

HDR's One Water Institute Drives Holistic Innovation Through Research

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HDR's One Water Applied Research Team performs ozone/peroxide bench scale testing providing technical solutions for taste and odor and HABs events. Visit our One Water Institute page at www.hdrinc.com/services/research/applied-water-research.

The demand for innovation in the water industry continues to grow as changing regulations, developing environmental conditions, and public health issues pose new and complex challenges to our communities. In an effort to help our clients with the evolving state of technology, HDR has been heavily involved in water research for the past 40 years. These efforts include participation in over 80 Water Research Foundation studies, water quality testing at our Applied Research and Engineering Center, and numerous client partnerships to perform bench and pilot-scale testing for site specific investigations.

Most recently, water utilities are moving towards a novel focus on sustainability, resource recovery, and improving operational efficiency through management of the entire water cycle – a truly “One Water” shift in how utilities have traditionally been managed. A

One Water utility manages an amalgam of wastewater treatment, water reuse, groundwater, stormwater, and water treatment through a holistic lens that focuses on providing safe water while being mindful of environmental and social impacts.

The drivers to pursue a One Water approach to utility management are typically not equivalent for all utilities. Regional differences in water supply, availability of funding, infrastructure requirements, and state regulatory challenges may influence the program's structure. For example, California has largely driven the pursuit of potable reuse as drought has led to water supply challenges and is at the forefront of operators training for potable reuse certification. On the East Coast, utilities are exploring ways to minimize nutrient discharges into sensitive water bodies through stormwater management,

indirect potable reuse, and large-scale water reclamation. And across the world, the movement towards sustainable integrated water management continues to grow, as chemical and energy costs increase and drive up operations and maintenance costs.

All of this is to say that there is no “one size fits all” or easy approach to One Water solutions. Each utility and community must be evaluated on a case-by-case basis to determine the program's best fit. To demonstrate our continued commitment to the One Water concept, water research, and innovation, we have formally launched [HDR's One Water Institute](#). This initiative leverages our national technical expertise, industry partnerships, and past water research experience to serve our communities and help our clients with complex water issues. We are dedicating resources to support management of applied water

research projects that fall into several categories, including projects solicited by a research-focused organization, validation of a new or existing technology, or strategic partnerships with utilities to help grow their One Water program.

Through HDR's One Water Institute, our staff have access to a network of technical leaders in a number of water markets. Additionally, we are making a concerted effort to network with academic, consultant, and utility partnerships for specific research topics. This year, we've identified several One Water focus areas that are developing rapidly. Just to name a few, we're partnering with utilities to investigate per- and polyfluoroalkyl substances (PFAS),

harmful algae blooms, bioinformatics, intelligent water systems, and opportunities for potable reuse.

The research doesn't stop there; specific water market sectors still have questions that must be addressed. We're focused on understanding emerging issues, such as microbial concerns in drinking water (such as bacteria, protozoa and viruses), fate, transport and removal of contaminants of emerging concern, toxics and nutrient management in wastewater effluent, optimizing

corrosion control strategies for lead and copper control, predicting the useful life of assets, fisheries management, risk-informed decision making for dam safety and resilience. In these dynamic times, new technologies, treatment processes, and regulations will continue to develop quickly. At HDR, we are ready to help our communities evolve with our rapidly changing world and support your One Water utility challenges and solutions.

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