

# National Priorities

## Water Research Grant Program Successes

### About the National Priorities Water Research Grant Program

Since Fiscal Year 2012, the National Priorities Water Research Grant Program (Program) has funded research on issues of national significance and of importance to the water sector. The Program, informed by the Nation's water and wastewater utilities, was specifically designed to address the country's highest priority drinking water, wastewater, water reuse, and stormwater research needs through targeted applied research projects. The Program requires that grant funding be cost shared with at least a 25% matching contribution to leverage more research through partnerships. This research has produced valuable information and tools to help meet today's water needs nationwide.

### Ask

The Water Research Foundation (WRF) is the nation's leading nonprofit water research organization. WRF research is used by water sector professionals to improve the quality of our national water resources and protect public health. WRF requests that policymakers continue to support the development of cost shared, applied research partnerships dealing with top priority water issues identified by water and wastewater utilities and their ratepayers nationwide.

### Impact

Funding for water research is critical to our nation as we face challenges such as aging infrastructure, dwindling water supplies, per- and poly-fluoroalkyl substances (PFAS), and lead in drinking water. We also look forward to a number of unprecedented opportunities, such as reusing water and resource recovery. Since 2012, the Program has invested more than \$21 million in research projects of critical importance to the water sector. These funds are leveraged through partnerships with utilities and leading research programs, resulting in an additional \$7 million of research value. National Priorities research has resulted in 450 publications in professional conference proceedings and peer-reviewed journals.

**\$21** Million Invested  
**\$7M** Additional Leveraged  
**450** Publications  
**44** Research Institutions  
Benefits All **50** States

To date, the Program has developed critical research to advance national priorities for the water sector, including:

- Impacts of water conservation on water quality
- Costs and benefits of green and gray infrastructure to support integrated planning and create more livable communities
- Strategies to improve the Nation's ability to plan and respond to water scarcity and drought
- Management and recovery of nitrogen and phosphorus from municipal and agricultural wastewater to improve water quality and help prevent impacts to drinking water supplies
- Strategies to reduce lead exposure from drinking water
- Solutions for challenges associated with PFAS on water quality

Many of these research projects rely on strong partnerships with local water utilities who provide data, serve as pilot sites, and use the results to help improve their decision making. In fact, researchers and utilities from 20 states and the District of Columbia (shown in Figure 1) have received funding and all 50 states have benefited from this competitive program.

## Successes of The Water Research Foundation

### Resource Recovery and Nutrient Management

The National Center for Resource Recovery and Nutrient Management, started in 2013, provides data, demonstrations, and tools to catalyze a paradigm shift in the water quality community—one where nitrogen and phosphorus are not regarded as wastes, but rather as valuable resources. Seven projects, which included eight universities and more than a dozen water utilities working across the nation, addressed innovative technologies and practices to efficiently remove or recover nutrients from a variety of sources, at the household scale, centralized wastewater treatment plants, urban stormwater, and animal manure. Results from these studies are expected to help the water sector reduce the energy needed to treat wastewater by two-thirds, almost completely eliminate the need for additional chemicals, help recover nutrients from urine, convert livestock waste to fertilizer for agricultural and other purposes, and help prevent groundwater contamination.

### Extreme Weather Events

*An Integrated Modeling and Decision Framework to Evaluate Adaptation Strategies for Sustainable Drinking Water Utility Management Under Drought and Climate Change*, a 4-year project initiated in September 2015, is investigating how extreme weather events, such as drought and catastrophic

flooding, impact surface water and groundwater quality and availability. Working with utilities, The Water Research Foundation and The University of Colorado-Boulder are developing an integrated framework to help understand the variability of key water quality parameters, along with a decision tool for evaluating adaptation strategies. The project results and tools will allow utility managers to quantify the risks of relevant climate extremes and other natural hazards impacting water quantity, quality, and subsequent water treatment challenges.

### Stormwater Infrastructure Costs

Started in 2016, *Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs (CLASIC)* will develop a transparent and accessible life cycle cost/life cycle analysis framework model for stormwater infrastructure alternatives that can support integrated planning. CLASIC will serve as a screening tool to guide decision making by utilities on when, how, and where to install green infrastructure, hybrid green-gray systems, and gray infrastructure. The tool will help communities make better informed decisions about stormwater infrastructure.

### Contact Information

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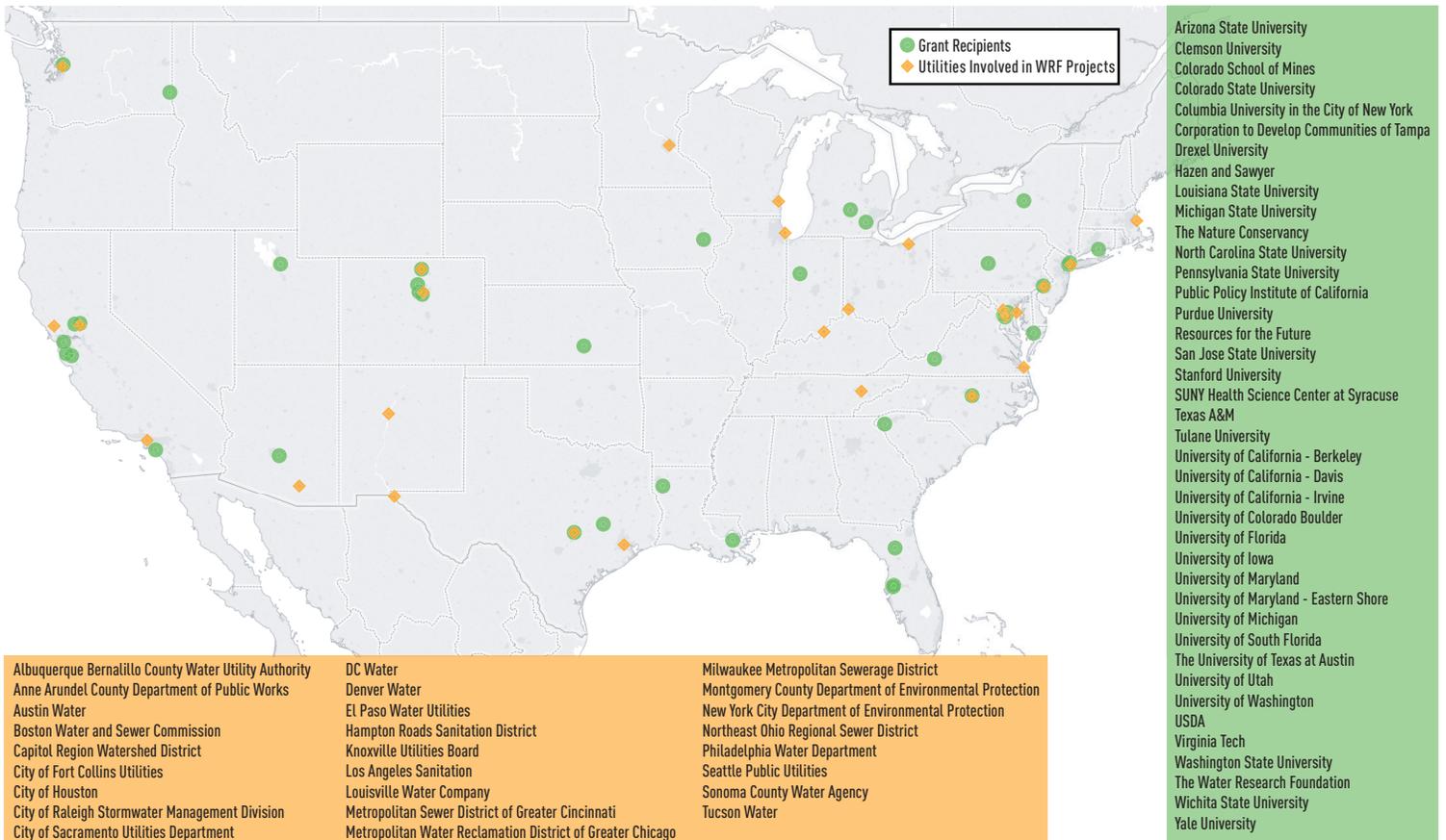


Figure 1. National Priorities Research Program Grant Recipients and Participating Utilities