National Water Reuse Action Plan

Collaborative Implementation (Version 1)

NATIONAL WATER REUSE ACTION PLAN QUARTERLY UPDATE
October–December 2020

A Message from EPA Assistant Administrator for Water David Ross

February 27 marks the one-year anniversary of the National Water Reuse Action Plan (WRAP). The story of the WRAP's implementation amid a pandemic is one of incredible dedication and determination by action leaders and partners across the country. I am truly inspired by the steadfast efforts of action teams to address regulatory barriers, facilitate financial support, advance technology development, and promote leadership and collaboration across the WRAP's 11 strategic themes. To date, 139 out of 322 implementation milestones have been completed. Additionally, the organic expansion of the WRAP effort illustrates its importance. Since the WRAP's inception, over 40 new milestones have been added as well as four new actions—bringing the total to 41—with the opportunity to introduce new actions each quarter. Most impressive is this growing community of more than 100 different organizations which have stepped forward to build reuse capacity, integrate efforts, and help secure our nation's water future. As we near the one-year anniversary, I encourage water stakeholders to seek new opportunities for watershed-level collaboration to help meet 21st century water demands through holistic strategies.

Federal Commitment to Water Reuse

In October 2020, the President of the United States issued an Executive Order on "Modernizing America's Water Resource Management and Water Infrastructure" to strengthen federal coordination and collaboration and ensure abundant, safe, and reliable water supplies for all Americans. The Executive Order formally established the Water Subcabinet for this purpose, chaired by U.S. Department of the Interior and EPA and comprised of officials from U.S. Department of Agriculture, U.S. Department of Commerce, U.S. Department of Energy, and U.S. Army Corps of Engineers. The Executive Order specifically includes implementation of the WRAP as one of the priority activities, reinforcing the importance of the WRAP and further supporting enduring partnerships to advance reuse efforts across the country.

Active Action Highlights

The following action highlights provide a snapshot of WRAP activities and efforts that occurred over the past quarter, including the completion of key milestones and outputs. Brief updates on all WRAP actions are included in the status update table at the end of this document.

- Prepare Case Studies of Successful Water Reuse Applications Within an Integrated Water Resources Management (IWRM) Framework (Action 2.1.2): **WateReuse** and action partners—including the **Association of Clean Water Administrators, American Water Works Association, National Ground Water Association, New York City Department of Environmental Protection, Parker Groundwater, Warner and Associates,** and the **City of Roseville, California**—are collating an initial list of case studies that demonstrates water reuse applications in an IWRM framework. IWRM provides a structure for long-term planning that considers how to prepare for current and future water needs in a way that is equitable to the community and environment. The group submitted a session proposal to the WateReuse 2021 Symposium, highlighting several examples around the country. WateReuse and partners aim to conduct initial interviews and develop a case study template in early 2021. If you would like more information or have a potential case study to share, please reach out to Aliza Furneaux (afurneaux@watereuse.org).

- Enhance State Collaboration on Water Reuse (Action 2.2.2): The **Association of Clean Water Administrators, Association of State Drinking Water Administrators, Association of State and Territorial Health Officials, Environmental Council of the States,** and **Groundwater Protection Council**—in collaboration with **EPA** and **WateReuse**—completed and released meeting notes summarizing discussions from the 2020 State Summit on Water Reuse. Moving forward, the state association planning team will continue to evaluate options for future meetings and consider other opportunities to support state priorities, including the needs and potential action items identified through the Summit and other venues.
- Communicate Eligibility of Water Reuse in State Revolving Fund (SRF) Programs (Action 2.6.2A): **EPA** developed a fact sheet that describes water reuse eligibility under the Drinking Water State Revolving Fund (DWSRF). The fact sheet includes case studies that illustrate how communities are using the DWSRF to provide financial assistance for water reuse projects to increase their source-water capacity and secure potable water for the future.
- Support and Promote Opportunities for Creating a Skilled Workforce (Action 2.9.2): In October 2020, **EPA** Administrator Andrew Wheeler announced the release of America's Water Sector Workforce Initiative at the virtual 2020 WEFTEC conference. The initiative identifies actions that EPA, other federal agencies, and water sector partners will take to support a strong, diverse, and resilient water workforce. EPA intends to biannually convene its partners to assess progress, identify new opportunities, and strengthen collaboration. Additionally, the agency plans to publish annual updates to the initiative.

COMMITMENT TO ENVIRONMENTAL JUSTICE

The WRAP seeks to support all communities to build capacity for water reuse projects and enhance the availability and effective use of water resources. Examples of WRAP actions that address some of the environmental and public health challenges disproportionally impacting our nation's minority, low-income, tribal, and indigenous populations include:

- Develop Case Studies of Successful Integration of Low-Input Solutions to Meet Local Water Needs (New Proposed Action 2.1.5)
- Conduct Outreach and Training with Tribes to Build Water Reuse Capacity (Action 2.2.15)
- Evaluate and Optimize Low-Input Treatment Methods to Remove Pharmaceutical Residues from Treated Wastewater Used for Irrigation (New Proposed Action 2.4.7)
- Engagement with Disadvantaged and Rural Communities on Water Reuse (Action 2.8.5)

New Active WRAP Actions

The October quarterly update introduced four new proposed actions across four WRAP strategic themes—science and specifications, technology development and validation, water information availability, and outreach and communications. These actions were developed in collaboration with action leaders, partners, and the WRAP team and reflect public feedback sent to waterreuse@epa.gov. These actions are now fully developed and active on the WRAP Online Platform:

- Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance in Water Reuse (Action 2.3.6): **EPA**
- Implement and Manage the National Alliance for Water Innovation (NAWI) Energy-Water Desalination Hub (Action 2.4.6): **U.S. Department of Energy** and **NAWI**
- Identify Monitoring Practices for Reuse Applications (Action 2.5.2): **Water Research Foundation**
- Engagement with Disadvantaged and Rural Communities on Water Reuse (Action 2.8.5): **EPA**

New Proposed WRAP Actions

New actions are introduced once each quarter to address identified needs and knowledge gaps related to water reuse. The three new proposed actions for this quarter are presented in the table below, with additional information on the actions available through the Online Platform. The WRAP team welcomes feedback on proposed actions via waterreuse@epa.gov through February 5, 2021, which it will compile and share with the potential action leaders before transitioning these to active WRAP actions.

The WRAP team invites the water user community to propose, lead, and collaborate on actions to advance water reuse. Ideas for new actions can be sent to waterreuse@epa.gov at any time. Sources include undeveloped actions from the *Draft Action Plan*, suggestions from the public docket portrayed in *Action Plan Version 1* (Table 3), and entirely new ideas. For information about how to propose a WRAP action, please reference the WRAP action development cycle webpage.

NEW PROPOSED WRAP ACTIONS		
Action Title and Number	**Action Leader(s)**	**Brief Description**
Integrated Watershed Action		
Develop Case Studies of Successful Integration of Low-Input Solutions to Meet Local Water Needs (Action 2.1.5)	**ECOS** Layne Piper	Develop and compile reuse case studies that highlight successful use of low-input solutions (i.e., low-energy, low-cost, and/or low-maintenance technologies) or projects that are accessible to a wide range of practitioners. Examples of low-input solutions may include cisterns or onsite treatment at farm scale, and a relevant project may include employing small-scale irrigation with treated wastewater in lieu of potable water at golf courses or parks. The case studies should demonstrate how these technologies and/or projects address water scarcity issues, help communities access alternative sources of water, create cost savings, and possibly alleviate permitting issues.
Technology Development and Validation		
Evaluate and Optimize Low-Input Treatment Methods to Remove Pharmaceutical Residues from Treated Wastewater Used for Irrigation (Action 2.4.7)	**USDA** Clinton Williams	This action aims to evaluate removal efficiencies and optimal operational parameters for low-input treatment technologies to maximize removal of pharmaceutical residues from municipal wastewater and wastewater produced from animal agriculture. Low-input reuse technologies, such as biochar produced from agricultural byproducts, are easily deployable, and early studies indicate that they may be useful in removing pharmaceutical residues. "Low-input" is a term that describes a combination of low-energy, low-cost, and/or low-maintenance technologies.
Water Information Availability		
Identify Methodologies to Quantify the Current Practice of Water Reuse (Action 2.5.5, previously 2.10.1)	**EPA** Ashley Harper **WEF** Morgan Brown	Build from existing approaches and methodologies to explore and clarify the extent of current water reuse practices around the nation. Developed methodologies are intended to quantify the volumes and potentially the percentages of water reused from key sources, including but not limited to municipal wastewater, stormwater, agricultural drainage, industry process and cooling water, and oil and gas produced water. Baseline estimates should be stratified by state and/or region.

Status Update on WRAP Actions

* *The number of updates made to each action on the Online Platform is cumulative (February–December 2020).*

** *For the implementation progress charts in the table below, the blue area indicates the completed milestones, while the white area reflects pending milestones.*

*** *Complete actions are those where all supporting milestones are completed, and no additional milestones will be added.*

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Integrated Watershed Action				
Prepare Case Studies of Successful Water Reuse Applications **(Action 2.1.2)**	**Greg Fogel** (WateReuse)	The action team continues to collate case studies and initiated conversations with representatives from water organizations where water reuse is considered and implemented as part of integrated water resources management programs.	25	
Leverage EPA's Water Partnership Programs **(Action 2.1.4)**	**Bob Benson** (EPA)	EPA is identifying locations to develop Water Equity Task Force programs that address water supply and infrastructure issues. A document inventorying existing water reuse and integrated water resource management activities within the Urban Waters Program and the National Estuary Program has been created as of August 2020 and is now undergoing review.	29	
Policy Coordination				
Compile Existing State Policies and Approaches to Water Reuse **(Action 2.2.1)**	**Sharon Nappier** (EPA), **Greg Fogel** (WateReuse), **Jake Adler** (ACWA), **Wendi Wilkes** (ASDWA)	EPA secured contractor support to initiate state reuse policy scoping and design conversations with action leaders WateReuse, ACWA, and ASDWA, as well as partners ASTHO, ECOS, WSWC, and GWPC. Work has begun to compile state policy and regulatory documents.	13	
Enhance State Collaboration on Water Reuse **(Action 2.2.2)**	**Ashley Harper** (EPA), **Jake Adler** (ACWA), **Wendi Wilkes** (ASDWA)	ACWA, ASDWA, ASTHO, ECOS, and GWPC, in collaboration with EPA and WateReuse, crafted and reviewed meeting notes from the 2020 State Summit on Water Reuse and are planning opportunities for continued collaboration in 2021.	32	
Enhance Wastewater Source Control Through Local Pretreatment Programs **(Action 2.2.4)**	**Cynthia Finley** (NACWA), **Claudio Ternieden** (WEF)	NACWA is planning to develop an online resource library for case studies and other relevant documents that characterize how pretreatment pollution prevention programs can be incorporated into a water reuse program. The implementation milestone is targeted for completion in March 2021.	7	
Develop Materials on How CWA NPDES Permits Can Facilitate Water Reuse (**Action 2.2.6)**	**David Smith** (EPA), **Kevin Weiss** (EPA), **Sean Rolland** (ACWA)	The workgroup, consisting of EPA, state, permittee, and other stakeholder volunteers, is reviewing a draft question and answer document and an outline for a companion white paper to address key NPDES permitting questions.	28	

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Utilize Existing Working Groups to Coordinate Federal Engagement **(Action 2.2.7)**	**Sharon Nappier** (EPA)	The Inter-Sustainability Working Group, Interagency Water Working Group, and National Drought Resilience Workgroup continue to convene with their partners. The WRAP Federal Partners Workgroup will meet in late January. The milestones in this action are recurring.	27	
Align Tools to Promote Best Management of Unused/Expired Pharmaceuticals **(Action 2.2.9)**	**Sharon Green** (LACSD)	LACSD continues to convene the action team monthly and identified four additional milestones.	19	
Leverage Existing USDA Programs for Consideration of Agricultural Water Reuse **(Action 2.2.12)**	**Alan Gillespie** (USDA)	USDA NRCS announced funding for 31 WaterSMART Initiative Priority Areas in 10 states. NRCS is currently working to provide detailed project descriptions for public view.	43	
Conduct Outreach and Training with Tribes to Build Water Reuse Capacity **(Action 2.2.15)**	**David Smith** (EPA)	EPA posted the Keys to Success: Water Recycling in Tribal Communities webinar recording and transcript on the Water Reuse Activities and Resources page and continues to assess the need for additional tribal support concerning water reuse.	45	
Support Local and Regional Reuse Projects **(Action 2.2.16)**	**Eric Rosenblum, Greg Fogel** (WateReuse), **David Smith** (EPA)	The action team submitted a draft Analytical Framework and Literature Review focused on institutional challenges to water reuse projects, and strategies that promote interagency collaboration. The team will continue to add references to the document throughout the course of the project. The action team also reported its preliminary findings to an international audience at the UNESCO EauMega conference in December and submitted a proposal to present an interactive session at the 2021 WateReuse Symposium.	19	
Propose Nationwide Permit Addressing Reuse **(Action 2.2.17)**	**Jennifer Moyer** (USACE)	USACE published its proposed nationwide permit for water reuse in the Federal Register on September 15, 2020, for public comment.	2	
Science and Specifications				
Compile Existing Fit-for-Purpose Specifications **(Action 2.3.1)**	**Sharon Nappier** (EPA)	EPA and contractors convene weekly, have ongoing meetings with action partners, and welcomed new partner Rich Cripe (Wyoming Department of Environmental Quality). To date, 145 documents have been compiled with fit-for-purpose data. The team has started to draft summaries of the technical basis for fit-for-purpose metrics from state regulations and policies.	16	

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Convene Experts on Urban Stormwater Capture and Use **(Action 2.3.3)**	**David Smith** (EPA), **Chris Kloss** (EPA), **Danielle Johnson** (JFW), **Seth Brown** (NMSA), **Richard Luthy** (ReNUWIt), **Greg Fogel** (WateReuse), **Claudio Ternieden** (WEF)	The action team re-scheduled the in-person convening on urban stormwater capture and use to September 2021 and is planning to host a series of interim webinars focused on specific topics of interest, including stormwater capture drivers and barriers, stormwater treatment standards, and methodologies for estimating stormwater capture potential. The first two webinars will be held in February 2021.	33	
Develop Research and Tools to Support ONWS **(Action 2.3.4)**	**Paula Kehoe** (NBRC for ONWS)	The San Francisco Public Utilities Commission hosted a series of webinars on how to implement an onsite non-potable water reuse system in San Francisco. NBRC is developing a national operator certificate/certification program for onsite non-potable water systems.	20	
Assess Specifications of Wastewater in Food Animal Protein Processing Facilities **(Action 2.3.5)**	**Jay Garland** (EPA)	EPA initiated and defined sampling design in January 2020 and is scheduled to resume March 2021.	7	
Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance in Water Reuse **(Action 2.3.6)**	**Sarah Ludwig-Monty** (EPA)	EPA developed an action implementation plan and accepted applications through the Science to Achieve Results (STAR) program Request for Applications for Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance in Water Reuse. In support of this request, EPA held an informational webinar for the public.	0 New!	
Technology Development and Validation				
Implement New Mexico Produced Water Research Consortium **(Action 2.4.2)**	**Rebecca Roose** (NMED), **Lynette Guevara** (NMED)	New Mexico's PWRC Directors completed data analysis and review efforts from year one, finalized a research plan based on projects identified by six working groups in conjunction with the Consortium research priorities, and outlined new milestones for year two that include conducting public education and outreach meetings, establishing quantitative risk assessments, and selecting research projects.	34	
Support Water Reuse Through DOE's Water Security Grand Challenge **(Action 2.4.3)**	**Diana Bauer** (DOE)	DOE held a virtual summit on the future of water innovation and infrastructure on October 27 and 28, 2020. Additional milestones are being considered for later stages of the prize competitions.	46	
Support Air-Cooling Condensate Water Reuse in Large Buildings **(Action 2.4.5)**	**Thomas Lawrence** (ASHRAE), **Bob Boulware** (Design Aire), **Pete DeMarco** (IAPMO), **Greg Eades** (EPA), **John Wammes** (WW), **Fred Betz** (ASHRAE), **Jay Garland** (EPA), **Gaby Schubert** (WTA)	WTA and co-leaders convened partners ASHRAE, EPA, WateReuse, WEF, and NBRC in initial conference calls and is assessing opportunities to promote public awareness of condensate reuse at virtual events.	23	

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Implement and Manage the National Alliance for Water Innovation (NAWI) Energy-Water Desalination Hub (**Action 2.4.6)**	**Melissa Klembara** (DOE), **Peter Fiske** (NAWI), **Meagan Mauter** (NAWI)	DOE and NAWI coordinated with action partners to develop an action implementation plan. NAWI held their first Annual Summit focusing on critical water challenges on November 18 and 19, 2020.	0 New!	
Water Information Availability				
Foster USDA Watershed-Scale Pilot Projects to Share Water Information **(Action 2.5.1)**	**Alan Gillespie** (USDA)	USDA NRCS funded two water reuse projects under the Conservation Innovation Grant (CIG) program. The CIG program is authorized through 2023 as per the 2018 Farm Bill and new opportunities will be tentatively announced in the spring.	14	
Identify Monitoring Practices for Reuse Applications **(Action 2.5.2)**	**Erin Partlan** (WRF), **Erin Swanson** (WRF)	WRF coordinated with action partners to develop an action implementation plan. WRF accepted submittals through the Request for Qualifications on project 4828 (Develop Standard Operating Procedures for the Collection, Storage, and Extraction of Aqueous Samples for In Vitro Bioanalytical Screening).	0 New!	
Develop National Integrated Water Availability Assessments **(Action 2.5.4)**	**Mindi Dalton** (USGS)	USGS plans to deploy a mapper that incorporates supply and demand in accordance with milestone one in the coming months.	1	
Finance Support				
Compile Federal Funding Sources and Develop Interagency Decision Tool **(Action 2.6.1)**	**Sonia Brubaker** (EPA), **Stephanie Santell** (EPA), **David Smith** (EPA)	The WRAP federal partners group and individual agencies (USDA, USBR) have discussed this action in preparation for a workshop that will identify the highest priority funding or financial programs to include in the tool. The project team gathered basic information about several dozen federal funding programs and conducted interviews with funding program managers at eight federal agencies. The team contacted EPA funding program managers.	12	
Communicate Eligibility of Water Reuse in SRF Programs **(Action 2.6.2A)**	**Justin Mattingly** (EPA), **Kiri Anderer** (EPA)	EPA developed and published a fact sheet detailing how communities can use the Drinking Water State Revolving Fund to obtain financing assistance supporting water reuse projects. This fact sheet also includes case studies of successful projects.	24	
Compile and Promote Existing USDA Resources for Rural Communities **(Action 2.6.4)**	**Steve Polacek** (USDA)	USDA compiled a list of 53 reuse projects funded by the water and waste program and plans to develop a short document detailing these projects. USDA's two funding programs (Water and Waste Disposal Loan and Grant, and Water and Waste Disposal Technical Assistance and Training Grant) will be renewed for FY2021.	16	

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Integrated Research				
Develop a Coordinated National Research Strategy **(Action 2.7.2)**	**Julie Minton** (WRF)	WRF analyzed survey responses from stakeholders on a coordinated national research strategy for water reuse. WRF collaborated with action partners and WRF's steering committee to develop a draft scope of work that is still under consideration.	9	
Increase Understanding of Current Aquifer Storage and Recovery Practices **(Action 2.7.4)**	**Mike Paque** (GWPC), **Justin Mattingly** (EPA), **Kara Goodwin** (EPA)	GWPC's ASR-MAR Workgroup hosted a webinar on November 12, 2020, that focused on managed aquifer recharge in California and exploration techniques for targeting recharge areas. The recording and slides can be found on the Workgroup's webpage. The EPA Office of Research and Development is developing a report addressing the state-of-the-science and knowledge gaps leading to improved understanding of best practices for enhanced aquifer recharge using stormwater. The report is targeted for completion in July 2021.	27	
Coordinate and Promote Water Reuse Technology in Federal SBIR Programs **(Action 2.7.5)**	**April Richards** (EPA)	EPA closed the SBIR solicitation in September 2020 and is finalizing proposal reviews for proposals submitted under Phase 1 topic areas 1A and 1B: monitoring and treatment technologies for water reuse. There was a strong response to the water reuse solicitation topics with 39 proposals submitted in this category.	24	
Develop USBR's Advanced Water Treatment Research Roadmap **(Action 2.7.6)**	**Yuliana Porras-Mendoza** (USBR)	USBR has drafted an advanced water treatment research roadmap that is currently undergoing internal review.	3	
Outreach and Communications				
Compile and Develop Outreach and Communication Materials **(Action 2.8.1)**	**Pat Sinicropi** (WateReuse), **Greg Fogel** (WateReuse)	WateReuse began an assessment of existing communications assets and will issue a request for proposals to develop a communications plan.	0	
Establish a Water Reuse Champion Award Program **(Action 2.8.4)**	**Pete May** (GreenBiz), **Greg Fogel** (WateReuse), **Jon Freedman** (Suez)	The action team met in November to touch base and outline an approach for 2021.	8	
Engagement with Disadvantaged and Rural Communities on Water Reuse **(Action 2.8.5)**	**David Smith** (EPA)	USDA, National Rural Water Association, and the AWWA California-Nevada Section have joined the action team as action partners. EPA coordinated with action partners to develop an action implementation plan.	0 New!	

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Workforce Development				
Support and Promote Opportunities for Creating a Skilled Workforce **(Action 2.9.2)**	**Jim Horne** (EPA), **Greg Fogel** (WateReuse), **Barb Martin** (AWWA), **Claudio Ternieden** (WEF)	EPA Administrator Andrew Wheeler announced the release of America's Water Sector Workforce Initiative on October 5, 2020, at the virtual 2020 WEFTEC conference. The initiative identifies actions EPA, other federal agencies, and water sector partners will be taking in the coming years to ensure a strong, diverse, and resilient water workforce.	10	
Metrics for Success				
Facilitate Implementation of the National Water Reuse Action Plan **(Action 2.10.3)**	**Sharon Nappier** (EPA)	Consistent with the WRAP team charge to pursue the institutionalization of water reuse, EPA established a water reuse team in the Office of Water.	30	
International Collaboration				
Facilitate U.S.-Israel Collaboration on Water Reuse **(Action 2.11.1)**	**Sharon Nappier** (EPA), **Adam Schalimtzek** (MoEP)	MoEP is considering options for a virtual event with states in May 2021. The in-person delegation has been postponed until fall 2021.	27	
Raise Global Water Reuse Awareness and Preparedness **(Action 2.11.2)**	**Allie Davis** (DOS)	DOS added several new implementation milestones and hosted a webinar on water security and transboundary cooperation in North America, highlighting the role that water reuse plays in strengthening domestic and regional water security and transboundary water management.	51	
Complete Actions* **				
Inclusive of the following completed actions: **Action 2.1.1**, **Action 2.2.3**, and **Action 2.6.2B**.			38	
41 Developed Actions	**30 Unique Action Leaders**		**762 Updates to Online Platform**	**139 Milestones Completed**

Abbreviations Used in This Table					
ACWA	Association of Clean Water Administrators	JFW	Johnson Foundation at Wingspread	PWRC	Produced Water Research Consortium
ASDWA	Association of State Drinking Water Administrators	LACSD	Sanitation Districts of Los Angeles County	SBIR	Small Business Innovation Research
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers	MoEP	Ministry of Environmental Protection (Israel)	USACE	U.S. Army Corps of Engineers
ASTHO	Association of State and Territorial Health Officials	NACWA	National Association of Clean Water Agencies	USBR	U.S. Bureau of Reclamation
AWWA	American Water Works Association	NAWI	National Alliance for Water Innovation	USDA	U.S. Department of Agriculture
DOE	U.S. Department of Energy	NBRC	National Blue Ribbon Commission	USGS	U.S. Geological Survey
DOS	U.S. Department of State	NMED	New Mexico Environment Department	WEF	Water Environment Federation
ECOS	Environmental Council of the States	NMSA	National Municipal Stormwater Alliance	WIFIA	Water Infrastructure and Finance Innovation Act
EPA	U.S. Environmental Protection Agency	NPDES	National Pollutant Discharge Elimination System	WRF	Water Research Foundation
GWPC	Groundwater Protection Council	NRCS	Natural Resources Conservation Service	WSWC	Western States Water Council
IAPMO	International Association of Plumbing and Mechanical Officials	ONWS	onsite non-potable water reuse system	WTA	Water Tech Alliance
				WW	Water Works, Inc.