

NATIONAL WATER REUSE ACTION PLAN



NATIONAL WATER REUSE ACTION PLAN QUARTERLY UPDATE April–June 2021

A Message from Sharon Nappier, National Program Leader for Water Reuse

EPA’s Water Reuse Team released the [WRAP Update on Collaborative Progress](#) in April, showcasing key action team accomplishments from the first year of implementation, including coordinating reuse research, conducting targeted community capacity building, and fostering new partnerships. The accompanying [webinar](#), “Resilience Through Collaboration: First Year Highlights and Future Directions of the National Water Reuse Action Plan,” featured voices of federal leadership, WRAP action leaders and partners, and other water reuse practitioners as a reminder of why our work to advance the consideration and implementation of reuse is so valuable. As Felicia Marcus of Stanford University’s Water in the West Program said in her keynote address, “The best part [of the WRAP collaborative] is the people—who, in their individual ways and in their individual communities, realize that they can do more collectively.”

There is exciting work anticipated in the coming year, including case study compilations, funding for innovative water reuse research, virtual convenings and events to discuss international policies and stormwater capture and use, and online compilations for both the fit-for-purpose specifications and federal funding sources for water projects. Such efforts are actively growing the body of reuse knowledge and best practices for the benefit of all.

Easier Access to WRAP Outputs—New Online Water Reuse Information Library

EPA’s Water Reuse Team launched a new, interactive [information library](#) to help water reuse practitioners access relevant and important water reuse resources, including publications, fact sheets, webinar recordings, and webpages. This searchable library displays detailed information about each resource, such as its description, contributors, and use application. The library primarily features outputs from WRAP actions, but also includes some resources not necessarily directly associated with WRAP activities. The number of resources will grow over time as more WRAP actions are completed, additional resources are identified, and water reuse collaborations expand. Based on user feedback, the navigation functions and other aspects of the library may evolve. Feel free to share any feedback by emailing waterreuse@epa.gov.

Instructions: Click on a resource in the table to display detailed information about each. You may also use the search function below, which filters results to show only those containing the text string entered.

Search:

Rightmost Column : Date Of Publication Release

Show 25 entries

Name	Description	Focus Area	Water Reuse Applications	Date Of Publication Release
Onsite Water Reuse in San Francisco Webinar Series	The San Francisco Public Utilities Commission (SFPUC) and the San Francisco Department of Public Health (SFDPH) hosted a series of recorded water reuse webinars that provided key updates and technical guidance on implementing onsite non-potable water reuse systems in San Francisco, California.	Science and Specifications	Onsite non-potable	11/1/20
Small and Rural Reuse Projects List	The U.S. Department of Agriculture (USDA) compiled list of reuse projects funded by its water and waste program. Fifty-four projects were identified through the effort.	Finance Support	Landscape irrigation, Industrial	9/30/20
Stormwater Capture Drivers, Impediments, and Future Visions Webinar	This webinar explored stormwater capture drivers, barriers, and future directions.	Science and Specifications	Various applications	2/3/21

[Water Reuse Information Library](#)

Active Action Highlights

The following action highlights provide a snapshot of WRAP activities and efforts 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 below. Organization acronyms are defined in the abbreviations table at the end of this document.

Technical Accomplishments

- *Support Water Reuse Through DOE's Water Security Grand Challenge (Action 4.3)*: DOE published a [report](#) on the proceedings and discussion held at the October 2020 Future of Water Infrastructure and Innovation Summit. The summit convened experts and practitioners to develop a vision for the future of domestic water and wastewater infrastructure and identify the technology and innovation advances needed to meet this vision.
- *Implement and Manage the National Alliance for Water Innovation (NAWI) Energy-Water Desalination Hub (Action 4.6)*: In May 2021, NAWI released a series of [water use roadmaps](#), outlining and assessing the role of the five end-use sectors critical to the U.S. economy for further exploration: power, resource extraction, industry, municipal, and agriculture. Under NAWI's vision, the transition from a linear to a circular water economy with nontraditional sources of water will be achieved by advancing desalination and water reuse technologies in six key challenge areas: autonomous, precise, resilient, intensified, modular, and electrified.

Financial Accomplishments

- *Clarify and Communicate the Eligibility of Water Reuse Under the Clean Water and Drinking Water State Revolving Fund Programs (Action 6.2A)*: The EPA CWSRF program completed the document [Integrating Water Reuse into the Clean Water State Revolving Fund](#). It includes information on the eligibility of water reuse in the CWSRF and highlights successful policies and practices that the state CWSRF programs have implemented to support reuse projects.
- *Coordinate and Promote Water Reuse Technology in Federal Small Business Innovation Research Programs (Action 7.5)*: EPA announced its 2021–2022 SBIR Phase I Solicitation to develop innovative technologies that protect human health and the environment. EPA is calling for small businesses to apply for awards up to \$100,000 to demonstrate proof of concept in various [topics](#), including modular decentralized non-potable water reuse for urban applications and low-input decentralized non-potable water reuse for irrigation applications. Information about the SBIR program and how to apply for an SBIR contract is available [here](#). To join the SBIR listserv, please sign up [here](#).

REUSE RESEARCH AND PROJECT FUNDING OPPORTUNITIES

National Priorities: Water Innovation, Science, and Engagement to Advance Water Reuse Request for Applications (RFA)

EPA is seeking applications for research to accelerate water innovation that advances clean and safe water reuse goals, promotes better understanding of the Nation's water and wastewater treatment and infrastructure, and enhances the availability and efficient use of water resources through water reuse. This RFA is intended to address multiple water reuse sources and applications that support national efforts to reduce technological and institutional barriers for expanded water reuse. To learn more, register [here](#) to join an information webinar on **August 5, 2021**. The RFA is open for applications now through **September 29, 2021**. For more information on eligibility, project specifications, or how to apply, visit [this webpage](#). *This opportunity is affiliated with Action 10.3: [Facilitate Implementation of the WRAP](#).*

Desalination and Water Purification Research Program

The U.S. Bureau of Reclamation is making up to \$7.85 million available through its [DWPR](#) program for fiscal year 2022. Research sponsors are encouraged to submit applications which address DWPR program goals and objectives through laboratory or pilot scale studies. The funding opportunity is available [here](#). Applications are due on **September 9, 2021**.

Institutional Accomplishments

- *Leverage EPA's Water Partnership Programs to Consider Water Reuse in the Context of Integrated Water Resources Management at the Watershed Scale (Action 1.4)*: EPA created a [compendium](#) of existing water reuse and integrated water resource management activities within its National Estuary Program and Urban Waters Program. The examples and information provided in this report highlight some of the innovative ways that these programs advance safe and reliable water reuse systems while promoting healthy watersheds.
- *Enhance State Collaboration on Water Reuse (Action 2.2)*: ACWA, ASDWA, ASTHO, ECOS, GWPC, and EPA have compiled a list of state water reuse contacts, available as an action output [here](#). This list presents contact information for state members involved in water reuse across the country to help facilitate networking and information-sharing opportunities among state staff and programs. The action team plans to reevaluate this list periodically or update it based on information provided by states.
- *Facilitate U.S.-Israel Collaboration on Technology, Science, and Policy of Water Reuse (Action 11.1)*: A water reuse virtual tour hosted by MoEP, MoEI, and EPA in collaboration with IWA, MoARD, MoH, WaterEdge.IL, WaterReuse, USDA, and FDA furthered a long-standing environmental knowledge-sharing partnership between the United States and Israel. The three-day event covered measures that enable Israel to recycle over 85 percent of its wastewater for agricultural use. Topics included Israel's water reuse regulatory approaches, case studies, technology, and agricultural irrigation applications. Recordings of each session are available [here](#).

STORMWATER EVENTS AND RESOURCES

Are you interested in learning more about stormwater capture and use? Check out related resources produced by WRAP action teams over the last year.

- This stormwater capture and use webinar series is hosted by NMSA, ReNUWIt, WEF, JFW, EPA, and WaterReuse (Action 3.3):
 - [Stormwater Capture Drivers, Impediments, and Future Visions](#)
 - [Treatment Standards for Stormwater Capture and Use: How Are We Doing?](#)
 - [Achieving Multiple Benefits Through Stormwater Capture and Use Projects](#)
- [Enhanced Aquifer Recharge: Influence of Stormwater on Groundwater Quality and Aquifer Recharge](#)
EPA ORD hosted a webinar that highlights the state of the science on information leading to best practices for enhanced aquifer recharge using stormwater (Action 7.4).
- [Keys to Success: Water Recycling in Tribal Communities](#)
The San Pasqual Band of Mission Indians and EPA presented this webinar, which includes examples of stormwater reuse (Action 2.15).
- [2020 State Summit on Water Reuse Meeting Notes Summary](#)
This document summarizes a session on stormwater and aquifer recharge approaches to maximize co-benefits and was completed by ACWA, ASDWA, ASTHO, ECOS, and GWPC in collaboration with EPA and WaterReuse (Action 2.2).



The Gates Foundation's 2-million-gallon capacity stormwater system in Seattle, Washington, collects and treats water from its central plaza and non-vegetative roof for flushing toilets, irrigation, and replenishing central plaza ponds.

New Active WRAP Action

[Action 7.7](#), Life-Cycle Analysis to Support Cost-Effective Enhanced Aquifer Recharge, is now active on the [WRAP Online Platform](#). More details on this action will be available in the Online Platform after the Request for Applications is released. This EPA-led action was proposed in the [April quarterly update](#).

Completed WRAP Action

A new completed WRAP action summary, featuring the accomplishments and impact of activities under Action 2.15, is available on [this webpage](#). As part of the action, EPA and partners NTC, NDRP, NTWC, and RTOCs conducted outreach and training with tribes to build water reuse capacity. After initial engagement with various tribal associations and EPA Regional Offices, the team assembled examples of tribal water reuse and delivered a training webinar that included direct narrative from the San Pasqual Band of Mission Indians on their water reuse projects. The team plans to continue tribal reuse engagement as part of [Action 8.5](#), Engagement with Disadvantaged and Rural Communities on Water Reuse.

Proposed WRAP Actions

The table below lists three proposed WRAP actions, with more information available in the Online Platform. Feedback on the actions via waterreuse@epa.gov is welcomed through August 27, 2021. The EPA Water Reuse Team will compile and share this feedback with the potential action leaders before these actions become active.

Members of the water user community are invited to propose, lead, and collaborate on actions to advance water reuse. Ideas for new actions may be sent to waterreuse@epa.gov at any time. For information about how to propose a WRAP action, visit [this webpage](#).





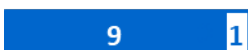

PROPOSED WRAP ACTIONS		
Action Title and Number	Action Leader	Brief Description
Strategic Theme: Science and Specifications		
Develop Issue Papers on Emerging Public Health Topics in Water Reuse (Action 3.7)	<p>EPA Ashley Harper</p> <p>FDA Kruti Ravaliya</p>	This action should explore the science of emerging public health topics relevant to water reuse through development of white papers and/or other types of publications. Example topics may include suspected microbiological or chemical constituents of interest to public health. Topics warranting further investigation and research may be expanded into additional actions within the WRAP in the future.
Strategic Theme: Outreach and Communications		
Develop Public Health and Resiliency-Focused Water Reuse Communication Tools (Action 8.6)	<p>CDC Mia Mattioli</p> <p>EPA Rabia Chaudhry Ashley Harper</p>	The action team should develop communication materials and an outreach plan for medical and public health professionals, as well as materials for the public, about the quality of recycled water. Content may include introductory information on water reuse; reuse water quality and human health; climate adaptation and resiliency benefits of incorporating reuse within a community water supply portfolio; and/or descriptions of how decentralized water reuse can help with extreme weather event preparedness.
Strategic Theme: International Collaboration		
Develop and Highlight Case Studies Relevant to the Water in Circular Economy and Resilience (WICER) Framework (Action 11.3)	<p>EPA Rabia Chaudhry</p> <p>The World Bank Clémentine Marie Stip</p>	Underserved communities in the U.S. and middle-income countries can mutually benefit by exchanging examples of innovative water reuse solutions reflecting their shared experiences. The World Bank has developed a streamlined approach to preparing water reuse case studies from around the world as part of a new Water in Circular Economy and Resilience (WICER) framework. This action should leverage the resources of the World Bank and EPA to develop case studies tailored to the needs of underserved Americans as well as similar international communities with a focus on financial, institutional, and policy aspects for centralized and decentralized water reuse systems.


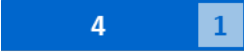





Status Update on WRAP Actions








* The number of updates made to each action on the [Online Platform](#) is cumulative (February 2020–June 2021).

** For the implementation progress bar graphs in the table below, the dark blue area indicates the completed milestones, the light blue area indicates milestones that are in progress, and the white area reflects forecasted future milestones.

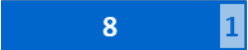



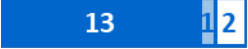


*** Complete actions are those where all supporting milestones are completed, and no additional milestones will be added.





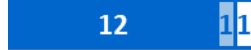


Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Integrated Watershed Action				
Prepare Case Studies of Successful Water Reuse Applications (Action 1.2)	Aliza Furneaux (WateReuse)	The action team will release a compilation of four case studies that explore how communities incorporated water reuse into their integrated water management processes or plans in summer 2021. The case studies include recycled water used for irrigation, onsite reuse, surface water augmentation, and indirect potable reuse.	32	
Leverage EPA's Water Partnership Programs (Action 1.4)	Bob Benson (EPA)	The water reuse and water resource management inventory was published in April 2021 and will serve as a foundation to leverage strong multi-stakeholder relationships in addressing water scarcity issues and reuse opportunities in communities across the country. A water reuse pilot project in collaboration with River Network and National Park Service, under milestone 7, is nearing completion in San Antonio and Verde River basins given initial funding. Final deliverables and reports should be available by the end of the fiscal year.	49	
Develop Case Studies of Low-Input Solutions (Action 1.5)	Layne Piper (ECOS)	ECOS is identifying potential case studies showcasing the integration of low-input solutions across a variety of geographic areas, community sizes, and applications of water reuse.	0	
Policy Coordination				
Compile Existing State Policies and Approaches to Water Reuse (Action 2.1)	Jake Adler (ACWA), Wendi Wilkes (ASDWA), Sharon Nappier (EPA), Greg Fogel (WateReuse)	Work has begun to compile and organize state policy and regulatory documents.	21	
Enhance State Collaboration on Water Reuse (Action 2.2)	Jake Adler (ACWA), Wendi Wilkes (ASDWA), Ashley Harper (EPA)	ACWA, ASDWA, ASTHO, ECOS, GWPC, and EPA compiled a publicly accessible list of state water reuse contacts and roles and began planning the 2022 State Summit on Water Reuse.	47	
Enhance Wastewater Source Control Through Local Pretreatment Programs (Action 2.4)	Cynthia Finley (NACWA), Claudio Ternieden (WEF)	NACWA is developing 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.	10	

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Develop Materials on How CWA NPDES Permits Can Facilitate Water Reuse (Action 2.6)	David Smith (EPA), Kevin Weiss (EPA), Sean Rolland (ACWA)	The action workgroup, consisting of EPA, state, permittee, and other stakeholder volunteers, is developing a white paper to compile case studies addressing key NPDES permitting questions specific to water reuse.	30	
Utilize Existing Working Groups to Coordinate Federal Engagement (Action 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. A status report for the NDRP is expected to be published this summer.	35	
Align Tools to Promote Best Management of Unused/Expired Pharmaceuticals (Action 2.9)	Sharon Green (LACSD)	The action team meets monthly to explore opportunities to align messaging related to pharmaceutical waste disposal. The development of case studies to highlight pollution prevention strategies and outreach and communication materials are expected to be completed in September 2021.	27	
Leverage Existing USDA Programs for Consideration of Agricultural Water Reuse (Action 2.12)	Alan Gillespie (USDA)	NRCS will evaluate the effectiveness of two interim practice standards, Managed Aquifer Recharge and Groundwater Recharge Basin, in California as part of their fiscal year 22 program delivery.	48	
Support Local and Regional Reuse Projects (Action 2.16)	Eric Rosenblum , Greg Fogel (WateReuse), David Smith (EPA)	The action team completed research and interviews with key water practitioners, and received input from a peer-review panel on a report summarizing institutional challenges, innovative governance structures and models, and critical factors in selecting interagency collaboration models. The action team also prepared a webinar for the WateReuse Association titled "Multi-Agency Water Reuse Programs: <i>Insights into Interagency Collaboration.</i> "	31	
Propose Nationwide Permit Addressing Reuse (Action 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. Proposed nationwide permit E is being considered for finalization in the coming months.	2	
Science and Specifications				
Compile Existing Fit-for-Purpose Specifications (Action 3.1)	Sharon Nappier (EPA)	EPA and contractors convene weekly and have ongoing meetings with action partners. The team is currently working to summarize the technical basis for state regulatory and guidance documents with fit-for-purpose reuse specifications.	17	

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 3.3)	David Smith (EPA), Chris Kloss (EPA), Danielle Johnson (JFW), Seth Brown (NMSA), Richard Luthy (ReNUWit), Greg Fogel (WateReuse), Claudio Ternieden (WEF)	EPA, WateReuse, NMSA, ReNUWit, and WEF co-sponsored a webinar on June 9, 2021, that explored how stormwater capture and use projects can be designed to provide benefits far beyond the management of stormwater. The action team is planning another webinar that will focus on benefits estimation needs and methods.	55	
Develop Research and Tools to Support ONWS (Action 3.4)	Paula Kehoe (NBRC for ONWS)	EPA ORD published three papers on the NEWWR calculator , graywater and wastewater log₁₀ reduction targets , and bacteria in graywater .	34	
Assess Specifications of Wastewater in Food Animal Protein Processing Facilities (Action 3.5)	Jay Garland (EPA)	EPA initiated and defined sampling design in January 2020 and resumed sampling work in March 2021.	7	
Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance (Action 3.6)	Sarah Ludwig-Monty (EPA)	EPA ORD completed eligibility, peer, and relevancy review in April 2021 for EPA STAR program Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance in Water Reuse applications. Awards are expected to be announced August 2021.	2	
Technology Development and Validation				
Implement New Mexico Produced Water Research Consortium (Action 4.2)	Rebecca Roose (NMED), Lynette Guevara (NMED)	New Mexico's PWRC Directors selected nine projects to advance the Consortium's agenda for year two. Project review teams will work with all project proponents to develop detailed operations and testing approaches, sampling and monitoring plans, quality assurance/quality control plans, cost and performance evaluation criteria and approaches, and regulatory compliance plans.	46	
Support Water Reuse Through DOE's Water Security Grand Challenge (Action 4.3)	Diana Bauer (DOE)	DOE published a report in June 2021 summarizing the discussions from the Future of Water Infrastructure and Innovation Summit in October 2020.	73	
Support Air-Cooling Condensate Water Reuse in Large Buildings (Action 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), Michael Jahne (EPA)	The action team added three new milestones to reflect an EPA study of condensate water quality promoting study collaboration from partner universities and utilities.	47	

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Implement and Manage the NAWI Energy-Water Desalination Hub (Action 4.6)	Melissa Klembara (DOE), Peter Fiske (NAWI), Meagan Mauter (NAWI)	NAWI published five roadmaps and baseline analysis for five end-use sectors in May 2021 to support the research priorities over the next five years.	10	6 2 3
Evaluate Low-Input Methods to Remove Pharmaceutical Residues (Action 4.7)	Clinton Williams (USDA)	Action partners at Penn State University are conducting ongoing research.	1	4
Water Information Availability				
Foster USDA Watershed-Scale Pilot Projects to Share Water Information (Action 5.1)	Alan Gillespie (USDA)	USDA NRCS's CIG program opened May 18, 2021 and accepted applications through July 19, 2021. This year's CIG includes a priority area of "Water Resources and Increased Resilience: Climate-Smart Strategies," and is seeking proposals for technologies that address water quality/quantity issues through climate-smart strategies (e.g., improving groundwater recharge).	15	2
Identify Monitoring Practices for Reuse Applications (Action 5.2)	Erin Partlan (WRF), Erin Swanson (WRF)	Research teams are getting underway to begin research on two projects: (1) developing standard operating procedures for the collection, storage, and extraction of aqueous samples for <i>in vitro</i> bioanalytical tool screening and (2) assessing water quality monitoring needs, tools, gaps, and opportunities for potable water reuse.	5	3 5 4
Develop National Integrated Water Availability Assessments (Action 5.4)	Mindi Dalton (USGS)	USGS developed project plans; work is underway to identify gaps and compile information needed to initiate simulations for suitable use estimates.	4	1 3
Quantify the National Volumes of Water Potentially Available for Reuse (Action 5.5)	Ashley Harper (EPA), Patrick Dube (WEF), Greg Fogel (WaterReuse)	This action is building on the 2018 WEF ReNEW Water Project to quantify the current amount of municipal wastewater reuse and potential volumes available for additional reuse. The action team is concurrently assembling a steering committee to provide support and expertise in quantifying the potential for water reuse from one additional source of water.	1	2 5
Finance Support				
Compile Federal Funding Sources and Develop Interagency Decision Tool (Action 6.1)	Sonia Brubaker (EPA), Stephanie Santell (EPA), David Smith (EPA)	The action team has completed work on determining the user requirements and framing the user interface for the tool to be developed.	30	6 2

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Communicate Eligibility of Water Reuse in SRF Programs (Action 6.2A)	Justin Mattingly (EPA), Kiri Anderer (EPA)	The Council of Infrastructure Financing Authorities' newsletter, released in May 2021, provided updates on the availability of \$1 billion in funding through WIFIA for state infrastructure financing authorities and EPA's release of the report Integrating Water Reuse into the Clean Water State Revolving Fund .	32	
Compile and Promote Existing USDA Resources for Rural Communities (Action 6.4)	Steve Polacek (USDA)	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 fiscal year 2021.	16	
Integrated Research				
Develop a Coordinated National Research Strategy (Action 7.2)	Julie Minton (WRF)	WRF continues to develop recommendations for stormwater harvesting projects and associated research needs based on an understanding of stormwater harvesting practices at local, regional, and state levels through project 4841 . This will be coordinated with Action 3.3.	11	
Increase Understanding of Current Aquifer Storage and Recovery Practices (Action 7.4)	Mike Paque (GWPC), Justin Mattingly (EPA), Kara Goodwin (EPA)	Three EPA-led white papers on aquifer recharge and aquifer storage and recovery are under development.	37	
Coordinate and Promote Water Reuse Technology in Federal SBIR Programs (Action 7.5)	April Richards (EPA)	EPA released the 2021–2022 SBIR Phase I Solicitation , which includes two water reuse topics and will remain open until August 3, 2021.	42	
Develop USBR's Advanced Water Treatment Research Roadmap (Action 7.6)	Yuliana Porras-Mendoza (USBR)	USBR has drafted an advanced water treatment research roadmap that is currently undergoing internal review.	3	
Life-Cycle Analysis to Support Cost-Effective Enhanced Aquifer Recharge (Action 7.7)	Jacquelyn Bell (EPA)	EPA has developed an Action Implementation Plan. The request for applications is scheduled to be released this summer.	New!	

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Outreach and Communications				
Compile and Develop Outreach and Communication Materials (Action 8.1)	Pat Sinicropi (WateReuse), Greg Fogel (WateReuse)	WateReuse began an assessment of existing communications materials and will issue a request for proposals to develop a communications plan this summer.	2	
Establish a Water Reuse Champion Award Program (Action 8.4)	Shana Rappaport (GreenBiz), Greg Fogel (WateReuse), Jon Freedman (Suez)	WateReuse and Suez will meet in July to begin developing Water Reuse Champion awards programs.	9	
Engagement with Disadvantaged and Rural Communities on Water Reuse (Action 8.5)	David Smith (EPA)	In June 2021, EPA held two webinars focusing on advancing water reuse in small and disadvantaged communities. The outreach and listening sessions focused on introducing water recycling opportunities and hearing communities' interests in water recycling and needs for support to pursue recycling programs.	3	
Workforce Development				
Support and Promote Opportunities for Creating a Skilled Workforce (Action 9.2)	Jim Horne (EPA), Greg Fogel (WateReuse), Barb Martin (AWWA), Claudio Ternieden (WEF)	AWWA is currently collecting information on existing water reuse training materials to support state-level efforts to develop advanced water treatment operations and water reuse training programs. Once the compilation is complete, AWWA will develop recommendations to expand operator training to support water reuse and other advanced water treatment operations nationwide.	13	
Metrics for Success				
Facilitate Implementation of the National Water Reuse Action Plan (Action 10.3)	Sharon Nappier (EPA)	The National Water Reuse Action Plan: Update on Collaborative Progress was released on April 29, 2021. The update chronicles highlights and successes from the past year of WRAP implementation. An accompanying " Resilience Through Collaboration " webinar was held in conjunction with the release.	45	
International Collaboration				
Facilitate U.S.-Israel Collaboration on Water Reuse (Action 11.1)	Sharon Nappier (EPA), Adam Schalimtzek (MoEP), Omer Bab (MoEI)	In May 2021, MoEP, MoEI, and EPA, in collaboration with various partner organizations, held a three-day virtual tour of water reuse in Israel. The team will soon begin planning for an in-person delegation mission to Israel in fall 2021.	46	
Raise Global Water Reuse Awareness and Preparedness (Action 11.2)	Allie Davis (DOS)	DOS continues to identify opportunities to highlight water reuse efforts globally through collaboration, including participating in meetings with EPA and the World Bank to frame proposed Action 11.3.	64	

Shortened Action Title and Number	Action Leader(s)	Brief Update	# of Updates to Online Platform*	Implementation Progress**
Complete Actions***				
Inclusive of the following completed actions: <ul style="list-style-type: none"> • Develop Federal Policy Statement to Support Consideration of Water Reuse (Action 1.1) • Complete the EPA Study of Oil and Gas Extraction Wastewater Management (Action 2.3) • Conduct Outreach and Training with Tribes to Build Water Reuse Capacity (Action 2.15) • Support and Communicate WIFIA Funding (Action 6.2B) 			86	15
41 Active Actions 4 Complete Actions	32 Unique Action Leaders		1,088 Updates to Online Platform	194 Milestones Completed

Abbreviations Used in This Document

ACWA	Association of Clean Water Administrators	IWA	Israel Water Authority	NTC	National Tribal Caucus
ASDWA	Association of State Drinking Water Administrators	JFW	Johnson Foundation at Wingspread	NTWC	National Tribal Water Council
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers	LACSD	Sanitation Districts of Los Angeles County	ONWS	Onsite Non-potable Water Reuse System
ASTHO	Association of State and Territorial Health Officials	MoARD	Ministry of Agriculture and Rural Development (Israel)	ORD	Office of Research and Development
AWWA	American Water Works Association	MoEI	Ministry of Economy and Industry (Israel)	PWRC	Produced Water Research Consortium
CDC	Centers for Disease Control and Prevention	MoEP	Ministry of Environmental Protection (Israel)	RTOCs	Regional Tribal Operations Committees
CIG	Conservation Innovation Grant	MoH	Ministry of Health (Israel)	SBIR	Small Business Innovation Research
CWSRF	Clean Water State Revolving Fund	MoEP	Ministry of Environmental Protection (Israel)	STAR	Science to Achieve Results
DOE	U.S. Department of Energy	NACWA	National Association of Clean Water Agencies	USACE	U.S. Army Corps of Engineers
DOS	U.S. Department of State	NAWI	National Alliance for Water Innovation	USBR	U.S. Bureau of Reclamation
DWPR	Desalination and Water Purification Research	NBRC	National Blue Ribbon Commission	USDA	U.S. Department of Agriculture
ECOS	Environmental Council of the States	NEWR	Non-potable Environmental and Economic Water Reuse	USGS	U.S. Geological Survey
EPA	U.S. Environmental Protection Agency	NDRP	National Drought Resilience Partnership	WEF	Water Environment Federation
FDA	U.S. Food and Drug Administration	NMED	New Mexico Environment Department	WIFIA	Water Infrastructure and Finance Innovation Act
GWPC	Groundwater Protection Council	NMSA	National Municipal Stormwater Alliance	WICER	Water in Circular Economy and Resilience
IAPMO	International Association of Plumbing and Mechanical Officials	NPDES	National Pollutant Discharge Elimination System	WRF	Water Research Foundation
		NRCS	Natural Resources Conservation Service	WSWC	Western States Water Council
				WTA	Water Tech Alliance
				WW	Water Works, Inc.