Appendix D: Compilation of Ideas/Actions from Outreach

NATIONAL WATER REUSE
ACTION PLAN
DRAFT

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Appendix D presents high-level action items provided during extensive outreach throughout the development of the draft Action Plan. Between November 2018 and August 2019, the EPA attended more than 20 public forums and met with an estimated 2,300 stakeholders with an interest in water reuse.

Event	Event Date
Resource Revolution of Water Reuse (Wharton, IGEL, Suez)	2/27/2019
WateReuse California Annual Conference (Garden Grove, CA)	3/15/2019
ACWA Mid-Year Meeting (Alexandria, VA)	3/19/2019
ASDWA Member Meeting (Alexandria, VA)	3/25/2019
Water Policy Fly In (Washington, DC)	3/31/2019
National Tribal Water Council	4/8/2019
National Blue Ribbon Commission for Onsite Non-potable Water Systems	4/11/2019
WateReuse Association Convening (Los Angeles, CA)	4/18/2019
WaterVent (Philadelphia, PA)	4/24/2019
State/EPA SRF Workgroup	4/26/2019
WateReuse Association Convening (Washington, DC)	5/9/2019
UNC Water Microbiology Conference (Chapel Hill, NC)	5/13/2019
NACWA Pretreatment and Pollution Prevention Workshop (Tacoma, WA)	5/15/2019
Idaho Reuse and Operators Conference (Boise, ID)	5/21/2019
WateReuse Webinar	5/21/2019
Club 20 - Western Colorado Fly-In (Washington, DC)	5/22/2019
ACWA ASDWA Webinar Series	6/5/2019
WEF Mid-2019 Federal Legislative and Regulatory Update Webcast	6/13/2019
IWA International Conference on Water Reclamation and Reuse (Berlin, Germany)	6/16/2019
Zero Mass Water Convening (Washington, DC)	6/17/2019
Region 6 Stormwater Conference (Denton, TX)	7/29/2019
National Tribal Caucus	8/7/2019
ACWA ASDWA Webinar Series	8/7/2019
New England Interstate Water Pollution Control Commission	8/8/2019
National Tribal Water Council	8/14/2019

Outreach included meetings with federal partners, states, non-governmental organizations, the water sector, utilities, technology developers, and academia. High-level actions identified through outreach are organized by the strategic objectives outlined in the draft Action Plan (Section 2.0).

Disclaimer

Actions are intended to serve as a high-level sampling of actions identified during outreach. Actions are not listed in order of significance. Additional suggested actions and discussions with reuse stakeholders are welcome to ensure that a robust set of action ideas related to water reuse are assessed and considered.

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

- Publish a policy statement/message that has all relevant federal agency logos.
  - Clarify continued collaborations with the National Association of Clean Water Agencies, the Water Research Foundation, the American Water Works Association, the Water Environment Federation, and the WateReuse Association.
- Transparency and effective communication between the EPA and states—convene face to face meetings with state regulators to solicit feedback.
- Relevant state examples:
  - Maryland state example: Leverage actions and resources to utilize water reuse for mitigating water supply issues (in state of Maryland and other similar cases).
  - New York state example: Leverage actions and resources to utilize water reuse for mitigating groundwater contamination issues (being investigated in New York).
  - West Virginia state example: Leverage actions and resources to convert mine pools into water reuse opportunities (potential ownership by West Virginia Department of Environmental Protection).

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

- Produce "go-to" best management practices for specific reuse applications for states' use. Other similar ideas (*some may be redundant*):
  - Develop federal permitting and total maximum daily load guidance to facilitate reuse.
  - Federal agencies should provide clarification on where reuse falls with respect to the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA)—NPDES permitting, etc.
  - The EPA should develop a "how-to" on regulations and identify where there is flexibility.
  - Work with state and local water districts on permitting issues.
  - Provide guidance on regulatory flexibility applicability.
  - Provide guidance on navigating non-compliance events related to reuse operations.
  - Add clarity to "gray zones" between the CWA and the SDWA.
  - The EPA can assist local governments with source control efforts using its authority under the CWA; the Toxic Release Inventory under the Emergency Planning and Community Right-to Know Act; the Toxic Substances Control Act; the Federal Insecticide, Fungicide, and Rodenticide Act; and other environmental statutes that may be applicable.
  - Utilize the NPDES pretreatment program to achieve source control, especially for "difficult-to-treat" industrial pollutants before they get into wastewater collection systems.
- Add to source-control action:
  - Develop comprehensive source control plans, to be part of any comprehensive master plans, to eliminate pathways of pollutants and emerging contaminants, including well head protection and pollutant source control for urban and agricultural runoff.

- Create an integrated permitting process that addresses all applicable regulatory processes in a more streamlined way for reuse.
    - Create a unified regulatory/permitting framework so that there are not conflicting or duplicative requirements resulting from potential reuse entities having to deal with two or more different regulatory frameworks.
- Develop national standards and regulations, explicitly, to sustain water reuse through time, operations, maintenance, and staffing.
    - For onsite reuse, standardized regulations can lead to standardized technologies across states.
    - For potable reuse, national water quality requirements for direct potable reuse (DPR) (as authorized under SDWA), rather than state-specific water quality requirements, will avoid confusion.
    - Support state efforts on enforcement/compliance of operating or proposed potable reuse systems.
    - For agriculture, national and state overview of water quality requirements and guidance for reuse water.
    - Identify agency roles and authority in setting standards and regulating reuse.
    - (A few stakeholders said *do not* develop national standards/regulations.)

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

- Identify and champion additional/increased testing requirements that would promote public understanding of potable reuse projects. Promote work to define critical control points.
    - Develop a list of pathogens and currently unregulated contaminants that need to be monitored in finished drinking water, and what levels are acceptable.
    - Develop national guidance for contaminants of emerging concern (CECs), as many do not have health guidance to provide a basis for regulations and/or permitting.
- The EPA should recommend a viral indicator (coliphage) to ensure a cleaner effluent for reuse projects using municipal effluent.
    - Develop federal guidance or expanded CT-tables to determine log treatment values to address wastewater effluent rather than just surface water effluent.
- Develop federal guidance on how states can efficiently study and approve pathogen treatment credits for log treatment values.
    - Develop updated pathogen removal and inactivation tables or guidance on how the existing information can be applied.
    - Compile information on fit-for-purpose requirements across states for different end uses.

Section 2.4—Promote Technology Development, Deployment, and Validation

- Create a certification for treatment technologies so that they do not have to be re-piloted/tested in every project/state.
    - Federal partners should revive new technology review/validation processes for filter/membrane systems, real-time sensors, and groundwater infiltration media.

- Develop a process to allow pilot studies to validate treatment technologies. New contaminant risk thresholds are needed (no Maximum Contaminant Level for CECs).
    - Establish industry best practices in the area of monitoring—what to monitor (surrogates and constituents), where to monitor, and how often would be helpful, particularly within the potable reuse area.
- The DOE/EPA should champion the first modular challenge (Grand Water Security Challenge—Goal 5) focused on monitoring systems to ensure that the systems are working (ramp up, ongoing ops/maintenance) with minimal onsite operator involvement.
- More R&D needs:
    - R&D of improved monitoring tools.
    - R&D of real-time sensors (and response systems, as well as event detection systems).
    - R&D of brine management technologies.
    - R&D for CEC monitoring and evaluation.
    - R&D onsite farm water treatment options.
    - R&D bioassays/assays for norovirus infectivity.
    - R&D of the effectiveness soil systems in filtering emerging contaminants.

Section 2.5—Improve Availability of Water Information

- Create a portal that improves data sharing of information among states and allows for data sharing among stakeholders (as well as access to water quality data), including criteria for acceptable water quality. This could include sharing case studies and reuse planning frameworks.
- Identify ways to share information on sensor technology and data analysis methods to work on high-volume data.
- The EPA and the U.S. Geological Survey will coordinate to identify water use and availability/data needs.
- Create interactive maps of where water reuse is in place across the states, regions, and the nation.

Section 2.6—Facilitate Financial Support for Water Reuse

- Identify, align, and publicize funding options other than the Water Infrastructure Finance and Innovation Act (WIFIA) and State Revolving Funds (SRFs)—e.g., FEMA and the USDA—to fund the construction of new reuse projects and maintenance of existing projects.
    - Use Water Smart Innovation Funds and Environmental Finance Centers (EFCs) to provide financial support and assistance for reuse projects.
- Create an action related to SRFs: Assess use of SRF funds for reuse; restore SRFs ("low SRF funds are single-most barrier to states") to fully fund state water programs, so states interested in promulgating a particular reuse regulation can hire and procure support.
    - Make developing an integrated water plan a precondition for receiving WIFIA or SRF funding.
    - Clarify eligibility for hybrid state water projects for SRF/WIFIA funding.
    - Explore ways to better leverage SRF and WIFIA funds; more state loan forgiveness.
    - Tribal set-asides for innovation and water reuse.

    - Change resource allocations in other EPA programs to more fully staff this priority area.
    - Develop more SRF capitalization and provide guidance on how to be effective in competing for SRF loans.
- Identify ways to incentivize decentralized peri-urban smaller systems' sale of effluent to/for agriculture applications.
    - Engage the U.S. Green Building Council; encourage them to give credits for decentralized reuse applications.
- Increase funding/resources to allow state entities to further DPR regulatory framework development efforts (specific to DPR).

Section 2.7—Integrate and Coordinate Research on Water Reuse

- The EPA (or an Agency workgroup?) to provide expertise and serve as a technical resource to states for evaluating variable source waters for reuse projects (log10 reduction target (LRTs), risk assessment).
    - Change resource allocations in other EPA programs to more fully staff this priority area.
    - Develop standards development frameworks tailored for stormwater capture and comparisons of current state implementation practices.
- Conduct/initiate targeted workshops/convenings/workgroups for various types of reuse applications (already have stormwater/produced water actions for this).
- Suggested research needs—opportunity to use STAR Grants:
    - Review the public health implications of indirect and DPR.
    - Evaluate the long-term effects, costs, and environmental implications of disposal of the concentrate and brine waste product/discharge capacity effects; explore environmentally acceptable alternatives for concentrate and brine management.
    - Evaluate minimum instream flows and impacts associated with nutrient-related ocean acidification.
    - Understand the risk of unregulated chemicals using bioanalytical tools for a range of health endpoints.
    - Use non-targeted analyses to identify unknown chemical compounds in recycled water to assist with technology validation.
    - Expand research of salt-tolerance among landscaping flora in addition to agricultural products.
    - Research the eco-effects of using reused water for artificial snowmaking, both for recreation and to generally increase/delay snowpack/runoff.
    - Collect national stormwater quality data (pathogen loads).

Section 2.8—Improve Outreach and Communication on Water Reuse

- Develop a curriculum to educate public health professionals, medical professionals, and others in the public health community about reuse generally and potential health risks associated with water reuse. This will strengthen communication with stakeholders and promote water reuse to the public.

    - Develop practical tools to assist in public and decision-maker risk communication and building consumer confidence in recycled water.
- The federal family could convene to envision ways to advance fit-for-purpose applications of water reuse on federal land or facilities within these organizations' purview.
    - Example: The EPA could work with the General Services Administration in reviewing the federally owned portfolio of buildings to identify candidates for onsite non-potable water systems, particularly in water-stressed areas.
- Create national-level messaging around reuse benefits and successes in tandem with discussion of the public health and environmental protection safeguards. Use examples of case studies for public outreach in order to "open peoples' eyes" to reuse and the multiple benefits.
- The EPA and other agencies to attend and/or hold national- and regional-scale convenings with a small number of attendees. Or initiate state convenings to discuss water reuse at Association of Clean Water Administrators, Association of State Drinking Water Administrators, and WateReuse Association events.
- Create outreach opportunities to educate buyers of produce grown with recycled water, third parties, and commodity groups.
- Foster mobile pilots and demo facilities (trailers).

Section 2.9—Support a Talented and Dynamic Workforce

- Establish certification program for operator training for reuse facilities. This is specifically needed for potable reuse (wastewater treatment plant/drinking water treatment plant nexus) and onsite non-potable reuse.
- Establish increased training opportunities for state staff facing the challenge of addressing new technologies. For example:
    - If chemical monitoring is to be completed at the system level, additional operations and sampling training will be needed, including clarification on methods for data integrity and reporting.
    - If monitoring is to be completed by the state, additional resources, funding, and staff time would be required.

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

- Conduct a volumetric survey in all or many states to help individuals understand the potential volumes re-routed for beneficial reuse, and volumes already being reused elsewhere.
- Establish consistency and consensus on baselines across the various reuse applications and industries. This would facilitate more reuse and would assist in developing public understanding/awareness/acceptance.
- Identify metrics to track permitted reuse activities.

Other Potential Ideas

- Water rights:
    - Develop a compendium of water rights issues and solutions.

- The EPA or another federal agency should develop tools such as user-friendly digital interfaces that help water users/suppliers navigate complex water rights/trading issues—trade water quantity for quality (a Utah example).
- Clarify how state water rights authorize/impede types of reuse (inclusive of stormwater capture, reuse), and collect and share examples of how states do this and handle the water rights elements of this.