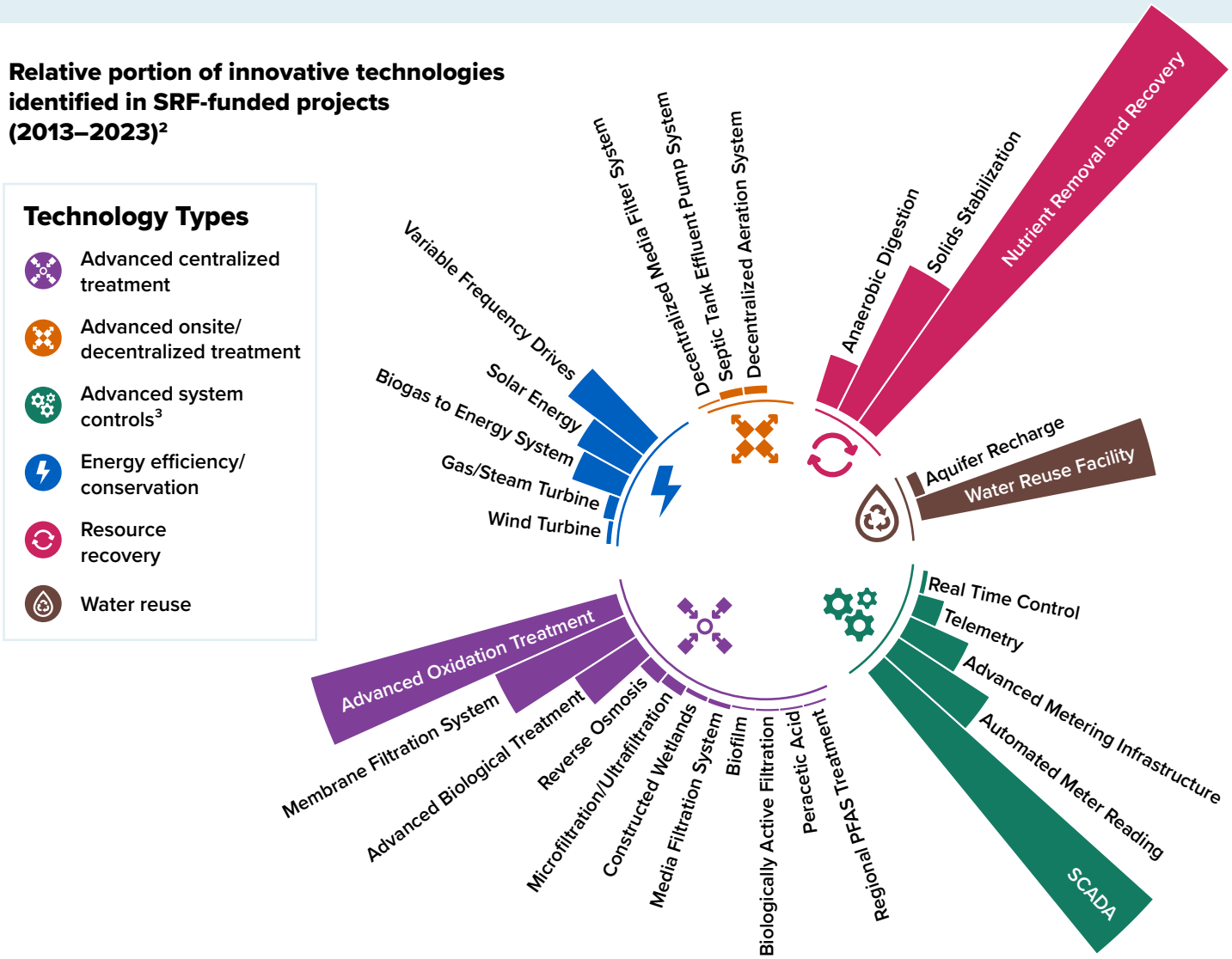
Clean Water
State Revolving Fund

Investing in Communities through
Water Innovation

EPA
United States
Environmental Protection
Agency

Over the last 10 years, the Clean Water State Revolving Fund (CWSRF)[1] has invested over **$12.5 billion** in projects that include a **variety of innovative technologies** to ensure clean water today and tomorrow.

Relative portion of innovative technologies identified in SRF-funded projects (2013–2023)[2]



These investments in water innovation have benefited communities' **infrastructure, public health, and water availability.**

Optimize water delivery

Limit water waste

Enhance sewer collection and wastewater treatment

Protect public health

Reduce energy usage

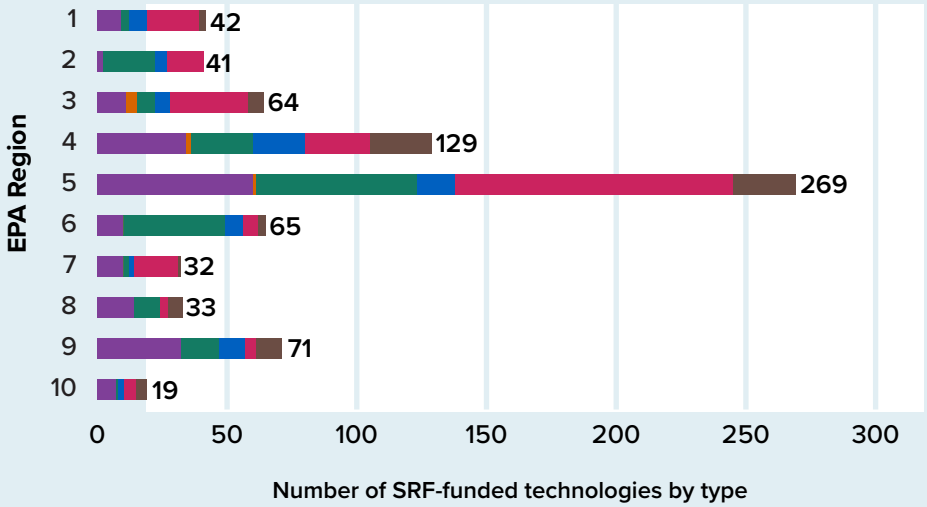
1 Each state and Puerto Rico implements their CWSRF program in partnership with EPA.

2 EPA identified innovative technology investments via a key word search of SRF-funded projects from 2013 to 2023, then grouped them into six technology types. The list of key words used was compiled from EPA resources like the Searchable Clearinghouse of Wastewater Technology and the CWSRF database. The relative distribution of technologies are presented on a logarithmic scale. Some SRF-funded projects might include more than one type of innovative technology.

3 For more information on advanced system controls, see EPA's report *Investing in Intelligent Technologies: Facing Today's Wastewater Challenges with the Future in Mind*.

Each CWSRF program is investing in innovation that is **best for their communities.**

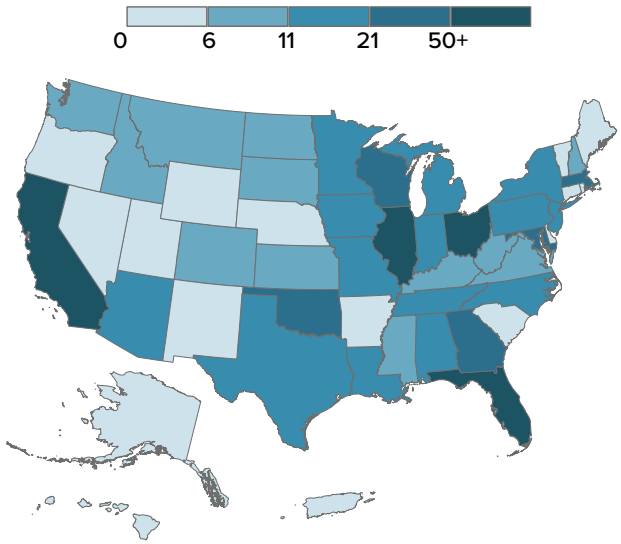
Number of SRF-funded innovative technologies by EPA Region[4] and technology types (2013–2023)



Technology Types

- Advanced centralized treatment
- Advanced onsite/ decentralized treatment
- Advanced system controls[3]
- Energy efficiency/ conservation
- Resource recovery
- Water reuse

Number of SRF-funded innovative technologies by state, including Puerto Rico (2013–2023)



Of the communities that received CWSRF innovation investments in the last decade:

53% are in **rural areas**[5]

29% are in **disadvantaged communities**[5]

4 EPA Regions include: Region 1 (CT, ME, MA, NH, RI, and VT), Region 2 (NJ, NY, Puerto Rico, the U.S. Virgin Islands, and eight federally recognized Indian Nations), Region 3 (DE, DC, MD, PA, VA, WV, and seven federally recognized tribes), Region 4 (AL, FL, GA, KY, MS, NC, SC, and TN), Region 5 (IL, IN, MI, MN, OH, and WI), Region 6 (AR, LA, NM, OK, and TX), Region 7 (IA, KS, MO, and NE), Region 8 (CO, MT, ND, SD, UT, and WY), Region 9 (AZ, CA, HI, NV, American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, Marshall Islands, and Republic of Palau), and Region 10 (AK, ID, OR, WA, and 271 native tribes).

5 The 2020 U.S. Census defines an urban area as "a densely settled core of census blocks that meet minimum housing unit density and/or population density requirements. This includes adjacent territory containing non-residential urban land uses. To qualify as an urban area, the territory identified according to criteria must encompass at least 2,000 housing units or have a population of at least 5,000." Rural areas include all census blocks not located within an urban area. EPA identified disadvantaged areas using the Climate and Economic Justice Screening Tool.

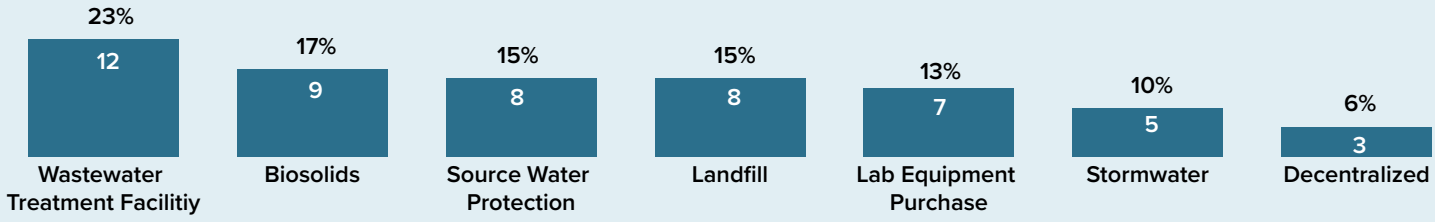
EPA is committed to supporting the innovation necessary to **address tomorrow's water challenges.**

CWSRF Emerging Contaminants funding first became available in fiscal year 2022. For this first year of funding, programs across the country proposed nearly $50 million in eligible projects to address emerging contaminants. Many projects will pilot innovative technologies to address contaminants such as pharmaceuticals and personal care products, microplastics, and per- and polyfluoroalkyl substances (PFAS). New challenges like emerging contaminants often utilize innovative technologies or apply well-established technologies in new and innovative ways. For example, communities across the country are investing CWSRF Emerging Contaminants funds into innovative removal and destruction technologies that address PFAS. Eighty-five percent of the projects in this first year of funding addressed PFAS.

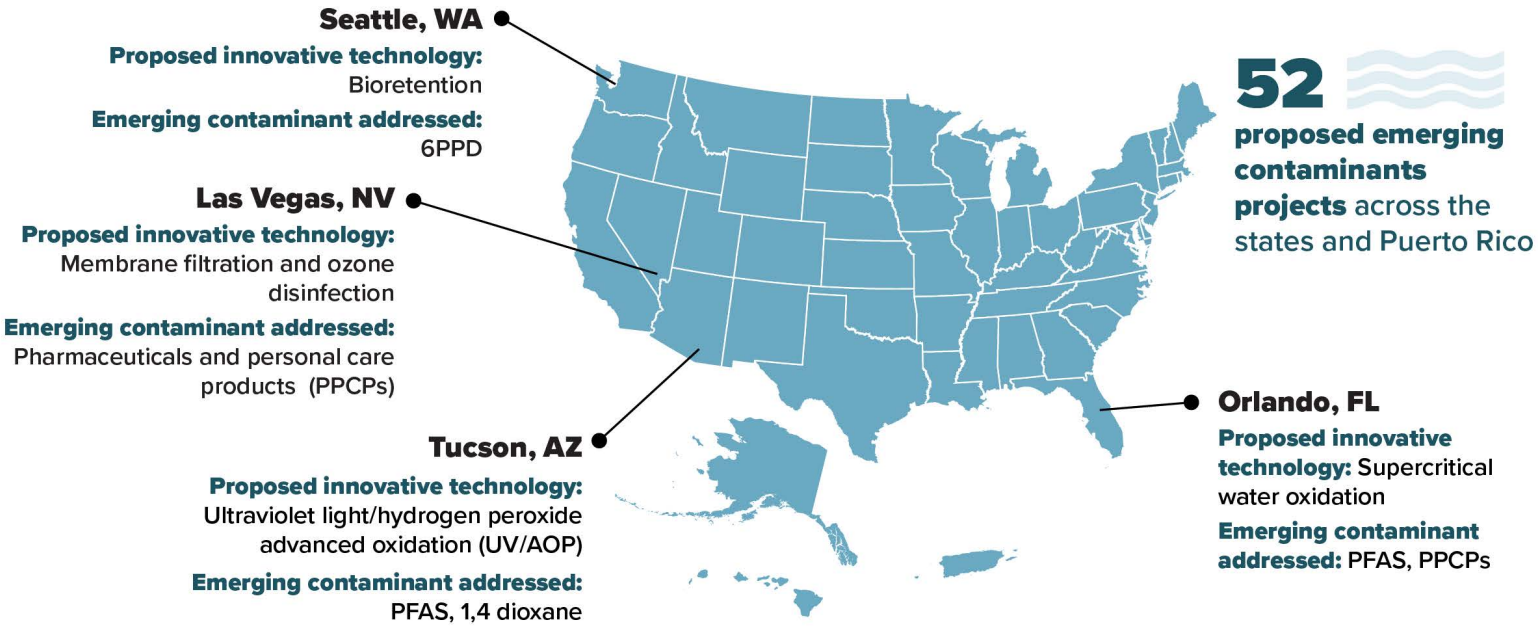
Funding appropriated between 2022 and 2026 to address **emerging contaminants.**

Project Types from CWSRF Emerging Contaminants First Year of Funding

EPA identified these projects from the Intended Use Plans published by states and Puerto Rico.



Selected Examples of Emerging Contaminants Projects Driving Water Innovation[6]



Seattle, WA

Proposed innovative technology: Bioretention

Emerging contaminant addressed: 6PPD

Las Vegas, NV

Proposed innovative technology: Membrane filtration and ozone disinfection

Emerging contaminant addressed: Pharmaceuticals and personal care products (PPCPs)

Tucson, AZ

Proposed innovative technology: Ultraviolet light/hydrogen peroxide advanced oxidation (UV/AOP)

Emerging contaminant addressed: PFAS, 1,4 dioxane

52

proposed emerging contaminants projects across the states and Puerto Rico

Orlando, FL

Proposed innovative technology: Supercritical water oxidation

Emerging contaminant addressed: PFAS, PPCPs

6 The projects in Seattle, WA; Las Vegas, NV; and Orlando, FL are all proposed for fiscal year 2022 funding. The project in Tucson, AZ is proposed for fiscal year 2023 funding.

For more information on innovative technologies, contact the Clean Water Technology Center at SCOWT@epa.gov or visit the technology clearinghouse at https://clearinghouse.epa.gov/ords/wfc/f?p=wtc.

For more information on financing innovative water quality projects, visit the CWSRF website at https://www.epa.gov/cwsrf. To review example CWSRF Emerging Contaminant investment case studies, visit https://www.epa.gov/cwsrf/clean-water-state-revolving-fund-emerging-contaminants.

EPA United States Environmental Protection Agency

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