



State Revolving Funds: Financing Drought Resilient Water Infrastructure Projects

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List of Abbreviations

AWWA – American Water Works Association

CWA – Clean Water Act

CWS - Community Water Systems

CWSRF – Clean Water State Revolving Fund

DWSRF – Drinking Water State Revolving Fund

EPA – U.S. Environmental Protection Agency

FSP – Fiscal Sustainability Plan

GPR – Green Project Reserve

IUP – Intended Use Plan

NIMS – National Information Management Systems

OWRB – Oklahoma Water Resources Board

PF – Principal Forgiveness

PWSDER – California Public Water System Drought Emergency Response

PWS – Public Water Systems

SDWA – Safe Drinking Water Act

SRF – State Revolving Fund

State Water Board – California State Water Resources Control Board

SWIFT – State Water Implementation Fund for Texas

TWDB – Texas Water Development Board

WRFP – California Water Recycling Funding Program

WRRDA – Water Resources Reform and Development Act of 2014

Executive Summary

The duration and impact of drought vary across the Western United States, and in the last five years many states have grappled with widespread water shortages, wildfires, and crop and livestock losses. The economic impact of these events is felt regionally and nationally, but even more so in the affected communities. While drought conditions in 2017 have improved in many areas across the West, there is recognition that the effects of drought could become severe again and water resources may be increasingly scarce in the future.¹ Long-term planning and investment are essential to delivering and maintaining water infrastructure services that have the capacity to mitigate the recurring impacts of drought.

EPA's Water Infrastructure and Resiliency Finance Center is collaborating with states and federal agencies to share successful examples of infrastructure investment that create drought resilience. The "State Revolving Funds: Financing Drought Resilient Water Infrastructure Projects" was developed to highlight how 13 western states have used the Clean Water State Revolving Fund ("CWSRF"), Drinking Water State Revolving Fund ("DWSRF"), and other complementary state funds to address drought. The report highlights innovative funding policies and programmatic actions that states are using to support drought resilient investment and operations through incentives, state requirements, and technical assistance.

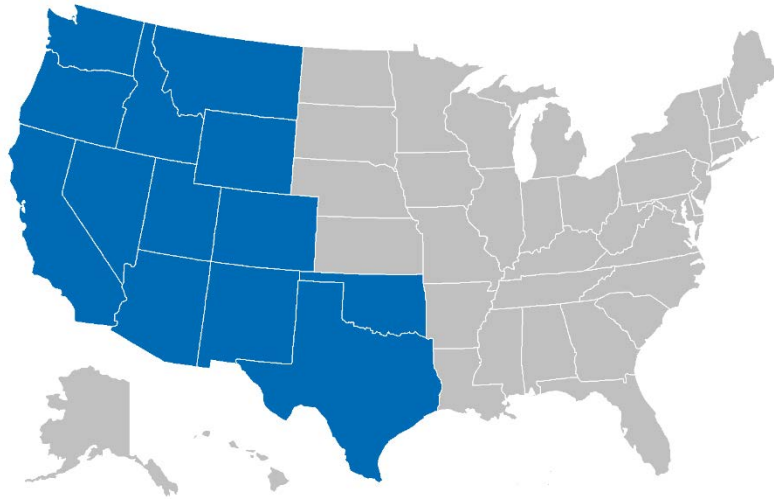
The report includes examples of SRF projects funded to address water availability, conservation, efficiency, and

reuse. Specific features of SRF programs were studied to see how states are encouraging these types of projects through programmatic goals, incentives such as priority points and principal forgiveness, state level requirements, complementary state funding, emergency funding mechanisms, technical assistance, and drought information sharing.

The report reviews 13 western states because these states are some of the most drought prone in the country and have experienced significant drought conditions since 2010. However, the examples in the report can be used more widely to provide policymakers and communities across the country with options to support water infrastructure that prepares for the impacts of recurring drought.

The CWSRF and DWSRF provide financial assistance to a wide variety of water infrastructure projects, many of which enhance community resiliency in a variety of ways. The examples in this report therefore, should not be taken as comprehensive of SRF policies or actions that affect drought resilience.

Drought will continue to be a concern for communities and water utilities. By highlighting innovative funding policies and programmatic actions, the report provides examples of how states can effectively use the SRF and other state resources to support drought resilient infrastructure investment.



Introduction

The purpose of the report is to highlight how 13 western states have used their Clean Water and Drinking Water State Revolving Funds (collectively, the “CWSRF”, “DWSRF”, “SRF” or “SRFs”), the largest federally supported funding programs for water infrastructure, to encourage infrastructure investments that can effectively mitigate impacts from drought on communities across the West through the strategic use of incentives, state requirements, and other methods.

The Clean Water Act and the Safe Drinking Water Act (collectively, the “CWA”, “SDWA” or the “Acts”) establish the legal requirements for the CWSRF and DWSRF programs, respectively. The U.S. Environmental Protection Agency (“EPA”) is responsible for administering the annual federal appropriation that capitalizes each state’s CWSRF and DWSRF and oversees compliance with the related federal Clean Water and Safe Drinking Water Act provisions. Congress appropriates approximately \$2 billion each year to EPA, who then awards capitalization grants to each of the 51 CWSRFs and DWSRFs in accord with allocation requirements mandated by the Acts. These appropriations together with state matching requirements, retained earnings and recycled SRF program dollars support financial assistance commitments, usually in the form of loans, to water utilities, local governments and other eligible entities. In 2016, relying on these resources, the DWSRF provided \$2.47 billion to 708 assistance agreements² and the CWSRF provided \$7.62 billion to 1,362 assistance agreements³ for water and wastewater infrastructure projects.

States operate their SRFs independently, however, and have the flexibility to use the SRF to address their individual needs within statutory guidelines. The independence and flexibility of the SRFs results in a wide spectrum of funding priorities and program objectives.

The SRF programs provide assistance for a broad range of eligible projects to assist communities in becoming drought resilient primarily through water conservation and reuse. Most of these projects were not specifically designed to mitigate drought, but nonetheless better position utilities and their customers to conserve and use water resources more efficiently. The provision of SRF financial assistance for conservation and reuse projects is not meant to take the place of conventional wastewater or drinking water treatment projects. For DWSRFs, addressing public health concerns are always given more weight in the scoring process compared to nontraditional efficiency or conservation projects. Likewise, for CWSRFs, water quality improvements generally receive priority over nontraditional conservation and reuse projects. However, by combining traditional projects with nontraditional approaches, the SRFs can provide cost effective solutions to managing water resources.

This report reviewed the SRF Intended Use Plans (IUPs) and Annual Reports to identify the types of unique and innovative mechanisms being used by the SRFs to encourage drought resilience, how SRFs are achieving these results in conjunction with other state programs, the amount of SRF water efficiency investment since 2010, and

highlights opportunities for SRFs to expand their efforts to help states mitigate drought impacts and become more resilient. While there are many types of projects including green infrastructure projects that can address drought resiliency states have almost exclusively funded water conservation and reuse projects.

Background

The primary information for the report comes from SRF Intended Use Plans (“IUPs”), Annual Reports, and program websites. These sources identify program goals, incentives, requirements, and other mechanisms SRFs have used to encourage drought resilient project investments. The report covers 13 drought prone western states across EPA Region 6 (New Mexico, Oklahoma, Texas), Region 8 (Colorado, Montana, Utah, Wyoming), Region 9 (Arizona, California, Nevada), and Region 10 (Idaho, Oregon, Washington).

For the purposes of this report “drought resilient” refers to projects that focus on or substantially include the following: water conservation, source water protection, water loss prevention, water audits, leak detection, meter replacement, aquifer storage and recovery, irrigation modernization, water recycling, reclamation, and reuse. There are other CWSRF and DWSRF eligible projects that could also be considered drought resilient, so the findings in this report should not be taken as exhaustive of SRF activity.

Data from the CWSRF and DWSRF National Information Management Systems (“NIMS”) were analyzed to determine the amount of the Green Project Reserve (“GPR”) financial assistance that was provided in the water efficiency category from 2010 to 2016. GPR consists of four categories: water efficiency, energy efficiency, green infrastructure, and environmentally innovative projects. The GPR requirement was initially created with passage of the American Recovery and Reinvestment Act in 2009 for both the DWSRF and CWSRF. GPR reporting became discretionary for the DWSRF in 2012.

The GPR reporting requirements do not capture all projects that could be considered “green” since SRFs must only designate enough projects to satisfy the annual

requirements of the federal capitalization grant. This inherently understates the total dollar value and number of “green” or water efficiency projects completed. While an underestimate, the GPR is the only uniform data available on water efficiency projects from every SRF program.

In addition to GPR, there are other CWSRF federal requirements that can drive drought resilient investments by directing assistance recipients to evaluate and maximize the potential for efficient water use, reuse, and conservation for their project. CWSRF loan recipients for publicly owned treatment works projects are required to have a Fiscal Sustainability Plan (“FSP”) as part of the 2014 Water Resources Reform and Development Act (“WRRDA”) amendments to the Clean Water Act. The FSP includes an inventory of critical assets that are part of the treatment works; an evaluation of the condition and performance of inventoried assets or asset groupings; *a certification that the assistance recipient has evaluated and will be implementing water and energy conservation efforts as part of the plan*; and a plan for maintaining, repairing, and, as necessary, replacing the treatment works and a plan for funding such activities.⁴ States have flexibility in determining the specific elements of an FSP.

Public CWSRF assistance recipients are also required to complete a Cost and Effectiveness Analysis for their project beginning October 1, 2015 as part of the WRRDA updates. The Cost and Effectiveness Analysis requires that the recipient has selected, to the maximum extent practicable, a project that *maximizes the potential for efficient water use, reuse, recapture, conservation, and energy conservation*, taking into account the cost of constructing the project or activity; the cost of operating and maintaining the project or activity over the life of the project or activity; and the cost of replacing the project or activity.⁵ States have flexibility in determining the specific elements of a Cost and Effectiveness Analysis.

A more detailed look at SRF responses to drought and project examples were provided by state SRF staff and EPA Regional staff for California, Oklahoma, and Texas. The examples demonstrate successful uses of the CWSRF and DWSRF to fund drought resilient projects.



State Highlights

California

Since its creation in 1967 the California State Water Resources Control Board (“State Water Board”) has tried to balance the uses of California’s limited water resources and support water infrastructure investment. From 2012 to 2016 the state experienced a severe drought causing the Governor to declare a continued state of emergency and issue mandatory water reductions for certain users.⁶ During the drought the State Water Board participated in drought-coordination committee meetings to decide how to direct financial resources to communities experiencing drought-related emergencies. The State Water Board and its partners developed several approaches to address emergency shortages and invest in longer-term sustainable water supplies.

Short-term responses:

The California State Legislature appropriated \$15 million from the Cleanup and Abatement Account and the State Water Board added \$4 million to provide interim emergency drinking water funds to disadvantaged communities facing drought-related emergencies or contaminated water supplies.⁷ In addition, the State Water Board used the DWSRF Local Assistance Set-Aside to provide funding support for the Public Water System Drought Emergency Response (“PWSDER”) program. The PWSDER program received a \$15 million California State General Fund appropriation to provide funding for interim and/or permanent solutions for community water systems and public water systems owned by school districts experiencing drought-related water shortages or threatened emergencies.⁸

Long-term solutions:

The State Water Board has used the SRFs to fund a variety of drought resilient projects that support broader state initiatives. In 2014 California voters approved Proposition 1 which authorized \$7.5 billion in general obligation bonds for a variety of water projects including surface and groundwater storage, ecosystem and watershed protection, and drinking water protection. The State Water Board manages Proposition 1 funds for five programs, including \$625 million for the Water Recycling Funding Program (“WRFPP”).⁹ As of March 6, 2017 the State Water Board had paired \$131 million in WRFPP grants with \$541 million in 1% CWSRF loans to support the construction of 27 recycled water projects for a total investment of \$673 million.¹⁰ The State Water Board has used the DWSRF to fund projects that meter unmetered systems including 11 major water meter projects worth \$107 million since 2009. These projects support California state requirements that all urban water suppliers install meters on their service connections by 2025.¹¹

The State Water Board has made it easier for applicants to apply for funding with holistic management of various grant and loan funding sources. Prospective borrowers submit one application through the Financial Assistance Application Submittal Tool (“FAAST”), and the State Water Board puts together the best funding package based on the applicant’s needs and eligibility. FAAST helps applicants save time and effort yet still takes advantage of the many funding programs the State Water Board offers.



Oklahoma

Oklahoma has a long history of living with drought. It was the record drought of 1957 that led to the creation of the Oklahoma Water Resources Board (“OWRB”). Oklahoma has been very proactive in addressing the drought of 2010-2015 using the SRFs and other state funding. In 2012 the State Legislature passed the Water for 2060 Act with the goal of using no more freshwater in 2060 than was used in 2010 to meet Oklahoma’s needs. The OWRB has aligned the goals of the CWSRF, DWSRF, and other programs to reflect the recommendations from Water for 2060 in order to encourage and incentivize water efficiency, reuse, and conservation measures.

Oklahoma has paired the SRF with other state funding programs to address drought, such as OWRB’s drought grant programs and the Financial Assistance Loan Program. The OWRB administers three emergency grant programs to assist communities facing drought during governor declared emergencies. The programs can award priority points based on the type of water use, how water efficient the project is, the severity of the Palmer Drought Index, and whether systems have an increasing block rate structure.¹² There are no restrictions on these state programs interacting with the SRF, and they have been used successfully to co-fund projects with the SRF or to fund crucial projects that were not SRF eligible.

Projects that used OWRB funding to become more drought resilient include:

- The City of Altus, located in southwest Oklahoma, was experiencing recurring periods of drought causing the two reservoirs that serve as the City’s water supply to

reach severely low levels, curtailing irrigation and causing major economic impacts. In 2015 the City of Altus Municipal Authority used a \$2.3 million DWSRF loan and a \$575,000 Emergency Drought Relief grant to upgrade their water supply and distribution system for their 7,535 water customers to serve the community with a population of 19,813. The project constructed a water line to serve existing rural customers and converted an existing water line to a raw water supply line from well fields in nearby Texas.¹³

- The Waurika Lake Master Conservancy District (“MCD”) delivers water to six cities including Duncan and Lawton, and serves approximately 250,000 people. Due to continued drought Waurika Lake dropped to 19% capacity in 2015 and the water level was approaching the lowest operable intake gate, threatening to cut off the supply entirely.¹⁴ Waurika Lake MCD used a \$10 million loan from the OWRB Financial Assistance Program and \$2.0 million in local funds to dredge 75,000 cubic yards of sediment from the intake channel, replace the lower gates on the intake structure, and install a floating intake unit at the deepest point of the lake. Since the project was not eligible for SRF financial assistance, the Financial Assistance Loan Program was able to provide below market rate terms for a project of critical regional importance.



Texas

The Texas Water Development Board (“TWDB”) was also created in 1957 in response severe drought. The TWDB has focused on the conservation and responsible development of water resources ever since. Texas experienced its second worst drought on record from 2010 to 2014 and its worst single year drought on record in 2011, causing TWDB to introduce new efforts to plan for drought and finance water projects such as creation of the SWIFT program in 2013.¹⁵

TWDB is responsible for developing the state water plan every five years which charts the development, management, and conservation of Texas’ water resources for the next 50 years based on past drought conditions and expected population growth. The state water plan is based on 16 regional water plans and is very focused on planning in the context of drought and maintaining sufficient water supplies. TWDB maintains an interactive website for the state water plan that shows water demand, supplies, and potential shortages over time, geographic regions, and for all water user groups including municipal, irrigation, manufacturing, livestock, steam electric power, and mining.¹⁶

To implement the priorities of the state water plan TWDB operates numerous financial assistance programs including the CWSRF, DWSRF, SWIFT, Agriculture Water Conservation Program, Texas Water Development Fund, and others. These financial assistance programs give TWDB many tools to fund water and wastewater infrastructure projects that meet the needs of multiple users. The 2017 state water plan includes approximately 50 projects that

are or will be funded by the SRFs, and all SRF projects are reviewed for consistency with the state water plan.¹⁷

Projects that used TWDB SRF funding to become more drought resilient:

- The City of Raymondville experienced surface water supply issues due to on-going drought in south Texas and needed to develop a second, sustainable source water supply. The City is using a \$2,145,000 DWSRF loan and \$1,655,000 in principal forgiveness to construct a public water supply well and a 2.0 million gallon per day reverse osmosis treatment facility to create additional water supplies for their customers. The project is also rehabilitating an existing well with Texas Department of Agriculture funding and replacing approximately 4,500 feet of deteriorated water distribution lines to address water loss. The project is part of the Texas State Water Plan and is expected to be completed in the summer of 2017.¹⁸
- The City of McAllen needed to off-set its potable water usage while providing water for irrigation to a new 2,600-acre subdivision, a youth sports complex, and several schools. The City is using a \$7,110,000 CWSRF loan and \$1,239,567 in green project principal forgiveness to make improvements to its’ North Wastewater Treatment Plant to produce Type 1 non-potable reuse water for land application. The project includes converting an abandoned aeration basin into a reuse storage vessel, construction of a booster pump station, and approximately seven miles of reclaimed water transmission lines. The project is part of the Texas State Water Plan and construction is anticipated to begin in April 2017.¹⁹

SRF Policies and Actions that Support Drought Resilient Investment

There are many ways that the CWSRF and DWSRF can support and encourage drought resilience for both communities and water and wastewater systems. This report groups SRF policies and actions into four categories: 1) SRF programmatic goals that support drought resilience; 2) SRF incentives that encourage drought resilient projects such as priority points, reduced interest rates, and additional subsidy such as principal forgiveness; 3) State requirements that encourage water conservation that are in addition to federal requirements; 4) Other activities such as complementary funding programs, emergency funding, coordination with other funding entities, technical assistance and information sharing.

SRF Programmatic Goals

Each state CWSRF and DWSRF publishes programmatic goals in the IUP and Annual Report. These goals are short and long-term and span a range of topics from maintaining the perpetuity of the state's fund to addressing compliance issues and impaired waters. Some SRFs have developed specific goals to encourage and fund projects that have a sustainability element such as water conservation, water reuse or recycling, low-impact development, climate resilience, emerging ecosystem service marketplaces, and more. The following examples illustrate some of the IUP goals that support SRF drought resilient investment.

California Drought Resilience Goals

- The California State Water Resources Control Board ("State Water Board") CWSRF supports the three goals of the California Water Action Plan: more reliable water supplies; the restoration of important species and habitat; and a more resilient, sustainably managed water resources system (water supply, water quality, flood protection, and environment) that can better withstand inevitable and unforeseen pressures in the coming decades.²⁰
- The State Water Board adopted a resolution to emphasize sustainability as a core value for all Water Board activities and programs. This includes actions that affect the CWSRF such as promoting recycled water use, water conservation, and low-impact

development and assigning a higher priority to climate-related projects.²¹

- The DWSRF has a short-term goal to facilitate drought relief through expedited funding efforts to help ensure that eligible Public Water Systems ("PWS") experiencing or facing imminent threats of drought-related drinking water emergencies will achieve permanent solutions.²²
- The DWSRF has a short-term goal to provide funding for water meter projects as part of the GPR, even though use of the capitalization grant for GPR eligible projects is now discretionary.²³ From 2009 to 2016 the DWSRF funded 11 major water meter projects worth \$107 million.²⁴

Oklahoma Drought Resilience Goals

- The CWSRF has a long-term goal to assist communities in integrating innovative water conservation practices including reuse, reclamation, conservation incentives, water efficiency, energy efficiency, stormwater runoff mitigation, green infrastructure or other measures that will assist Oklahoma in reaching the goals outlined in the Water for 2060 initiative into their projects.²⁵
- The CWSRF has a short-term goal to create strategies and finance implementation of the Water for 2060 initiative by encouraging non-point source, stormwater, green infrastructure, water/energy conservation and water reuse projects.²⁶
- The DWSRF has a short-term goal to continue to refine their Capacity Development Program, including a Water Loss Audit Pilot Study that assists communities in identifying and mitigating water loss. DWSRF has adopted a policy that a Water Loss Audit will be conducted on any new public water supply, any public water supply that desires a loan through the DWSRF, and any public water supply that requests a Water Loss Audit be conducted on its water system.²⁷

Texas Drought Resilience Goals

- The CWSRF has a short-term goal to encourage the use of green infrastructure and technologies by offering principal forgiveness for green infrastructure, , water efficiency, or for the environmentally innovative portions of projects.²⁸

- The CWSRF has a long-term goal to promote systems that employ effective utility management practices through a priority rating system that awards points to projects that address specific targets, goals, or measures in a water conservation and/or drought contingency plan, and/or address specific goals in a system-wide or plant-wide energy assessment, audit, or optimization study.²⁹
- The DWSRF has a short-term goal to encourage the use of green infrastructure by offering principal forgiveness for green infrastructure, energy efficiency, water efficiency, or environmentally innovative portions of projects. During state fiscal year 2016 Texas set a goal to allocate an equivalent of 10% of the capitalization grant to approved green project costs.³⁰
- The DWSRF has a long-term goal to promote effective utility management by awarding priority points for a variety of practices including implementation of water plans, water conservation strategies, use of reclaimed water, and projects increasing energy efficiencies.³¹

Other Notable State Drought Resilience Goals

- The Arizona DWSRF has a short-term goal to encourage green infrastructure for stormwater, water and energy efficiency improvements and other environmentally innovative activities.³²
- The Idaho DWSRF has a short-term goal to direct a minimum of approximately 10% of the capitalization grant to sustainability efforts such as the GPR.³³ While sustainability efforts can include many types of projects, water efficiency projects are eligible. To date Idaho's GPR efforts have resulted in a recurring savings of 459 million gallons of water per year.
- The Nevada CWSRF encourages the reclamation and reuse of wastewater as part of its water quality goals.³⁴
- The Oregon CWSRF has a goal to support emerging markets in obtaining SRF financing, which includes but is not limited to, irrigation districts.³⁵ Oregon has provided funding to irrigation districts to modernize their systems which can save significant amounts of water from evaporation and leakage, helping districts become more drought resilient. Oregon is establishing

protocols and procedures to effectively use the SRF to support irrigation infrastructure modernization.³⁶

- The Utah CWSRF has a short-term goal to provide at least 10% of the capitalization award to recycled water and water reuse projects.³⁷
- The Washington DWSRF has a short-term goal to provide assistance for consolidation or interconnection of water systems to improve service or capacity. Incentives for this goal include consolidation grants and up to 50% principal forgiveness to construction loan projects that include consolidation of public water systems serving at least 15 connections or 25 people per day for at least 60 days per year.³⁸
- The Washington DWSRF has a long-term goal to promote resilient infrastructure. This involves implementing an investment grade energy audit requirement for all construction loans.³⁹

SRF Incentives

State SRF programs can provide incentives for utilities to voluntarily incorporate drought remediation into projects seeking SRF funding. To receive funding a project must be on the state's project priority list. Projects are ranked by priority points and for the DWSRF projects must be funded in priority order. States can award extra points to projects addressing drought. States set the interest rate for their programs and may reduce the rate for projects that address drought issues. Another option available to states is additional subsidization through principal forgiveness for drought related projects. Utilities proposing projects that address drought can either increase the probability of funding and may reduce the cost of financing by utilizing these incentives.

Priority Points

SRFs use criteria to award priority points to project applicants and then rank those projects for the annual Project Priority List and IUP. SRF funding criteria must support the requirements of the CWA and SDWA, but SRFs can also choose to award priority points for a variety of factors. The relative value of priority points varies based on a state's overall priority point system, therefore points are not comparable between SRFs. Generally, projects that address immediate public health needs, compliance, or

impaired water bodies are eligible for the largest share of priority points. The maximum point totals for SRF scoring criteria are listed below where available. Many SRFs award priority points based on sustainability efforts and readiness to proceed. The examples below offer smaller point values compared to public health or compliance categories but can be useful in giving a drought resilient project an edge in the ranking process over similar projects.

CWSRF priority points that support drought resilience:

California CWSRF assigns projects to one of five priority classes (A through E) and also awards sustainability points which are used to rank projects within the same class. Examples include:

- Water recycling projects that provide for treatment and delivery of municipal wastewater or groundwater for uses that will offset or augment state and local water supplies qualify as Class C. Projects that are necessary to meet state policy regarding recycled water are also assigned Class C.⁴⁰
- Projects that incorporate climate change adaptation qualify for one sustainability priority point.⁴¹
- Projects that incorporate wastewater or storm water/urban runoff recycling, water conservation, energy conservation, low impact development, or reduce the use of other vital resources qualify for one sustainability point.⁴²

Colorado CWSRF has five sections in the priority scoring model including sustainability/Green Project Reserve. Examples include:

- Projects that incorporate GPR components at a minimum of 20% of total project costs (up to 35 points available).⁴³
- Projects that implement a source water protection plan (5 points).⁴⁴
- Planning and design grants where projects will generate and/or utilize reclaimed water for direct reuse, or correct a water loss issue (10 points).⁴⁵

Idaho CWSRF has seven priority sections with a maximum of 610 points available. Sustainable infrastructure efforts are eligible for up to 50 points and include:

- Systems that will implement green building management based on Leadership in Energy and Environmental Design (“LEED”) operation and maintenance criteria (10 points), and projects that will construct or renovate buildings to meet LEED design and construction criteria (10 points).⁴⁶
- Projects that will implement wastewater reuse when other alternatives have been considered (10 points).⁴⁷
- Projects that will implement Class A reclaimed water distribution system or “purple pipe” (10 points).⁴⁸
- Projects that will implement groundwater recharge by land application (10 points).⁴⁹
- Systems that will consolidate with another wastewater system (10 points).⁵⁰

Nevada CWSRF has three priority classes (A through C) and within each class projects are given priority points and ranked. Points for water quality, readiness, asset management, and green projects apply to all priority classes. Examples include:

- Projects that provide treatment beyond water quality standards or permit requirements in order to reclaim and reuse wastewater qualify for Class B and 10 points. Class B projects are necessary to increase reliability or sustainability.⁵¹
- Projects with reclaimed water distribution qualify for Class B and 8 points.⁵²
- Projects that incorporate GPR components including installation of water meters, replacement or rehabilitation of distribution lines that have documented water loss, and reuse of treated effluent are each eligible for 5 points.⁵³

New Mexico CWSRF has five point categories with maximum of 700 points available, including financial/affordability (100 points), sustainability (75 points), and a bonus category for the GPR (25 points).

- In the financial/affordability category, applicants that have a rate structure with block rates that increase

over time by an ordinance receive 25 points and other block rates receive 15 points. Flat rate structures receive no points.⁵⁴

- In the sustainability category, projects that result in physical regionalization and consolidation can receive 20 points.⁵⁵
- Points for sustainability are also awarded to projects that establish a watershed service funding structure (5 points), or include water efficiency, reuse, and conservation measures (5 points).⁵⁶
- Any project that incorporates GPR eligible components can qualify for 25 points.⁵⁷

Oklahoma CWSRF has five priority areas with a maximum of 600 points available: project type (70 points), water quality restoration (20 points), water quality protection (10 points), programmatic (100 points), and readiness to proceed (400 points). Drought resilient priorities include:

- Treatment works or water quality projects that are designed to increase capacity, reliability, or efficiency, and projects designed to reclaim/reuse wastewater (30 points).⁵⁸
- Recycling and water reuse projects that replace potable sources with non-potable sources, including gray water, condensate and wastewater effluent reuse systems (where local codes allow the practice), and extra treatment costs and distribution pipes associated with water reuse (40 points).⁵⁹
- Construction projects other than those above that align with Oklahoma's Water for 2060 goals (30 points).⁶⁰
- Engineering and design projects that have non-potable use within the wastewater system, and engineering, planning, and studies for direct and indirect potable water reuse systems, pending new water reuse rules (20 points).⁶¹
- Projects that implement the recommendations of a conservation plan or water audit (5 points).⁶²

Oregon CWSRF has three priority categories for non-planning loans: water quality standards and public health considerations, watershed and health benefits, and other

considerations. Within the watershed and health benefits category priority can be given to:

- Projects that integrate or expand the use of natural infrastructure, or use approaches including, but not limited to, water quality trading.⁶³
- Projects that incorporate or expand water efficiency including, but not limited to, using improved technologies and practices to deliver equal or better services with less water, such as conservation, reuse efforts or water loss reduction and prevention.⁶⁴

Texas CWSRF has priority points available for publicly owned treatment works, nonpoint source pollution, estuary management, and for all eligible projects. Priority points can be given to:

- Treatment projects where a majority of CWSRF funds are used to implement measures to reduce the demand for publicly owned treatment works capacity through water conservation, efficiency, or reuse (5 points).⁶⁵
- Projects where a majority of CWSRF funds are used to implement innovative approaches to manage, reduce, treat or recapture stormwater or subsurface drainage water (15 points).⁶⁶
- Projects where a majority of CWSRF funds are used to implement reuse or recycling wastewater, stormwater, or subsurface drainage water (5 points).⁶⁷
- Projects that address a specific goal in a water conservation plan (1 point).⁶⁸
- Projects that are consistent with a state or regional water plan, integrated water resource management plan, regional facility plan, regionalization or consolidation plan (2 points).⁶⁹

Utah CWSRF has four priority categories and the special consideration category includes:

- Projects that have a documented water conservation plan (20 points).⁷⁰

DWSRF priority points that support drought resilience:

California DWSRF assigns projects to one of six priority categories (A through F). Drought resilient priorities include:

- Compliance or shortage projects that address water quantity problems caused by source capacity or water delivery capability that is insufficient to meet existing demand qualify for Category C.⁷¹
- Inadequate reliability projects that address non-metered service connections or defective water meters qualify for Category D. Projects that address community water systems and public water systems owned by public schools, with a single source and no backup supply also qualify for Category D.⁷²
- Projects that result in the consolidation of water systems receive priority over other projects within the same category.⁷³

Colorado DWSRF awards priority points across six categories including source protection/conservation and sustainability. Within these categories points are given for:

- Systems that have increasing block rates (15 points) or seasonal rates (10 points) to encourage conservation.⁷⁴
- Projects that will implement water metering, leak detection and/or other water conservation and efficiency infrastructure applications at a minimum of 20% of total project costs (10 points).⁷⁵
- Projects that establish a protective zone to address potential pollution as a result of wildfires in burn scar areas (10 points).⁷⁶
- Projects that correct compliance issues, water quality problems, and/or water supply problems through physical consolidation and regionalization of water systems (10 points).⁷⁷

Idaho DWSRF has six priority sections with a maximum of 260 points available. Sustainability efforts have a maximum of 50 points available and the incentives section has a maximum of 10 points. Examples include:

- Projects that incorporate sustainability in management-based efforts (50 points), technology-

based efforts (50 points), and construction practices (30 points).⁷⁸

- Systems that have a current source water protection plan (2 points).⁷⁹
- Systems that have a conservation-oriented rate structure (2 points).⁸⁰

Montana DWSRF has five priority categories with a maximum of 350 points available.

- Projects that construct a regional public water supply that would serve two or more existing public water supplies (30 points).⁸¹

New Mexico DWSRF has six priority categories with a maximum of 162 points available, including regionalization (14 points), water efficiency (23 points), and sustainability (16 points). The following priority points are awarded within the six categories:

- Projects that replace potable water with non-potable sources such as greywater and reuse systems (3 points).⁸²
- Water utilities that have drought contingency or water conservation policies to manage seasonal demand or water shortages (2 points).⁸³
- Regionalization projects for two or more public water systems that will consolidate or physically connect (5 points) and emergency interconnection projects (3 points).⁸⁴
- Water efficiency projects that meter an unmetered system (8 points) or reduce water loss by replacing or rehabilitating distribution lines (5 points).⁸⁵
- Systems that maintain a water conservation plan with the State Engineer or utilize AWWA water loss control methods (1 point).⁸⁶
- Projects that include renewable energy or energy efficiency measures (2 points), green infrastructure features such as rainwater harvesting or grey water (2 points), and other environmentally innovative ways to produce, treat, or deliver water (2 points).⁸⁷

Oklahoma DWSRF awards points for nine priority factors including quantity deficiencies, consolidation and source water protection:

- Projects that resolve a continual shortage of water (60 points) or a seasonal shortage of water (60 points) due to source, treatment, or distribution problems will be awarded points. Projects may only meet one of these conditions.⁸⁸
- Projects that result in the consolidation (20 points), interconnection (10 points), or improvement of services such as back-up or emergency supply (10 points) for two or more water systems. Projects may meet more than one of these conditions.⁸⁹
- Water supply systems which have implemented source water protection programs such as watershed protection programs or wellhead protection programs (100 points).⁹⁰

Texas DWSRF has five priority categories that are summed and multiplied by 10 before adding points for effective management and affordability. Examples, equally weighted, include:

- Projects that address system water loss greater than 25% (2.5 points).⁹¹
- Projects that address a specific goal in a water conservation plan (1 point).⁹²
- Projects that involve the use of reclaimed water (1 point).⁹³
- Projects that are consistent with a municipal and/or state watershed protection plan, water efficiency plan, integrated water resource management plan, regional facility plan, or regionalization or consolidation plan (2 points).⁹⁴

Utah DWSRF has five priority categories with a maximum of 425 points available, including:

- Systems that have a high leak rate in distribution lines (10 points).⁹⁵
- Separately, Utah DWSRF awards points for financial need with 100 points available:

- Reduced interest and fees to applicants that are creating or enhancing a regionalization plan (16 points).⁹⁶
- Reduced interest and fees to applicants that have a rate structure that encourages conservation (6 points).⁹⁷

Washington DWSRF scores projects based on five risk categories, readiness to proceed, and bonus points, with the highest risk categories given the most weight.

- Risk category 4 includes system resiliency projects that protect against a range of natural events including flooding, long-term drought, and earthquakes (50 points). Qualifying projects include adding a redundant source or modifying a surface water intake to operate under drought or flood conditions.⁹⁸
- Readiness to proceed points are given to water utilities with current distribution system leakage of 10% or less (1 point). If leakage is over 30% the applicant may be asked to reevaluate the project.⁹⁹
- Bonus points are given to projects that meter an unmetered system or for systems that are not fully metered (2 points).¹⁰⁰

Wyoming DWSRF has a priority system with four categories and a maximum of 555 points available, including:

- Projects that address distribution system equipment that is deteriorated and results in numerous or serious leaks (20 points).¹⁰¹

Reduced Interest Rate

SRFs can offer reduced interest rates for certain types of projects or borrowers. Reduced interest rates are typically extended to borrowers that face affordability challenges. However, other methods of awarding interest rate subsidies for drought resilient projects include:

- The Arizona CWSRF and DWSRF offer reduced interest rates to borrowers if the majority of project costs are related to green components.¹⁰²
- The California CWSRF offered a one-time drought relief 1% interest rate for any eligible water recycling project that was submitted by December 2, 2015. In many cases the State Water Board combined 1%

CWSRF financing with a grant from the Water Recycling Funding Program.¹⁰³

- The Colorado CWSRF offers 0% interest up to \$2.5 million to projects that implement eligible green components equal to or greater than 20% of the total project cost. This incentive is only offered until the GPR requirement has been met.¹⁰⁴
- Projects in Wyoming that meet GPR requirements are eligible for a 0% interest rate from the CWSRF¹⁰⁵ and DWSRF¹⁰⁶ instead of the standard 2.5% interest rate.

Principal Forgiveness (“PF”)

SRFs can offer PF for certain types of projects or borrowers. Principal forgiveness is often used for disadvantaged communities. The following are examples of how PF has been used to support drought resilient projects:

- The Arizona CWSRF and DWSRF offer PF for projects where the majority of costs are related to green components.¹⁰⁷
- The California CWSRF offers PF to projects that address water and energy efficiency, mitigation of stormwater runoff, and sustainable planning, design, and construction. Eligible projects include water or energy conservation assessments, audits, or plans, water reuse, water or energy reducing devices, and water meters. Water reuse projects are limited to \$2.5 million PF and are not eligible if funded through the Water Recycling Funding Program. Water or energy conservation assessments, audits, and planning are eligible for up to \$35,000 PF. For construction projects, 50% of total, actual costs associated with water or energy conservation or sustainable planning, design, or construction up to \$4.0 million are eligible for PF.¹⁰⁸
- The New Mexico DWSRF offers up to 25% PF to projects that are 100% categorically green, and considers other projects with a business case explanation.¹⁰⁹
- The Oklahoma CWSRF offers PF for certain project categories, the types and amounts of which vary year to year: indirect potable reuse to reduce the demand on publicly owned treatment works (not to exceed \$200,000); engineering, planning and design, and

construction for water reuse (not to exceed \$439,750); green infrastructure (not to exceed \$439,750); and other GPR projects, if the other categories are not used.¹¹⁰

- The Oklahoma DWSRF offers PF for consolidation or regionalization of water systems.¹¹¹
- The Utah CWSRF may provide additional subsidy in the form of PF to projects addressing water efficiency or energy efficiency, mitigating stormwater runoff, or that encourage sustainability.¹¹²
- The Texas CWSRF and DWSRF offer up to 15% PF if the project contains green components that are at least 30% of the total project costs. Green projects address water efficiency, energy efficiency, mitigation of stormwater runoff; or encourage sustainable project planning, design, and construction.¹¹³
- The Washington DWSRF offers up to 50% PF to construction loan projects that include consolidation of other public water systems that serve at least 15 connections or 25 people per day for at least 60 days per year.¹¹⁴
- The Wyoming CWSRF and DWSRF may offer PF to projects that are eligible for the Green Project Reserve.¹¹⁵

State Requirements

In addition to the federal requirements of the SDWA and CWA such as the Fiscal Sustainability Plan, some SRFs implement state-level requirements for SRF assistance recipients that focus on water conservation and efficiency. The following requirements can drive more projects to adopt drought resilient measures.

- The State of California has certain water conservation requirements for financial assistance applicants and requires compliance with specific state water management laws where applicable. These include urban water management planning, Delta Plan, and water metering requirements.¹¹⁶ The State Water Board implements these requirements for the SRFs and other programs.¹¹⁷

- The California Assembly Bill 2572 enacted in 2004 amended the water code to require, with certain exceptions, that urban water suppliers install water meters on all municipal and industrial water service connections located within their service area by 2025.¹¹⁸ The DWSRF is a continued source of funding for these projects.
- Water utilities in Colorado that distribute or supply 2,000 acre feet of water or more per year are required to have a water conservation plan approved by the Water Conservation Board in order to receive DWSRF assistance.¹¹⁹
- In Nevada water utilities are required to have a water conservation plan for all financial assistance including the DWSRF. The plan must be updated every five years and approved by the Nevada State Engineer's Office.¹²⁰
- Utah DWSRF applicants must have adopted a water conservation plan prior to executing a loan agreement.¹²¹
- The Texas CWSRF and DWSRF require applicants to have a water conservation and drought contingency plan for loans greater than \$500,000. Water conservation plans include targets and goals for efficiency, reuse, other options.¹²²
- The Texas CWSRF and DWSRF also require that utilities must use a portion of any financial assistance to mitigate water loss if the utility's total water loss meets or exceeds the threshold for that utility in accordance with Texas Administrative Code. This requirement may be waived if the SRF finds the utility is addressing the water loss.¹²³
- To receive DWSRF financial assistance in Washington, water systems must have source meters on all existing and proposed new sources of water supply, or include source metering as part of the proposed DWSRF project. In most cases, systems must also have service meters on all existing connections or must include service meter installation as part of the proposed project.¹²⁴
- Washington also requires an Investment Grade Efficiency Audit for all state infrastructure funding,

including projects that receive funding from the CWSRF and DWSRF, to show that the project includes energy saving strategies. The requirement can be met by one of four options: recent documentation of energy savings, a third party design review of energy intensive processes for projects that do not fit into a traditional energy audit, a finding of no obtainable energy savings for projects with minimal or no energy use, or a formal audit from an electric utility or energy services company.¹²⁵

SRF Complementary Funding, Funding Networks, and Technical Assistance

In addition to providing incentives and state requirements for the SRFs states are helping communities become drought resilient in other ways. Several states have invested in water infrastructure funding programs that can provide financial assistance for drought resilient projects that complement SRF eligibilities or even co-fund with the SRF. States have used their SRFs to offer emergency financial assistance that can be accessed by communities facing immediate drought conditions. Several SRFs are members of funding coordination groups that meet to collaborate with other state and federal funding sources that can fund drought resilient projects. The SRFs also provide technical assistance to water and wastewater systems for a variety of issues including water loss auditing and drought planning, and some SRF websites link to drought specific information.

Complementary State Funding

The following are examples of state funding programs or sources that complement the SRF in funding drought resilient projects.

- [California Water Recycling Funding Program](#) (“WRFP”) – The State Water Board provides grant and loan assistance for the construction of water recycling facilities through the WRFP. Many WRFP projects have also received 1% financing from the CWSRF. Funding for this program is being provided from proceeds of Proposition 1 state bond issues.¹²⁶
- California Integrated Regional Water Management Grant Program – Provides grants to protect

communities from drought, protect and improve water quality, and improve local water security by reducing dependence on imported water. The program is managed by the California Department of Water Resources and the State Water Board is a partner by passing along grant eligible projects.¹²⁷

- [Colorado Water Revenue Bond Program](#) – Provides funds up to \$500 million, without legislative review, to entities for water and wastewater projects not eligible under the SRF. The Colorado Water Resources and Power Development Authority subsidizes the costs of the bond issuance for the program. Eligible projects include water and wastewater treatment plants, pump stations, dams/reservoirs, water rights, pipelines, hydro-electric projects, wells, meters, reuse, and storage tanks.¹²⁸
- [Colorado Watershed Protection and Forest Health Projects](#) – The Colorado Water Resources and Power Development Authority is authorized to issue up to \$50 million in bonds to fund projects that include, but are not limited to, activities to achieve fire prevention or wildfire hazard reduction or post-fire remediation, soil stabilization, water supply continuance, or water quality maintenance or improvement within the watershed.¹²⁹
- [New Mexico Rural Infrastructure Program](#) – Provides financial assistance to municipalities, water districts and sanitation districts serving less than 20,000 people, or counties serving less than 200,000, for the construction or modification of water supply, wastewater, and solid waste facilities. The maximum loan per entity is \$2 million per fiscal year.¹³⁰
- [Oklahoma Financial Assistance Loan Program](#) – Provides financial assistance for projects related to water and/or sewer system improvements or refinancing of existing debt obligations incurred by communities for a variety of projects. The program’s loan terms can extend up to 30 years and can fund drought resilient projects not eligible under the SRFs.¹³¹ The OWRB encourages all projects funded through the program to be consistent with the state’s goals to address drought. The Financial Assistance Loan Program also funds the Emergency Grant Program through interest earnings on investments.¹³²
- [State Water Implementation Fund for Texas \(“SWIFT”\)](#) – Provides financial assistance for projects in the state water plan through revenue bonds. SWIFT helps communities develop and optimize water supplies at cost-effective rates with eligibilities that reach further than the SRF to include reservoirs, well fields, and purchasing water rights. The program provides low-interest loans, extended repayment terms, deferral of loan repayments, and incremental repurchase terms for projects with state ownership aspects. A [water conservation](#) and [drought contingency plan](#) is required for financial assistance greater than \$500,000.¹³³
- [Texas Agriculture Water Conservation Grant and Loan Program](#) – Provides financial assistance for agricultural water conservation programs or projects. The program is used for projects that improve infrastructure, equipment and efficiency of irrigation delivery, and technical assistance and education related to agricultural water use and conservation. Loans are available for terms up to 10 years.¹³⁴
- Utah Wastewater Loan Program – Provides funding for certain water quality projects that can include drought resilience and gives additional project flexibility compared to the SRFs. State matching funds for the SRF are generated from the Wastewater Loan Program.¹³⁵ The Utah Permanent Community Impact Board (CIB) provides loans and grants to counties, cities and towns that are impacted by mineral resource development on federal lands within the State of Utah. Because local communities cannot collect taxes from federal lands, their ability to provide necessities like roads, municipal buildings, water and sewer service is diminished. To reduce that burden, a portion of the federal lease fees are returned to the Community Impact Board to distribute to the impacted communities for eligible projects such as water and sewer services.¹³⁶
- Utah Department of Natural Resources Division of Water Resources under Utah Code Section 73-10-1 provides revolving funds to give technical and financial assistance to water users to achieve the highest beneficial use of water resources within the state. The Board of Water Resources administers three revolving construction funds: the Revolving Construction Fund,

the Cities Water Loan Fund, and the conservation and Development Fund. Funding is available for projects that conserve, protect, or more efficiently use present water supplies, develop new water, or provide flood control.¹³⁷

Emergency Funding

States and SRFs can offer emergency funding assistance to communities dealing with immediate drought impacts. The following are examples of emergency drought funding mechanisms.

- The Arizona SRF may approve emergency funding for eligible applicants if a declaration of emergency is made by the Governor of Arizona or the Federal Emergency Management Agency. Loan terms cannot exceed one year and are no more than \$250,000 per emergency event.¹³⁸
- The California DWSRF Local Assistance Set-Aside provided funding for state operational costs to support the Public Water System Drought Emergency Response (“PWSDER”) program. The PWSDER program received a \$15 million California State General Fund appropriation to fund drought emergency drinking water related projects.¹³⁹
- The California Cleanup and Abatement Account was repurposed in 2016 to provide interim emergency drinking water funds to disadvantaged communities facing a drought related emergency or contaminated water supplies. The State Water Board supplemented these funds with \$4 million, and a total of \$19 million was available for bottled water, well repair, hauled water, emergency interties, and other emergency response efforts.¹⁴⁰
- Oklahoma Emergency Drought Grants – In 2012 the Governor declared a “State of Emergency Due to Drought.” The OWRB responded by making \$300,000 available to provide grants to fund community drought projects. The Emergency Drought Grants are a subset of the Emergency Grant Fund. There is \$500,000 available for drought assistance during a Governor declared emergency. The maximum funding per project is \$100,000, subject to a 15% match requirement. Priority points are awarded based on the type of water use (human consumption, agriculture, increase capacity, fire protection), severity of the Palmer Drought Index, and to systems that have an increasing block rate structure.¹⁴¹
- Oklahoma Emergency Drought Commission & Relief Fund – In 2013 the Oklahoma legislature provided \$1.1 million in one-time funding for drought mitigation and related projects. Assistance was limited to counties in a governor declared emergency and had to be approved by the Emergency Drought Commission (since dissolved). Eligible projects included agricultural water conservation, water for livestock, rural fire suppression, soil conservation, and other activities. Priority points were awarded based on the type of water use, severity of the Palmer Drought Index, and to systems that had an increasing block rate structure.¹⁴²
- Oklahoma Water for 2060 Drought Grants – In 2014, in concert with the Water for 2060 Act, Oklahoma made \$1.5 million available to communities who demonstrated water efficiency and supported drought resiliency. The Water for 2060 Drought Grant program was available for FY 2015 only with a maximum funding per project of \$500,000. Priority points were awarded based on the estimated increase in water efficiency, severity of the Palmer Drought Index, and to systems that had an increasing block rate structure.¹⁴³
- The Texas CWSRF and DWSRF provide limited emergency funding at 0% interest to qualifying utilities. The funding mechanism is often used for drought situations but can be used for other qualifying reasons.¹⁴⁴
- The Washington DWSRF emergency loan program provides funding for publicly and privately owned not-for-profit community water systems serving fewer than 10,000 people that were impacted by an unforeseen event, such as flooding, drought, fire, or earthquake. The maximum amount allowed per entity is \$100,000 with up to 75% PF based on affordability, a 1.5% fixed interest rate, with the ability to reduce to 1% based on affordability, and a 6-year loan term.¹⁴⁵

Funding Networks

Many SRFs are members of funding networks, committees, or other infrastructure coordination groups that meet to collaborate with other state and federal funding sources. These groups have resources that can fund drought resilient projects.

- The Water Infrastructure Finance Authority of Arizona manages the CWSRF and DWSRF and is a member of the [Rural Water Infrastructure Committee](#) (“RWIC”), an informal partnership of various federal and state agencies that provides loans, grants and technical assistance to Arizona’s rural communities. RWIC serves as a “One-Stop Shop” for rural communities with a population of less than 10,000.¹⁴⁶
- The California State Water Board participated in six [California Financing Coordinating Committee](#) (“CFCC”) funding fairs during SFY 15/16. The CFCC funding fairs provide members of the public and infrastructure development professionals current information on funding options available for different project types.¹⁴⁷
- The [Infrastructure for Nevada Communities](#) (“INC”) group consists of the major funding sources and technical service providers in Nevada and helps to coordinate water quality financing. This collaborative effort maximizes the limited funding dollars to support the greatest number of projects and provide cost savings for communities.¹⁴⁸
- The Oklahoma [Funding Agency Coordinating Team](#) (“FACT”) is a group of federal and state organizations that offer financing to eligible Oklahoma public entities for water and wastewater projects. The purpose of the team is to facilitate the funding process through communication and streamlined application processes. FACT is hosted by the Oklahoma Rural Water Association.¹⁴⁹
- The [Texas Water Infrastructure Coordination Committee](#) (“TWICC”) is a one-stop shop for information on funding eligibility or technical assistance for water systems facing infrastructure or compliance issues. TWICC is a collaborative effort by State and Federal government agencies and technical assistance providers promoting an efficient process for affordable, sustainable, and innovative funding

strategies for water and wastewater infrastructure projects that protect public health.¹⁵⁰

Technical Assistance

SRFs can use their financial resources to provide technical assistance to water and wastewater systems to assist with various technical, managerial, and financial capacity issues. DWSRFs use their set-asides for technical assistance, a portion of which can address water loss, drought planning, and related activities.

- The Water Infrastructure Finance Authority of Arizona is enhancing their conservation efforts by starting a water loss control program using SRF set asides to hire contractors that can work directly with utilities to implement American Water Works Association procedures. Utilities throughout the state will receive training in analyzing and managing non-revenue water, and learn AWWA water loss auditing and validation practices to improve system efficiency.¹⁵¹
- The California State Water Board provides a wide array of technical assistance to small and disadvantaged communities through the SRFs and other programs, including leak detection/water audits, project coordination, legal assistance, and engineering and environmental analysis. This assistance can be used for drought resilient projects that improve distribution systems, water storage, interconnections, consolidation, water sources, and water meters.¹⁵²
- The Oklahoma Water Resources Board developed the Oklahoma Drought Tool for communities and planners in collaboration with the U.S. Bureau of Reclamation. The tool outlines drought management concepts and planning options with links to other resources.¹⁵³
- Spurred by drought, the Oklahoma Department of Environmental Quality used the DWSRF Local Assistance Set-Aside to implement a water loss audit pilot study to determine the extent of water loss from community water systems (“CWS”). The Southwest Environmental Finance Center trained staff on how to conduct a water loss audit utilizing American Water Works Association’s water loss auditing method and software. Forty small CWSs volunteered to participate in the pilot. The audit results are being used to help the CWSs identify and develop a plan to address water loss. DWSRF Set-Aside funds have been used to

provide technical assistance through the Oklahoma Rural Water Association (“ORWA”) to some of those 40 CWSs. The technical assistance provided by ORWA will be assisting water systems in leak detection and meter analysis to reduce water loss.¹⁵⁴

- The Oklahoma CWSRF has piloted the use of administrative funds to offer mapping services to small systems. The water, wastewater, and stormwater infrastructure mapping is free to the system and the data can be viewed through a secure web login available on any smart device at any time.¹⁵⁵
- The Utah Division of Drinking Water will use DWSRF set-aside funds for a water use study to review the Division’s minimum source capacity requirements that help ensure water systems have enough water to meet demand. The three-year study will evaluate indoor and outdoor residential usage for a sample of water systems in order to identify periods of high water use and set reasonable minimum source capacity requirements based on the findings.¹⁵⁶

Drought Information

To further assist local drought resilience efforts, some SRF websites link to drought specific information or monitoring data, as well as water conservation resources for utilities and consumers.

- [California drought actions and information](#) and water conservation information.¹⁵⁷
- [Nevada Drought Forum](#)¹⁵⁸
- [Oklahoma Drought Monitoring](#) and water conservation information.¹⁵⁹
- [Oregon Drought Watch](#)¹⁶⁰
- [Texas drought response](#) and water conservation information.¹⁶¹
- [Utah Drought Information](#)¹⁶² and [water conservation](#)¹⁶³

Water Efficiency Investment

The CWSRF and DWSRF can encourage certain types of projects by offering various forms of additional subsidy for GPR projects. Each GPR category includes eligible projects that build drought resilience, but water efficiency projects such as water conservation plans and recycling and water reuse projects that replace potable sources are generally

the most relevant to drought resilience.¹⁶⁴ Since the GPR became discretionary for the DWSRF in 2012, states can choose whether to report the number and value of water efficiency assistance agreements. The water efficiency GPR data illustrates some, but certainly not all, of the SRF drought resilient financial assistance provided from 2010 to 2016.

CWSRF Water Efficiency Assistance Provided from 2010 to 2016¹⁶⁵

STATE	WATER EFFICIENCY ASSISTANCE PROVIDED (millions)	WATER EFFICIENCY AS PERCENTAGE OF TOTAL ASSISTANCE PROVIDED
Arizona	\$30.9	9.5%
California	\$512.6	13.4%
Colorado	\$4.8	1.4%
Idaho	\$4.2	1.8%
Montana	\$5.5	2.1%
Nevada	\$8.6	5.0%
New Mexico	\$5.3	3.4%
Oklahoma	\$5.6	1.1%
Oregon	\$23.3	5.4%
Texas	\$38.3	1.9%
Utah	\$3.9	2.4%
Washington	\$23.5	3.4%
Wyoming	\$9.6	6.0%
	Total \$676.0	Average 4.4%

The most common projects funded by the CWSRFs through the GPR water efficiency category were for water reuse and recycling treatment, distribution, pump stations, and ¹⁶⁶ California funded the majority of reuse/recycling projects with assistance in the GPR water efficiency totaling \$512.6 million, and had the highest proportion of water efficiency investment compared to total assistance provided at 13.4%. Other projects in the water efficiency

related facilities. Some reuse projects replaced prior reliance on potable water for public parks irrigation.

category included replacing flood irrigation units with more efficient center pivot systems, replacing open irrigation canals with piped systems to prevent water loss, and meter replacements.

DWSRF Water Efficiency Assistance Provided from 2010 to 2016¹⁶⁷

STATE	WATER EFFICIENCY ASSISTANCE PROVIDED (millions)	WATER EFFICIENCY AS PERCENTAGE OF TOTAL ASSISTANCE PROVIDED
Arizona	\$18.4	5.4%
California	\$99.7	6.4%
Colorado	\$15.2	6.0%
Idaho	\$17.0	16.8%
Montana	\$16.8	13.4%
Nevada	\$0	0.0%
New Mexico	\$2.1	2.3%
Oklahoma	\$22.0	4.3%
Oregon	\$11.6	7.2%
Texas	\$101.1	13.1%
Utah	\$13.2	11.6%
Washington	\$5.4	1.0%
Wyoming	\$8.2	6.5%
	Total \$330.7	Average 7.2%

The most common projects funded by the DWSRFs through the GPR water efficiency category were for automated water meters. From 2010-2016 nearly every state funded projects to install new meters or replace inaccurate meters.¹⁶⁸ Texas and California supported the largest investment in water efficiency categorical projects totaling \$101.1 million and \$99.7 million¹⁶⁹, respectively, while the Idaho DWSRF had the highest proportion of water efficiency investment compared to total assistance provided at 16.8%. Other projects funded in the water efficiency category included water line replacements for particularly problematic lines, leak detection and leak detection equipment, water storage tanks, and enclosing reservoirs to prevent loss from evaporation.

Conclusion

While drought conditions vary year to year and have improved in 2017 across parts of the West¹⁷⁰, there is a

need for long-term planning due to the periodic nature of drought conditions. The SRFs, supported by EPA, inherently fund many projects that conserve and reuse water as a byproduct of SRFs' flexible eligibilities and states' policy choices. Recent federal requirements from WRRDA such as the CWSRF Fiscal Sustainability Plan and Cost and Effectiveness Analysis are driving more projects to include water conservation and efficiency measures, which in turn make communities more drought resilient. The 13 states highlighted in the report have SRF programs that are promoting drought resilience with specific programmatic goals, borrower incentives, state level requirements for funding, and other actions that are within statutory guidelines and complement overall program objectives. These actions and policies harness the flexibility of the SRF programs and provide examples for other states to promote drought resilience in their communities.

U.S. EPA Water Infrastructure and Resiliency Finance Center

The Water Finance Center is an information and assistance center, helping communities make informed decisions for drinking water, wastewater, and stormwater infrastructure to protect human health and the environment. Through its technical assistance to states, local government and non-governmental entities the Water Finance Center helps communities understand their financing options, improving the effectiveness of federal funding, and supporting local decision-making for resilient water infrastructure.

If you have any questions, please contact the Water Finance Center at:

- waterfinancecenter@epa.gov
- www.epa.gov/waterfinancecenter

¹ U.S. Drought Portal, <https://www.drought.gov/drought/data-maps-tools/outlooks-forecasts>

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- ³ Clean Water State Revolving Fund, National Information Management System (NIMS), <https://www.epa.gov/cwsrf/clean-water-state-revolving-fund-cwsrf-national-information-management-system-reports>
- ⁴ Clean Water Act section 603(d)(1)(e); and U.S. EPA Water Resources Reform and Development Act Guidance, 2015.
- ⁵ Clean Water Act section 602(b)(13); and U.S. EPA Water Resources Reform and Development Act Guidance, 2015.
- ⁶ California State Water Resources Control Board, Drought Year Water Actions, http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/actions.shtml
- ⁷ California State Water Resources Control Board, Cleanup and Abatement Account Interim Emergency Drinking Water, http://www.waterboards.ca.gov/water_issues/programs/grants_loans/caa/dw_droughtfund/
- ⁸ Public Water System Drought Emergency Response (PWSDER) program, http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/drought/PWSDER%20Final%20Drought%20Fact%20Sheet%20SWRCB.pdf
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- ¹¹ California Assembly Bill 2572, Water Meters, 2004, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=200320040AB2572
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- ¹³ Ibid.
- ¹⁴ “Resilient Water Supply for an Uncertain Future,” Dave Taylor, Waurika Lake Master Conservancy District, https://www.epa.gov/sites/production/files/2015-10/documents/session_2_-_dave_taylor_resilient_water_supply_for_an_uncertain_future.pdf
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- ¹⁶ Texas State Water Plan, <https://2017.texasstatewaterplan.org/statewide>
- ¹⁷ Phone conversation with Matt Nelson and Mark Wyatt, Texas Water Development Board, 3/7/2017.
- ¹⁸ Mark Wyatt, Texas Water Development Board, 3/15/2017.
- ¹⁹ Ibid.
- ²⁰ California State Water Resources Control Board, Clean Water State Revolving Fund, SFY 2016-2017 Intended Use Plan, 6/21/2016.
- ²¹ Ibid.
- ²² California State Water Resources Control Board, Drinking Water State Revolving Fund, SFY 2016-2017 Intended Use Plan, 6/21/2016.
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- ²⁴ Provided by Juanita Licata, U.S. EPA Region 9, 3/13/2017.
- ²⁵ Oklahoma Water Resources Board, Clean Water State Revolving Fund, SFY 2017 Intended Use Plan.
- ²⁶ Ibid.
- ²⁷ Oklahoma Department of Environmental Quality, Drinking Water State Revolving Fund, SFY 2017 Intended Use Plan.
- ²⁸ Texas Water Development Board, Clean Water State Revolving Fund, SFY 2016 Annual Report.
- ²⁹ Ibid.
- ³⁰ Texas Water Development Board, Drinking Water State Revolving Fund, SFY 2016 Annual Report.
- ³¹ Ibid.
- ³² Water Infrastructure Finance Authority of Arizona, SFY 2017 Drinking Water Intended Use Plan.
- ³³ Idaho Department of Environmental Quality, Drinking Water State Revolving Fund, SFY 2016 Annual Report.
- ³⁴ Nevada Division of Environmental Protection, State Revolving Fund, SFY 2015 Annual Report.
- ³⁵ Oregon Department of Environmental Quality, Clean Water State Revolving Fund Loan Program, SFY 2017 Intended Use Plan Update #1, 2/6/2017.

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- ³⁶ Phone conversation with Kimberly Carlson, Oregon Department of Environmental Quality, 10/17/2016.
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