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SUMMARY

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As part of the federal response to the "Great Recession," Congress passed the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5) to stimulate the economy and address a range of other policy objectives. ARRA included tax relief and incentives and provided hundreds of billions of dollars in mandatory and discretionary spending, including funding for wastewater and drinking water infrastructure projects. As Congress considers options to mitigate the economic impacts of Coronavirus Disease 2019 (COVID-19), infrastructure funding is receiving increased attention. ARRA implementation experience may be relevant as policymakers consider options to stimulate the economy through increased infrastructure spending.

ARRA delivered wastewater and drinking water infrastructure funding primarily through two U.S. Environmental Protection Agency (EPA) programs—the Clean Water State Revolving Fund (CWSRF) program under the Clean Water Act (CWA) and the Drinking Water State Revolving Fund (DWSRF) program under the Safe Drinking Water Act (SDWA). These programs help publicly owned treatment works and public water systems finance infrastructure improvements needed to comply with water quality or public health requirements and for other statutory purposes. Using annual appropriations, EPA makes grants to states to capitalize state revolving loan funds. States in turn primarily provide subsidized loans to eligible recipients. ARRA provided $4.0 billion for the CWSRF and $2.0 billion for the DWSRF in supplemental funding in FY2009. The ARRA SRF funding was more than double the appropriations for FY2008.

Congress applied several conditions to the ARRA funding for the CWSRF and DWSRF programs that differed from the existing statutory requirements. ARRA required states to give priority to projects that were "ready to proceed to construction within 12 months" of enactment, and it required that all ARRA SRF funds must be under contract or used for construction by February 17, 2010. ARRA required states to use at least 50% of ARRA grants to "provide additional subsidization to eligible recipients" and use not less than 20% of ARRA grants "for projects to address green infrastructure, water or energy efficiency improvements or other environmentally innovative activities." In addition, recipients of ARRA funding were subject to Davis-Bacon Act wage requirements and "Buy American" provisions. Congress has applied versions of some ARRA requirements to the SRFs in subsequent EPA appropriations acts and through amendments to the CWA and SDWA.

Pursuant to ARRA reporting requirements, the U.S. Government Accountability Office (GAO) reported that all 50 states met the 12-month deadline to have ARRA-funded projects under contract by February 17, 2010. GAO also reported that states met the act's requirement to use at least 20% of the funds for green infrastructure, water and/or energy efficiency, and other innovative environmental projects and that states used 76% of CWSRF funds and 70% of DWSRF funds to provide additional subsidies (e.g., forgiveness of loan principal or grants).

The ARRA SRF funding results and implementation experience may be relevant in the 116th Congress as policymakers consider legislative options to stimulate the economy and/or meet other policy objectives through increases in water infrastructure spending. Key considerations involve the broad policy objectives of stimulus legislation and how to efficiently achieve such objectives. Some policy objectives may involve trade-offs among competing priorities and may require differing tools for evaluation. In the case of funding wastewater and drinking water infrastructure as a means of achieving these or other policy goals, the practicalities of wastewater and drinking water infrastructure projects may be informative. In general, water infrastructure projects often involve complicated planning and construction efforts that span multiple years. Other policy considerations include whether to provide funding through existing programs, such as the SRF programs, or through new programs. Policymakers may also consider whether to apply certain requirements to the funding, as occurred with ARRA, and the trade-offs that may result from certain funding conditions. Although states met ARRA's deadline and funding conditions, the one-year funding deadline combined with the added funding conditions presented implementation challenges for EPA, states, and local governments. In some cases, the ARRA funding deadline and conditions changed states' SRF funding priorities for their previously ranked projects.

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Introduction

The condition of the nation's wastewater and drinking water infrastructure and related financing challenges, as well as the federal role in helping communities meet those challenges, have been perennial subjects of debate and attention in Congress. The U.S. Environmental Protection Agency (EPA) estimates that the capital cost of wastewater and drinking water infrastructure needed to meet statutory water quality and public health requirements and objectives exceeds $744 billion over a 20-year period.[1] A broader water infrastructure survey conducted by the American Water Works Association estimated that, for drinking water alone, the cost to repair aging infrastructure and expand water service to meet growing demand would be $1 trillion over 20 years.[2]

In the 116th Congress, Members have introduced numerous bills that would support existing and create new water infrastructure assistance programs. In addition, as efforts to contain the Coronavirus Disease 2019 (COVID-19) have contributed to economic decline and significant job losses, some Members from both the House and Senate have linked these and other infrastructure bills to future economic recovery efforts. For example, the Department of the Interior, Environment, and Related Agencies Appropriations Act, 2021 (H.R. 7612), would provide more than $10 billion in emergency supplemental appropriations for wastewater and drinking water infrastructure. Further, the House-passed Moving Forward Act (H.R. 2) contains provisions that would authorize billions of dollars in wastewater and drinking water infrastructure spending. The chairman of the House Committee on Energy and Commerce, Frank Pallone, linked this bill to economic recovery efforts, saying, "There is no better way to stimulate our economy and create millions of good paying jobs than to modernize our badly aging infrastructure."[3] In the Senate, the Committee on Environment and Public Works reported the America's Water Infrastructure Act of 2020 (S. 3591) and the Drinking Water Infrastructure Act of 2020 (S. 3590) on May 11, 2020. The committee chairman, John Barrasso, stated that these bills "will be critical to our economic recovery after the immediate pandemic response is behind us."[4]

[1] This estimate includes $271 billion for wastewater infrastructure and $473 billion for drinking water infrastructure. See EPA, *Clean Watersheds Needs Survey (CWNS) Report to Congress—2012*, 2016, https://www.epa.gov/cwns; and EPA, *Drinking Water Infrastructure Needs Survey and Assessment: Sixth Report to Congress*, 2018, https://www.epa.gov/dwsrf/what-infrastructure-needs-survey-and-assessment.

[2] American Water Works Association (AWWA), "Buried No Longer: Confronting America's Water Infrastructure Challenge," 2012, p. 3. Unlike EPA's drinking water needs assessment, the AWWA estimate included the cost for additional distribution lines investments anticipated to meet projected population growth, regional population shifts, and service area growth through 2050, as well as the costs for investments needed for statutory compliance and for repairs to aging water infrastructure.

[3] House Committee on Energy and Commerce, "Pallone Applauds Passage of the Moving Forward Act," press release, July 2, 2020, https://energycommerce.house.gov/newsroom/press-releases/pallone-applauds-passage-of-the-moving-forward-act.

[4] Senate Committee on Environment and Public Works, "Barrasso: Infrastructure Will Be Critical to Economic Recovery After Pandemic Is Behind Us," press release, May 6, 2020, https://www.epw.senate.gov/public/index.cfm/press-releases-republican?ID=F22B94C0-71BB-42CB-8963-4A2EB2249DCE.

As part of the federal government's response to the "Great Recession,"[5] Congress enacted the American Recovery and Reinvestment Act of 2009 (ARRA, P.L. 111-5) on February 17, 2009.[6] ARRA was the largest fiscal stimulus measure passed by Congress to address the economic impacts of the Great Recession.[7] Among the purposes identified in ARRA were (1) preservation and creation of jobs and promotion of U.S. economic recovery and (2) investment in transportation, environmental protection, and other infrastructure that would provide long-term economic benefits.[8] To support these and other policy objectives, ARRA included revenue provisions and provided hundreds of billions of dollars in mandatory and discretionary spending, including funding for infrastructure projects in transportation, energy, and other sectors.

This report discusses the ARRA provisions regarding wastewater and drinking water infrastructure funding, which was delivered through the Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) programs.[9] The first section provides background information on the CWSRF and DWSRF programs. The second section discusses the ARRA funding levels provided to these two programs in the context of historical and recent funding levels. The third section discusses the ARRA funding requirements and how Congress continued to apply many of these requirements in some form to SRF funds after ARRA. The fourth section discusses the funding results and selected observations from EPA and states regarding ARRA implementation challenges.[10] The final section provides concluding observations.

This report does not evaluate the economic impacts associated with the increased ARRA funding for the CWSRF and DWSRF programs. Other studies have examined ARRA's overall economic impacts, including impacts to the U.S. gross domestic product and unemployment.[11]

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[5] The National Bureau of Economic Research (NBER) defines a recession as "a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in production, employment, real income, and other indicators." According to the NBER, the Great Recession began in December 2007 and ended in June 2009. During that time, the U.S. economy experienced its longest recession since the Great Depression of the 1930s. For more details, see NBER, "US Business Cycle Expansions and Contractions," https://www.nber.org/cycles.html.

[6] For more information, see CRS Report R40537, *American Recovery and Reinvestment Act of 2009 (P.L. 111-5): Summary and Legislative History*, by Clinton T. Brass et al.

[7] Other measures included the Economic Stimulus Act of 2008 (P.L. 110-185) and the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (P.L. 111-312).

[8] P.L. 111-5, §3. Other purposes were to assist those most impacted by the recession and to stabilize state and local government budgets.

[9] Various other federal programs provide financial assistance for wastewater and drinking water infrastructure. In particular, the U.S. Department of Agriculture's Rural Utilities Service provides loans and grants for wastewater and drinking water projects in rural communities. For information on these and other water infrastructure programs, see CRS Report RL30478, *Federally Supported Water Supply and Wastewater Treatment Programs*, coordinated by Jonathan L. Ramseur.

[10] ARRA required the U.S. Government Accountability Office (GAO) and the inspector general offices of federal departments or agencies to report the use of funds. ARRA included reporting and evaluation requirements that applied to federal agencies as well as others. This report relies on these reports, as sources.

[11] For example, see Congressional Budget Office (CBO), "Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output in 2014," 2014. See also CRS Report R46343, *Transportation Infrastructure Investment as Economic Stimulus: Lessons from the American Recovery and Reinvestment Act of 2009*, by William J. Mallett.

Background: State Revolving Fund Programs

The Clean Water Act (CWA)[12] and the Safe Drinking Water Act (SDWA)[13] respectively authorize parallel complementary financial assistance programs—the CWSRF and DWSRF—that help finance wastewater and drinking water infrastructure projects needed for compliance and other statutory purposes.[14] The CWSRF program provides financial assistance to a range of eligible recipients—including municipalities, state agencies, and certain private and nonprofit entities—to support a range of eligible projects and activities. These include construction of wastewater treatment works and stormwater systems, management of nonpoint source pollution, and replacement of decentralized systems (e.g., septic tanks), among others.[15] The DWSRF program provides assistance to community water systems and nonprofit noncommunity water systems for projects needed to maintain SDWA compliance or to further the act's health protection goals, among other activities. Eligible projects include installation and replacement of treatment facilities, distribution systems, and certain storage facilities construction, among others.[16]

Using annual appropriations, EPA makes grants to states to capitalize state revolving loan funds.[17] EPA allots CWSRF funds among states based on a CWA statutory formula, which provides a minimum share of 0.5% to each state and has effectively been in place since the beginning of the program in 1987.[18] DWSRF state allotments are based on the proportional share of each state's needs identified in the quadrennial drinking water infrastructure needs survey, except that no state may receive less than 1% of available funds.[19] Each year, each state must match 20% of its annual capitalization grant and, for each SRF, develop an intended use plan (IUP) indicating how the allotted funds will be used.[20] As outlined in their plans, states provide primarily subsidized loans to publicly owned treatment works (CWSRF) or public water systems (DWSRF), which reduce the cost of such infrastructure projects to communities. Communities repay loans into the fund, thus making resources available for projects in other communities. Over time, the federal grants and state match—combined with funds from loan repayments, leveraged bonds, and other

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[12] The statutory name is the Federal Water Pollution Control Act, as amended, codified at Title 33, Section 1251 et seq of the *United States Code.* For more information, see CRS Report RL30030, *Clean Water Act: A Summary of the Law*, by Laura Gatz.

[13] The SDWA is codified generally at Title 42, Sections 300f-300j of the *U.S. Code*. For more information, see CRS Report RL31243, *Safe Drinking Water Act (SDWA): A Summary of the Act and Its Major Requirements*, by Mary Tiemann.

[14] 42 U.S.C. §300j-12. For more details regarding the history of the DWSRF, see CRS Report 96-647, *Water Infrastructure Financing: History of EPA Appropriations*, by Jonathan L. Ramseur and Mary Tiemann.

[15] 33 U.S.C. §§1381-1387. For more details regarding the history of the CWSRF and its predecessor grant program in CWA Title II, see CRS Report 96-647, *Water Infrastructure Financing: History of EPA Appropriations*, by Jonathan L. Ramseur and Mary Tiemann.

[16] For more information, see CRS Report R45304, *Drinking Water State Revolving Fund (DWSRF): Overview, Issues, and Legislation*, by Mary Tiemann.

[17] The 50 U.S. states and Puerto Rico operate SRF programs. The CWA and SDWA require EPA to provide direct grants to the District of Columbia, the U.S. Virgin Islands, American Samoa, Guam, the Commonwealth of Northern Marianas, and Indian tribes for wastewater and drinking water infrastructure improvements (33 U.S.C. §1362 and §1377; 42 U.S.C. 300j-12(i) and (j)). The funding for the District of Columbia, U.S. territories, and Indian tribes is part of the SRF appropriations to EPA.

[18] For more information, see CRS Report RL31073, *Allocation of Wastewater Treatment Assistance: Formula and Other Changes*, by Jonathan L. Ramseur.

[19] 33 U.S.C. §1384 and §1285(c); 42 U.S.C. §300j-12(a)(1)(D)(ii).

[20] 33 U.S.C. §1386; 42 U.S.C. §300j-12(e).

sources—are intended to generate an ongoing, revolving source of water infrastructure funding at the state level.

States may also use the DWSRF and CWSRF to provide "additional subsidization"—such as principal forgiveness and/or negative interest loans—to disadvantaged communities to make projects affordable.[21] In addition, states can use CWSRF grants to provide additional subsidization for specific types of infrastructure projects, including those that address water or energy efficiency.[22]

Both the CWA and SDWA require states to report specific information to EPA regarding the implementation of their respective SRF programs. States are required to submit to EPA an annual report on the CWSRF and a biennial report on the DWSRF. In addition, both statutes require EPA to annually review states' implementation activities and periodically audit state programs.[23]

As context, while the SRF programs are the two key federal financial assistance programs for wastewater and drinking water infrastructure, the federal contribution of total public spending is less than some other "infrastructure" sectors.[24] According to analysis from the Congressional Budget Office (CBO), state and local governments contribute the vast majority of public funding for wastewater and drinking water infrastructure projects.[25] In CBO's analysis, federal spending includes the EPA SRF programs as well as other federal programs (e.g., the U.S. Department of Agriculture's Rural Utilities Service water and waste loan and grant program).[26] Infrastructure spending analyzed by CBO includes both spending on capital (e.g., treatment plants, pipes and equipment) and spending on operation and maintenance (O&M) activities. In 2017, CBO data indicate that capital spending accounted for $31 billion and O&M spending accounted for $80 billion in this sector.[27] State and local governments contribute the vast majority of spending on O&M activities, as these are generally not eligible for funding by the SRF programs. **Figure 1** compares the capital spending (adjusted for inflation) on wastewater and drinking water infrastructure between state and local governments and the federal government. The figure indicates that in 2017, the state and local share of such spending was 89%, while the federal contribution was 11%.[28]

[21] 33 U.S.C. §1383(i); 42 U.S.C. §300j-12(d).

[22] 33 U.S.C. §1383(i)(1)(B).

[23] 42 U.S.C. §300j-12(g)(4); 33 U.S.C. §1386.

[24] CBO, Public Spending on Transportation and Water Infrastructure, 1956 to 2017, 2018, p. 22, https://www.cbo.gov/publication/54539.

[25] CBO, *Public Spending on Transportation and Water Infrastructure, 1956 to 2017*, p. 22.

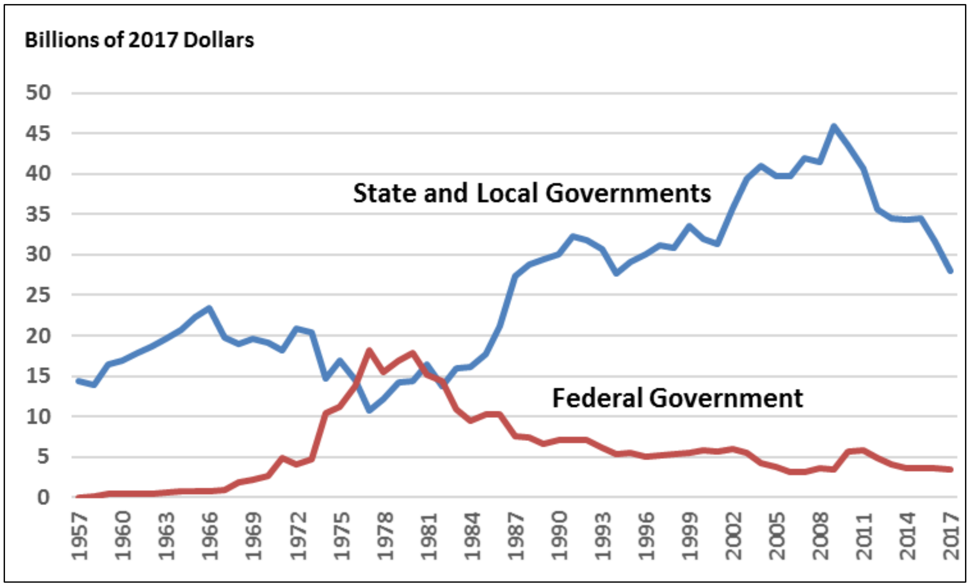
[26] 7 U.S.C. §1926.

[27] CBO, *Public Spending on Transportation and Water Infrastructure, 1956 to 2017*, Supplemental Data Tables.

[28] Authorized in 1987, the CWSRF replaced the construction grant program authorized by Title II of the Clean Water Act Amendments of 1972 (P.L. 92-500). Title II of P.L. 92-500 authorized grants to states for wastewater treatment plant construction under a program administered by EPA. Federal funds were provided through annual appropriations under a state-by-state allocation formula contained in the act. For more information, see CRS Report 96-647, *Water Infrastructure Financing: History of EPA Appropriations*, by Jonathan L. Ramseur and Mary Tiemann.

Figure 1. Comparison of Water Infrastructure Capital Spending by Level of Government (1957-2017)

Does not include spending for operation and maintenance activities



Source: CBO, *Public Spending on Transportation and Water Infrastructure, 1956 to 2017*, 2018, Supplemental Data Tables, https://www.cbo.gov/publication/54539.

Notes: For details on CBO's methodology, see CBO, *Public Spending on Transportation and Water Infrastructure*, 2010, Appendix B, https://www.cbo.gov/publication/21902.

ARRA Funding for the SRFs

ARRA provided funding for infrastructure in a range of sectors. Depending on how one defines *infrastructure*, the aggregate infrastructure funding totaled between $100 billion and $150 billion.[29] ARRA provided $4.0 billion for the CWSRF and $2.0 billion for the DWSRF in FY2009. The Omnibus Appropriations Act, 2009 (P.L. 111-8), enacted on March 11, 2009, provided an additional $689 million for the CWSRF and $829 million for the DWSRF in FY2009. Therefore, the total FY2009 funding for the CWSRF was $4.7 billion and, for the DWSRF, was $2.8 billion. The stimulus funding for the CWSRF and DWSRF was four times larger and 2.5 times larger, respectively, than the FY2008 appropriations for these programs. Unlike regular CWSRF and DWSRF grants from EPA, ARRA waived the requirement for states to provide a 20% match to the federal capitalization grant.[30]

As a point of comparison, from FY2000 through FY2009, annual appropriations averaged about $1.1 billion for the CWSRF and about $833 million for the DWSRF. **Figure 2** illustrates the annual appropriations for the CWSRF and DWSRF programs for FY2000-FY2020, including the

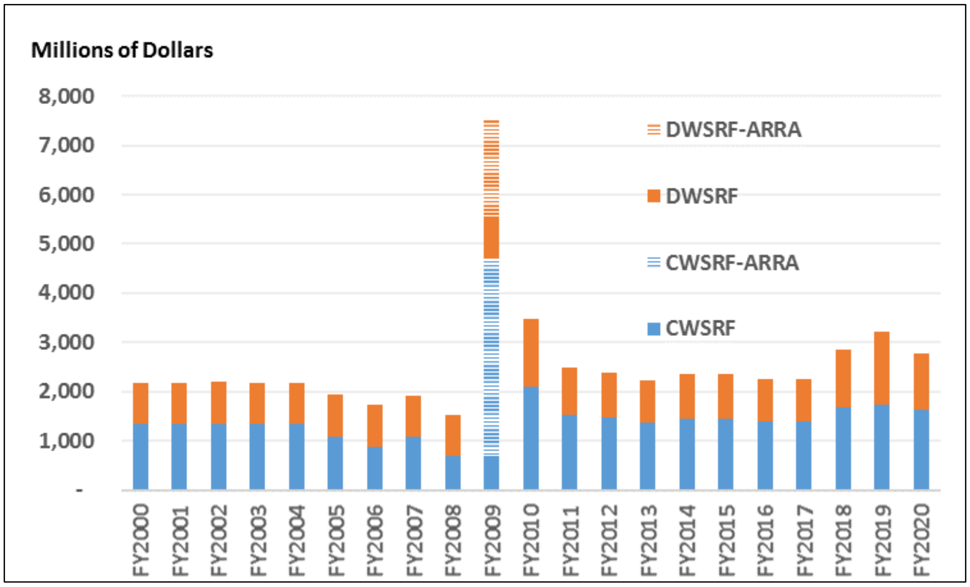
[29] For example, programs administered by the U.S. Department of Transportation received a total of $48.1 billion. Other public works infrastructure funding in ARRA included $4.6 billion for Army Corps of Engineers civil works projects and $2.5 billion for four major federal land management agencies. In addition, authority for state and local governments to issue tax credit bonds for capital spending represented an additional federal subsidy of about $36 billion. For a further discussion, see CRS Report R46343, *Transportation Infrastructure Investment as Economic Stimulus: Lessons from the American Recovery and Reinvestment Act of 2009*, by William J. Mallett.

[30] ARRA provided funds to U.S. territories and the District of Columbia in a similar manner to the annual SRF appropriations. ARRA required EPA to reserve up to 1.5% of the appropriation for CWSRF capitalization grants for grants to Indian tribes.

ARRA funding in FY2009. In nominal dollars (i.e., not adjusted for inflation), the annual appropriations for these programs—especially for the CWSRF—increased after ARRA. Between FY2010 and FY2020, the annual appropriations averaged about $1.6 billion for the CWSRF and about $1.0 billion for the DWSRF.

Figure 2. CWSRF and DWSRF Appropriations: FY2000-FY2020

Not adjusted for inflation



Source: Prepared by CRS using information from annual appropriations acts, ARRA, committee reports, and explanatory statements presented in the *Congressional Record*. Amounts reflect applicable rescissions but do not include recent supplemental appropriations for specific locations in P.L. 116-20 and P.L. 116-113 or special purpose project grants (often referred to as "earmarks"), which ended in FY2011. For more information, see CRS Report 96-647, *Water Infrastructure Financing: History of EPA Appropriations*, by Jonathan L. Ramseur and Mary Tiemann.

ARRA Requirements for the SRF Programs

A key purpose of ARRA was to stimulate the economy quickly. To support this objective, Congress delivered wastewater and drinking water infrastructure funding through existing programs. In ARRA, Congress applied a range of new conditions for the funding of the CWSRF and DWSRF programs that differed from the SRF's statutory requirements that applied at the time. As discussed below, in some cases these new funding conditions "created extensive challenges for EPA, states and funding recipients."[31]

In support of the act's overarching objective to stimulate the economy, ARRA generally required that funds be obligated by September 30, 2010. However, the act included shorter deadlines for the SRF program funding. The act directed states to give priority to wastewater and drinking water projects that were "ready to proceed to construction within 12 months" of enactment (i.e., by February 17, 2010)—often described as "shovel-ready"—and required that all SRF funds must

[31] EPA, *U.S. Environmental Protection Agency (EPA) and Major Partners' Lessons Learned from Implementing EPA's Portion of the American Recovery and Reinvestment Act: Factors Affecting Implementation and Program Success: Funds Management*, September 2013, https://www.epa.gov/sites/production/files/2015-09/documents/lessons-learned-arra-funds-management.pdf.

be under contract or construction within that time frame. Further, ARRA directed EPA to reallocate funds to other states if any SRF capitalization grant funds were not under contract or construction by February 17, 2010. As discussed below, EPA did not need to reallocate the ARRA funding.

Additionally, Congress applied several new programmatic requirements to ARRA funding to support specific policy objectives. Among these conditions, states were required to use at least 50% of ARRA funds for additional subsidization (e.g., grants) and 20% for "green projects." Projects receiving ARRA funding were required to use American iron, steel, and manufactured goods[32] and comply with Davis-Bacon Act prevailing wage provisions.[33] **Table 1** discusses these requirements and provides their location in ARRA.

Table 1. ARRA Requirements That Applied to the SRFs

ARRA Requirements	Section/Account of P.L. 111-5
One-Year Funding Time Frame: EPA was required to reallocate ARRA SRF funding if projects were not under contract or construction within 12 months of February 17, 2009. States were required to prioritize projects on their IUPs that were ready to proceed to construction within 12 months of February 17, 2009.	Division A, Title VII, State and Tribal Assistance Grants Account
Additional Subsidization: States were required to use at least 50% of ARRA grants to "provide additional subsidization to eligible recipients in the form of forgiveness of principal, negative interest loans or grants or any combination of these."	Division A, Title VII, State and Tribal Assistance Grants Account
Green Reserve: States were required to use not less than 20% of ARRA grants "to the extent there are sufficient eligible project applications … for projects to address green infrastructure, water or energy efficiency improvements or other environmentally innovative activities."	Division A, Title VII, State and Tribal Assistance Grants Account
Buy American: ARRA funding was available only if all iron, steel, and manufactured goods used in a project were produced in the United States. This section allowed federal agencies, with limited exceptions and applied consistently with U.S. international obligations, to waive this "Buy American" requirement if doing so was in the public interest because there were insufficient American supplies or if the use of American supplies would have increased the cost of the project by more than 25%.	Division A, Title XVI, Section 1605
Davis-Bacon Prevailing Wages: States were required to ensure that ARRA-funded projects complied with the prevailing wage requirements of the Davis-Bacon Act.	Division A, Title XVI, Section 1606
Reporting: Recipients of ARRA funds were required to submit to federal agencies quarterly reports on expenditure of funds and provide job creation estimates. Federal agencies were required to report on a quarterly basis on implementation. Inspector general offices of federal departments or agencies were required to report on the use of funds.	Division A, Title XV, Sections 1512, 1514, and 1515

Source: Prepared by CRS.

In addition, ARRA included reporting and evaluation requirements that applied to federal agencies, state and local implementing agencies, and ARRA funding recipients. These requirements were intended to provide transparency and accountability for the increased

[32] P.L. 111-5, §1605.

[33] P.L. 111-5, §1606. This section directed that all projects funded directly by or assisted in whole or in part by ARRA shall comply with prevailing wage requirements of the Davis-Bacon Act.

spending.[34] EPA was directed to submit, within 30 days of enactment, a report to the House and Senate Committees on Appropriations containing a general plan for expenditure of funds provided by the legislation and, within 90 days, another report providing detailed project-level information associated with the general plan. Federal agencies were required to report on a quarterly basis on implementation.[35] Recipients of ARRA funds were required to submit to EPA quarterly reports on expenditure of funds and provide job creation estimates.[36]

Further, ARRA required the U.S. Government Accountability Office (GAO) and the inspector general offices of federal departments or agencies to report on the use of funds. Inspectors general were required to review any concerns raised by the public about specific investments using ARRA funds and relay findings to department or agency heads and post the findings of such reviews or audits on the internet.[37] GAO was required to conduct bimonthly reviews on the use of ARRA funds by selected states and localities.[38]

Funding Results and Implementation Experience

Pursuant to ARRA reporting directives, GAO issued multiple reports assessing ARRA implementation and documenting how the funds were used. In addition, EPA issued several "lessons learned" reports describing funding outcomes and recounting experiences and challenges from the states concerning implementation.

An evaluation of the economic impacts associated with the increased ARRA funding for the CWSRF and DWSRF programs is beyond the scope of this report. Other studies have examined ARRA's overall economic impacts, including impacts to the U.S. gross domestic product and unemployment.[39] This section discusses the funding results and selected observations from EPA and states regarding ARRA implementation challenges.

One-Year Funding Deadline

In a 2010 report,[40] GAO cited EPA as stating that all 50 states met the deadline to have ARRA-funded projects under contract by February 17, 2010 (i.e., one year after enactment). As discussed above, ARRA waived the 20% state match requirement for ARRA SRF funds in order to "expedite the use of funds" by the recipients.[41] The waived matching requirement likely

[34] Office of Management and Budget (OMB), "Requirements for Implementing Sections 1512, 1605, and 1606 of the American Recovery and Reinvestment Act of 2009 for Financial Assistance Awards," 74 *Federal Register* 18449, April 23, 2009.

[35] P.L. 111-5, Title XV, §1512.

[36] P.L. 111-5, Title XV, §1512. During ARRA implementation, the website, recovery.gov, contained recipient information reported on a grant-by-grant basis under EPA Recipient Reporting. EPA produced quarterly reports that can be found at https://archive.epa.gov/recovery/web/html/plans.html#quarterly.

[37] P.L. 111-5, Title XV, §§1514 and 1515. EPA Office of Inspector General reports are available at https://www.epa.gov/office-inspector-general.

[38] P.L. 111-5, Title IX, §§901 and 902.

[39] See, for example, CBO, "Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output in 2014," 2014. See also CRS Report R46343, *Transportation Infrastructure Investment as Economic Stimulus: Lessons from the American Recovery and Reinvestment Act of 2009*, by William J. Mallett.

[40] GAO, *Recovery Act: States' and Localities' Uses of Funds and Actions Needed to Address Implementation Challenges and Bolster Accountability*, GAO-10-604, May 2010, https://www.gao.gov/assets/310/304678.pdf.

[41] U.S. Congress, Conference Committee, Making Supplemental Appropriations for Job Preservation and Creation, Infrastructure Investment, Energy Efficiency and Science, Assistance to the Unemployed, and State and Local Fiscal

contributed to states meeting the one-year time frame. Without such a waiver, some states may have required current-year budget increases in order to provide a match, which may have needed state legislative approval.

ARRA funds supported more than 3,000 water infrastructure projects.[42] CWSRF projects included wastewater treatment, sanitary sewer overflow, and new sewers. DWSRF projects included construction of transmission and distribution lines and projects to treat and store drinking water.

In 2011, GAO reported that two years after ARRA enactment, states had drawn down from the Treasury approximately 80% of the CWSRF funding and 83% of the DWSRF funding of the ARRA provided funds.[43] This may indicate that, in some circumstances, a project that met the ARRA time frame for contracting may still have been months away from actual construction or implementation. Specific ARRA-funded projects likely had varying time frames for construction.

Wastewater and drinking water projects can take multiple years to complete. **Figure 3** illustrates the rate at which ARRA-funded projects were completed under the CWSRF and DWSRF programs. As the figure indicates, at the end of FY2013, funding recipients had completed 66% of the CWSRF projects and 83% of the DWSRF projects funded through ARRA.[44] Certain ARRA-funded projects, such as water meter installations, may have had shorter timelines than other ARRA-funded projects, such as water treatment plant construction or sewer line replacement.

Stabilization, for Fiscal Year Ending September 30, 2009, and for other Purposes, conference report to accompany H.R. 1, 111th Cong., 1st sess., H.Rept. 111-16 (Washington, DC: GPO, 2009), p. 443.

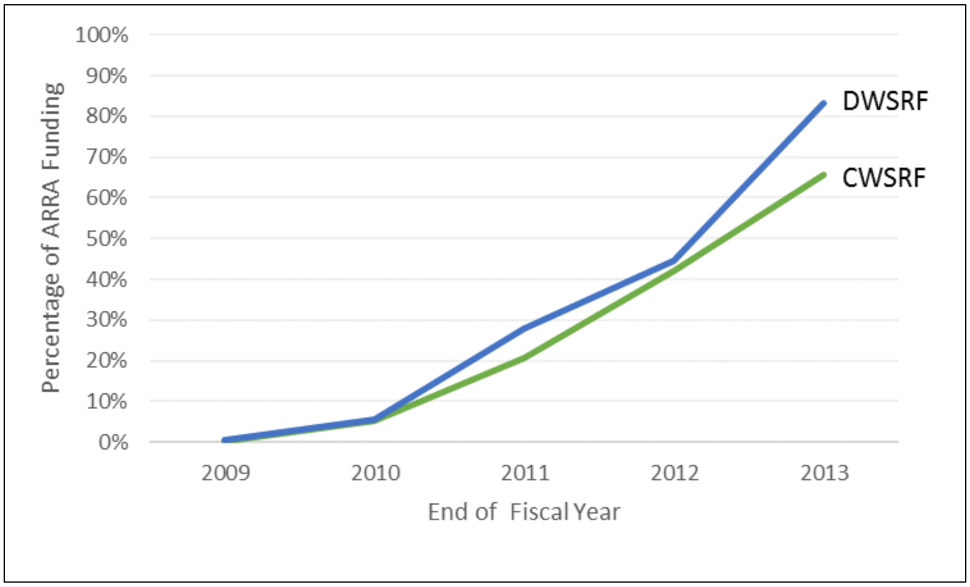
[42] GAO, *Recovery Act: Funds Supported Many Water Projects, and Federal and State Monitoring Shows Few Compliance Problems*, GAO-11-608, June 2011, https://www.gao.gov/assets/330/320224.pdf.

[43] GAO, *Recovery Act: Funds Supported Many Water Projects*.

[44] EPA's website contained such quarterly reporting through the fourth quarter of 2013. See EPA, *American Recovery and Reinvestment Act, Quarterly Performance Report*, FY2013 Quarter 4, 2013, https://archive.epa.gov/recovery/web/html/.

Figure 3. Cumulative Percentage of ARRA SRF Funding Based on Year of Project Completion

As of September 30, 2013



Source: Prepared by CRS with data from EPA, *American Recovery and Reinvestment Act, Quarterly Performance Report*, FY2013 Quarter 4, 2013, https://archive.epa.gov/recovery/web/html/.

Both EPA and GAO reported that the added requirements for ARRA funds and the statutory deadline for contracting changed states' SRF funding priorities. In some cases, the changes resulted in previously prioritized projects being bypassed for the projects that were consistent with ARRA funding conditions. For example, states reported postponing projects with greater environmental or public health benefits in favor of projects that could meet the 12-month contracting deadline. In addition, an EPA report stated that the one-year deadline "made it difficult for water projects to take advantage of green infrastructure or innovative technology options."[45] According to this report, these ARRA requirements were complex, EPA clarified guidance as questions arose to address implementation issues, and the workload for states and EPA associated with the mandates alone was significant.

In addition, EPA stated that the scale of funding provided by ARRA and the associated requirements, including the one-year time frame for contracting, posed significant workload challenges for states and EPA.[46] Relatedly, the 2011 GAO report found that "the deadline was the single most important factor hindering the ability of [economically disadvantaged communities] from receiving funding … because these communities typically do not have funds to plan and develop projects."

[45] EPA, *U.S. Environmental Protection Agency (EPA) and Major Partners' Lessons Learned from Implementing EPA's Portion of the American Recovery and Reinvestment Act: Factors Affecting Implementation and Program Success, A Summary of Six Specific Reports*, September 2013, p. 21, https://www.epa.gov/sites/production/files/2015-09/documents/lessons-learned-arra-six-report-summary.pdf. The Science Applications International Corporation conducted these assessments on behalf of EPA.

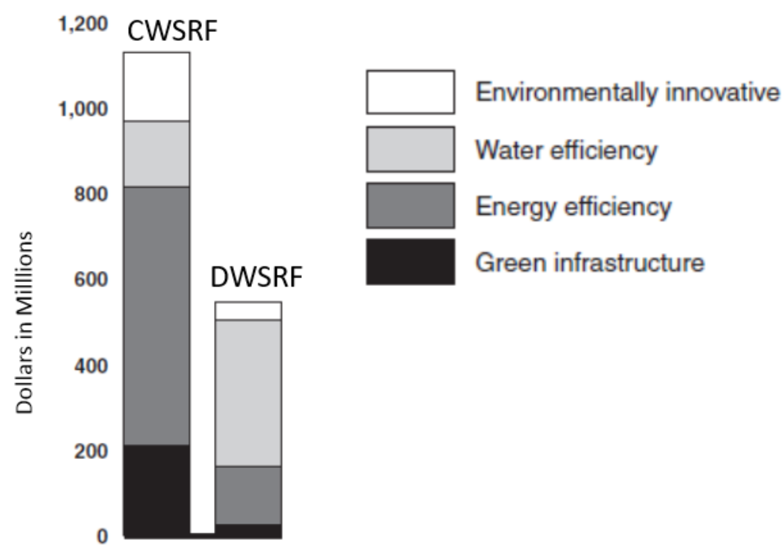
[46] EPA, *Lessons Learned: A Summary of Six Specific Reports*, p. 2.

Green Reserve Requirement

ARRA required states to use at least 20% of the funds be reserved for "green" projects. Although GAO reported that states met (or exceeded) this requirement, this funding requirement presented implementation challenges. ARRA identified general categories of green reserve projects, including "green infrastructure, water or energy efficiency improvements or other environmentally innovative activities." As illustrated in **Figure 4**, expenditures involving energy efficiency in the CWSRF and water efficiency in the DWSRF accounted for more than half of the green reserve projects funded by ARRA. The wastewater sector offers a wider range of project opportunities to improve energy efficiency (particularly at wastewater treatment plants) and more opportunities for "green" infrastructure (e.g., stormwater runoff reduction projects). As discussed below, most of the DWSRF water efficiency projects supported by ARRA funding were water meter installations.

Figure 4. Breakdown of ARRA Green Reserve Project Funding

Dollars in millions



Source: Reproduced from GAO, *Recovery Act: Funds Supported Many Water Projects, and Federal and State Monitoring Shows Few Compliance Problems*, GAO-11-609, June 2011, https://www.gao.gov/assets/330/320224.pdf.

As with many of the other ARRA funding conditions, the green reserve provision was a new requirement for both EPA and state agencies, as the SRF provisions in the CWA and SDWA did not require a portion of funds to be used for "green" projects. The green reserve provision in ARRA included general categories of project types; it did not include definitions for the terms or categories (e.g., *green infrastructure* and *environmentally innovative activities*). Consequently, state agencies were uncertain as to which projects would satisfy the green reserve condition. EPA published guidance that addressed green project reserve eligibilities on March 2, 2009, and subsequently issued four additional documents to clarify its initial guidance on green project reserve.[47] A 2010 inspector general report found that a lack of clear EPA guidance on the "green

[47] EPA, *Lessons Learned: Funds Management*, p. 62.

requirement" caused confusion and disagreements as to which projects were eligible.[48] In addition, according to the 2011 GAO report, "in certain cases state officials said they had to choose between a green water project and a project that was otherwise ranked higher to address water quality problems." That is, states selected "green projects" over projects that were prioritized for SRF financial assistance based on compliance with water quality or public health requirements.

To receive an ARRA capitalization grant, states were required to submit an IUP reflecting the green project reserve and other ARRA funding requirements.[49] In contrast to ARRA, the CWA and SDWA criteria for SRF project prioritization emphasized compliance, water quality or public health benefits, and economic need and did not target "green" infrastructure projects specifically.[50] Given the one-year time frame, EPA encouraged states to use their existing IUPs to identify projects that would be eligible for the ARRA green reserve. Most states did not have a sufficient number of conforming projects in their existing IUPs to fulfill the 20% "green reserve."[51] In the absence of sufficient projects, EPA required states to issue solicitations for green project applications.[52] Several states reported re-issuing solicitations for green projects after EPA clarified its initial guidance,[53] which resulted in further implementation delays. Some 38 states had to conduct additional solicitations to attract clean water "green" projects, and 35 states had to solicit to attract drinking water green reserve projects.[54] To attract participation, 15 states offered 100% subsidization for clean water green projects.[55]

The green reserve requirement was particularly challenging under the DWSRF program, which is focused on public health. In general, state agencies implementing DWSRFs had fewer project options to satisfy the green reserve conditions than did agencies implementing CWSRF programs.[56] This is, in part, due to the CWSRF project eligibilities, as some green projects more directly support the environmental quality objectives of the CWA.[57] As **Figure 4** indicates, water efficiency projects accounted for the majority of green reserve projects in the DWSRF, and "new water meters in previously unmetered areas [accounted] for a substantial percentage of these

[48] EPA, Office of Inspector General, *EPA Needs Definitive Guidance for Recovery Act and Future Green Reserve Projects*, 2010, https://www.epa.gov/sites/production/files/2015-11/documents/20100201-10-r-0057.pdf.

[49] EPA, *Award of Capitalization Grants with Funds Appropriated by* P.L. 111-5*, the "American Recovery and Reinvestment Act of 2009,"* March 2, 2009.

[50] EPA, *U.S. Environmental Protection Agency (EPA) and Major Partners' Lessons Learned from Implementing EPA's Portion of the American Recovery and Reinvestment Act: Factors Affecting Implementation and Program Success: Green Project Reserve*, September 2013, p. 2, https://www.epa.gov/sites/production/files/2015-09/documents/lessons-learned-arra-green-project-reserve.pdf.

[51] EPA, Office of Inspector General, *EPA Needs Definitive Guidance for Recovery Act and Future Green Reserve Projects*.

[52] EPA, *Award of Capitalization Grants with Funds Appropriated by* P.L. 111-5.

[53] EPA, Office of Inspector General, *EPA Needs Definitive Guidance for Recovery Act and Future Green Reserve Projects*.

[54] EPA, Office of Inspector General, *EPA Needs Definitive Guidance for Recovery Act and Future Green Reserve Projects*.

[55] EPA, *ARRA: Clean Water State Revolving Fund Green Project Reserve Report*, June 2012, p. 8, https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100MF4Y.txt.

[56] EPA, *Award of Capitalization Grants with Funds Appropriated by* P.L. 111-5. States could submit a business case for projects not specifically identified in the guidance. At least one state reported that it forewent the business case option for green projects due to the one-year time frame.

[57] At the time, the CWSRF eligible uses included treatment works construction (e.g., sewer and stormwater systems), nonpoint source management program implementation (e.g., infrastructure to address nonpoint discharges and stormwater runoff), and national estuary plan implementation.

water efficiency projects."[58] These water meter installation projects helped states achieve their "green reserve" funding requirement for the DWSRF and meet the one-year time frame for contracting. As stated by EPA, "water meter projects were quickly able to meet shovel-ready status, as compared to projects that involve intensive planning, such as water and wastewater treatment."[59]

Additional Subsidization Requirement

ARRA required states to use at least 50% of their allotment of funds for the SRFs as additional subsidization (e.g., forgiveness of principal, negative interest loans, or grants). According to the ARRA conference report:

> [T]his provision provides relief to communities by requiring a greater Federal share for local clean and drinking water projects and provides flexibility for States to reach communities that would otherwise not have the resources to repay a loan with interest.[60]

States exceeded the requirement that 50% of the funds be provided as additional subsidies. Of the total ARRA funds awarded, GAO reported that states provided 76% of CWSRF funds and 70% of DWSRF as additional subsidies (e.g., forgiveness of principal or grants).[61]

State approaches to the additional subsidization requirements for ARRA funds varied. Under SDWA, states have discretion to offer additional subsidization in their DWSRF programs. While some states had offered additional subsidization prior to ARRA, other states had to adopt legislative changes to authorize SRF programs to provide assistance other than loans.[62] Other states emphasized loans in order to build the "revolving" capacity of their DWSRFs.

Some states opted to offer 100% of ARRA funds in principal forgiveness.[63] One state reported that additional subsidization expedited the contracting process as applicants did not have to complete credit reviews.[64] In the long term, as subsidy recipients do not repay funds to the SRF, offering 100% of ARRA funds as subsidies limits the future availability of repayments for loans for other infrastructure projects. On the other hand, ARRA's additional subsidization requirement was intended to support water infrastructure projects in communities that otherwise may not have the resources to repay a loan with interest.[65]

[58] EPA, *Drinking Water State Revolving Fund, Green Project Reserve Funding Status*, 2010.

[59] EPA, *Lessons Learned: Green Project Reserve*.

[60] U.S. Congress, Conference Committee, Making Supplemental Appropriations for Job Preservation and Creation, Infrastructure Investment, Energy Efficiency and Science, Assistance to the Unemployed, and State and Local Fiscal Stabilization, for Fiscal Year Ending September 30, 2009, and for other Purposes, conference report to accompany H.R. 1, 111th Cong., 1st sess., H.Rept. 111-16 (Washington, DC: GPO, 2009), p. 443.

[61] GAO, *Recovery Act: Funds Supported Many Water Projects, and Federal and State Monitoring Shows Few Compliance Problems*.

[62] EPA, *Lessons Learned: Funds Management*, p. 29.

[63] EPA, *Lessons Learned: Funds Management*, p. 34.

[64] EPA, *Lessons Learned: Funds Management*, p. 33.

[65] U.S. Congress, Conference Committee, Making Supplemental Appropriations for Job Preservation and Creation, Infrastructure Investment, Energy Efficiency and Science, Assistance to the Unemployed, and State and Local Fiscal Stabilization, for Fiscal Year Ending September 30, 2009, and for other Purposes, conference report to accompany H.R. 1, 111th Cong., 1st sess., H.Rept. 111-16 (Washington, DC: GPO, 2009), p. 443.

"Buy American" Requirements

Congress required the use of American-produced iron, steel, and manufactured goods in projects that received ARRA funding.[66] As with some of the other ARRA funding requirements, EPA and the states had little previous experience implementing these funding conditions.[67] In April 2009, the Office of Management and Budget (OMB) published government-wide guidance in the *Federal Register* to assist agencies in implementing this and other ARRA requirements.[68] Several days later, EPA issued its guidance for implementing the "Buy American" requirements under the SRF programs.[69] EPA subsequently published additional clarifying guidance documents, some of which were revised on several occasions.[70]

According to an EPA study, although participant support for the "concept of buying American-made products was strong … participants noted many instances in which the Buy American requirements were so resource intensive and time consuming that projects were delayed simply to meet the requirement."[71]

As states used their existing IUPs to identify projects, such project applications had to be amended to include the ARRA "Buy American" requirements, which may have contributed to delays in contracting.[72] Some project funding recipients sought waivers of these requirements, which EPA could grant on a project-by-project basis.[73] EPA found that offering a waiver for a product (e.g., wind turbine) rather than a project may have assisted with a more expeditious obligation of funds.[74]

Davis-Bacon Requirements

A number of state agency officials had prior experience with the Davis-Bacon provisions, as these labor requirements applied to CWSRF projects in the beginning years of the program (FY1989-

[66] P.L. 111-5, §1605. None of the funds appropriated or made available by ARRA were to be used for construction, alteration, maintenance, or repair projects unless all of the iron, steel, and manufactured goods used in the project were produced in the United States, with certain exceptions.

[67] GAO, *Recovery Act: States' and Localities' Uses of Funds and Actions Needed to Address Implementation Challenges and Bolster Accountability*.

[68] OMB, "Requirements for Implementing Sections 1512, 1605, and 1606 of the American Recovery and Reinvestment Act of 2009 for Financial Assistance Awards," 74 *Federal Register* 18449, April 23, 2009.

[69] EPA, Memorandum to Regional Directors, "Implementation of Buy American provisions of P.L. 111-5, the 'American Recovery and Reinvestment Act of 2009,'" April 28, 2009.

[70] EPA, "Buy American Provisions of ARRA Section 1605, Questions and Answers," Part 1, July 2, 2009 (revised September 22, 2009 and May 27, 2010).

[71] EPA, *Lessons Learned: Funds Management*, p. 45.

[72] EPA, *Lessons Learned: Funds Management*.

[73] See for example, EPA, "Notice of a Regional Project Waiver of Section 1605 (Buy American) of the American Recovery and Reinvestment Act of 2009 (ARRA) to the Town of Falmouth, MA," 75 *Federal Register* 22129-22131, April 27, 2010.

[74] EPA, *Lessons Learned: Funds Management*.

FY1995) and in the CWA Title II Construction Grants program (the precursor to the CWSRF program).[75] In addition, some states had experience with their own fair labor wage standards.[76]

Some stakeholders observed that Davis-Bacon and other ARRA mandates hindered the "the push to obligate and spend funds quickly."[77] Part of the implementation challenge may have been due to uncertainty regarding the requirements. According to an EPA report, "all states and funding recipients complained about the onerous and confusing Davis-Bacon process."[78] Applications for SRF funding from states' existing IUPs had to be amended to include the Davis-Bacon requirements, which further challenged efforts to use existing projects from state IUPs to meet the one-year time frame for contracting.[79] In addition, some states identified eligible parties who chose not to apply for or withdrew from the ARRA funding process due to the additional costs related to the ARRA funding requirements, such as the Davis-Bacon requirements.[80]

Reporting Requirements

As discussed above, ARRA required quarterly reporting from federal agencies that were in charge of implementing ARRA funding programs. States were required to submit weekly reports on usage of ARRA funds, and EPA published weekly reports to a website specifically for ARRA.[81] Some states noted the importance of transparency and publicly available data. Others questioned the utility of the added reporting data, observing that the data they were providing under the SRF program was broadly duplicative to existing SRF reporting requirements.

ARRA also required recipients of funds to provide quarterly reports on spending details and estimates of job creation provided by the ARRA funding. In general, states conducted the recipient reporting requirements for the SRF programs. While most of the required data elements were relatively "straightforward and familiar," state officials noted that the ARRA requirement to report jobs data, coupled with quarterly deadlines, presented implementation challenges for the states.[82] In addition, the OMB guidance describing the method for calculating jobs data changed several times during ARRA implementation.[83] States noted that these changes led to confusion and required additional time to implement, as the new guidance was discussed among EPA regions, states, and local recipients.[84]

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[75] Prior to ARRA, the CWA contained Davis-Bacon requirements for CWSRF projects that were constructed before FY1995 (33 U.S.C. §1382(b)(6) as in effect before the Water Resources Reform and Development Act of 2014 changes). Some policymakers and stakeholders sought to apply Davis-Bacon provisions to CWSRF projects after FY1995. For more information on the history of these provisions and developments, see CRS Report R41469, *Davis-Bacon Prevailing Wages and State Revolving Loan Programs Under the Clean Water Act and the Safe Drinking Water Act*, by Gerald Mayer and Jon O. Shimabukuro. In addition, state officials may have encountered these requirements while managing other government-funded construction projects.

[76] EPA, *Lessons Learned: Funds Management*.

[77] EPA, *Lessons Learned: A Summary of Six Specific Reports*.

[78] EPA, *Lessons Learned: Funds Management*.

[79] EPA, *Lessons Learned: Funds Management*.

[80] GAO, *Recovery Act: Funds Supported Many Water Projects, and Federal and State Monitoring Shows Few Compliance Problems*.

[81] EPA, Award of Capitalization Grants with Funds Appropriated by P.L. 111-5, the "American Recovery and Reinvestment Act of 2009."

[82] EPA, *Lessons Learned: Funds Management*.

[83] EPA, *Lessons Learned: Funds Management*.

[84] EPA, *Lessons Learned: Funds Management*.

Subsequent Changes to the SRF Programs

In the years following ARRA, Congress has variously applied versions of ARRA requirements to the SRF programs in specific years through appropriations acts and, in some cases, has incorporated similar provisions into the underlying statutes. These requirements and the subsequent changes to the CWSRF and DWSRF are identified in **Table 2**.

Table 2. ARRA Requirements for States and Subsequent Changes to the SRFs

ARRA Requirements	Subsequent Changes	
	CWSRF	**DWSRF**
Additional Subsidization: States were required to use at least 50% of ARRA grants to "provide additional subsidization to eligible recipients in the form of forgiveness of principal, negative interest loans or grants or any combination of these."	Appropriations acts subsequent to ARRA regularly required 10% of the CWSRF grants to be used for additional subsidization. The Water Resources Reform and Development Act of 2014 (WRRDA 2014, P.L. 113-121) amended the CWA to authorize states to provide additional subsidization under certain conditions and limitations.[a]	SDWA had authorized, but not required, states to use up to 30% of their capitalization grants to provide additional subsidies to disadvantaged communities. Appropriations acts subsequent to ARRA regularly required states to use 20% of their capitalization grants for additional subsidies.[b] America's Water Infrastructure Act of 2018 (AWIA 2018, P.L. 115-270) amended the DWSRF provisions of SDWA to increase the portion (from 30% to 35%) of a state's capitalization grant that states may dedicate to additional subsidization while conditionally requiring states to use at least 6% of their grants for these subsidies.
Green Reserve: States were required to use not less than 20% of ARRA grants "to the extent there are sufficient eligible project applications … for projects to address green infrastructure, water or energy efficiency improvements or other environmentally innovative activities."	Appropriations acts subsequent to ARRA have included provisions requiring a percentage of CWSRF grants be used for such projects. Since the FY2012 appropriations act, subsequent appropriations acts have required 10% of the grants be used for this purpose. WRRDA 2014 expanded CWSRF project eligibility to specifically include some "green reserve" projects (e.g., energy and water efficiency).	Starting with the FY2012 appropriations act, states, at their own discretion, could use DWSRF grants for green infrastructure projects.
Buy American: ARRA funding was available only if all iron, steel, and manufactured goods used in a project were produced in the United States.	Appropriations acts subsequent to ARRA have included provisions requiring CWSRF-financed projects to comply with narrower requirements to use American iron and steel (AIS). WRRDA 2014 added AIS requirements to CWSRF provisions of the CWA.	Appropriations acts subsequent to ARRA have included provisions requiring DWSRF-financed projects to comply with narrower AIS requirements. In 2016, the Water Infrastructure Improvements for the Nation Act (P.L. 114-322) amended SDWA DWSRF provisions to apply AIS requirements for FY2017. AWIA 2018 amended the DWSRF provisions to renew the AIS requirements for FY2019-FY2023.

ARRA Requirements	Subsequent Changes	
	CWSRF	**DWSRF**
Davis-Bacon Prevailing Wages: States were required to ensure that ARRA-funded projects complied with the prevailing wage requirements of the Davis-Bacon Act.	In the Consolidated Appropriations Act, 2012 (P.L. 112-74), Congress applied Davis-Bacon prevailing wage requirements to CWSRF program funding for FY2012 and all future years.[c] WRRDA 2014 added Davis-Bacon prevailing wage to CWSRF provisions.	In the Consolidated Appropriations Act, 2012, Congress applied Davis-Bacon prevailing wage requirements to DWSRF program funding for FY2012 and all future years. AWIA 2018 amended the SDWA DWSRF provisions to add Davis-Bacon prevailing wage requirements.

Source: Prepared by CRS.

a. WRRDA 2014 added CWA Section 603(i) to authorize states to provide additional subsidization to municipalities and other eligible entities that meet affordability criteria or other specified conditions. States may provide additional subsidization "only if the total amount appropriated for making capitalization grants to all States under this title for the fiscal year exceeds $1,000,000,000." With limitations, states may generally use as much as 30% of their annual capitalization grant for providing additional subsidization.

b. Since the DWSRF program was established in 1996, states were authorized, but not required, to provide up to 30% of their capitalization grants as additional subsidization to disadvantaged communities (42 U.S.C. §300j-12(d)).

c. At the time ARRA was enacted, the CWA contained Davis-Bacon requirements that applied to CWSRF projects constructed before FY1995 (see the provisions in 33 U.S.C. §1382(b)(6)) before they were amended by WRRDA 2014. Some policymakers and stakeholders sought to apply Davis-Bacon provisions to CWSRF projects after FY1995. For more information on the history of these provisions and developments, see CRS Report R41469, *Davis-Bacon Prevailing Wages and State Revolving Loan Programs Under the Clean Water Act and the Safe Drinking Water Act*, by Gerald Mayer and Jon O. Shimabukuro.

Concluding Observations

To address the economic impacts of the Great Recession, ARRA provided hundreds of billions of dollars in mandatory and discretionary spending delivered through both new and existing programs. A primary objective of ARRA was economic stimulus to preserve and create jobs. To support this objective, ARRA provided funding for infrastructure in a range of sectors, including $6 billion in supplemental appropriations for the CWSRF and DWSRF programs. Congress may consider the degree to which funding such projects would help achieve their specific policy goals. Whether federal dollars could provide more of a stimulus by supporting other economic policy tools (e.g., tax cuts) is beyond the scope of this report. Below are several points involving the experience with ARRA specific to the EPA SRF programs that may be informative for policymakers considering future economic stimulus measures.

In contrast to the CWSRF and DWSRF capitalization grants provided through annual appropriations, ARRA SRF funds did not require a 20% match from the states. This waiver likely contributed to states' success in meeting the one-year contracting requirement. Without the waiver, some states may have required current-year budget increases in order to provide a match, which would have generally required state legislative approval. Without the ARRA waiver, the 20% state match may have leveraged an additional $1.2 billion for the SRF programs above the appropriated amount in ARRA. If policymakers consider substantial funding increases for the SRF programs in future stimulus proposals, a state-match waiver may raise issues for consideration, including the feasibility of states to provide additional funds within a fiscal year and the trade-off between the increased amount of available funds provided by a state contribution and the spending time frame. During the Great Recession, states may not have had sufficient funds to match ARRA's funding due to reduced revenue from state tax sources and/or potential limitations on borrowing from state-level balanced budget requirements.

In addition to the one-year contracting deadline, ARRA funding included several new conditions and priorities that differed from the existing statutory requirements. Subsequent to ARRA, Congress applied versions of many of the ARRA funding requirements to the SRF programs through appropriations acts and, subsequently, through amendments to the underlying statutes (see **Table 2**). State and federal SRF program administrators now have more than a decade of experience implementing many of the funding conditions included in ARRA, although some of the details of the conditions have changed over time. For example, both SRFs now include a narrower requirement to use American-made iron and steel products in SRF funded projects, with certain exceptions. Davis-Bacon prevailing wage requirements now apply to projects receiving assistance from either SRF. In terms of the green reserve condition, annual appropriations provisions have directed states to use a percentage (e.g., 10% in the Further Consolidated Appropriations Act, 2020 [P.L. 116-94]) of their CWSRF capitalization grants for "green" projects, while under the DWSRF program, states have discretionary authority to finance such projects.

Although states met ARRA's deadline and funding conditions, stakeholders reported that the one-year contracting deadline combined with the added funding conditions presented substantial implementation challenges for EPA, states, and local governments. For example, according to one report, "it took a tremendous amount of extra effort from all stakeholders to attain EPA's ARRA goals."[85] In addition to the implementation challenges, in some cases the ARRA funding deadline and funding conditions altered states' SRF funding priorities (at least temporarily) for their previously ranked projects or selected projects needed for compliance with water quality or public health requirements.

The ARRA SRF funding results and implementation experience may be relevant in the 116th Congress as policymakers consider legislative options to stimulate the economy and/or meet other policy objectives through increases in water infrastructure spending. Considerations involve the broad policy objectives of stimulus legislation and how to efficiently achieve such objectives, perhaps while supporting other policy goals, including statutory priorities such as protecting public health and environment and infrastructure assistance. Policy options to achieve certain objectives vary and may depend on the degree and nature of the economic impacts being addressed (e.g., recovery from COVID-19-related economic impacts). Some policy objectives may involve trade-offs among competing priorities and may require differing tools for evaluation.

In the case of funding wastewater and drinking water infrastructure as a means of achieving policy goals, the practicalities of wastewater and drinking water infrastructure projects may be relevant. In general, water infrastructure projects often involve complicated planning and construction efforts that span multiple years. Regarding the objective of quickly stimulating the economy, one consideration is whether to provide funding through existing programs, such as the SRF programs, or through new programs. For existing programs, a consideration is whether or how to apply new conditions to the funding to further certain policy objectives, as occurred with ARRA. If funding were to be delivered through new programs, various considerations—program structure, development time frames, rulemakings, or other related implementation considerations—may arise.

[85] EPA, *Lessons Learned: A Summary of Six Specific Reports*, p. 2.

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