

Issue Brief

The U.S. Infrastructure Investment and Jobs Act: Water Components

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n November 5, 2021, the U.S. Congress passed President Biden's major infrastructure bill, HR 3684, the \$1.2 trillion <u>Infrastructure Investment and Jobs Act</u>. The President is expected to sign the bill into law. The bill is the largest single federal investment in infrastructure in a generation, with the funds to be expended over five years. It aims to rebuild and replace failing, aging, and outdated water, energy, transportation, and communications systems. As the first significant federal investment in climate resilience, it also begins to address the growing consequences of climate change, including intensifying extreme weather events, increasing temperatures, and rising sea levels, on communities throughout the United States.

One key component of the Act is the set of proposals to address the wide range of water-related challenges facing the United States. This Pacific Institute analysis provides an overview of how the Infrastructure Act addresses these challenges.

Highlights:

- The Act dedicates approximately \$82.5 billion for a wide range of critical water investments. The largest water-related investments are for improvements in safe drinking water and sanitation.
- The Act addresses many of the recommendations made by the Pacific Institute in 2020 with its Issue Brief: Water Recommendations to the Next President.
- The Act provides a shift away from the 20th century primary focus on building major dams and water diversions toward a more sustainable and resilient approach.
- The Act helps correct some of the historical inequities previous infrastructure bills have perpetuated on frontline communities, who are disproportionately impacted by water insecurity.
- The water system investments provided by the Act are important steps in the right direction. They are not, however, enough alone to prepare water systems to become fully resilient, as they need to be to withstand the stresses and shocks of climate change.

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Context

The United States faces several severe and worsening water problems, including:

- old and deteriorating water infrastructure for safe drinking water and wastewater treatment;
- new contaminants that are neither regulated nor controlled;
- failure to provide modern water services to millions of people;
- growing impacts from severe droughts and floods, intensifying as a result of climate change;
- water shortages for farms and rural communities;
- destruction of aquatic ecosystems, fisheries, and wetlands; and
- increasing risks of both climate change and conflicts over water resources around the world.

Continuing to neglect these water problems will further impoverish and sicken this and future generations while increasing threats to our economy and food supply. Conversely, smart water policies are projected to create hundreds of thousands of jobs, improve public health, address long-standing impacts on frontline communities, and speed economic recovery. In September 2020, the Pacific Institute released an <u>Issue Brief: Water Recommendations to the Next President</u>, with a set of water-related recommendations for the new administration. Some of the most important of these recommendations are:

- delivering clean, affordable drinking water to everyone in the US, with a focus on removing remaining lead water pipes and service lines;
- modernizing and updating existing federal laws that protect drinking water and regulate water pollutants;
- preparing for the increasingly detrimental consequences of extreme weather and climate disasters;
- protecting and restoring natural aquatic ecosystems; and
- improving access to safe water and sanitation in frontline communities, including on Tribal lands

The Infrastructure Investment and Jobs Act

The new Infrastructure Act provides the most comprehensive opportunity to help tackle America's water problems this century. Of the \$1.2 trillion authorized to be spent over five years, the Act dedicates approximately \$82.5 billion for a wide range of critical water investments. Table 1 provides a broad overview of the major water-related priorities in the bill.

A major difference between past efforts to fund water infrastructure and the current Act is that the new investments refocus funds to modern, 21st century priorities that increasingly involve a longer-term water resilience view. For instance, the bill includes investments in some nature-based solutions, including ecosystem restoration, as well as water efficiency, water reuse, flood and drought programs, dam safety, and rural communities. In this way, we see a shift away from the 20th century primary focus on building major dams and water diversions toward a more comprehensive and integrated approach. Importantly, the new legislation also corrects some of the historical inequities previous infrastructure bills and federal water policies have perpetuated on frontline communities, who are disproportionately affected by water insecurity.

The largest water-related investments in the Act are for improvements in safe drinking water and sanitation throughout the country, including around \$24 billion in grants over five years directly to the states under the existing Federal Water Pollution Control Act and Safe Drinking Water Acts. An additional \$15 billion is provided for projects to replace lead water pipes and service lines, like those responsible for the severe contamination incident in Flint, Michigan, and remaining lead pipes in other cities around the country. Another \$9 billion is allocated for addressing a set of new, dangerous, and unregulated pollutants, including perfluoroalkyl and polyfluoroalkyl and other "emerging contaminants," long neglected by current federal law.

Federal infrastructure investments have historically supported the construction of major waterrelated projects, such as dams, aqueducts, irrigation systems, and river and port transportation systems. The current bill is no exception.

The U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation, the agencies traditionally charged with managing the nation's federal waters, are authorized to spend approximately \$25 billion over five years for a wide range of these new investments. These include dam safety, coastal and river protection and management, flood protection, rural water supply and sanitation projects, ecosystem restoration, WaterSmart grants, desalination projects, and water recycling and reuse. Another \$2 billion is set aside for specific regional water protection programs in the Great Lakes, Chesapeake Bay, San Francisco Bay, Puget Sound, Long Island Sound, Gulf of Mexico, South Florida, Lake Champlain, Lake Pontchartrain, Southern New England Estuaries, and the Columbia River Basin.

The National Oceanic and Atmospheric Administration (Department of Commerce) and the Natural Resources Conservation Service (Department of Agriculture) are authorized to spend around \$3.9 billion for research, science and modeling, watershed rehabilitation, fire monitoring and prevention, and various ocean programs.

Additional Water Infrastructure Investment Highlights

- Section 50108 ("Needs Assessment for Nationwide Rural and Urban Low-Income Community"): Requires the EPA Administrator to prepare and submit to Congress a comprehensive report on municipalities, communities, and Tribes with a disproportionate number of people who spend a disproportionate amount of household income on access to public drinking water or wastewater services or who have unsustainable levels of water-related debt. The report must also include recommendations of the Administrator of the best methods to reduce the prevalence of a lack of affordable access to water services.
- Section 50110 ("Lead Contamination in School Drinking Water"): Requires the EPA to develop a program to make grants to states and Tribes to help schools test for and remediate lead in drinking water.
- Section 50111 ("Indian Reservation Drinking Water Program"): Provides funds to improve water quality, water pressure, or water services on Indian reservations by connecting to, expanding, repairing, improving, or obtaining water from a public water system, and to improve water quality or sanitation or wastewater services at a treatment works. It prioritizes projects addressing emergency situations occurring due to or

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resulting in a lack of access to clean drinking water that threatens the health of Tribal populations; and serving Tribal populations that would qualify as a disadvantaged community.

- Section 50112 ("Advanced Drinking Water Technologies"): Requires the EPA Administrator to prepare a report to Congress on the state of existing and potential future technology, including technology that could address cybersecurity vulnerabilities, that enhances or could enhance the treatment, monitoring, affordability, efficiency, and safety of drinking water provided by a public water system. It also sets up a grant program to water systems for the purpose of identifying and/or deploying such technologies.
- Section 50115 ("Annual Study on Boil Water Advisories"): Requires the EPA to prepare a study on the prevalence of, and reasons for, boil water advisories issued in the United States.
- Section 50202 ("Wastewater Efficiency Grant Pilot Program"): Provides funds for the EPA to establish a wastewater efficiency grant pilot program to carry out projects that create or improve waste-to-energy systems.
- Section 50203 ("Pilot Program for Alternative Water Source Projects"): Amends the Federal Water Pollution Control Act to support projects that use water, wastewater, or stormwater or treat wastewater or stormwater for groundwater recharge, potable reuse, or other purposes.
- Section 50204 ("Sewer Overflow and Stormwater Reuse Municipal Grants"): Amends the Federal Water Pollution Control Act to support project funding for projects in rural communities or financially distressed communities for the purpose of planning, design, and construction of treatment works to intercept, transport, control, treat, or reuse municipal sewer overflows, sanitary sewer overflows, or stormwater; or any other measures to manage, reduce, treat, or recapture stormwater or subsurface drainage.
- Section 50205 ("Clean Water Infrastructure Resiliency and Sustainability Program"):

 Amends the Federal Water Pollution Control Act to require the EPA Administrator shall establish a clean water infrastructure resilience and sustainability program providing grants for the purpose of increasing the resilience of publicly owned treatment works to a natural hazard or cybersecurity vulnerabilities through the conservation of water; the enhancement of water use efficiency; the enhancement of wastewater and stormwater management by increasing watershed preservation and protection, including through the use of natural and engineered green infrastructure; and reclamation and reuse of wastewater and stormwater, such as aquifer recharge zones; the modification or relocation of an existing publicly owned treatment works, conveyance, or discharge system component that is at risk of being significantly impaired or damaged by a natural hazard; the development and implementation of projects to increase the resilience of publicly owned treatment works to a natural hazard or cybersecurity vulnerabilities, as applicable; or the enhancement of energy efficiency or the use and generation of recovered or renewable energy in the management, treatment, or conveyance of wastewater or stormwater.

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- Section 50207 ("Small Publicly Owned Treatment Works Efficiency Grant Program"): Amends the Federal Water Pollution Control Act to permit the EPA to develop an "efficiency grant program" for small publicly owned water systems or non-profit groups that assist such systems, for the replacement or repair of equipment that improves water or energy efficiency of small publicly owned treatment works, as identified in an efficiency audit.
- Section 50208 ("Grants for Construction and Refurbishing of Individual Household Decentralized Wastewater Systems for Individuals with Low or Moderate Income"): Amends the Federal Water Pollution Control Act to provide grants to private nonprofit organizations for the purpose of improving general welfare by providing assistance to eligible individuals for the construction, repair, or replacement of an individual household decentralized wastewater treatment system; or for the installation of a larger decentralized wastewater system designed to provide treatment for 2 or more households under specific circumstances.
- Section 50211 ("Water Infrastructure and Workforce Investment"): Amends the America's Water Infrastructure Act of 2018 to provide \$5 million a year from 2022 to 2026 for the purpose of expanding training, diversity, and job opportunities in the water and wastewater sectors and the developing innovative activities and strategies for the maintenance and retention of a sustainable workforce in the water and wastewater utility sector.
- Section 50212 ("Grants to Alaska to Improve Sanitation in Rural and Native Villages"): Amends the Safe Drinking Water Act to provide grants to Alaska for rural and native village sanitation programs.
- Section 50213 ("Water Data Sharing Pilot Program"): Establishes a competitive grant program for systems that improve the sharing of information concerning water quality, water infrastructure needs, and water technology, including cybersecurity technology, between states or among counties and other units of local government within a state.
- Section 50216 ("Small and Disadvantaged Community Analysis"): Requires the EPA to analyze the Federal Water Pollution Control Act and Safe Drinking Water Act programs (and report to Congress) to identify historical distributions of funds to small and disadvantaged communities and new opportunities and methods to improve on the distribution of funds under those programs to low-income communities, rural communities, minority communities, and communities of Indigenous peoples, in accordance with Executive Order 12898. The analysis shall include an analysis, to the extent practicable, of communities in the United States that do not have access to drinking water or wastewater services.
- Section 50218 ("Water Reuse Interagency Working Group"): Requires the EPA Administrator to establish a Water Reuse Interagency Working Group from federal agencies to develop and coordinate actions, tools, and resources to advance water reuse across the United States, including through the implementation of the February 2020 National Water Reuse Action Plan.

- Section 50222 ("Enhanced Aquifer Use and Recharge"): Amends the Federal Water Pollution Control Act to provide joint grants to state, local, or Tribal agencies with research institutions as partners, to carry out groundwater research on enhanced aquifer use and recharge in support of sole-source aquifers.
- Section 70101 ("Indian Water Rights Settlement Completion Fund"): Establishes in the Treasury of the United States the "Indian Water Rights Settlement Completion Fund," with \$2.5 billion remain available until expended, to satisfy obligations identified by the Secretary of the Interior under an Indian water settlement approved and authorized by an Act of Congress before the date of enactment of this Act.
- Section 11520: Requires the EPA to request the National Academy of Sciences to prepare a study on best management practices for stormwater, especially to reduce runoff pollution associated with severe storms.

Water Co-Benefits of Other Infrastructure Investments

Additional funds are authorized in the Infrastructure Act for other purposes, including transportation, energy, environmental cleanup, wildfire risk, and climate. Some of these investments offer co-benefits for the nation's freshwater resources. These amounts are not included in Table 1. However, examples include:

- Transportation project investments with water co-benefits: Portions of the funds allocated to the states for transportation projects include some water-related components such as using "the use of natural infrastructure or the construction or modification of storm surge, flood protection, or aquatic ecosystem restoration elements that are functionally connected to a transportation improvement, such as increasing marsh health and total area adjacent to a highway right-of-way to promote additional flood storage" (Sec. 11405), along with a series of stormwater protection provisions. The bill also calls for risk assessments for transportation infrastructure that assesses their vulnerability to "current and future weather events and natural disasters, such as severe storms, flooding, drought, levee and dam failures, wildfire, rockslides, mudslides, sea level rise, extreme weather, including extreme temperatures, and earthquakes" (Sec. 11405). Transportation authorizations also include the "Healthy Streets Program" (Sec. 11406) with support for "cool" and "porous" pavement, which increases the ability to capture stormwater for flood protection, water reuse, and ecosystem enhancement, with priority for "low-income" and "disadvantaged" communities.
- Energy project investments with water co-benefits: Some of the energy infrastructure funds also offer water benefits. Section 40113 provides for increased coordination between the United States and Canada along the Columbia River to ensure continued non-carbon electricity generation from hydroelectric plants and to "increase bilateral transfers of renewable electric generation between the western United States and Canada." This section also provides funds to rehabilitate and enhance the hydropower and irrigation functions at Grand Coulee Dam on the Columbia River, and for a major study of the potential to increase coordination of Pacific Northwest hydropower plants in the United States and Canada in the face of projected changes in energy systems in the region, the need to reduce greenhouse gas emissions, and options for improved transmission capacity. Section 40333 provides funds for the Department of Energy's

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Office of Energy Efficiency and Renewable Energy to prepare technical assessments of the opportunities for, among other things, "improving efficient use of water in manufacturing processes."

- Climate change and environmental cleanup investments with water co-benefits: Investments to tackle the causes or consequences of climate change or funds for environmental cleanup can also offer water benefits. The "Methane Reduction Infrastructure" section of the bill includes funding (Section 40601) to identify methane leaks from orphaned oil and gas wells and to plug, remediate, and restore those wells including funding to measure and track contamination of groundwater and surface water from orphaned wells and to identify and address disproportionate burdens of human health or environmental effects of such wells on communities of color, low-income communities, and Tribal and Indigenous communities. An additional major set of grants (Section 40701 ("Abandoned Mine Reclamation")) provides states and Tribes an additional \$11.2 billion to be spent over 15 years for land and water reclamation projects associated with abandoned mines. Priority grants under this program will go to states with historically high levels of coal production, including West Virginia and Wyoming, and may also be given to projects that provide employment to "current and former employees of the coal industry." The "Natural Resources-Related Infrastructure, Wildfire Management, and Ecosystem Restoration" section (Section 40801 et al.), provides \$250 million over five years to decommission and clean up old Forest Service roads to restore passages for fish and other aquatic species, taking account foreseeable changes in weather and hydrology and to support other projects in the National Forests that improve the resilience of roads, trails, and bridges to "extreme weather events, flooding, or other natural disasters."
- Wildfire risk reduction investments with water co-benefits: Section 40803 authorizes \$3.369 billion over five years for restoration treatment programs to reduce wildfire risk on Federal or Indian lands having a very high wildfire hazard potential at the wildland-urban interface or public drinking water source area. The program provides funds for enhanced satellite detection of wildfire starts, salary coverage for Federal wildfire firefighters, and improved communications and fire-fighting technology, along with a wide range of other wildfire and forest improvement efforts. Section 40804 ("Ecosystem Restoration") provides \$2.130 billion over five years for a wide range of projects to improve the ecological health of U.S land and waters, including detecting and removing invasive species, restoring streambeds, improving water quality and fish passages.

Conclusion

As with all federal legislation, the final bill was a compromise, shifting priorities based on political and financial considerations. Many important investments in initial versions of the bill were watered down. For example, earlier drafts included far more money to help remove legacy lead drinking water pipes. While the \$15 billion provided in the final bill is a start, far more funds will have to be found to complete that vitally important job.

It's important to point out that the ultimate success of these investments to address water problems throughout the United States will depend on how the authorized funds are ultimately

allocated and spent. Success will also depend on the ability of federal agencies, states, local communities, and Tribes to create and mobilize jobs, find additional investments, and implement needed projects.

The water investments provided by this new Act are important steps in the right direction. They are not, however, enough—alone—to prepare U.S. water systems to become fully resilient, as they need to be to withstand the stresses and shocks of climate change. This will require an all-hands-on-deck approach to ensure people and nature have the water they need to thrive, and all communities are protected from intensifying water-related disasters.

Table 1. Selected Water-Related Infrastructure Investments in HR 3684, the Infrastructure Investment and Jobs Act

Includes most, but not all, fund authorizations related to U.S. freshwater resources. Most authorizations are over five years. See bill for specifics and details.

		Totals	Subtotals
Total	\$	82,558,000,000	
DEPARTMENT OF AGRICULTURE: Natural Resources Conservation	Service	e	
Operations and Applications Programs	\$	918,000,000	
Watershed and Flood Prevention Operations			\$ 500,000,000
Watershed Rehabilitation Program			\$ 118,000,000
Emergency Watershed Protection Program			\$ 300,000,000
DEPARTMENT OF COMMERCE: National Oceanic and Atmospheric	Admin	istration	
Research and Facilities	\$	2,791,000,000	
National Oceans and Coastal Security Fund grants			\$ 492,000,000
Restoring marine, estuarine, coastal, or Great Lakes ecosystem habitat, protecting ecological features and coastal communities from flooding or coastal storms			\$ 491,000,000
Coastal and inland flood and inundation mapping and forecasting, water modeling activities			\$ 492,000,000
Data acquisition activities pursuant to the Water Resources Development Act of 2020			\$ 25,000,000
Wildfire prediction, detection, observation, modeling, and forecasting, for fiscal year 2022			\$ 50,000,000
Study of soil moisture and snowpack monitoring network in the Upper Missouri River Basin			\$ 1,000,000
Marine debris assessment, prevention, mitigation, and removal			\$ 150,000,000
Marine debris prevention and removal through the National Sea Grant College Program			\$ 50,000,000
Habitat restoration projects thru the Coastal Zone Management Act, including ecosystem conservation			\$ 207,000,000

Habitat restoration projects through the National Estuarine Research Reserve System including ecosystem conservation Improved and enhanced coastal, ocean, and Great Lakes observing systems Regional Ocean Partnerships (ROPs) to coordinate the management of ocean and coastal resources Consultations and permitting related to the Endangered Species Act, the Marine Mammal Protection Act, and Essential Fish Habitat Restoring fish passages, removing in-stream barriers and providing technical assistance pursuant to the Magnuson-Slevens Fishery Conservation and Management Reauthorization Act of 2006 Wildfire prediction, detection, forecasting; supercomputers for weather and climate model development for drought flood, and fire; coastal, ocean and Great Lakes observing systems; and Pacific Coastal Salmon Recovery DEPARTMENT OF THE ARMY: U.S. Army Corps of Engineers Construction projects Water-related environmental infrastructure assistance \$ 11,615,000,000 Waterways projects Water-related environmental infrastructure assistance \$ 2,00,000,000 Construction, replacement, rehabilitation, and expansion of inland waterways projects Previously approved construction projections under federal legislation; Aquatic ecosystem/Restore fish and wildlife passages Aquatic ecosystem restoration projects, for multi-purpose projects Coastal storm risk management, hurricane and storm damage reduction projects, and activities targeting states that have been impacted by federally declared disasters over the last six years Inland flood risk management projects Additional funds authorized for the Army Corp of Engineers \$ 5,484,000,000 Investigations by the Secretary of the Army through the Chief of Engineers to undertake work authorized under the Water Resources Development Act of 1974 Mississippi River and Tributary projects, including emergencies and disasters	
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Operation and Maintenance (over a three-year period) \$ 4,000,000,000	0
Emergency Regulatory Programs \$ 160,000,000	0
Flood Control and Coastal Emergencies; Expenses \$ 291,000,000	0
The Water Infrastructure Finance and Innovation Program Account for dam safety \$ 75,000,000	

Bureau of Reclamation (Water and Related Resources)	\$	8,350,000,000	
Feasibility studies and construction of previously approved water storage, groundwater storage, and conveyance projects. Includes small-scale storage and groundwater projects	*	3,000,000,000	\$ 1,150,000,000
Major rehabilitation and replacement of water infrastructure including funds for dam failures, dam rehabilitation or replacement			\$ 3,200,000,000
Rural water projects previously authorized by an Act of Congress, in accordance with the Reclamation Rural Water Supply Act of 2006			\$ 1,000,000,000
Water recycling and reuse projects			\$ 1,000,000,000
Implementing the Colorado River Basin Drought Contingency Plan and the Drought Contingency Plan for the Upper Colorado River Basin			\$ 300,000,000
Multi-benefit habitats, protection against invasive species, restoration of aspects of the natural ecosystems, enhancement of commercial, recreational, subsistence, or Tribal ceremonial fishing, or enhancement of river-based recreation			\$ 100,000,000
Water desalination projects and studies authorized or approved for construction funding by an Act of Congress before July 1, 2021; or selected for funding under the program			\$ 250,000,000
Safety of dams in accordance with the Reclamation Safety of Dams Act of 1978			\$ 500,000,000
WaterSMART grants in accordance with the Omnibus Public Land Management Act of 2009			\$ 400,000,000
Financial assistance for watershed management projects in river basins adversely affected by Bureau of Reclamation projects.			\$ 100,000,000
Design, study, and construction of aquatic ecosystem restoration and protection projects			\$ 250,000,000
Endangered species recovery and conservation programs in the Colorado River Basin in accordance with public law			\$ 50,000,000
Central Utah Project Completion Account			\$ 50,000,000
Bureau of Indian Affairs (Projects on Indian Lands)	\$	250,000,000	050 000 000
Construction, repair, improvement, maintenance of irrigation and power systems, dams, sanitation, and other facilities			\$ 250,000,000
ENVIRONMENTAL PROTECTION AGENCY			
Environmental Programs and Management programs	\$	1,959,000,000	
Great Lakes Restoration Initiative			\$ 1,000,000,000
Chesapeake Bay			\$ 238,000,000
San Francisco Bay			\$ 24,000,000
Puget Sound			\$ 89,000,000
Long Island Sound			\$ 106,000,000
Gulf of Mexico			\$ 53,000,000
South Florida			\$ 16,000,000

Lake Champlain	\$ 40,000,000
Lake Pontchartrain	\$ 53,000,000
Southern New England Estuaries	\$ 15,000,000
Columbia River Basin	\$ 79,000,000
Other geographic activities which includes Pacific Northwest	\$ 4,000,000
National Estuary Program grants	\$ 132,000,000
The Gulf Hypoxia Action Plan	\$ 60,000,000
Class VI Wells permitting	\$ 25,000,000
Battery Recycling best practice and labeling programs	\$ 25,000,000
EPA Major Safe Drinking Water and Contaminants Grants	\$ 48,426,000,000
Clean Water State Revolving Funds under the Federal Water Pollution Control Act	\$ 11,713,000,000
Drinking Water State Revolving Funds under the Safe Drinking Water Act	\$ 11,713,000,000
Capitalization grants for lead service line replacement projects and the identification, planning, design, and replacement of lead service lines	\$ 15,000,000,000
Clean Water State Revolving Funds under the Federal Water Pollution Control Act to address emerging contaminants	\$ 1,000,000,000
Capitalization grants for the Drinking Water State Revolving Funds under the Safe Drinking Water Act to address emerging contaminants in drinking water with a focus on perfluoroalkyl and polyfluoroalkyl substances	\$ 4,000,000,000
Addressing emerging contaminants in underserved communities, under the Safe Drinking Water Act	\$ 5,000,000,000
EPA Additional Safe Drinking Water and Federal Pollution Control Act Funding	\$ 2,765,000,000
For authorized purposes of the Safe Drinking Water Act in addition to amounts otherwise authorized to be appropriated for those purposes	\$ 1,126,000,000
For authorized purposes of the Federal Water Pollution Control Act in addition to amounts otherwise authorized to be appropriated for those purposes	\$ 1,639,000,000

Contact Information

More information about water infrastructure recommendations, both in the United States and globally, is available at www.pacinst.org. Contact the Pacific Institute directly at info@pacinst.org.

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