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Small Water Systems: Selected Safe Drinking Water Act (SDWA) Provisions

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Small Water Systems: Selected Safe Drinking Water Act (SDWA) Provisions

The nation's public water systems face a range of challenges, including disruptions of safe and reliable water supplies due to cyberattacks or natural hazards, detections of unregulated contaminants in drinking water supplies, and long-standing challenges in financing repairs to or replacement of aging water infrastructure. Some small water systems have limited technical, managerial, and financial capacity to address these challenges.

The Safe Drinking Water Act (SDWA) was enacted in 1974. The act established the federal role in regulating contaminants in public water supplies. SDWA authorizes the U.S. Environmental Protection Agency (EPA) to promulgate drinking water regulations. For more than 90 contaminants, EPA has issued regulations with treatment techniques or enforceable standards, called maximum contaminant levels (MCLs), as well as monitoring and reporting requirements. Federal drinking water regulations apply to the approximately 144,650 privately and publicly owned water systems that provide piped water for human consumption to at least 15 service connections or that regularly serve at least 25 people. Most federal drinking water regulations apply to *noncommunity water systems*, which include locations such as campgrounds or gas stations that have their own water systems but serve individuals temporarily. All federal drinking water regulations apply to the nearly 50,000 *community water systems*, which serve the same residences year-round. More than 91% of these water systems are relatively small, serving 10,000 or fewer individuals. These systems provide water to approximately 17% of the total population served by community water systems.

Small water systems have a relatively narrow rate base from which to operate and to finance infrastructure projects needed to comply with new or revised regulations, improve the resilience of their infrastructure to risks of malevolent acts or natural hazards, or repair or replace infrastructure, much of which was constructed more than 50 years ago. Limited technical and/or managerial capacity may affect the ability of small community water systems to implement certain drinking water regulations that include complex requirements, such as the Lead and Copper Rule Revisions, which aim to control lead in tap water. Hiring and retaining skilled water system operators may also be a challenge for such systems.

Congress has included a suite of provisions in SDWA to promote the compliance capacity of public water systems. Of these, several are intended to improve small water system compliance, through (1) building capacity through training and development activities, (2) providing limited enforcement relief from drinking water regulations under certain circumstances, and (3) authorizing federal assistance for technical assistance for water systems, as well as for water infrastructure improvements. The Safe Drinking Water Act Amendments of 1996 (P.L. 104-182) added many of these provisions to the statute. More recently, the Water Infrastructure Improvements for the Nation Act (WIIN Act; P.L. 114-322), America's Water Infrastructure Act of 2018 (AWIA; P.L. 115-270), and the Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58) added a range of grant programs to SDWA. These programs focus on addressing small system compliance, improving small system operational sustainability and resilience to natural hazards, and deploying advanced drinking water technologies at certain systems. Further, IIJA's emergency supplemental appropriations for drinking water infrastructure projects may assist those systems that receive assistance to afford projects necessary to comply with new or revised drinking water regulations.

Aside from SDWA requirements and programs, water systems may voluntarily participate in partnerships to address compliance capacity issues. Such partnerships can range from informal arrangements (e.g., joint bulk purchase of chemicals) to more formal cooperation (e.g., management assistance agreements or physical consolidation).

SDWA compliance continues to challenge water systems. Small water systems comprise the majority of water systems that regularly serve individuals, and have comprised the majority of systems reporting a health-based violation of a drinking water regulation. As such, congressional and stakeholder attention may continue to focus on developing small water system capacity to comply with drinking water regulations, plan for and manage potential events that may disrupt water service, and finance repairs and rehabilitation of infrastructure.

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Introduction

Several recent events have highlighted challenges that might affect the nation’s roughly 144,650 public water systems.¹ These events include disruptions of a safe and reliable water supply from cyberattacks or natural hazards, such as wildfires or flood events, and detections of unregulated contaminants (e.g., 1,4-dioxane, per- and polyfluoroalkyl substances [PFAS] or cyanobacteria) in drinking water supplies. In addition to these events, some systems are challenged to finance repairs to or replacement of water infrastructure.

These challenges may be particularly difficult for smaller water systems that have comparatively limited technical, managerial, and financial capacity. Roughly 91% of the nearly 50,000 *community water systems*—systems that regularly provide water to at least 25 individuals year-round—are relatively small, serving 10,000 or fewer individuals.²

The Safe Drinking Water Act (SDWA)³ was enacted in 1974 after a nationwide study of community water systems documented widespread water quality problems and health risks resulting from inadequate facilities, poor operating procedures, and poor management of water supplies in communities of all sizes.⁴ The 1974 act established the federal role in regulating contaminants in public water supplies, a key SDWA authority. SDWA authorizes the U.S. Environmental Protection Agency (EPA) to promulgate drinking water regulations for contaminants that may pose health risks and are likely to be present in public water supplies.⁵ Since 1974, EPA has issued regulations with enforceable standards, called maximum contaminant levels (MCLs), or treatment techniques for more than 90 contaminants.

SDWA legislative history states that drinking water standards “should be achievable by large metropolitan water systems treating relatively clean source water.”⁶ Water systems serving 10,001 or more individuals comprise 9% of the total number of community water systems and provide water to approximately 83% of the total population served (about 264 million individuals) by water systems. By establishing standards at levels achievable by large metropolitan water

¹ From U.S. Environmental Protection Agency’s (EPA’s) Safe Drinking Water Information Systems (SDWIS) “Water System Summary Report,” August 9, 2022, <https://ofmpub.epa.gov/apex/sfdw/f?p=108:21::NO:RP,RIR>. The search parameters were “community water systems” with operating status “active.” EPA reports that the agency is aware of inaccuracies and underreporting in SDWIS. Accordingly, the data generated from the SDWIS database may be subject to similar inaccuracies or underreporting. For more information about SDWIS and data quality, see EPA’s Envirofacts web page at <https://www3.epa.gov/enviro/facts/sdwis/search.html>.

² 42 U.S.C. §300f(4); EPA’s SDWIS “Water System Summary Report,” August 9, 2022, <https://ofmpub.epa.gov/apex/sfdw/f?p=108:21::NO:RP,RIR>.

³ Safe Drinking Water Act of 1974 (SDWA; P.L. 93-523), enacted December 16, 1974. As amended, SDWA defines “small water systems” by different “individuals served” thresholds. For example, the act requires EPA, when issuing a regulation for a contaminant, to list any technologies or other means that comply with the regulation and are affordable for “small” public water systems. The act defines such water systems as those serving three population thresholds (i.e., (1) 10,000 or fewer but more than 3,300; (2) 3,300 or fewer but more than 500; and (3) 500 or fewer but more than 25). SDWA defines eligibility for certain compliance assistance and grant programs variously by the population thresholds listed above.

⁴ EPA, “Community Water Supply Study: Significance of National Findings,” 1971, in *A Legislative History of the Safe Drinking Water Act*, Senate Committee on Environment and Public Works, Serial No. 97-9, February 1982, p. 1076. In the early 1970s, other federal pollution control statutes were enacted.

⁵ 42 U.S.C. §§300f et seq. SDWA requirements, including federal drinking water regulations, do not apply to residences served by private wells. For more information, see CRS Report R46652, *Regulating Contaminants Under the Safe Drinking Water Act (SDWA)*, by Elena H. Humphreys.

⁶ U.S. Congress, House Committee on Interstate and Foreign Commerce, Safe Drinking Water Act, 93rd Cong., 2nd sess., July 10, 1974, H.Rept. 93-1185, p. 18.

systems, the regulation of drinking water results in the majority of people receiving tap water that meets federal standards. As a result, however, smaller water systems may be challenged to comply with drinking water standards.

EPA reported in 2021 that approximately 6.8% of community water systems (3,400 out of roughly 50,000 systems) reported a health-based violation.⁷ Systems serving 10,000 or fewer individuals comprise a majority of community water systems, and also comprise a majority of systems reporting a health-based violation.⁸

This report provides an overview of the SDWA provisions established to assist with water system compliance capacity development. For context, this report begins with a discussion of challenges facing small water systems and then presents statistics on community water systems. It discusses recent SDWA amendments related to small water systems made by the Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58), Division E, Title I—“Drinking Water.” The report concludes with considerations for Congress regarding EPA implementation of the SDWA authorities added by IIJA, as well as small water system provisions added to SDWA by the Water Infrastructure Improvements for the Nation Act (WIIN Act; P.L. 114-322) and America’s Water Infrastructure Act of 2018 (AWIA; P.L. 115-270). Further, it discusses small-system considerations that may arise as EPA develops and finalizes drinking water regulations for two PFAS. This report does not discuss authorities under the U.S. Department of Agriculture intended to address the drinking water infrastructure needs of small or rural communities.⁹

Small-System Challenges

Small water systems have a relatively narrow rate base from which to finance infrastructure projects needed to (1) comply with new or updated regulations, (2) improve the resilience of their infrastructure to risks of malevolent acts or natural hazards, or (3) repair or replace infrastructure, much of which was constructed more than 50 years ago. Limited technical and/or managerial capacity may affect the ability of such systems to implement drinking water regulations that include complex treatment technique requirements, such as the regulation to control lead in drinking water.¹⁰ Retaining water system operator institutional knowledge may also be a challenge for systems with a small number of employees. While estimates vary, EPA projected in 2020 that one-third of water sector employees will be eligible for retirement within 10 years, and the Department of Labor’s Bureau of Labor Statistics projected that annually 8.2% of water operators will need to be replaced between 2016 and 2026.¹¹ Particularly for small water systems,

⁷ EPA Office of Enforcement and Compliance Assurance, *Reducing Noncompliance with Drinking Water Standards at Community Water Systems*, 315F21002, Washington, DC, April 2021, <https://www.epa.gov/sites/default/files/2021-04/documents/complianceadvisory-communitywatersystemncigeneral.pdf>.

⁸ From EPA’s *Enforcement and Compliance History Online (ECHO) Dashboard: Drinking Water*, accessed on August 9, 2022, <https://echo.epa.gov/trends/comparative-maps-dashboards/drinking-water-dashboard>. EPA reported that water systems serving 500 individuals or fewer but more than 25 are 50% more likely to incur a violation than all other system sizes. Such systems make up roughly 50% of the community water systems that operate nationally. EPA, *25 Years of the Safe Drinking Water Act: History and Trends*, EPA 816-R-99-0007, Washington, DC, December 1999, p. 28.

⁹ For more information on such U.S. Department of Agriculture programs, contact Lisa Benson, CRS Analyst in Agricultural Policy.

¹⁰ EPA, “National Primary Drinking Water Regulations: Proposed Lead and Copper Rule Revisions,” 84 *Federal Register* 61700, November 13, 2019.

¹¹ EPA, *America’s Water Sector Workforce Initiative*, Washington, DC, October 2020, https://www.epa.gov/sites/default/files/2020-11/documents/americas_water_sector_workforce_initiative_final.pdf. As cited in U.S. Government Accountability Office (GAO), *Recruiting Approaches Helped Industry Hire Water and Wastewater Workforce*:

EPA identified aging infrastructure, workforce shortages, and declining rate bases as key factors at the root of most SDWA violations.¹²

Background on Community Water Systems

SDWA defines a *public water system* as a system that provides water through pipes or other conveyances to at least 15 service connections or that regularly serves at least 25 individuals.¹³ Systems with fewer than 15 service connections or that regularly serve fewer than 25 individuals are not covered by SDWA. The act does not specify ownership of public water systems. Public water systems can be owned and operated by public entities, such as municipalities or local governments, or by private entities, such as investor-owned utilities or private not-for-profit entities.

SDWA defines a subset of public water systems, namely *community water systems*, as systems that regularly serve at least 25 individuals year-round.¹⁴ Compared to other regulated utility sectors, such as electric power, the number of community water systems operating is relatively large.¹⁵ **Table 1** provides population and ownership statistics on community water systems identified in the EPA's Safe Drinking Water Information System (SDWIS) database.¹⁶

As of June 2022, nearly 50,000 community water systems are operating in the United States. These community water systems vary in characteristics, such as population served, ownership type, and source water (e.g., groundwater, surface water, or purchased water). Approximately 81% of community water systems serve fewer than 3,300 individuals. About 54% of these community water systems are privately owned and generally operate as an ancillary part of another business, such as a mobile home park, or as a part of a homeowners association.¹⁷ Of all privately owned community water systems, 96% serve fewer than 3,300 individuals. Most (84%) community water systems that serve 3,300 or more individuals are operated by local governments.

Recruiting Approaches Helped Industry Hire Operators, but Additional EPA Guidance Could Help Identify Future Needs, GAO-18-102, January 2018, <https://www.gao.gov/assets/690/689646.pdf>.

¹² EPA, *Fiscal Year 2023 Justification of Appropriation Estimates for the Committee on Appropriations*, EPA-190-R-22-001, April 2022, p. 242, <https://www.epa.gov/cj>.

¹³ 42 U.S.C. §300f(4).

¹⁴ 42 U.S.C. §300f(15). In addition, EPA established two other categories of public water systems. A nontransient noncommunity water system (NTNCWS) regularly supplies water to at least 25 of the same people at least six months per year but not year-round (e.g., schools, factories, office buildings, and hospitals that have their own wells). Transient noncommunity water systems (TNCWS) provide water in places where people do not remain for long periods, such as gas stations and campgrounds.

¹⁵ For example, according to the U.S. Energy Information Administration (EIA), 2,938 electric utilities operated in the United States in 2019. EIA, *Investor-owned Utilities Served 72% of U.S. Electricity Customers in 2017*, August 15, 2019, <https://www.eia.gov/todayinenergy/detail.php?id=40913>.

¹⁶ From EPA's SDWIS "Water System Summary Report," August 9, 2022, at <https://ofmpub.epa.gov/apex/sfdw/f?p=108:21:::NO:RP,RIR>. The search parameters were "community water systems" with operating status "active." EPA reports that the agency is aware of inaccuracies and underreporting in SDWIS. Accordingly, the data generated from the SDWIS database may be subject to similar inaccuracies or underreporting. For more information about SDWIS and data quality, see EPA's Envirofacts web page at <https://www3.epa.gov/enviro/facts/sdwis/search.html>.

¹⁷ The SDWIS database does not collect information on ownership type (e.g., investor-owned utilities or other types of water systems operated for profit or not for profit).

Table I. Number of Community Water Systems

Ownership Type	Number of Individuals Served				Total
	>25 to <500	>501 to <3,300	>3,301 to <10,000	>10,001	
Private	18,669	2,913	532	463	22,577
Public/Private	509	505	116	62	1,192
Federal government	114	101	74	75	364
Local government	6,856	9,367	4,143	3,797	24,163
Native American	400	233	58	19	710
State government	134	189	69	45	437
Total	26,682	13,308	4,992	4,461	49,443

Source: Prepared by CRS from EPA’s Safe Drinking Water Information Systems: Water System Summary report, on August 9, 2022, with data through the second quarter of 2022.

Note: Safe Drinking Water Act §1401(15) defines “community water system” as a system that serves 25 or more individuals year-round or that has at least 15 service connections.

The number of systems has changed over time. EPA reports that in 1980 approximately 62,000 community water systems operated to serve approximately 200 million individuals.¹⁸ Over the last 40 years, the number of community water systems decreased by nearly 20%, while the number of individuals served by water systems increased by roughly 30%.¹⁹ In 2021, the American Water Works Association (AWWA) estimated that per year, for the past 20 years, approximately 350 water systems have ceased operating.²⁰

Several factors may have contributed to the decrease in the number of community water systems. Declining populations in certain water systems’ service area may mean that a system no longer serves 25 individuals. Some water systems may have ceased operating or used “consolidation” (e.g., joining of two systems) as a method to achieve compliance with the number of drinking water regulations, which increased during this time period.²¹

Background on SDWA Regulatory Development

After its enactment in 1974, SDWA was significantly amended in 1986, 1996, 2018, and 2021. The Safe Drinking Water Act Amendments of 1996 (P.L. 104-182) established the current health-risk-based process for evaluating contaminants for potential regulation. Prior to 1996, SDWA regulatory development provisions did not require EPA to follow a health-risk-based approach. In the Safe Drinking Water Amendments of 1986 (P.L. 99-339), Congress directed EPA to promulgate drinking water regulations for 83 contaminants by June 1989 and for 25 additional

¹⁸ EPA, *25 Years of the Safe Drinking Water Act: History and Trends*, EPA 816-R-99-0007, Washington, DC, December 1999, p. 5.

¹⁹ Ibid.

²⁰ Jessica Norriss et al., *Too Small to Succeed: State Level Consolidation of Water Systems*, AWWA, December 6, 2021, <https://doi.org/10.1002/awwa.1821>. In 2006, EPA’s “Community Water System Survey” estimated that between 2000 and 2006, the number of systems serving 500 or fewer individuals operating decreased by roughly 3,300 systems, while the number of systems serving 10,000 or more individuals increased by 508 systems (13%). EPA, *2006 Community Water System Survey*, EPA 815-R-09-001, Washington, DC, February 2009, p. V.

²¹ EPA, *25 Years of the Safe Drinking Water Act: History and Trends*, EPA 816-R-99-0007, Washington, DC, December 1999, p. 5.

contaminants every three years thereafter. Following the 1986 amendments, EPA promulgated new regulations and revised existing regulations for more than 80 contaminants, attempting to keep pace with the statutory requirements.²²

SDWA Regulatory Development Provisions

As amended by the Safe Drinking Water Act Amendments of 1996 (P.L. 104-182), EPA is required to follow a multistep process when evaluating contaminants to determine whether a national primary drinking water regulation (NPDWR) is warranted.²³ The process includes identifying contaminants of potential concern, assessing health risks, collecting occurrence data (and developing any necessary test methods), and making determinations as to whether a national drinking water regulation is warranted. To make a positive determination to regulate a contaminant, SDWA directs EPA to find the following: (1) a contaminant may have an adverse health effect; (2) a contaminant is known to occur or there is a substantial likelihood that it will occur in water systems at a frequency and at levels of public health concern; and (3) in the sole judgment of the EPA administrator, regulation of the contaminant presents a meaningful opportunity for reducing health risks.

Water utilities, state drinking water regulators, and EPA expressed concern that the 1986 regulatory schedule imposed significant burdens and did not prioritize contaminants based on risk to public health.²⁴ In its report on the 1996 SDWA amendments, the House Committee on Commerce stated that, particularly for small water systems, the 1986 regulatory schedule resulted in increased compliance costs without a commensurate increase in public health protection.²⁵ In response to calls for “a more streamlined and flexible approach to controlling drinking water contamination consistent with continued protection of the public health,”²⁶ the 104th Congress amended SDWA to establish the current regulatory process.²⁷

Selected SDWA Provisions

Congress has amended SDWA to add a suite of provisions designed to promote the compliance capacity of public water systems. These provisions focus on building compliance capacity through training and development activities, providing limited enforcement relief from drinking water regulations under certain circumstances, and authorizing federal financial assistance for technical assistance for water systems, as well as for water infrastructure projects. In recent years, several statutes have added to SDWA a range of grant programs, focused on addressing small system compliance, and improving small system operational sustainability and resilience to natural hazards, as well as deploying advanced drinking water technologies at certain systems.

Drinking Water State Revolving Fund

The Drinking Water State Revolving Fund (DWSRF) program is the key federal financial assistance program for drinking water infrastructure. Paralleling a similar program authorized by

²² U.S. Congress, House Committee on Commerce, *Safe Drinking Water Act Amendments of 1996*, 104th Cong., 2nd sess., June 24, 1996, H.Rept. 104-632, p. 6.

²³ SDWA §1412; 42 U.S.C. §300g-1.

²⁴ U.S. Congress, House Committee on Commerce, *Safe Drinking Water Act Amendments of 1996*, 104th Cong., 2nd sess., June 24, 1996, H.Rept. 104-632, p. 10.

²⁵ U.S. Congress, House Committee on Commerce, *Safe Drinking Water Act Amendments of 1996*, 104th Cong., 2nd sess., June 24, 1996, H.Rept. 104-632, p. 6.

²⁶ *Ibid.*

²⁷ For additional discussion of SDWA regulatory development provisions, see CRS Report R46652, *Regulating Contaminants Under the Safe Drinking Water Act (SDWA)*, by Elena H. Humphreys.

the Clean Water Act, the DWSRF was added to SDWA to address concerns over cost to comply with the act's requirements.²⁸

Section 1452 of SDWA authorizes EPA to make grants to states each year to capitalize a state revolving loan fund. Each state must match 20% of its annual capitalization grant. States are authorized to use DWSRF funds to provide financial assistance (primarily subsidized loans) to eligible public water systems for expenditures that EPA has determined, through guidance, will facilitate SDWA compliance or significantly further the act's health protection objectives.²⁹ The act directs each state to develop an intended use plan each year indicating how the allotted funds will be used and requires states to give funding priority to projects that address the most serious human health risks, are necessary to ensure compliance, and assist systems most in need on a per-household basis according to state affordability criteria.³⁰

EPA and State Set-Asides

In general, states determine which projects to support financially through their DWSRF programs. However, specific SDWA provisions both direct and authorize EPA and states to reserve DWSRF funds available to them for certain purposes. These reserved funds are commonly referred to as "set-asides." These set-asides demonstrate the emphasis that the 1996 amendments placed on enhancing compliance, especially among smaller systems.

EPA is required or authorized to set aside amounts of the DWSRF appropriation for various program purposes before allotting the remaining funds among the states. Some of the EPA set-asides are intended to assist smaller water systems. For example, SDWA directs EPA to set aside from the annual DWSRF appropriation \$2.0 million to pay for monitoring of unregulated contaminants in small and medium systems.³¹ A different set-aside authorizes EPA to provide technical assistance to small systems, by reserving up to 2% of the DWSRF appropriation, with a \$15.0 million maximum. Although Congress authorized and has appropriated funding for this activity under Section 1442, EPA has not set aside DWSRF funds for this purpose.

These set-asides may offer states flexibility to tailor their individual DWSRF programs to address state priorities, including to assist small and/or disadvantaged communities. SDWA requires states to make available at least 15% of their annual allotment for loan assistance to systems that serve 10,000 individuals or fewer, to the extent that the funds can be obligated to eligible projects. As amended by IJJA, SDWA also allows states to use up to 35% of their DWSRF capitalization grants to provide additional subsidization, such as forgiveness of loan principal or negative interest rate loans, to help disadvantaged communities (as determined by the state), while conditionally requiring states to provide at least 12% of their capitalization grant amount, to the extent that there are sufficient applications.³² Through appropriations acts, Congress has frequently required states to provide additional subsidization to "eligible recipients."³³ In an EPA

²⁸ U.S. Congress, House Committee on Commerce, *Safe Drinking Water Act Amendments of 1996*, 104th Cong., 2nd sess., June 24, 1996, 104-632, p. 9.

²⁹ SDWA §1452(a)(2)(B); 42 U.S.C. §300j-12(b)(3).

³⁰ SDWA §1452(b)(3); 42 U.S.C. §300j-12(b)(3).

³¹ SDWA §1452(o); 42 U.S.C. §300j-12(o). In addition, SDWA §1445(a)(2)(H) authorized appropriations of \$10 million for each of FY2019 through FY2021 to pay for monitoring of unregulated contaminants in small and medium water systems.

³² SDWA §1452(d); 42 U.S.C. §300j-12(d).

³³ For example, P.L. 117-103 requires states to provide 14% of their capitalization grant for principal forgiveness, negative interest loans, or grants (or a combination of these) for eligible recipients.

memorandum on May 12, 2022, the agency clarified its interpretation that the appropriations acts' additional subsidization percentages are additive to the SDWA additional subsidization statutory floor of 12%.³⁴

DWSRF Appropriations

SDWA Section 1452(m) authorizes appropriations for the DWSRF program at

- \$2.40 billion for FY2022,
- \$2.75 billion for FY2023,
- \$3.00 billion for FY2024, and
- \$3.25 billion for each of FY2025 and FY2026.

Table 2 provides enacted appropriations for the DWSRF program. EPA reports that between FY1997 and FY2021, more than 17,779 projects received DWSRF assistance, and 12,752 were completed.³⁵

The Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58) provided three emergency supplemental appropriations for the DWSRF. IIJA provided \$11.7 billion over five fiscal years for the DWSRF. The act also provided additional emergency supplemental appropriations dedicated to specific projects or activities.³⁶ Through the DWSRF, IIJA provided \$4.0 billion over five fiscal years for grants for emerging contaminants projects, and also provided \$15.0 billion over five fiscal years for lead service line replacement projects, and related activities.³⁷ For FY2022 annual appropriations, the Consolidated Appropriations Act, 2022 (P.L. 117-103) provided \$1.1 billion for the DWSRF, of which \$397.8 million is dedicated to “community project funding/congressionally directed spending” (CPF/CDS). CPF/CDS amounts are distributed directly to recipients, rather than through state DWSRF programs.

Table 2. DWSRF Appropriations
(in millions of dollars, nominal)

Fiscal Year	Enacted DWSRF Appropriation
1997	\$1,275.0
1998	\$725.0
1999	\$775.0
2000	\$820.0
2001	\$823.2
2002	\$850.0
2003	\$844.5

³⁴ EPA, *FY 2022 DWSRF Base Allotment Availability*, Washington, DC, May 2022, <https://www.epa.gov/system/files/documents/2022-05/FY%202022%20DWSRF%20Base%20Allotment%20Availability.pdf>.

³⁵ These data are nominal (not adjusted for inflation). Detailed national and state program data are available at EPA, “Drinking Water State Revolving Fund National Information Management System Reports,” <https://www.epa.gov/drinkingwatersrf/drinking-water-state-revolving-fund-national-information-management-system-reports>.

³⁶ The Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58) provides that for the IIJA FY2022 and FY2023 appropriations, each state is required to match 10% of its annual capitalization grant. For FY2024 through FY2026, the state match returns to 20%.

³⁷ IIJA; P.L. 117-58 waives the 20% state match requirements for these DWSRF appropriations.

Fiscal Year	Enacted DWSRF Appropriation
2004	\$843.2
2005	\$845.0
2006	\$837.5
2007	\$837.5
2008	\$829.0
ARRA/2009	\$2,829.0
2010	\$1,387.0
2011	\$963.1
2012	\$917.9
2013	\$956.3
2014	\$906.9
2015	\$906.9
2016	\$863.2
2017	\$963.2
2018	\$1,163.2
2019	\$1,460.1
2020	\$1,126.1
2021	\$1,126.1
IIJA/2022 ^a	\$6,828.1
IIJA 2023	\$6,002.0
IIJA 2024	\$6,203.0
IIJA 2025	\$6,403.0
IIJA 2026	\$6,403.0

Source: Prepared by CRS using House, Senate, or conference committee reports accompanying the annual appropriations bills that fund the U.S. Environmental Protection Agency (EPA).

Notes: “ARRA” refers to the American Recovery and Reinvestment Act of 2009 (P.L. 111-5). “IIJA” refers to the Infrastructure Investment and Jobs Act (P.L. 117-58). The FY2023 through FY2026 enacted appropriations for the DWSRF represent the sum of the IIJA DWSRF appropriations for each fiscal year. IIJA provides five fiscal years of emergency supplemental appropriations for the DWSRF, some of which are dedicated to specific project types. Specifically, IIJA includes \$3.0 billion for each of FY2022 through FY2026 for the DWSRF for lead service line replacement projects and related activities; and IIJA provides \$800 million for each of FY2022 through FY2026 for the DWSRF for grants to address emerging contaminants. Congress may provide additional funding through the regular appropriations process for FY2023 through FY2026. This table includes supplemental appropriations acts that provided DWSRF funding for specific locations or narrower types of projects.

- a. The Consolidated Appropriations Act, 2022 (P.L. 117-103) provides \$1.1 billion in EPA’s State and Tribal Assistance Grants account for the DWSRF. The act includes “community project funding/congressionally directed spending” (CPF/CDS) items, which some have referred to as earmarks. P.L. 117-103 sets aside 35% (\$397.8 million) of the FY2022 DWSRF appropriation to CPF/CDS. Such funds will be distributed directly to recipients, instead of to states’ SRF programs.

Compliance Assistance Programs

Several SDWA provisions are intended to support public water systems' ability to meet drinking water standards. The 1996 SDWA Amendments added requirements for states to develop programs focused on water system compliance. SDWA Section 1419 required states to adopt programs for training and certifying operators of community and nontransient noncommunity systems (e.g., schools and workplaces that have their own wells) as a condition of full DWSRF funding.³⁸ SDWA directed EPA to withhold 20% of a state's annual DWSRF grant unless the state adopted and implemented an approved operator certification program.

Capacity Development

Added in 1996, SDWA Section 1420³⁹ established requirements for states to develop strategies to improve the technical, managerial, and financial capacity of community water systems and nontransient noncommunity water systems.⁴⁰ To avoid a 20% reduction in the annual DWSRF capitalization grant, states were required to (1) establish the legal authority to ensure that new water systems demonstrate the technical, financial, and managerial capacity to comply with SDWA requirements, and (2) develop and implement a strategy to assist existing systems experiencing compliance difficulties. Every state developed a capacity development program, and as such EPA did not withhold DWSRF funds from any state. In 2018, AWIA amended SDWA Section 1420 to direct states to revise their capacity development strategies to include a description of how they will encourage water systems to develop asset management plans,⁴¹ and required states to demonstrate their process in providing technical assistance to help systems develop asset management plans.⁴²

As part of the state capacity development strategy, SDWA Section 1420(b)(1) requires states to prepare, periodically update, and submit to EPA a list of community water systems and nontransient noncommunity water systems that have a "history of significant noncompliance" with SDWA (as defined in EPA guidelines).⁴³ To the extent practicable, states are to include the reasons for noncompliance. Further, Section 1420(b)(2) requires states to report to EPA on the success of enforcement mechanisms and capacity development efforts in assisting such water systems to improve technical, managerial, and financial capacity.⁴⁴

³⁸ 42 U.S.C. §300g-8.

³⁹ 42 U.S.C. §300g-9.

⁴⁰ Nontransient noncommunity water systems, such as schools or factories, have their own water supplies and generally serve the same individuals for more than six months but not year-round. Most drinking water regulations apply to these systems.

⁴¹ Asset management is a budgetary and planning process that public water systems may undertake to evaluate their capital assets and plan the maintenance of their infrastructure (e.g., pumps, motors, and piping) to ensure that the water system can fund the costs. For more information, see EPA, "Asset Management: A Best Practices Guide," April 2008, <http://nepis.epa.gov/Exe/ZyPDF.cgi/P1000LP0.PDF?Dockey=P1000LP0.PDF>.

⁴² In 2019, EPA published a report, *State Asset Management Initiatives*, that outlines the various efforts of states to incentivize asset management planning among the water systems. This report can be found at https://www.epa.gov/sites/default/files/2019-03/documents/asset_management_initiatives_document_508.pdf.

⁴³ In 2010, EPA published a report, *Public Water System Historical Significant Non-Compliers: National Trends Report*, that summarized the characteristics of public water systems that have a history of significant noncompliance. This report can be found at <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100MEXD.PDF?Dockey=P100MEXD.PDF>.

⁴⁴ 42 U.S.C. §300g-9(b).

Consolidation Incentives

In 1996, Congress amended SDWA enforcement provisions to allow limited and temporary enforcement relief as an incentive for noncompliant public water systems under certain circumstances.⁴⁵ SDWA Section 1414(h) allows any public water system to submit to the state or EPA a plan for the physical consolidation or the consolidation of management and administrative functions with another public water system, or the transfer of ownership of a public water system, to correct identified violations.⁴⁶ In 2018, AWIA amended SDWA Section 1414(h) to provide that in addition to the physical or management consolidation or transfer of ownership, a public water system can also submit a plan to execute a contractual agreement with another public water system to manage the noncompliant public water system.⁴⁷ If the plan to consolidate or transfer ownership is approved by a state or EPA, enforcement action against that public water system for the specified violation would not be taken for two years.⁴⁸

SDWA Section 1414(h) authorizes states, under certain circumstances, to require public water systems to assess options for consolidation or transfer of ownership.⁴⁹ Any public water systems undertaking such actions pursuant to a mandatory assessment are eligible to receive a DWSRF loan to carry out the consolidation, transfer, or other action.⁵⁰ Generally, to be eligible for financial assistance from the DWSRF, water systems are required to be in compliance with drinking water regulations and to have the technical, managerial, and financial capacity to maintain compliance with the act.⁵¹

SDWA Section 1414(h)(5) provides limited liability protection for the water system owner or operator who has a state-approved consolidation plan. In the consolidation plan, the owner or operator of the public water system must identify any potential or existing liabilities from specific violations and their available assets. This provision also limits the liability of a consolidating system to the amount of its assets and to the liabilities identified in the plan.⁵²

⁴⁵ 42 U.S.C. §300g-3(h)(2).

⁴⁶ Under SDWA Section 1413, states that meet statutory criteria may assume primary enforcement responsibility (primacy) for public water system compliance with SDWA requirements.

⁴⁷ America's Water Infrastructure Act of 2018 (AWIA; P.L. 115-270), §2009.

⁴⁸ 42 U.S.C. §300g-3(h)(2).

⁴⁹ SDWA Section 1414(h) outlines the specific circumstances under which EPA or a state can require a consolidation assessment. Specifically, EPA or states may require an assessment (1) if a public water system has repeatedly violated one or more primary drinking water regulations, and is unable or unwilling to take feasible and affordable actions to address compliance with SDWA or has undertaken actions to address compliance, but has not achieved compliance; (2) when a consolidation, transfer, or other action is feasible; and (3) when a consolidation will result in greater compliance with SDWA. 42 U.S.C. §300g-3(h)(3).

⁵⁰ SDWA §1414(h)(4); 42 U.S.C. §300g-3(h)(4).

⁵¹ SDWA §1452(a)(3)(A); 42 U.S.C. §300j-12(a)(3)(A). SDWA Section 1452(a)(3)(B) allows states to provide DWSRF financial assistance to noncompliant public water systems if such assistance would ensure compliance with the act and "the owner or operator of the system agrees to undertake feasible and appropriate changes in operations (including ownership, management, accounting, rates, maintenance, consolidation, alternative water supply, or other procedures) if the State determines that the measures are necessary to ensure that the system has the technical, managerial, and financial capability to comply with the requirements of this title over the long term."

⁵² AWIA Section 2010 required EPA to promulgate regulations by October 23, 2020, to implement SDWA Section 1414(h)(3), Authority for Mandatory Assessment; Section 1414(h)(4), Financial Assistance; and Section 1414(h)(5), Protection of Nonresponsible System.

Variations and Exemptions

In recognition of compliance challenges of small systems, SDWA includes provisions that provide for “variances” from a drinking water standard and “exemptions” (i.e., additional time for compliance with a standard) from drinking water regulations, under specified circumstances.

Specifically for small systems, states may provide variances⁵³ if EPA cannot identify an affordable technology that reduces the contaminant to the MCL.⁵⁴ To date, EPA has determined that compliance technologies for all MCLs are affordable for small systems. Should EPA identify no affordable technology, then the agency is required to identify affordable variance technologies that may not meet the MCL.⁵⁵ After identifying variance technologies, states may grant small system variances to systems serving 3,300 or fewer persons if through treatment, an alternative water source, or restructuring, a system cannot afford to comply with the MCL and the variance ensures adequate protection of public health.⁵⁶ Under this type of variance, a state would allow the system to use a variance technology to comply with a regulation. With EPA approval, states may also grant variances to systems serving between 3,301 and 10,000 persons.

SDWA Section 1416 authorizes states to grant public water systems temporary exemptions from drinking water regulations if a system cannot comply for specified reasons (including costs). An exemption is intended to give a water system additional time to come into compliance with a regulation and is limited to situations where an exemption would not result in an unreasonable health risk. States can issue exemptions to a qualified system for up to three years beyond the regulation’s effective date. Systems serving 3,300 or fewer persons may receive a maximum of three additional two-year extensions for a total exemption duration of nine years.

Drinking Water Grant Programs

Several acts amended SDWA to authorize a range of grant programs focused on specific projects or activities (e.g., lead testing) or for specific purposes (e.g., assisting small and/or disadvantaged communities with SDWA compliance). These statutory amendments include the WIIN Act (P.L. 114-322), AWIA (P.L. 115-270), and IJJA (P.L. 117-58). IJJA Division E, Title I—“Drinking Water” amends provisions addressing existing drinking water grant programs or authorizes new EPA-administered programs, and authorizes appropriations to support such programs. As outlined below, these grant programs are intended to assist such systems to improve compliance; increase technical, managerial, and financial capacity; respond to threats of contamination; and build resilience against natural hazards; among other objectives.

⁵³ Variances are not available for microbial contaminants.

⁵⁴ SDWA §1415(e); 42 U.S.C. §300g-4(e). To determine if a technology is affordable, EPA compares the cumulative cost of providing drinking water that complies with the new standard to a threshold equal to 2.5% of median household income (about \$1,100). EPA, “Announcement of Small System Compliance Technology Lists for Existing National Primary Drinking Water Regulations and Findings Concerning Variance Technologies,” 63 *Federal Register* 42032-42048, August 6, 1998. In addition, SDWA Section 1415 authorizes states to grant a public water system a variance from an MCL if the untreated source water quality prevents meeting the MCL even after application of best technology, and the variance does not result in an unreasonable risk to health.

⁵⁵ SDWA §1412(b)(15); 42 U.S.C. §300g-1(b)(15).

⁵⁶ SDWA §1415(e); 42 U.S.C. §300g-4(e).

Technical Assistance to Small Public Water Systems

SDWA authorizes EPA and states to provide technical assistance to public water systems and particularly to systems serving from 25 to 10,000 customers. SDWA Section 1442(e) allows EPA to provide technical assistance to small water systems through grants to nonprofit organizations. Section 1442(e) authorizes the appropriation of \$15 million annually for FY2022 through FY2026 for this technical assistance.⁵⁷ The technical assistance is intended to enable such systems to achieve and maintain compliance with drinking water regulations. It may include multistate or regional technical assistance programs, training, and assistance in implementing regulations, source water protection plans, monitoring plans, water security enhancements, and other types of assistance. The Consolidated Appropriations Act, 2022 (P.L. 117-103) provided \$22 million for such technical assistance grants for FY2022.

Grants for Small and Disadvantaged Communities

Added to SDWA in 2016 by the WIIN Act, Section 1459A directs EPA to establish a grant program to assist disadvantaged and/or small communities that are unable to finance projects needed to comply with the act.⁵⁸ EPA may make grants to public water systems, tribal water systems, and states on behalf of an underserved community. As originally established, eligible projects included investments needed for SDWA compliance, household water quality testing, and assistance that primarily benefits a community on a per-household basis. IJA amended this grant program authority to add the following eligible projects:

- the purchase of point-of-entry or point-of-use filters and filtration systems;
- investments necessary for providing information regarding (1) use and maintenance of such devices, and (2) options for replacing lead service lines and removing other sources of lead in water; and
- entering into contracts, including with nonprofit organizations that have water system technical expertise to assist eligible entities (or a state on behalf of eligible entities).

As amended, EPA may also provide assistance through this grant program to eligible entities to increase their technical, managerial, or financial capacity. EPA must give funding priority to projects and activities that benefit underserved communities (i.e., communities that lack household water or wastewater services or that violate or exceed a SDWA requirement), after consulting with and considering state, tribal, and local priorities. IJA amended this grant program authority to reduce the nonfederal share of project costs of the grant project from not less than 45% to not less than 10%.

In 2018, AWIA amended SDWA Section 1459A to authorize EPA to make grants to requesting states to assist communities when contaminants are present in, or likely to enter, a public water system or an underground drinking water source, and pose an imminent and substantial endangerment to the health of persons, when the state determines that the appropriate authorities have not acted sufficiently to protect public health. EPA is authorized to recover funds from persons or entities who are found by EPA or a court of competent jurisdiction to have caused or contributed to the contamination addressed by the grant. Cost-recovery of grant funds from the party responsible for the contamination also is dependent on whether the person or entity violated a law administered by EPA related to the contamination.

⁵⁷ The Consolidated Appropriations Act, 2022 (P.L. 117-103) provided \$22 million for this program.

⁵⁸ 42 U.S.C. §300j-19a. Added by §2104 of the WIIN Act (P.L. 114-322).

For both of these small and disadvantaged communities grant programs, SDWA Section 1459A authorizes appropriations of \$70 million for FY2022, \$80 million for FY2023, \$100 million for FY2024, \$120 million for FY2025, and \$140 million for FY2026. This grant program began receiving appropriations in FY2018,⁵⁹ and the Consolidated Appropriations Act, 2022 (P.L. 117-103) provided \$27.2 million for this grant program for FY2022. IIJA provides \$5 billion over five fiscal years in emergency supplemental appropriations for the Small and Disadvantaged Communities Grant Program dedicated to projects that address emerging contaminants.⁶⁰

In addition, AWIA amended SDWA Section 1459A to add the Drinking Water System Infrastructure Resilience and Sustainability Program for small and/or disadvantaged water systems.⁶¹ This section authorizes EPA to award grants to eligible public water systems for projects that increase resilience to natural hazards, including hydrologic changes.⁶² Eligible projects include those that increase water use efficiency, enhance water supply through watershed management or desalination, and increase energy efficiency in the conveyance or treatment of drinking water. IIJA amended these provisions to direct EPA to establish this grant program, and authorizes appropriations of \$25 million annually for FY2022 through FY2026. The IIJA amendments established a 10% cost share for eligible entities, which EPA may waive under certain circumstances. The Consolidated Appropriations Act, 2022 provided \$5 million for grants under SDWA Section 1459A(l) for FY2022. This grant program first received an appropriation (\$3 million) for FY2020 in the Further Consolidated Appropriations Act, 2020 (P.L. 116-94), and the Consolidated Appropriations Act, 2021 (P.L. 116-260) provided \$4 million for FY2021.

Further, IIJA amended SDWA Section 1459A to add the State Competitive Grants for Underserved Communities program.⁶³ EPA is directed to distribute appropriations provided for this grant program to states in competitive manner. To obtain a grant, states are required to submit an application to EPA. EPA is required to establish criteria to prioritize states with a high proportion of underserved communities. This provision authorizes appropriations of \$50 million for each of FY2022 through FY2026 for this grant program. To date, Congress has not provided appropriations for this grant program.

Grant Assistance for Small System Operational Sustainability

IIJA amended SDWA to add Section 1459E, which directs EPA to establish a grant program to improve the “operational sustainability of one or more small systems.”⁶⁴ Eligible entities for this grant program include state, local, or tribal governments; public corporations established by a local government; nonprofit entities that own, operate, or provide technical assistance to public water systems; and tribal consortia. Section 1459E defines *operational sustainability* as the

⁵⁹ The Consolidated Appropriations Act, 2018 (P.L. 115-141) provided \$20 million for SDWA Section 1459A for FY2018.

⁶⁰ IIJA waives the matching requirement for the emergency supplemental appropriations for the Small and Disadvantaged Communities Grant Program. For more detail, see CRS Report R46892, *Infrastructure Investment and Jobs Act (IIJA): Drinking Water and Wastewater Infrastructure*, by Elena H. Humphreys and Jonathan L. Ramseur.

⁶¹ SDWA §1459A(l); 42 U.S.C. §300j-19a(l).

⁶² *Eligible entities* are defined in SDWA Section 1459A(c)(2)(B) [42 U.S.C. §300j-19a(c)(2)(B)]. *Natural hazard* is defined as a natural event that threatens the functioning of a community water system, including an earthquake, tornado, flood, hurricane, wildfire, and hydrologic changes (SDWA §1433(h)(2); 42 U.S.C. §300i-2(h)(2)).

⁶³ SDWA §1459A(n); 42 U.S.C. §300j-19a(n).

⁶⁴ 42 U.S.C. §300j-19f. SDWA §1459E(a)(1)(4) defines *small system* as a public water system that serves fewer than 10,000 people, and is owned or operated by a local or tribal government, public corporation, nonprofit corporation, public trust, or cooperative association.

ability to improve small water system operations by identifying and preventing potable water loss from metering or infrastructure failures, including leaks and breaks. Eligible uses of the funds include various asset management activities. This section authorizes appropriations of \$50 million annually for FY2022 through FY2026, and requires eligible entities to provide a 10% match, which EPA may waive under certain circumstances. To date, Congress has not provided appropriations for this grant program.

Advanced Drinking Water Technologies Grant Program

IJA amended SDWA to add Section 1459G, which directs EPA to establish a grant program for identifying, deploying, or identifying and deploying technologies to address cybersecurity vulnerabilities, or to enhance treatment, monitoring, affordability, efficiency, or safety of drinking water.⁶⁵ Eligible entities for this grant program include public water systems serving 100,000 or fewer people and disadvantaged communities and small communities that are unable to finance projects needed to comply with SDWA. To be eligible for a grant, systems are required to have plans to identify or have identified opportunities to employ such technologies and have expressed an interest in operating such technologies. This section authorizes appropriations of \$10 million annually for FY2022 through FY2026, and requires eligible entities to provide a 10% match that EPA can waive if an eligible entity would experience significant financial hardship in providing the nonfederal match. To date, Congress has not provided appropriations for this grant program.

Voluntary Partnerships

In addition to the above SDWA programs, some water systems may use voluntary partnerships to address issues with SDWA compliance capacity. Many states developed water system partnership programs to enhance the technical, managerial, and financial capacity of water systems. Water system partnerships can range from informal arrangements (e.g., joint bulk purchase of chemicals) to more formal cooperation (e.g., management assistance agreements or physical consolidation).⁶⁶ EPA issued and periodically updates guidance on water system partnership programs.⁶⁷ This guidance outlines the policies, regulations, and legal authorities in each state used to support partnerships among water systems.⁶⁸

Concluding Observations

Water system compliance, particularly for smaller systems, has been a focus of SDWA implementation since at least 1996, with several acts amending SDWA to assist with improving the technical, managerial, and financial capacity of such systems. The 1996 SDWA amendments included provisions intended to assist such systems, such as authorizing capacity development and technical assistance, and authorizing limited enforcement relief under certain circumstances. The 1996 amendments also established the DWSRF program, the key federal financial assistance program for drinking water infrastructure projects, and provides assistance with water system financial capacity.

⁶⁵ 42 U.S.C. §300j-19h.

⁶⁶ See, for example, EPA's "Water System Partnership Case Studies" website at <https://www.epa.gov/dwccapacity/water-system-partnerships-case-studies>.

⁶⁷ EPA, *Water System Partnerships: State Programs and Policies Supporting Cooperative Approaches for Drinking Water Systems*, EPA 816-S-17-002, August 2017.

⁶⁸ *Ibid.*

More recently, AWIA amended SDWA compliance assistance program authorities, and along with the WIIN Act and IJJA, authorized several grant programs. These grant programs are intended to assist with (1) SDWA compliance or emergency response or resilience activities for small and/or disadvantaged systems, (2) advanced technologies deployment at small systems, and (3) operational sustainability through technical assistance. Such grant programs may help improve small system technical and managerial capacity.

EPA's implementation of SDWA authorities are generally dependent on appropriations provided for such purposes. After its establishment in 1996, the DWSRF program has received annual appropriations since 1997. Beginning in 2018, annual appropriations acts have provided regular appropriations for the SDWA Section 1459A Small and Disadvantaged Communities Grant Program, and beginning in FY2020, for SDWA Section 1459A(l) Drinking Water System Infrastructure Resilience and Sustainability Program for small and disadvantaged water systems. IJJA provided emergency supplemental appropriations for the DWSRF, and also for the Small and Disadvantaged Communities Grant Program. IJJA did not provide appropriations for the grant programs added to SDWA by IJJA Division E. The President's FY2023 budget requests appropriations for these IJJA Division E drinking water grant programs.⁶⁹

As Congress deliberates on appropriations, considerations include the scale of funding for the DWSRF and other SDWA grant programs, as well as the tradeoffs between providing funding through an established financial assistance program, such as the DWSRF, versus through the more recently authorized grant programs. Questions remain about EPA's ability to identify and provide grants to small water systems versus the states' ability to do so through the DWSRF. For example, for prior years' appropriations, EPA has allocated funding for the Small and Disadvantaged Communities Grant Program noncompetitively among states, territories, and tribal governments to administer directly to underserved communities.⁷⁰ Other considerations include the focus of drinking water programs and whether such programs should focus on assisting the largest number of people served by water systems or on assisting the largest number of systems.

In addition to states or EPA, Congress has also identified community drinking water infrastructure projects and provided funding to them directly. The Consolidated Appropriations Act, 2022 sets aside 35% (\$397.8 million) of the FY2022 DWSRF appropriation to community project funding/congressionally directed spending (CPF/CDS), which some have referred to as earmarks.⁷¹ Such funds are distributed directly to recipients, instead of through states' DWSRF programs. As such, these funds bypass states' intended use plans (IUPs) or the priority lists of projects that the state intends to fund in that year. Through CPF/CDS, Congress directs funds to specific projects, which may result in more or less funding for small water system projects. For example, for FY2023, the House and Senate Committees on Appropriations stipulate guidelines to Members regarding CPF/CDS item requests.⁷² To the extent that such guidance changes, water system eligibilities for such funding may also change. Whether Congress includes such items in

⁶⁹ EPA, *Fiscal Year 2023: Justification of Appropriation Estimates for the Committees on Appropriation*, EPA-190-R-22-001, Washington, DC, April 2022.

⁷⁰ For more information, see EPA, "WIIN Grant: Small, Underserved, and Disadvantaged Communities Grant Program," <https://www.epa.gov/dwcapacity/wiin-grant-small-underserved-and-disadvantaged-communities-grant-program-0>.

⁷¹ P.L. 117-103.

⁷² U.S. Congress, Senate Committee on Appropriations, *Reforms and Regulations for Congressionally Directed Spending in Fiscal Year 2023*, 117th Cong., 1st sess.; U.S. Congress, House Committee on Appropriations, *Guidelines for the FY2023 Community Project Funding Member Request Process*, 117th Cong., 1st sess.

future appropriations acts, and, if so, their impact on the level of appropriations for the DWSRF or other grant programs, remains to be seen.

Among other challenges, SDWA compliance continues to challenge water systems. In 1996, EPA published the first National Public Water System Annual Compliance Report, which found that water systems serving 3,300 or fewer individuals comprised a majority of the community water systems with an MCL or a treatment technique violation.⁷³ (Monitoring and reporting requirement violations make up the majority of drinking water regulations violations.) Overall, the number of water systems with such a violation has decreased from 5,151 in 1996 to 3,174 in 2021, though water systems serving 3,300 or fewer individuals remain both the majority of community water systems that operate nationally and the majority of systems with an MCL or a treatment technique violation.⁷⁴ Over the same time period, the number of community water systems operating nationally has decreased by roughly 4,600 systems.⁷⁵ These data indicate that while community water system compliance capacity has increased with fewer systems with health-based violations, certain water systems remain challenged to comply with SDWA.

Legislative history states that SDWA regulations should be achievable by large metropolitan water systems treating relatively clean source water.⁷⁶ Accordingly, smaller water systems will likely remain a focus of compliance capacity development, as EPA proposes and finalizes a new drinking water regulation for two PFAS, and evaluates existing regulations for potential revision. Water systems, including small systems, may struggle to finance projects for increased treatment technology,⁷⁷ or to operate and maintain such technology. Addressing barriers to small-water-system technical, managerial, and financial capacity may remain a focus for EPA, the states, and other stakeholders.

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⁷³ EPA, *Providing Safe Drinking Water in America 1996 National Public Water System Annual Compliance Report and Update on Implementation of the 1996 Safe Drinking Water Act Amendments*, September 1998, p. 4, <https://www.epa.gov/sites/default/files/2014-04/documents/sdwcom1996.pdf>.

⁷⁴ *Ibid.*; and EPA, Enforcement and Compliance History Online (ECHO) Database, accessed in August 2022, <https://echo.epa.gov/trends/comparative-maps-dashboards/drinking-water-dashboard?yearview=FY&view=activity&criteria=basic&state=National>. CRS filtered the ECHO database by “calendar year” and by “community water systems.”

⁷⁵ EPA, Enforcement and Compliance History Online (ECHO) Database, accessed in August 2022, <https://echo.epa.gov/trends/comparative-maps-dashboards/drinking-water-dashboard?yearview=FY&view=activity&criteria=basic&state=National>. CRS filtered the ECHO database by “calendar year” and by “community water systems.”

⁷⁶ U.S. Congress, House Committee on Interstate and Foreign Commerce, *Safe Drinking Water Act*, 93rd Cong., 2nd sess., July 10, 1974, H.Rept. 93-1185, p. 18.

⁷⁷ For example, in 2019, the AWWA estimated that potential capital costs associated with implementing drinking water treatment to remove perfluorooctanoic acid (PFOA); and perfluorooctane sulfonic acid (PFOS) may exceed \$3 billion, with operations and maintenance costs ranging from \$150 million to \$1.3 billion. Letter from G. Tracy Mehan III, Executive Director of Government Affairs, AWWA, to Lilia Ledezma, Analyst, Congressional Budget Office, August 8, 2019, <https://www.awwa.org/Portals/0/AWWA/ETS/Resources/AWWAInformationforCBOforPFASTreatmentCosts.pdf?ver=2019-10-23-113359-787>.

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