Congress can advance climate resiliency and clean water goals by investing $25 million in the Pilot Program for Alternative Water Source Grants (33 U.S.C. 1300) in FY 2023. The *Infrastructure Investment and Jobs Act of 2021* authorizes this program at $25 million per year for five years.

President's Budget Request FY 2023: $25 million

As climate change accelerates, and its associated adverse impacts on water resources increase, it is vitally important that the nation invest in water recycling to build resilience, manage energy demands, support public and environmental health, and ensure America's economic prosperity.

The **Pilot Program for Alternative Water Source Grants** authorizes the U.S. Environmental Protection Agency (EPA) to make competitive grants to state, interstate, and intrastate water resource development agencies to engineer, design, construct, and test alternative water source systems, including water reuse systems. The program will ensure that communities in all 50 states plus the District of Columbia and Puerto Rico can access water recycling tools to solve local water challenges.

Investments in water reuse:

- Compare favorably to other options for providing *new* water supplies by often using less energy, imposing a smaller carbon footprint, and generating fewer air pollution emissions.
- Ensure reliable and resilient community water supplies in the face of increasingly frequent, severe and prolonged droughts, wildfire, and other climate-related risks by drawing on a stable, locally generated and controlled water source.
- Support sustainable economic prosperity, advanced clean manufacturing, and well-paying high-skill employment opportunities by providing business and industry with a reliable, long-term supply of water.
- Protect our rivers, lakes and streams -- as well as America's aquifers and wetlands -- by reducing extractive water demands, reducing nutrient and other pollutant loads, and providing high quality water for replenishing groundwater and riparian base flows.

We ask that Congress meet the President's Budget Request for $25 million for the Pilot Program for Alternative Water Source Grants in FY 2023 to create new, sustainable water supplies for irrigation, drinking, and other beneficial uses.

HOW WATER REUSE IS BUILDING CLIMATE RESILIENCE AROUND THE COUNTRY

NEW YORK CITY'S BATTERY PARK

Using Onsite, Distributed Water Recycling to Build Resilience to Hurricanes and Extreme Rain Events

Battery Park is a mixed-use community of residential, commercial, and institutional properties constructed on 92 acres of land created along the Hudson River in lower Manhattan. Each building in Battery Park has its own internal wastewater collection system that is interconnected to the New York City (NYC) sewer system.

Battery Park's Solaire Project, a 5-building residential complex, is the first to incorporate onsite water reuse, recycling 25,000 gallons of wastewater per day and using it for flushing, building cooling, sidewalk maintenance, and landscape irrigation. Compared to similar residential buildings in NYC, the Solaire consistently achieves a 48% reduction in water consumption, a 56% reduction in wastewater discharge, a 35% reduction in energy consumption, and a 65% reduction in peak demand for electricity. During Super Storm Sandy when lower Manhattan and the surrounding region experienced severe flooding that disrupted power and sewer service to neighborhoods and towns, Solaire's water recycling system provided continuous service to its residents.

The Solaire Project and similar developments that incorporate on-site water recycling systems, increase resilience and combat climate change by:

- Increasing the capacity of centralized wastewater infrastructure by managing flows to the sewer system and treatment facilities;
- Reducing pollution discharges from combined sewer overflows during wet weather events;
- Protecting against major extreme precipitation events such as hurricanes that may cause disruptions to centralized systems; and

Reducing greenhouse gas emissions by reducing energy-intensive pumping of wastewater flows to central facilities.

VIRGINIA'S TIDEWATER REGION

Water Reuse Addresses Sea Level Rise, Saltwater Intrusion, Land Subsidence, and Provides a Climate-Savvy Environmental and Economic Win-Win

Virginia's Tidewater Coastal Plain region hosts the largest concentration of military bases and facilities of any metropolitan area in the world. Nearly one-fourth of the nation's active-duty military personnel are stationed in Hampton Roads, and 45% of the region's $81B gross regional output is Defense-related.

Approximately 50,000 federal civilian jobs are linked to the port's military's role, and additional jobs in the region are associated with NASA and the Departments of Energy, Transportation, Commerce and Veterans Affairs.

While water rich in terms of large water bodies and ample year-round precipitation, the region nonetheless faces significant on-going climate change-related water resource challenges:

- The region is suffering adverse effects of sea level rise, coastal land inundation, flooding, land subsidence (from over-pumping the regional aquifer) and saltwater intrusion into the region's groundwater, placing the region's economic base and the nation's military readiness at risk.
- The region's groundwater is in overdraft, with land subsidence, falling water levels in wells

(dropping more than 200 feet in some locations), increasing energy demands for pumping, and saltwater intrusion.

- Increasing precipitation intensity exacerbates nutrient and other water quality challenges in Chesapeake Bay, requiring increasingly stringent and costly nutrient treatment upgrades for farms, wastewater plants, and municipal stormwater systems.

To address these challenges, Hampton Roads Sanitation District (HRSD) is pursuing a multi-benefit water reuse program called the Sustainable Water Initiative for Tomorrow (SWIFT). HRSD's SWIFT project treats wastewater effluent to drinking water standards and reuses it to recharge the regional aquifer. The investment of $1.1 billion in capital outlays provides critical public health, environmental and economic benefits by:

- Replenishing the overdrawn Potomac Aquifer, recharging 100 million gallons per day (MGD) of fresh water at full implementation, alleviating costly impacts associated with overdraft and saltwater intrusion;
- Providing a reliable safe water supply to support the region's population and the nation's critical military assets and thereby avoiding the likely alternative of investing in more expensive and energy intensive desalination facilities; and,
- Generating nutrient credits that HRSD can trade - providing an estimated savings of $1.5 billion for 11 counties across the region.

FLORIDA'S TAMPA BAY REGION

A SHARP Water Reuse Solution Protecting Essential Water Supplies from Sea Level Rise and Saltwater Intrusion, While Enhancing the Bay's Ecosystems

In Florida's Tampa Bay region, rapid growth has long outpaced natural water resources, leading to environmentally harmful groundwater overdrafts, lawsuits, pumping bans, and a regional "Water War" requiring legislative action. Water reuse has emerged as a centerpiece for the region's approach to water supply reliability - meeting dry season irrigation demands and relieving pressure on the region's limited potable supplies.

Hillsborough County's Saltwater Intrusion and Aquifer Recharge Program (SHARP) is a system of recharge wells along Tampa's coast, creating a hydraulic barrier to saltwater intrusion between the Bay and the region's drinking water aquifer. At a cost of $20 million, SHARP is yielding significant climate-resiliency benefits by:

- Protecting the region's freshwater aquifer from sea level rise and saltwater intrusion, and preserving the regional potable supply;
- Reducing pumping costs and energy use by raising groundwater levels and increasing pressure in the potable freshwater aquifer;
- Generating water supply credits that offset the project's cost by increasing freshwater yields in a water-limited region facing rapid population and economic growth; and,
- Supporting seagrass and fishery recovery efforts in Tampa Bay by reducing nutrient and other effluent loadings to the estuary where excess wet season reclaimed water would otherwise be discharged.

EL PASO, TEXAS

Reducing the Carbon Footprint and Providing Significant Cost Savings while Solving an International Water Challenge and Preserving Regional Agricultural Communities

Following decades of concern over water scarcity, El Paso Water has aggressively pursued water reuse, conservation and diversification and is now on solid footing as it implements its 50-year water plan. For years, the regional aquifers have seen high demand by a combination of water users in northern Mexico and New Mexico, and far west Texas. Surface water is very limited, drawing from drought-limited shares of Rio Grande river water.

[i] Present value savings over the 50-year period 2010 – 2060, in 2021 dollars
[ii] In 2021 dollars
[iii] Present value savings over the 30-year period 2001 – 2030, updated to 2021 dollars

Pioneering efforts in water reuse and saline groundwater desalination by EPWater have navigated a path to a sustainable, drought-resilient, cost-effective, energy-saving, and reliable water supply to support a vibrant local economy. Compared to the next best alternative for meeting the community's water supply needs (importing groundwater acquired from agricultural communities 100+ miles distant), El Paso's water reuse program is:

- Reducing energy use by 3.6 million MWH over the planning period by producing reclaimed water locally, eliminating the need to pump groundwater more than 100 miles to the City;
- Shrinking EPWater's carbon footprint by nearly 700,000 MT of carbon emissions over a 50-year period, reducing sulfur dioxide and nitrous oxide emissions, and delivering associated public health benefits;
- Addressing affordability challenges related to imported water by saving more than $1.2 billion in the cost of meeting the community's water demands, a savings of 74% over the next best alternative[i]; and,
  Preserving regional agricultural communities' farm production levels, by delaying importation of groundwater that EPWater ratepayers have rights over.

RENO-SPARKS, NEVADA

Building a Reuse-Driven 21st Century Green Manufacturing Center, Creating Jobs and Economic Diversity While Protecting Special Status Fisheries

A collaborative effort by Nevada's Reno-Sparks area water agencies has enabled development of a large-scale water reuse project serving the Tahoe-Reno Industrial Center (TRIC), an emerging center for high-tech and advanced, clean manufacturing businesses. TRIC exemplifies the critical role of water reuse in paving a sustainable, climate-friendly pathway to regional job creation, climate resilience, and forward-looking and sustainable economic prosperity.

TRIC includes the Tesla Gigafactory, Google, Switch, and nearly 100 other businesses producing solar panels and batteries as well as other goods and services, exemplifies the emerging climate-savvy clean economy. Absent large-scale water reuse, TRIC is unlikely to have been feasible within Nevada's water-limited Truckee River basin. Investing in water reuse yields considerable dividends for this region:

- Creating an estimated 20,000 new jobs, largely in emerging clean high-tech sectors, and providing a large sustainable stimulus to the regional economy;
- Diversifying the local economy beyond the gaming and tourism sector, and providing opportunities for high-skill, well-paying, secure jobs;
- Improving instream water quality and supporting two endangered fish species (Lahontan Cutthroat Trout and Cui-ui) in downstream Pyramid Lake; and,
- Avoiding competition between new enterprises and existing municipal and other water users for the region's scarce and climate-sensitive raw water supplies.

SOUTHERN CALIFORNIA'S CHINO BASIN

Water Reuse Reduces Carbon Emissions, Saves Money, and Enhances the Environment while Solving a Multitude of Water Supply Challenges

California's Inland Empire relied for decades on the Chino Groundwater Basin and imported Colorado River water to serve its flourishing citrus and dairy operations. As the aquifer became depleted and widely contaminated, the region turned to expensive, unreliable, and energy intensive imported surface water from the Metropolitan Water District (MWD). However, this short-term solution was not sustainable, so local leaders developed the Optimum Basin Management Program (OBMP) to address the region's water challenges.

[i]Present value savings over the 50-year period 2010 – 2060, in 2021 dollars
[ii]In 2021 dollars
[iii]Present value savings over the 30-year period 2001 – 2030, updated to 2021 dollars

At its core, the OBMP is a water reuse program with other key components facilitated by water recycling. The OBMP required a sizable investment of $1.6 billion[ii], providing an array of highly valuable net benefits, including:

- Generating energy savings in excess of 5.8 Billion kWh over 30 years by relying on local resources rather than energy intensive water imports;
- Reducing the energy-related carbon footprint and other air pollutant emissions from the region's water supply;
- Saving rate payers an estimated $2.4 billion in water supply costs, representing a rate of return of 153% on the investment[iii]; and,
- Restoring instream flows and water quality in the Santa Ana River, returning a surface water supply to downstream Orange County, and replenishing and improving water quality in the Chino Groundwater Basin.

[i]Present value savings over the 50-year period 2010 – 2060, in 2021 dollars
[ii]In 2021 dollars
[iii]Present value savings over the 30-year period 2001 – 2030, updated to 2021 dollars