District
EPA-HQ-OW-2019-0174-0050	7/10/2019	Julia Wiener, Ph.D. Candidate	Purdue University
EPA-HQ-OW-2019-0174-0051	7/10/2019	Mark Pestrella, Director of Public Works; Daniel J. Laferty, Deputy Director	County of Los Angeles; Los Angeles County Flood Control District
EPA-HQ-OW-2019-0174-0052	7/10/2019	Anonymous	Pacific Institute
EPA-HQ-OW-2019-0174-0053	7/10/2019	Gabe Maser, Vice President, Government Relations	International Code Council
EPA-HQ-OW-2019-0174-0054	7/10/2019	Nick Weigel; Regina Hirsch; Tony Madrone; Laura Allen (Board of Directors)	California Onsite Water Association
EPA-HQ-OW-2019-0174-0055	8/1/2019	Maria Cahill	Recode
EPA-HQ-OW-2019-0174-0056	8/1/2019	James D. Herberg	Orange County Sanitation District

Examples of Ideas/Actions from the Public Docket by WRAP Strategic Objective

The following sections are intended to serve as a high-level sampling and summary of suggested actions submitted through the public docket. Actions are arranged by the most relevant strategic objectives outlined in the draft Action Plan (Sections 2.1 through 2.10).

Section 2.1—Enable Consideration of Water Reuse with Integrated and Collaborative Action at the Watershed Scale

- Examine what, if any, regulatory restrictions may impede or disincentivize water reuse and formulate rules and guidelines that would instead promote such practices.
- Provide summaries of applicable state and local ordinances addressing water reuse; develop guidance for state and local water planning efforts to include water reuse in comprehensive water plans.
- Incentivize jurisdictions at the state and local levels to adopt codes and standards that promote water efficiency and reuse, including ICC's IPC, IRC, IgCC, the CSA B805-2018/ICC 805-2018

Rainwater Harvesting Standard, the ASABE/ICC 802-2014 Landscape Irrigation Sprinkler and Emitter Standard, and the BSR/RESNET/ICC 1101-201x Water Rating Index Standard.

- Develop guidance and suggested options for integrated planning portfolios, where each option meets the critical end-use needs but also includes distinct benefits (e.g., water reuse and groundwater replenishment).
    - Recognize and support local and state efforts that consider social, environmental, and financial benefits and are sustainable in the long run.
- Create onsite reuse targets (e.g., percentage goals) for onsite non-potable supplies, such as rainwater or graywater.
- Create a taxonomy for alternative water sources with respect to their reuse potential, treatment requirements for intended use, risk, and affordability to help local jurisdictions assess what is their "low-hanging fruit" for reuse.

Section 2.2—Coordinate and Integrate Federal, State, Tribal, and Local Water Programs and Policies

- Federal agencies should integrate and harmonize federal policies that have the potential to impact the quality of reclaimed water.
- Create a voluntary participation program to encourage the development and use of reclaimed water. Could be modeled after the Green Power Partnership Program and provide resources and recognition for various categories of producers, purveyors, and users of reclaimed water.
- Develop guidance on different sampling requirements based on type of reuse (e.g., direct vs. indirect), type of source water (e.g., municipal wastewater vs. industrial) and intended use of water (e.g., drinking water vs. agriculture).
- Integrate water reuse into USDA Natural Resources Conservation Service (NRCS) farm support programs. Opportunities for increasing water reuse may include additions or revisions to conservation practice standards, Conservation Stewardship Program enhancements, conservation activity plans, and scenarios in cost calculations.
- Advance salinity management nationally for agricultural-sector as well as other types of water reuse. Actions might include WaterSense labeling, discouraging use of cation exchange water softeners, promoting federal programs that reduce the salinity in source water, ensuring adequate federal funding for these programs, and supporting states and municipalities that develop control and pretreatment programs.
- Develop state policies to promote agricultural reuse, including policies that have enabled use of recycled water for irrigation of food and non-food crops, as well as those that have enabled drainage authorities to operate their systems for multiple benefits (e.g., storage, water quality practices, downstream flood reduction) beyond just drainage.
- Engage with the states to develop resources for states and water systems regarding public notification, procedures for returning to compliance, and planning for major disruptions to the water supply if the multi-barrier approach fails and how these practices may differ from traditional water system supervision.
- Require states to develop permit programs (via NPDES Phase I and II water quality permits) based on guidance from the National Blue Ribbon Commission for Onsite Non-potable Water Systems.
- Investigate and provide guidance to states and other stakeholders on ways in which to integrate MS4 permit compliance with water reuse.

- Coordinate or support the coordination of regional, multi-stakeholder research consortia to scope and/or execute studies and pilot projects aimed at addressing identified knowledge gaps regarding oil and gas wastewater reuse risk and risk mitigation.

Section 2.3—Compile and Refine Fit-for-Purpose Specifications

- Compile fit-for-purpose thresholds for different end uses across states into one central location.
    - Provide guidance to state regulators on how these fit-for-purpose specifications can be applied to address "low-hanging fruit."
    - Define water reuse categories by pathogen removal requirements.
    - Actively update existing pathogen removal and inactivation tables as new information becomes available.
- Evaluate and expand fit-for-purpose risk-based approaches for multiple source waters beyond municipal wastewater, including industrial wastewater, oil and gas produced water, and stormwater.
    - Develop and assess risk-based log reduction targets for a range of onsite, non-potable water treatment system types.
- Develop national guidance on how to test for and treat unregulated contaminants and contaminants of emerging control (CECs) in various source waters and what levels are acceptable.
- The EPA, the USDA, and other federal agencies should partner with the water sector and oil and gas industry to assist those considering the reuse of produced water to develop informational guidelines. This could be assembled into a compendium and be readily accessible to potential users and interested stakeholders.
- Develop a national, minimum standard based on existing work done in states like California and Arizona to support the rapid adoption of safe water reuse systems (from simple, permit-exempt rainwater and graywater systems to complex, monitored, large-building-scale systems).
- Develop user-friendly and cost-effective guidelines that can be referenced in national plumbing standards and water quality standards for alternate water that protect public health, protect the plumbing system and installed components, and foster the installation of water reuse systems.
- Contact-time tables and other tools used to determine log treatment values for addressing viruses need to be expanded to include wastewater as a source in the case of DPR projects.

Section 2.4—Promote Technology Development, Deployment, and Validation

- Develop national guidance and standardization of water quality testing and technology verification practices relevant to reuse.
    - Diversify national grants available for technology verification and water quality testing programs.
    - Provide national guidance to state and local drinking water systems by reviewing, evaluating, and providing discussion forums on mobile treatment units.
    - Use existing data to validate treatment log-reduction target models for onsite non-potable water systems.
- Leverage ongoing water research efforts of organizations such as the Water Research Foundation, the National Blue Ribbon Commission for Onsite Non-potable Water Systems, and the DOE to promote technology development and validation.

- Promote a standard national understanding of environmental buffers; the demarcation between direct and indirect potable reuse; and related aspects including minimum retention time, dilution factors, and physical attributes if counting on aquifers for treatment.
- Work through ACWA and ASDWA to develop recommendations for pilot testing parameters, sharing lessons learned from states that have existing reuse projects, and key elements to look for in pilot testing results for validation.
- Federal agencies such as the EPA and the DOE should issue a "call to action" for technology providers to develop "plug and play systems" that can be easily incorporated into building design. Emphasis should be placed on developing systems to address multiple source waters, end-uses, cost effectiveness, energy efficiency, operability, and small footprint.
- Develop a pilot project to demonstrate cost-effective management systems for monitoring, control, and automation of agricultural water reuse systems, including a decision support framework to help farmers integrate and interpret information.

Section 2.5—Improve Availability of Water Information

- Construct a national database of private, public, and municipal water reuse systems that tracks system usage and performance to increase stakeholders' understanding of the costs and benefits of using reclaimed water. It could include information on the quality and resource recovery efficiency of water systems, including water, nutrients, and energy.
- Establish industrial reuse benchmarks, fit-for-purpose information, and a data clearinghouse. This may involve setting a research agenda for industrial reuse, compiling current knowledge, and soliciting research projects. A way to further this concept is to establish an interactive survey or tool that enables users to input site or industry-specific information, related to challenges, limitations, or opportunities, and receive feedback that provides a set of options for implementing reuse.
- Encourage widespread sample and data sharing of oil and gas wastewater and make research publicly accessible.
- Establish industry best practices in monitoring.
- Establish list of chemical constituents/surrogate for monitoring.

Section 2.6—Facilitate Financial Support for Water Reuse

- Develop financial incentives to encourage industry to consider water reuse. A range of options exist for providing financial incentives for industrial reuse, including tax credits, private foundation funding, utility incentives, and trading. Possible examples include Texas (HB 2545) and New Mexico (HB 546).
- Support development of financial models to evaluate and implement integration of onsite non-potable water systems into communities where it is appropriate. Action should involve Environmental Financing Centers, the Water Finance Clearinghouse, infrastructure financers including bond issuers, other financial services firms, State Revolving Fund (SRF) programs, and water sector associations.
- Clarify that water reuse projects are eligible expenses for SRFs and which SRF—clean water or drinking water—should fund which pieces of a project. Offer bonus points for reuse projects to incentivize consideration.
- Collaborate with the NRCS, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, other relevant federal partners, and the water sector to develop informational guidelines to clarify federal funding eligibility for environmental restoration projects using recycled water and what

federal regulations would apply to various types of restoration projects that are using recycled water.

- Prioritize and expand (where possible) funding opportunities for water reuse projects, and distribute a list of current/upcoming funding opportunities to interested parties.
- Link funding (106, PWSS, DWSRF) through workplan mandates to water reuse requirements; otherwise efforts may be stymied.
- Address disincentives to reuse that currently exist in water utility billing practices, such as the linkage between water and sewer, which presumes that water supplied equals water discharged to public sewer systems.

Section 2.7—Integrate and Coordinate Research on Water Reuse

- Engage federal agencies, water sector stakeholders, and institutions (i.e., colleges and universities) that have conducted studies on water reuse subject matter to assess the current state of research and developed informed research agendas.
    - Create a national research plan specific to agriculture (potential for and drivers of increased capture and reuse, costs, nutrient benefits and energy savings/costs, benefits, and scale).
- Water sector should collect, collate, and disseminate case studies demonstrating the successful use of recycled water for environmental restoration. This should include a consideration of environmental economics.
- Support state- and national-level research targeted at advancing reuse applications and understanding implications:
    - Analyze chemical interactions and long-term effects that occur following injection of groundwater recharge.
    - Assess cost impacts of water scarcity and the monetary benefits of water security.
    - Develop strategies for reducing the oil and gas industry's reliance on fresh water resources through increased wastewater reuse.
    - Identify choke points in the current water reuse market.
    - Assess what changes in water quality occur during storage of treated non-potable water and what best management practices can be used to maintain microbial stability, with minimal reliance on maintaining a chlorine residual.
    - Categorize the constituents of stormwater to better understand treatment needs for various use applications (e.g., irrigation, industrial uses, graywater applications) and in varying climates.
    - Assess the potential impacts of stormwater harvesting on downstream water quantity and in-stream flows.
    - Investigate the impacts that water conservation can have on recycled water quantity and quality.
- Coordinate in-person expert workshops to develop standardized and technically precise terminology and definitions.
- The federal family can "lead by example" by piloting reuse projects at federal facilities and by incorporating water reuse practices throughout the federal government where possible.
- Assess market opportunities for reclamation of brines and brainstorm solutions for any potential litigation risks associated with reuse of residual solids.

- Consider the entire life cycle of chemicals introduced through commerce before those chemicals are approved for production or import. Engage the chemical industry and the water sector to facilitate identification and focus attention on problematic chemicals, based on sound science; support development of a sound, multiple-barrier risk management strategy including enhanced CWA pretreatment programs.

Section 2.8—Improve Outreach and Communication on Water Reuse

- Educate and inform the public about water reuse to help inform the public's understanding of costs, benefits, and tradeoffs in water resources management. Efforts should focus on various use applications and be conducted in the short and long term; messages should be appropriate for the user type and scale of systems.
- Improve messaging and language used to talk about water reuse (e.g., national messaging, talking in terms of "proper treatment," use of symbols, use of neutral or scientific language).
- Use oil and gas wastewater research as an opportunity for public engagement and education.
- Increase public awareness of potable reuse through federal leadership. Statements by the EPA, the DOE, the USBR, the USDA, the DOD, and other authoritative federal voices should be aligned to help provide continuity in messaging from the federal government.
- Develop and provide an outreach and education portal focused on water conservation, water reuse, and source control for use by state agencies and local governments.
- Develop resources for states and industry on reuse communications plans and effective public outreach, such as webinars with water systems and states that have already implemented reuse projects, case studies with repeatable actions and communications plans, sample or template plans, and other resources.
- Leverage existing recognition programs or create new recognition programs for exceptional water reuse projects.
- Water associations and utilities should form partnerships with producer associations, USDA extension programs, and others to conduct outreach to farmers and the food supply chain to discuss the benefits of and typical concerns related to using recycled water for irrigation, and to promote the use of reclaimed water.

Section 2.9—Support a Talented and Dynamic Workforce

- Promote a skilled workforce through workforce development efforts, including training and transitioning to address an aging workforce, and creating opportunities for state-to-state knowledge transfer related to water reuse.
- Encourage and assist in developing worker training programs for operator certification to ensure that operators have the knowledge and skills needed to preside over water reuse projects.
- Promote new partnerships and leverage existing partnerships for peer-to-peer engagement on water reuse, which will help elevate performance of the sector.
- Water sector associations, state and federal certification programs, universities, and vocational training schools should develop operator training and design and permitting training for onsite non-potable water reuse systems.
- Work with states and other training providers to develop and execute water reuse training programs for state and federal staff, including permit writers and inspectors. An example topic would be how

to evaluate treatment technologies for reuse with a focus on innovative technologies or existing technologies that are being used in a new way.

- Encourage the use of the Capacity Development program under the drinking water SRF to encourage technical, financial, and managerial capacity to operate in a sustainable manner.
- Partner with entities on efforts like the National Green Infrastructure Certification Program to develop training expertise to enhance stormwater capture and reuse.

Section 2.10—Develop Water Reuse Metrics that Support Goals and Measure Progress

- Develop trackable goals.
- Be clear on expectations as to how success is measured.