



EQUITABLE WATER INFRASTRUCTURE TOOLKIT





The cost of water is rising throughout the United States. For the past two decades, water and wastewater service bills have grown much faster than other household expenses; in fact, the rate of increase is faster than almost any economic measure, including private university tuition.

Utilities charge customers for treating and transmitting water, and discharging wastewater. Ideally, the utility recoups a surplus and uses reserve funds to implement cost- and resource-saving innovations such as conservation rates, customer affordability programs (CAPs), and energy efficiency measures at its treatment plants. In municipalities with growing populations or service areas, infrastructure investment revenues can generally be recouped through appropriately-set service utility charges (i.e. full cost-of-service water rates), however, many municipalities reached their peak population in the mid-20th Century and have since lost a large percentage of their population (due in part to the loss of a local industry).

Now water and wastewater systems are overbuilt, and community water supplies, and stormwater and wastewater systems, need vast and critical infrastructure

investments. But with little new, growth-based revenue, utilities are struggling to find the necessary funds to maintain services, and reduce flooding and main breaks that can result in significant water loss; a Chicago Tribune study found that communities around Lake Michigan lose 30 percent or more of their water due to faulty infrastructure, a level of system inefficiency that has real financial implications.

As water affordability becomes increasingly compromised, low-, moderate-, and fixed-income households have been most severely impacted. When assessed as a share of income, their water bills can be five times greater than those of high-income households; in some cases, such as in Detroit, and Flint, Michigan, drinking water service charges for low- and fixed-income residents were 40 percent of their income.

Those who cannot pay their water bills face dire consequences that can damage credit, terminate service, and create public health emergencies. In the aftermath of thousands of water shut-offs across the country, international social justice groups unanimously stated that access to clean water — a basic human right established by the United Nations — had been grievously violated.

The aforementioned factors conspire to both increase the risk of system failure and create an untenable cost burden on ratepayers.

River Network determines that “equitable water infrastructure investment” has been achieved when dollars are:

1. Directed by the community toward public health, and result in safe, clean, affordable and accessible water and stormwater;
2. Distributed in a way that supports the communities that are most at-risk for environmental harm and have historically lacked investment, chiefly low-income communities and communities of color; and
3. Used to support the long-term sustainability of our waterways, water systems, and utilities.



This River Network Equitable Infrastructure Toolkit is a one-stop shop for community stakeholders, advocates, and leaders to:

- Identify the factors that affect water affordability
- Become familiar with water infrastructure funding and financing mechanisms; and
- Understand the role and impact of local, state and federal entities.

With this knowledge, we hope that you will recognize and work to influence equitable water infrastructure investment opportunities, practices, and policies, and then, help to address, direct, remedy, and improve outcomes.

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River Network empowers and unites people and communities to protect and restore rivers and other waters that sustain all life. We envision a future with clean and ample water for people and nature, where local caretakers are well-equipped, effective and courageous champions for our rivers. We believe that everyone should have access to affordable, clean water and healthy rivers.

Utilities

Objectives

- Understand how water utilities operate and make decisions, and how those decisions can impact water affordability.
- Know how utilities fund their operations and receive financial oversight at the local and state levels.
- Explore the various components of a water bill.
- Assess the structure of a water bill to identify potential areas where your utility could establish or incorporate more equitable practices.
- Recognize options for both utilities and customers to improve water affordability and equity outcomes.

1. **Why Utilities Matter**
2. **How Utilities Work**
 - a. Rate Setting
 - b. Governance and Management
 - c. Oversight
3. **Understanding Your Water Bill**
4. **Utility Programs and Practices**
 - a. Equitable Rate Setting and Customer Assistance Programs (CAPs)
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 - c. Improved Asset Management and Equitable Investment Practices
5. **Recommended Actions**
 - a. Utilities: Improve Asset Management
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What Is a Utility?

A utility is the entity responsible for collecting, treating, and transmitting clean water from a source (groundwater aquifers, or surface water such as rivers or lakes) to residential, municipal, commercial, and industrial customers. In this work, they are responsible for managing various aspects of water infrastructure (ex. miles of water mains, the number of metered households in its system, the comparative number of residential and commercial accounts).

Utilities can be privately owned or publicly owned — water utilities might serve one municipality, or many localities within a limited geography; in addition to providing water services within its prescribed areas, water utilities might also sell wholesale water to surrounding communities.

WHY UTILITIES MATTER

The United States is experiencing a water affordability crisis. Across the past two decades, water and wastewater service expenses have grown much faster than other household expenses; in 2016, an estimated 1.4 million people lost water service due to unpaid bills.¹

Low-income communities and communities of color are more likely to have unaffordable water bills due to aging and overburdened water infrastructure, population loss, and water rate structures that do not account for ability to pay. And, in exchange for potential job creation, these communities also are more likely to use tax breaks, low water rates, or other measures to incentivize large industries² — if there is a financial shortfall, residential customers often receive higher bills to make up the difference, and thus, end up subsidizing industrial operations.

When water payments are past due for a specific amount of time, it is common practice for utilities to shut off water service to incentivize payment. The cities with the largest number of water shutoffs have, on average, a 41 percent higher poverty rate and 47 percent higher unemployment rate than cities with the fewest water shutoffs.³ This is largely driven by the fact that poorer communities are more likely to have infrastructure systems that are not “right-sized,” which drives up investment costs and places a disproportionate burden on the shoulders of those least able to pay.

Unaffordable water bills place vulnerable residents at greater risk of having their water service disrupted. Water shutoffs can lead to dire public health and economic impacts, creating and furthering affordability and environmental justice issues.

For more information on the impacts of unaffordable water bills, see the [Affordability section](#).

1 Food and Water Watch. (2018). *America's Secret Water Crisis: National Shutoff Survey Reveals Water Affordability Emergency Affecting Millions* [PDF]. Retrieved from http://fwa2020prod.wpengine.com/wp-content/uploads/2021/03/rpt_1810_watershutoffs-web2.pdf.

2 Singh, R. K. (2019, February 10). *U.S. Steel wins tax breaks from one of America's poorest cities*. Reuters. <https://www.reuters.com/article/us-steel-gary-insight-idUSKCN1PX17D>.

3 Food and Water Watch. (2018). *America's Secret Water Crisis: National Shutoff Survey Reveals Water Affordability Emergency Affecting Millions* [PDF]. Retrieved from http://fwa2020prod.wpengine.com/wp-content/uploads/2021/03/rpt_1810_watershutoffs-web2.pdf.

Poor asset management and federal water quality standards also can drive up water rates, resulting in higher bills and rendering services unaffordable for millions of U.S. households. When a utility fails to keep track of its water infrastructure system, leaks or other faults go unnoticed and create opportunities for waste. Federal water quality standards are critical to ensure the safety and cleanliness of rivers and drinking water, but meeting more protective (often more stringent) standards may require upgrade, operation and/or maintenance costs that are then passed on to customers.

TAKEAWAY

- Households who cannot afford to pay their water bills face the threat of shutoffs, which can create numerous challenges.
- Water affordability issues disproportionately impact low-income communities, communities of color, and older communities — their amenities and infrastructure have lacked investment, and these communities contend with other vulnerabilities such as economic instability, racial discrimination, environmental injustice, etc.
- Older communities whose populations have dwindled may have water infrastructure networks that are too big for their service areas. When a customer base shrinks, the municipality collects less revenue, which means less funding for adequate infrastructure investment; this dynamic is particularly stark if the customer base is low-income. Economically disadvantaged communities that need to create jobs may be more likely to incentivize large industries with tax breaks, low water rates, or other economic incentives. Offering lower water rates to industrial users might result in rate increases for residential customers, creating affordability issues.
- Poor asset management practices, and more stringent and protective federal water quality standards, can also increase household water bills, regardless of actual usage and consumption.

HOW UTILITIES WORK

Rate Structure – The pricing method a utility uses to calculate how much a consumer will pay for water usage; it includes both the base (fixed) fee and the volumetric charge.

Building trusting relationships between water utilities and customers/community members can provide long-term value and benefits for both groups, and help advocates and organizations influence decision-making and policies related to water affordability.⁴ Given that there is wide variability in how utilities are run and regulated, advocates should first understand some key elements of utility operations.

Rate Setting

Rate setting refers to the process that utilities use to determine how they will charge for water usage.⁵ Common rate structures include flat rates; uniform rates; block rates; seasonal rates; and lifeline rates.

Flat Rates: Customers are charged the same amount irrespective of their exact usage.

Uniform Rates: Customers are charged based on actual usage, at a set price per unit.

Block Rates: Customers are charged one rate for usage up to a certain amount; afterward, that rate can either increase or decrease.

With increasing block rates, charges increase for every unit (or block) of water used; for example, customers might pay \$1.00 for each unit of water up to a thousand gallons, and if usage exceeds that threshold, the cost per unit would incrementally increase. This rate structure incentivizes conservation and is popular in water-scarce regions.

With decreasing block rates, charges decrease for every unit (or block) of water used; for example, a customer might pay \$4.00 for each unit of water up to a thousand gallons, and if usage exceeds that threshold, the cost per unit would incrementally decrease. This rate structure is popular in water-rich regions and farming communities.

Seasonal Rates: Customers are charged different rates based on the season. This rate structure incentivizes water conservation; for example, rates may be higher in the summer due to higher demand and use.

Quiz

Match the water rate structure to its definition:

- a. Flat rates
- b. Uniform rates
- c. Increasing block rate
- d. Decreasing block rate
- e. Seasonal rate
- f. Lifeline rate
- i. The rate increases for each additional volumetric unit used
- ii. The rate changes based on time period, driven by changes in demand
- iii. The rate is the same for each household no matter the volumetric units used
- iv. The rate decreases for each additional volumetric unit used
- v. The rate is lower for a predetermined volume, and the rate structure changes for volumetric units beyond that amount
- vi. The rate is charged based on how many volumetric units a household uses

Answers: a-iii, b-vi, c-i, d-iv, e-ii, f-v

⁴ Skeo Solutions, Inc. (2019). *A Water Utility Manager's Guide to Community Stewardship*. Denver, CO: American Water Works Association. <https://www.awwa.org/Portals/0/AWWA/Communications/AWaterUtilityManagersGuidetoCommunityStewardship.pdf>

⁵ Office of Water. (2017, February 3). *Understanding Your Water Bill* [Overviews and Factsheets]. US EPA. <https://www.epa.gov/watersense/understanding-your-water-bill>

Lifeline Rates: Customers are charged a lower or fixed rate for an estimated volume of water deemed necessary to cover basic needs; usage beyond this set amount is charged based on a different rate structure.

Governance and Management

There are three main models of local utility governance and management: publicly owned; regional authority or special district; and privately owned/investor-owned.⁶

Closer Look



(For more information on the management and oversight of water supply systems, see the [River Network Drinking Water Guide](#), pg. 18.)

Publicly Owned

Most water, wastewater, and stormwater utilities are public entities that are part of a local government. Usually, the utility is one department within the local government. Its revenue is comprised of fees collected from customers.

In this scenario, management best practice calls for a utility to be run as an “enterprise fund” — this means that utility revenue, expenses, and expenditures should be somewhat independent of the parent government, and utility funds should not be commingled with local government general funds. In an effort to support wider needs, there is precedent for emergency transfers from utilities to municipalities, however, these should be small and/or one-time reallocations. Generally, advocates should regard large, repeated, and/or arbitrary fund transfers between utility enterprise funds and government general operating funds as a red flag.

When a water utility is publicly owned, its agenda, direction and priorities are usually determined by elected officials who sit on the local city council or county board. In some larger municipalities, a specific committee (e.g. a board of water commissioners) may govern the water supply system. Decision-making can be complicated with elected officials at the helm — some may support popular options rather than best options, which could compromise management and affordability initiatives in the long term.

Revenue – The money that the water utility collects in rates and fees from its customers.

⁶ RiverNetwork. (2019, July 24). *Understanding how the Money is Supposed to Flow - Water Infrastructure Funding and Finance* 101. https://youtu.be/XT86raPy_j0

Regional Authority or Special District

Another public model is for the utility to be a separate authority or special district that is not a part of a specific city or county. Often these are regional entities that serve multiple local governments; for example, the Metropolitan Water Reclamation District of Greater Chicago, and the Douglasville-Douglas County Water and Sewer Authority in Georgia.

The governing board of a regional authority or special district is usually made up of individuals from the municipalities that are served by the utility; based on the rules set when the board is established, members may be appointed or elected. In this model, the utility tends to have less oversight from local governments — the municipality representatives must work together to find solutions, set rates and make infrastructure investment decisions for the collective.

Privately-Owned/Investor-Owned

(In the context of this document) private water systems are for-profit companies that provide service to a city, county, or combination of local governments and operate under the management of investors or shareholders. Private utilities are not subject to the same local oversight as the previous two utility models: A board of directors makes governing decisions related to rates, and these are reviewed and approved by a state regulator (ex. a public service commission).

In many cases, private water systems are convened when a local government is unable to manage utility assets and finances. Sometimes the private company owns the utility outright, and in other cases, there is a partnership wherein the municipality maintains ownership and the private company operates and maintains the system.

Lack of customer accountability is a primary concern with privately owned utilities — opponents of privatization highlight that these entities may be more concerned with profits than keeping water services affordable.

Quiz

The three main models of local utility governance and management are: (select all that apply)

- a. Publicly owned with local oversight (i.e. the water utility is a department of the local government and its finances are separate from the local government)
- b. Regional authorities with regional and local oversight (i.e. the utility is a separate public entity that serves multiple municipalities or regions)
- c. Privately owned with local oversight (i.e. the utility is owned by investors but has the same local oversight as a publicly owned utility)

Answers: a, b (c is not a correct answer because private utilities are regulated at state level, not the local level)

Public Comment – A formal process whereby feedback and suggestions can be made about a proposed rule or regulation that is under consideration by the governing agency. Public comments are one form of influence that individuals or groups have on local, state, and federal decision-making.

See the [Decision-Making and Influence section](#) for more details about how to get involved and make your voice heard

Oversight

Typically, a local government or appointed governing board regulates public utilities and regional authorities, whereas private utilities are regulated by state commissions (e.g. public utility commissions/PUCs or public service commissions/PSCs).⁷

When a utility that is governed by a state commission wants to increase or change a water rate structure, there is typically a rate hearing — the utility must present the details of and offer justification for the proposed change, and also provide and receive testimony (oral and written) from customers, advocates, and coalitions. Rate hearings and presentations are great opportunities to register public input.

For utilities that are not regulated by commission, rate change discussions would likely take place during utility board meetings or at city council meetings. Advocates may offer comment during these meetings, but take note:

Tip



Utility staff often prefer to be engaged prior to public comment periods, so it may be more courteous, effective, and advantageous to reach out to individuals by email and/or phone beforehand.

Quiz

True or False: Only privately owned utilities receive fiscal oversight from state commissions.

Answer: False – In some states, like Wisconsin, the state commission regulates all utilities, both private and public.

Oversight structures and practices vary throughout the country.⁸ For instance, water utilities are not regulated by commission in Georgia, Michigan, Minnesota, North Dakota, South Dakota, and the District of Columbia, while, on the other hand, Wisconsin has a public service commission that regulates all utilities in the state, both public and private. In some states there is a separate entity that plays more of an advocacy and investigative role, such as the [South Carolina Office of Regulatory Staff](#) which “represents the public interest” in utility regulation for major industries, including water; similar agencies tend to be good partners for advocacy work.

⁷ National Research Council. (2002). *Privatization of Water Services in the United States: An Assessment of Issues and Experience*, Chapter: 5. Structural, Pricing, and Regulatory Issues. <https://www.nap.edu/read/10135/chapter/7#92>

⁸ Isaac Berahzer, S., Hughes, J., and Riggs, E. (2017, July 10). *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs*. UNC School of Government: Environmental Finance Center. <https://efc.sog.unc.edu/project/navigating-legal-pathways-rate-funded-customer-assistance-programs>.

Quiz

What governmental bodies typically regulate fiscal responsibility of a water utility? (choose all that apply)

- a. State environmental department
- b. Public utilities commissions
- c. Public service commissions
- d. State regulatory commission
- e. State legislature

Answers: b, c, d

Resources

Due to oversight variability and complexities, advocates might find the following resources helpful:

- [Navigating Legal Pathways to Rate-Funded Customer Assistance Programs: A Guide for Water and Wastewater Utilities](#). This resource is a good starting point for a digestible overview of how water utilities are governed state to state. The report introduction gives a succinct overview of rate setting and CAPs (which are discussed later), and advocates can download two-page policy and legal analysis summaries for each state.
- [National Association of Regulatory Utility Commissioners \(NARUC\)](#). This is a good place to find regulatory commission contact information. (A governor or state legislature appoints most commissioners, but more than a dozen states elect their commissioners.) Writing letters to commissioners is a great way to get on their radars: It is good practice for a group of like-minded individuals and organizations to deliver their objections or suggestions as a collective.

TAKEAWAY

- Understanding utility rate structures is important to understand how households are being charged, and it can help customers and advocates identify appropriate interventions to improve affordability outcomes.
- Public utilities commission/PUCs or the public service commissions/PSCs regulate fiscal matters for privately owned utilities (and some public utilities).
- Given the variability in utility governance, management, and oversight, advocates should consider referencing the above-mentioned resources to find pertinent information for their state.

UNDERSTANDING YOUR WATER BILL

A [water bill](#) is one of the most important resources that advocates can use to get a glimpse of how utilities make decisions about rates and infrastructure investment needs.

Water bills typically include information about water usage and detail corresponding charges for usage and infrastructure operations.⁹ However, bills may also

9 Office of Water. (2017, February 3). *Understanding Your Water Bill* [Overviews and Factsheets]. US EPA. <https://www.epa.gov/watersense/understanding-your-water-bill>



Profile: The Fok Family

include other expenses that range from wastewater and stormwater charges to trash and recycling services. Many of the charges on a water bill are fixed, i.e. charges that not impacted by water use and stay the same from month to month.

Exploring the terminology and components of a water bill can enlighten customers and advocates, and help them better interpret what factors may be affecting water affordability, e.g. usage trends, system upgrades, or seasonal considerations. Below is a list of terms/items that are commonly included on water bills; remember, this list is not exhaustive, some items might be worded differently, and all of the enumerated elements may not be included in every bill.

Identification

Account Number: This number correlates to your account, it is a unique qualifier specific to you/your household/your business.

Service Class: This signifies your account type, or how your water service is classified (e.g. residential or commercial).

Service Period: The contents of a bill are specific to this interval of time; bills are usually generated month to month but sometimes may be issued bimonthly or quarterly.

Your Meter

Meter Number: Your meter measures how much water is used in your household per billing cycle, and this serial number is unique to your meter. Though it varies from region to region, meters typically are located in a front yard near the curb (in a box labeled “water”); outside, at the back of a house; or inside a house, in the basement or under a sink.

Meter Reading (Previous Read and Current Read): Utilities inspect (i.e. take readings) of your meter to document the amount of water used between billing periods, and you should see these numbers on your bill. Your meter will show what unit is being used to measure water — gallons or centum cubic feet (CCFs) — and your bill should explicitly identify this unit of measure, too.

Measurements

Most common units for measuring water use

- CCF* (centum cubic feet)
- HCF (hundred cubic feet)
- Gallon

*One CCF = 748 gallons

Meter Reading Date: This is the date that the utility read your water meter.

E or Estimated Reading: For metered accounts, an estimated reading occurs when your utility cannot access your meter; in these instances, the bill is based on the amount of water used in previous cycles. For non-metered accounts, the estimated reading is based on property characteristics such as building size, lot size, and/or number of water fixtures (e.g. sinks).

Charges and Fees

Base/Fixed/Service: This fee goes toward the operating costs of the utility and is typically the same every billing period because it's not tied to water usage.

Water Volume or Usage: This charge indicates the amount of water that your household used; on the bill, customers will likely see the charge applied to the water volume, but if your utility uses a block rate, you may see multiple lines that reflect charges for each block.

Wastewater/Sewer Volume: This charge indicates the amount of water discharged to the sanitary sewer or wastewater system; typically, households do not have wastewater meters, so the charge is likely based on the water volume or usage amount (as the utility assumes that all of the water used by the household was subsequently discharged to the wastewater system).

Wastewater/Sewer, Fixed: This fee goes toward operating costs specific to wastewater and sewer maintenance.

Reconnection: This is the cost to restore water service after a shutoff.

Scavenger: This charge is for trash and recycling services, frequently included as a bill line item.

Stormwater: This charge is associated with municipal stormwater management, which may include collection by grey infrastructure (i.e. pipes and treatment plants) or green infrastructure (e.g. nature-based solutions that use soil and vegetation to capture and infiltrate stormwater). Climate change impacts (e.g. more severe and frequent storms) are making such fees more regular.¹⁰

Non-metered Annual Charge: This fee is used to cover other municipal commitments, for example, pension contributions or environmental cleanup.

Penalty: This is an imposed/incurred charge due to bill nonpayment.

¹⁰ *What Is Stormwater Management and Why Is It Important?* (2018, January 31). EEC Environmental. <https://www.eecenvironmental.com/what-is-stormwater-management/>

Payment

Balance: This is the amount that you owe; any credit and/or outstanding balances would be reflected in this total.

Due date: This is the date by which you must pay your bill.

Previous Bill Amount: These are charges associated with your previous bill, often included for ease of reference.

TAKEAWAY

- Fixed fees and unrelated charges (e.g. trash collection) on a water bill can affect affordability because they are not influenced by actual usage or conservation efforts.
- Although bill terminology can vary, becoming acquainted with key terms can help customers understand the nature and purpose of their charges.

UTILITY PROGRAMS AND PRACTICES

Utilities and local governments have several tools at their disposal to improve water affordability outcomes, including equitable rate setting and assistance programs, transparent billing practices, and improved management approaches. However, implementing these strategies takes time and resources, and many utilities, especially in smaller, economically-disadvantaged communities, may not have the capacity to deal with the challenges.

This section will outline some of these strategies, looking at what utilities need to implement such policies and practices, and providing case examples of communities that are successfully applying these principles.

Equitable Rate Setting and Customer Assistance Programs (CAPs)

The most common ways to charge for water are uniform rate structures, decreasing block structures, increasing block structures, and lifeline rates ([all defined earlier in this section](#)). But it's important to remember that water rates alone do not dictate whether water bills are affordable.

Equitable rate setting, or appropriate water rate setting, uses different rate structures for different customer classes. This approach can improve water affordability outcomes by accounting for ability to pay (income) and consumer type (commercial vs residential),¹¹ which can

Equitable Rate Structure – Rate structures that account for consumer type and ability to pay (also see “equity” entry)

Customer Assistance Programs (CAPs) – Customer assistance programs (CAPs) are used as a supportive mechanism for households who cannot afford to pay as dictated by the standard rate structure. CAPs are designed to help customers manage past-due bills

¹¹ Office of Water. (2017, February 3). *Understanding Your Water Bill* [Overviews and Factsheets]. US EPA. <https://www.epa.gov/watersense/understanding-your-water-bill>

ensure that the utility is able to recoup enough revenue to fully operate and maintain the water distribution system without burdening low- and fixed-income ratepayers; see the [River Network Drinking Water Guide](#) for more information about the cost of water.¹²

To achieve equitable rate structures, utilities should consider the following strategies:

Set a reasonable ratio between the base and volumetric charges. A relatively high base charge produces a more stable revenue stream for the utility, but given that the base charge is unaffected by water usage, customers who are trying to lower their bills through conservation and efficiency measures will see minimal effect. So utilities should work to find a sweet spot between a reasonable base/fixed/service charge and volumetric charge; see “Sample Water Bill from Cleveland” which illustrates such a fixed-to-volumetric charge ratio.

Consider lifeline rates. Lifeline rates often refer to a base fee for a volume of water that is deemed sufficient to cover essential, indoor water use. But utilities often define and implement lifeline rates differently, and employ them in different contexts. Sometimes the fee may be included with a fixed charge; in other cases, the utility sets a very low rate for the first few units of water, and the costs are essentially subsidized because the price is less than the expenses to treat and supply the water. In some instances, utilities dub a specific customer assistance program where the fixed rate is only available to qualified customers as a lifeline rate.

While lifeline rates are a way to address affordability concerns, there are some caveats that should be considered. For example, lifeline rates may have limited benefits for large or multigenerational households, many of which may be low-income. If the volume of water is not sufficient to serve all of the people in the home, these families risk using more water than the lifeline rate allows — they would be charged for the additional usage, inadvertently resulting in high or unaffordable water bills, or these families would lose access to a vital resource if water supply was stopped after the lifeline volume was used.

It’s also important to note that lifeline rates may not effectively reduce costs if a household’s water supply infrastructure (ex. the pipes that deliver water into the home) is leaky: It can appear that the household

¹² Midwest Assistance Program, the Midwest RCAP. (2011). *Formulate Great Rates: The Guide to Conducting a Rate Study for a Water System. Rural Community Assistance Partnership.* <https://www.rcapsolutions.org/wp-content/uploads/2013/06/RCAP-Formulate-Great-Rates.pdf>

Quiz

Which strategies can utilities can use to achieve equitable rate structures?

(choose all that apply)

- a. Lifeline rates
- b. A high base or fixed charge and low volumetric charge
- c. Rates based on customer classes
- d. Income qualified rates
- e. Debt forgiveness
- f. Customer assistance programs

Answers: a, b, c, d, e, f

Learn more about CAPs in the CNT and IB Environmental “Beyond the Water Bill” report, or by referring to the [Affordability](#) section.

Arrearage – An outstanding balance; overdue charges on a water bill can lead to penalty fees, water shutoffs, and other compounding, debt-driven issues.

is consuming more water than it actually is, which will increase the charged fees. A good way to check for leaks is to monitor the usage listed on the bill – if it fluctuates wildly from service period to service period, the infrastructure may warrant inspection.

Utilities can be thoughtful in how they operationalize lifeline rates by making sure not to keep rates artificially low. When customers who can afford to pay full cost are charged accordingly, utilities will have adequate and appropriate revenue that can be targeted and tailored to best assist low-income customers.

Establish customer-class and income-qualified rates.

Utilities can look at setting rates according to customer class or actual income. Customer class rates could be determined based on variables such as income bracket, water usage, or household type. With income-qualified rates, the water bill would be a set percentage of customer earnings.

Utilities can also offer customer assistance programs (CAPs), which are practices that provide targeted relief. Benefits of five types of CAPs — discounts, budget billing, monthly billing, debt forgiveness and replacing inefficient fixtures — are outlined below¹³:

Discount programs can reduce bill burden on fixed income or low-income households.

Budget billing averages the bill over the year, neutralizing seasonal fluctuations. Because customers pay the same amount every month they can budget proactively.

Monthly billing (versus quarterly) helps households adjust and monitor their activity closer to real-time; for example, a spike might prompt timely detection of a leak, or encourage better conservation efforts.

Debt forgiveness programs wipe away arrears after successful payment of a lower amount across a certain period of time. In addition to reducing the overall amount owed, and stopping the accumulation of additional, associated fees, debt forgiveness reduces emotional burden and diffuses the stress of the debt collection process.^{14 15}

13 AWWA. (2014). *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers*. American Water Works Association. <https://www.awwa.org/Portals/0/AWWA/ETS/Resources/ThinkingOutsidetheBill-2Ed.pdf>.

14 Walton, B. (2020, August 4). *Millions of Americans Are In Water Debt*. Circle of Blue. <https://www.circleofblue.org/2020/world/millions-of-americans-are-in-water-debt/>

15 Moler, K. (2016). *The Crisis of Unaffordable Water in the U.S.* Unitarian Universalist Service Committee. <https://www.uusc.org/press/the-crisis-of-unaffordable-water-in-the-u-s/>

Old, inefficient fixtures (e.g. toilets, faucets, dishwashers, washing machines, etc.) may be leaking or simply using more water than necessary. Utilities can work in their service communities to offer leak detection support, identify repair grants (if leaks are found), and ensure that customers have access to water efficient upgrades that can help reduce water use. Additionally, they might also monitor customer accounts to flag any higher than normal usage that would indicate issues with fixtures.

TAKEAWAY

- There are several equitable rate structures that can improve water affordability outcomes, including lifeline rates, customer-class based rates, and income-qualified rates. Each of these rates are modified to make water bills more affordable for low-income households.
- Customer Assistance Programs (CAPs) can support water affordability through reactive practices such as discounts, averaging water bills over the year, and removing demand-based fluctuations in costs



Profile: [Domitila Valerio](#)

Transparent and Accessible Billing Practices

It is common to focus on water rates when working to address affordability, but rates do not tell the full story.¹⁶ Water bills often contain several line items beyond usage charges, for example: fees for trash collection, stormwater management, and water infrastructure updates.

It is vital that utilities transparently delineate what charges on a water bill are influenced by customer usage versus charges that are fixed and not directly related to a household's behaviors and activities. Utilities should abide by these transparent billing best practices:

Provide non-English-language billing services.

Be specific and descriptive when presenting customer charges (e.g. gallons of water used, solid waste fees).

Use plain language to describe when a charge, fee, or rate has changed (either increased or decreased), and alert customers well in advance of any expected changes. Water bills frequently use industry terminology, some of which can be unclear to the general public. Using more accessible language can empower customers who are working to reduce their billing total.

Benchmark usage against community averages, or a comparable customer profile/composition. In some instances, it can be helpful for customers to contextualize

¹⁶ Wolf, A., McGraw, J., and Isaac Berahzer, S. (2020). *Beyond the Water Bill* (p. 26). Center for Neighborhood Technology.
<https://www.cnt.org/sites/default/files/publications/Beyond-the-Water-Bill.pdf>

water usage within their community. In the energy sector, it is common practice to include the average usage by geographic area or a similar customer type (e.g. single family household).

Include leak identification and efficiency upgrade opportunities in water bills. Older homes that have not undergone efficiency improvements or fixture upgrades will use more water, so even if rates are relatively low on a per-unit basis, bills for these households can still be high.

Tip



Affordability efforts must include help to improve and maximize a house's ability to function efficiently.

Show historical water use to aid behavior monitoring and leak detection. Some water bills have a bar chart that shows monthly water use for the past 12 months. This gives customers an opportunity to compare their usage to the same time last year; if there is a marked increase, perhaps there is a leak (see item 2 in "Sample Water Bill from Cleveland").

Sample Water Bill from Cleveland

Quiz

Transparent billing practices are important to water affordability because they:

(choose all that apply)

- Educate customers, helping them become more informed advocates
- Delineate the types of charges that would appear on a water bill
- Help customers understand what control they have in reducing water costs
- Further the understanding that affordability does not start and end with water rates, but rather, must be understood in the context of the full water bill.

Answers: a, b, c, d

City of Cleveland Division of Water
1201 Lakeside Avenue
Cleveland, OH 44114

Customer Name: JOHN DOE
Account Number: 0000000000
Service Address: 123 MAIN ST.
CLEVELAND, OH 44101

Due Date: January 29, 2019

Get Your Cleveland Water News Straight From The Tap - www.clevelandwater.com/news

Page 1 of 2

USAGE COMPARISON

2 Your Monthly Usage (in 1,000 cubic foot (MCF) increments)

Account Summary as of Jan 09, 2018

Previous Balance	42.33
Payments Received	-42.33
Balance Forward	0.00

Your current Bill has 2 Charges:

① Cleveland Water Charges (page 1)	27.10
② Local Charges (page 2)	22.27
Total Amount Due:	49.37

Meter Number	Previous Meter Read	Current Meter Read	Usage/Consumption				
Date	Read	Type	Date	Read	Type		
B 00000000	12/06/2018	17.3	ACTUAL	01/06/2019	17.9	ACTUAL	0.6 MCF

① Cleveland Water Current Charges

② www.clevelandwater.com | Billing Questions: 216.664.3130 | Emergency: 216.664.3060

Go Paperless. Go Green. Open your mail from your inbox instead of your mailbox. Create your account at www.clevelandwater.com.

3

Fixed Charge - 12-07-2018 to 01-06-2019	9.00
Water - 0.200 MCF at \$20.57 for first 0.200 MCF	4.11
Water - 0.400 MCF at \$34.97 per additional MCF	13.99
Cleveland Water Total	27.10

4

*Local and Other Current charges detailed on page 2

Please return this portion with payment made payable to City of Cleveland Division of Water - Do not send cash

City of Cleveland Division of Water 1201 Lakeside Avenue Cleveland, OH 44114	Account Number 0000000000	Due Date 01/29/2019	Total Amount Due \$49.37	Amount Enclosed
--	------------------------------	------------------------	------------------------------------	-----------------

Amount Paid: \$

Page 2 of 2

② Local & Other Current Charges

5 Questions on these items... please contact your city or municipality

ONLY RAIN DOWN THE STORM DRAIN - Help protect local waterways for a safe and sustainable environment. Don't dump yard waste, trash, oil, or chemicals in storm drains. Report dumping to (216) 664-DUMP (3967). Questions? Visit www.ClevelandWPC.com.

Billing Period 12-06-2018 to 01-06-2019	
Waste Collection Fee - 1 month(s) at \$8.75 per month	8.75
Billing Period 12-25-2018 to 01-25-2019	
Water Pollution Control Fixed Charge	6.00
Water Pollution Control Charge - 0.6 MCF at \$12.53 per MCF	7.52
Local & Other Current Charges Total	22.27

Smart meters

Shifting to smart meters is another critical opportunity to effectively improve data accessibility and transparency. Smart meters provide more detailed information about water consumption, and because they can be read remotely, both customers and utilities can access the information frequently and ascertain real-time insights that may uncover leaks or other possible issues. And like the energy sector, utilities can make smart meter data more accessible to customers and trusted partners (but only if data availability is prioritized as part of smart meter adoption).

While smart meters can help utilities create and target efficiency and affordability programs, it's important to remember that this technology is not cheap — an economically disadvantaged utility should thoughtfully prioritize its infrastructure investment projects and initiatives, and if smart meter adoption is desired, they should seek federal or state funding to facilitate requisition and installation.

Improved Asset Management and Equitable Investment Practices

Asset management simply refers to how a utility accounts for its water infrastructure and makes infrastructure investment decisions that consider repair needs, operational funding, asset maintenance, etc.¹⁷ Asset management is a common practice for large and/or financially healthy utilities that have the capacity to maintain and update asset inventories, capital improvement plans, and infrastructure drawings.

Utilities that can implement an infrastructure-wide asset management planning effort might consider the Integrated Water Resource Planning (IWRP) model. IWRP techniques strive to make existing services more efficient and less costly through scenario planning, participatory decision-making, and stakeholder coordination.¹⁸ The IWRP model is a benefit to utilities because they consider the interconnectedness of wastewater and stormwater, making their planning processes more holistic.

17 Office of Water. (2016, January 26). *Asset Management for Water and Wastewater Utilities* [Overviews and Factsheets]. US EPA. <https://www.epa.gov/sustainable-water-infrastructure/asset-management-water-and-wastewater-utilities>.

18 CNT. (2011). *The Role of Integrated Resource Planning in Improving Water Resource Management within the Great Lakes Region*. https://www.cnt.org/sites/default/files/publications/CNT_GreatLakesSustainableWater.pdf



An Integrated Water Resource Plan can help a utility answer questions pertaining to:

- Current system performance
- Risks and opportunities that warrant preparation (e.g. climate change)
- Stormwater management strategies
- Conservation strategies

In the process of answering these questions, a utility can decide what its future portfolio of projects and assets should be in order to maintain supply, reduce costs, and mitigate risks.¹⁹

Closer Look



Utilities that employ IWRP practices can increase efficiency and avoid unnecessary expenditures by improving existing infrastructure systems, promoting water conservation, and properly investing in green stormwater infrastructure (i.e. systems that use nature-based processes to manage stormwater and improve water quality);²⁰ see “Green Stormwater Infrastructure and Community Priorities” below for information on how such work can support multiple goals.

¹⁹ Loucks, Daniel P., and van Beek, E. (2017). “Water Resources Planning and Management: An Overview.” In *Water Resource Systems Planning and Management: An Introduction to Methods, Models, and Applications*, 1–49. Springer, Cham. https://doi.org/10.1007/978-3-319-44234-1_1.

²⁰ Palmer, D. R. and Lundberg, K. V. (n.d.). *Integrated Water Resource Planning*. Illinois State Water Survey. https://www.isws.illinois.edu/iswsdocs/wsp/iwrp_palmer_lundberg.pdf.

Water loss consequences and implications are explored more extensively in the [Affordability](#) section.

Regionalization – The process by which two or more nearby utilities merge into a single entity, bundle resources, coordinate processes (such as rate setting), establish new governance structures, and share resources.

Green Stormwater Infrastructure and Community Priorities¹

Municipalities can install green infrastructure to improve stormwater management thus increasing the lifespan of gray water infrastructure. Green infrastructure serves multiple purposes including flood protection, energy conservation, access to nature, improved health outcomes, and educational opportunities for the neighborhood.² However, it is also important to note that some types of GSI are tied to property value increases, which may benefit some, but can create displacement concerns for others.

¹ CNT. (2020). Green Values Strategy Guide: Linking Green Infrastructure Benefits to Community Priorities.

<https://www.cnt.org/sites/default/files/publications/Green%20Values%20Strategy%20Guide.pdf>

² Clean Water for All, Black Women's Health Imperative, Policy Link, NRDC. (2018). Water, Health, and Equity: The Infrastructure Crisis Facing Low-Income Communities and Communities of Color — and How to Solve It. Clean Water for All. https://www.policylink.org/sites/default/files/CWC_Report_Full_report_lowres.pdf

While a comprehensive asset management strategy is recommended for all utilities, it can be daunting for smaller, cash-strapped, and economically challenged utilities with limited resources to establish such a framework. (They may not have a complete picture of their water infrastructure, let alone a multi-year asset management plan.) These utilities should complete interim or one-off efforts that move the needle on necessary water infrastructure improvements: Water loss auditing and management, service sharing, regionalization, and technical assistance are four ways they can work up to an integrated asset management approach.

	GREEN STORMWATER INFRASTRUCTURE									
	Linear Buffer Park / Trail	Stormwater Park	Stormwater Planter	Parkway Bioswale	Rain Garden	Street Trees	Green Roof	Permeable Pavement	Permeable Bike Lane	District Stormwater
HEALTH BENEFITS										
Improved Outdoor Air Quality	•••	•	••	•	••	••	•			••
Improved Indoor Environmental Quality	•	•••	••	•	•	•••	•	••	••	•
Reduced Noise Pollution	•••						•••	••	••	••
Reduced Heat Stress	••	•••	•	•	•	••	•			••
Improved Community Cohesion + Mental Health	•	•••	••	•	•	••	•			••
ECONOMIC BENEFITS										
Improved Workforce Development / Job Creation	•••	•••		•		•••	•	•	•	•••
Increased Vacant Land Reactivation	•••	•••			•••					•••
Increased Property Values	••	•••	•	••	•	••	•••			•••
Increased Sales Revenue			••	••	••	••			••	••
Increased Recreational Revenue	•••	•••							•••	
CLIMATE ADAPTATION / RESILIENCE										
Reduced Flooding	•••	•••	••	••	••	•••	••	•••	••	•••
Reduced Urban Heat Island Temperatures	••	•••	•	•	•	•••	•••	•	•	•••
Protected Water Quality (reduced runoff and combined sewer overflows)	•••	•••	••	••	••	•••	••	•••	••	•••
CLIMATE MITIGATION / AVOIDANCE										
Reduced Greenhouse Gases	•••	•••	•••	•••	•••	•••	•••	•	•	•••
Reduced Energy / Fuel Use	••	••				•••	•••			••
TRANSPORTATION BENEFITS										
Reduced On-Street Flooding	••	••	••	••	••	•••	•	•••	•••	•••
Improved Safety	••		•	•					••	••
Increased Opportunities for Active Transportation	•••	•••	••	•••	••				•••	••
••• high benefit •• medium benefit • low benefit										

Water Loss Auditing and Management

Water loss generally refers to water that has been treated to drinking standards and sent out for delivery by the utility, but gets lost somewhere in the system, e.g. through major water main breaks, small cracks in the distribution system, and/or leaks in household fixtures.²¹ Water loss significantly impacts water affordability.

Conducting audits to assess both water use and loss is a critical first step for utilities to identify faults in their infrastructure and establish a water loss strategy within a comprehensive asset management plan.²² Some states require that utilities conduct water audits annually, while others are more lax — advocates can find out what their state requires by visiting the [National Resources Defense Council \(NRDC\) interactive map](#).

The American Water Works Association (AWWA)

The American Water Works Association M36 Manual is the industry standard on water loss management, used by large and small utilities across the country. It recommends beginning with an infrastructure assessment that evaluates direct effects on customers (e.g. costs, shutoffs, frequency and occurrence of leaks, water main breaks, etc.), followed by an inclusive and community-driven investment decision-making process that outlines key points of action related to infrastructure replacement and repair, metering practices, water pressure management, and other related topics.²³ Utilities of any size can use the [AWWA water loss auditing software](#), and small utilities can make use of the Environmental Protection Agency (EPA) [Check-Up Program for Small Systems](#), a free asset management software.

Service Sharing

One strategy recommended in the IWRP process is instituting a regional service sharing arrangement. Service sharing is when multiple utilities seek to reduce administrative costs by purchasing or contracting water services cooperatively.²⁴ For example, a utility may

Quiz

Asset management practices include which of the following: (choose all that apply)

- a. Auditing leaks and weak spots in infrastructure systems
- b. Investing in green stormwater infrastructure
- c. Implementing a water loss program
- d. Identifying opportunities to share resources among utilities
- e. Creating near-, mid-, and long-term operations plans
- f. Requesting technical support

Answers: a, b, c, d, e, f

21 Office of Water. (2013, July). *Water Audits and Water Loss Control for Public Water Systems*. U.S. Environmental Protection Agency. <https://www.epa.gov/sites/production/files/2015-04/documents/epa816f13002.pdf>.

22 Ibid.

23 Montag, C. (2019, May). *Water/Color: A Study of Race and the Water Affordability Crisis in America's Cities*. The NAACP Legal Defense and Educational Fund, Inc.. https://www.naacpldf.org/wp-content/uploads/Water_Report_Executive-Summary_5_21_19_FINAL-V2.pdf.

24 The Massachusetts Association of Regional Planning Agencies. (2012). Ways municipalities can share services. <https://www.regionalbestpractices.org/right-for-you/what-is-regionalization/share-services/>

purchase water services from another utility if it is less expensive than the utility paying for the operation and management of its own system.

Utilities might also use service sharing to save money on engineering services or expensive water infrastructure tools (e.g. jointly purchasing excavation or leak detection tools, or buying water treatment chemicals in bulk).

Regionalization

Regionalization, another IWRP strategy, is the process by which water utility ownership, operations, or management are consolidated within a specific geographic or hydrogeologic area. This can achieve increased production and regulation efficiency, improved service reliability, lower costs through economies of scale (to a certain extent), and better sustainability by working at the water basin or watershed level.^{25, 26} Additionally, utilities may earn more revenue through regionalization because the customer base may become more mixed and income diverse.

However, utilities may face policy or internal administrative barriers to regionalization. These may include feared loss of local control, not having a coordinating agency, larger upfront capital costs that call for managing multiple grants, and a general lack of support and knowledge for regionalization as a concept.²⁷

Technical Assistance

All states have technical assistance opportunities, whereby utilities can access services related to asset management, rate setting and other needs. Below are some examples:

Rural Water Associations (NRWA)

The organization receives federal and state funding to assist rural systems, which tend to be smaller and have less internal capacity. Staff “circuit riders” travel to rural utilities to provide onsite assistance.

See this [Greater Cincinnati case study](#) for insights about regionalization efforts.

Regionalization – The process by which two or more nearby utilities merge into a single entity, bundle resources, coordinate processes (such as rate setting), establish new governance structures, and share resources.

25 Beecher, J. A., Higbee, J., Menzel, A., ; Dooley, R. (1996, July). *The Regionalization of Water Utilities: Perspectives, Literature Review, and Annotated Bibliography*. <https://pubs.naruc.org/pub/48860212-155D-0A36-3115-26BCFC16B761>.

26 Martin, D. “Regionalization: A Potential Solution to Affordability and Capacity Issues of Small Systems.” *Rural Matters*, Summer 2009, p.8-11. <https://www.rcap.org/wp-content/uploads/2016/01/RuralMatters-Summer2009-1.pdf>.

27 Ibid.

Rural Community Assistance Partnership (RCAP)

A national network of nonprofit organizations that provide support to rural communities across the country. There are six regional offices that manage programs and field work, and the national office manages a USDA program for water and wastewater technical assistance and training for communities along the United States/Mexico border.

Regional Councils (RCs) and Council of Governments (COGs)

Of the 39,000 local governments in the United States, more than 35,000 are served by COGs and RCs. In most cases, these bodies provide free or low-cost assistance with applying for water and wastewater infrastructure funding and identifying which funding source may be the best fit. There is not a national searchable database for where to find local or regional councils, but advocates can look up their state to find specific resources.

EPA Environmental Finance Centers

The Centers often have grants from federal agencies that allow them to provide free technical assistance and resources to water utilities, particularly on issues of funding, rate setting, asset management and other areas of financial management. Their network of organizations serve all 10 EPA regions.



TAKEAWAY

- Water rate structures are not the only input that can create unaffordable water bills — fixed fees (which are not affected by conservation or efficiency measures) and undiagnosed leaky pipes also drive up costs.
- Comprehensive asset management is a useful strategy for utilities to improve water affordability. Multiple resources exist to improve asset management including the American Water Works Association M36 Manual and the Integrated Water Resource Planning model.
- Asset management strategies allow utilities to better understand the weaknesses in their water infrastructure systems and identify avenues to improve cost efficiencies, such as green stormwater infrastructure. Addressing water loss can lead to more affordable water bills for households.
- Utilities can pursue regionalization, or regional service sharing, as a way to save on operation and management costs.
- Reducing operation and management costs can keep utilities from implementing steep rate increases, and thereby, keep water bills affordable.

RECOMMENDED ACTIONS

Utilities have competing priorities: keep rates low to better ensure affordability, but set rates high enough to incentivize conservation and collect enough revenue to update and maintain old and underinvested water systems. Given this financial burden, they typically pass on these infrastructure improvement and investment costs to customers in the form of rate increases or additional fees.

To prevent affordability concerns from ballooning and morphing, utilities and individuals should use the myriad tools at their disposal.

Utilities: Improve Asset Management

There are numerous asset management best practices that utilities can use to improve efficiency in their own systems and pass these benefits along to customers, including:

Instituting a comprehensive asset management plan (ideally an Integrated Water Resources Planning approach) that highlights the interconnectivity among water, wastewater, and stormwater, and strives to achieve equity outcomes.

Affordability – According to the Pacific Institute, water is affordable when its cost does not prohibit access to the resource, nor interfere with other essential expenditures (ex. food, shelter, electricity).



Profile:
[Exasperated utility manager](#)

See [The Future of Affordability Programs](#) infographic.

Taking interim steps toward a comprehensive asset management approach, which can include: water loss auditing and management, service sharing, regionalization, and seeking technical assistance.

Utilities: Pursue State and Federal Funding, and Low-Cost Financing

Much of America's water infrastructure was installed in the early 20th Century with the use of federal funds, but today, the burden to finance and fund infrastructure falls largely to local stakeholders. Utilities may feel fiscally unprepared to implement many of the aforementioned recommendations — addressing rate restructuring efforts, stopping water shutoffs, and implementing customer assistance programs may improve revenue collection in the medium or long term, but utilities need to operate in the short term, and if they are financially struggling to maintain operations in the current moment, implementing affordability or assistance programs may seem out of reach.

Federal and state policy offer several funding, financing, and technical assistance opportunities. It is incumbent upon both utilities and municipalities to be intentional and thoughtful in identifying federal and state resources, and petitioning for increased funding and support for water infrastructure investments. “The Future of Water Affordability” graphic shows a set of factors that need to be present to support affordability, equity, and maintenance imperatives, for the benefit of customer safety and broader social and environmental efforts.

Individuals: Understand Water Utility Governance, Practices, and Oversight

By learning the basics of utility governance, oversight, rate setting and billing practices, advocates can get a better sense of what informs decision-making and the ways in which they might influence those decisions to achieve equitable and affordable outcomes.

Advocates should use this information to feel more comfortable and ask informed questions at rate hearings or community, city council, or water board meetings. This information can also help advocates, community groups, or coalitions when they reach out to government officials, because they'll be able to highlight what affordability programs, infrastructure investments, or other areas of concern might benefit from support and funding.

Individuals: Take Up Community Relations and Outreach Efforts

Visit the [Decision-Making and Influence section](#) to find guiding questions that can help you establish the state of affairs in your community.

In service of trust-building and ensuring that decision-making is transparent and accessible, advocates should reach out to their utility or elected officials to find out about community advisory boards. Such bodies are tasked with representing the best interests of the community, so they may have established campaigns and initiatives that advocates can move forward (or there may be opportunity to form a community advisory board). A good example of a community advisory board is the Massachusetts Water Resources Authority Advisory Board (MWRD Board), which provides financial oversight, tracks regulations and legislation, and provides education resources to communities.



ADDITIONAL INFORMATION AND RESOURCES

Case Studies

Case Study: Bellingham, Wash.²⁸

Inventorying Infrastructure

The City of Bellingham wanted to extend the life of its 70-plus year old water system, and it hired a consultant to assess its condition.²⁹ The consultant used a three-tiered assessment approach — visual testing, excavation and sample collection, and physical examination — that progressively accounted for costs and degree of labor, and the move from one tier to the next required completion of the previous tier. This approach demonstrates that a thoughtfully designed set of steps can help a utility establish an asset management framework.

Case Study: Denver

Integrated Water Resource Management

In 1997, Denver Water began using an Integrated Resource Plan that is noted for its optimization approach to making cost-effective decisions.

Denver Water reviews water collection, treatment, distribution, and recycling needs in order to advise for future demand and use. The process in developing the plan included collecting data, deciding on water system design criteria, considering demand-management alternatives, calculating optimized options, and selecting a the final plan. Over time, the plan began to evaluate climate change impacts.³⁰

The utility considers energy cost, pressure levels, tank turnover, and tank recovery as part of its optimization criteria. After setting up the plan and implementing next steps, Denver Water continues to evaluate the system and reinitiate planning.³¹

28 Buonadonna, D., and Cleys, T. (2017, May 3). *Lessons on Rightsizing Water and Sewer Infrastructure Projects*. Water Online. <https://www.wateronline.com/doc/lessons-on-rightsizing-water-and-sewer-infrastructure-projects-0001>.

29 Public Works Department. (2021). "Water Utility." *City of Bellingham*. <https://cob.org/services/utilities/water-utility>

30 Denver Water. (2020). "Adaptation Planning." Denver Water. <https://www.denverwater.org/your-water/water-supply-and-planning/climate-change/adaptation-planning>.

31 Szana, K. (2018, March 19). *Denver Water Dynamic and Adaptive Master Plan*. Water Research Foundation. <https://www.waterrf.org/sites/default/files/file/2019-07/IWN-Szana.pdf>.

Case Study: Colorado Springs, Colo.³²

Integrated Water Resource Management

Colorado Springs, Colo. is a large city far from a water source. It draws from three different river basins, and the water travels through up to 100 miles of piping to get to the city.

In 2014, Colorado Springs Utilities began developing of an integrated water resource plan for the next 50 years. The goal of the plan was to address demand and sustainability of its water supply in a way that reflected community values and climate change adaptation needs. The plan assessed current system performance; highlighted risks and opportunities; identified projects, programs and policies for implementation; and mapped out future decision-making points. The assessment cited climate change, changes in demand, water rights challenges, infrastructure issues, environmentally driven water source concerns, and federal and state policy changes as risks, all of which could affect reliability, costs, and quality of its future water supply.

After establishing its acceptable level of risk, Colorado Springs Utilities identified relevant strategic responses such as conservation, reuse of non-potable water, agriculture water transfers, and storage methods. To evaluate these strategies, the utility considered performance, logistics, finances, environmental impacts, and social impacts. It also actively engaged its community by sharing updates via website, distributing flyers, organizing focus groups, surveying stakeholders for their input, holding open houses, doing community presentations, and convening an advisory group to inform the process.

Case Study: Successful Regionalization in Greater Cincinnati³³

Regionalization

The Greater Cincinnati Water Works (GCWW) is a large-scale water system that serves three Ohio counties and parts of northern Kentucky.³⁴ In its regionalization efforts, GCWW offers its partner utilities and nearby smaller systems a slew of services, including lab-testing, billing support, call center operations, project financing, engineering, and construction-management. It also allows the smaller utilities to decide what type of partnership makes the most sense for them, such as joint contracting, bulk purchasing, bundling debt to access better bond ratings, or relinquishing full control to GCWW.

To make sure all parties are comfortable with the collaboration before endeavoring to create a regionalized utility, GCWW suggests that large utilities should reach out to first establish service sharing agreements or other smaller-scale partnerships.

32 Lusk, K. (2016, July). *Integrated Water Resource Plan: The Big Picture*. Colorado Springs. https://coloradosprings.gov/sites/default/files/pk_bd_july.2016.util_int_water_res.pdf.

33 Martin, D. "Large Systems Are Critical to Making Regional Solutions Work: A Case of Successful Regionalization in Greater Cincinnati." *Rural Matters*, Summer 2009, p.12-14. <https://www.rcap.org/wp-content/uploads/2016/01/RuralMatters-Summer2009-1.pdf>.

34 Greater Cincinnati Water Works. (2021). "Service Area." *City of Cincinnati*. <https://www.cincinnati-oh.gov/water/about/water-source-service-area>

Toledo Area Water Authority (TAWA), Ohio

Regionalization

In 2018, in an effort to spread fixed and operations costs across multiple jurisdictions, the City of Toledo, Ohio and its surrounding communities began talks to regionalize the water utility. The motivation was that such action could keep water costs affordable and allow neighboring communities to be involved in rate setting. The bid for regionalization was approved in 2019.³⁵

Initially, Toledo residents did express concern that regionalization would end up their water rates.³⁶ Rates were raised across the board, but it's important to note that rates likely would have increased regardless of the proposal; local advocacy groups continue to monitor impacts and benefits of the regionalization effort.³⁷

For more case studies on customer assistance programs, see the [Affordability](#) section.

Resources

[The Case for Fixing the Leaks](#) (pgs. 7-9) This short report identifies the pitfalls of water loss and provides suggestions for how utilities can begin to address the issue.

[The Role of Integrated Resource Planning in Improving Water Resource Management within the Great Lakes Region](#) (pgs. 11, 20-23) This paper lays out the benefits of integrated resource planning within the Great Lakes Region, looking at the importance of a holistic approach to water management.

[Blueprint for One Water](#) (pgs. 1-9) This report provides an overview for the rationale and possibilities of an integrated water resource plan and outlines steps to implement a plan, and presents case studies.

[The Road to Regionalization](#) (pgs. 11-20) This magazine by the Rural Community Assistance Partnership provides several case studies of the benefits that rural communities have derived from regionalization.

[The Regionalization of Water Utilities: Perspectives, Literature Review, and Annotated Bibliography](#) (pgs. 9-12) This structures regionalization as a set of public policies and resource planning frameworks that create institutional changes.

[Drinking Water Infrastructure: Who pays and how \(and for what?\)](#) (pgs. 24-26) This report guides an advocate through the decisions that a water utility makes, and also provides ideas for how utilities can manage affordability while addressing all of their responsibilities.

35 Elms, S. (2019, August 16). *Toledo, suburbs poised to approve regional water agreement*. The Blade. <https://www.toledoblade.com/local/2019/08/16/toledo-suburbs-maumee-perrysburg-sylvania-whitehouse-regional-water-agreement/stories/20190816129>.

36 *Toledo Area Wrestles with Regional Water*. (2018, June 6). Impact Ohio. <https://impactohio.org/toledoregionalwater/>

37 Elms, S. (2019, November 26). *City Council Approves 2020 Regional Water Rates*. The Blade. <https://www.toledoblade.com/local/city/2019/11/26/toledo-city-council-approves-2020-regional-water-rates/stories/20191126135>.

[Asset Management for Water and Wastewater Utilities](#) This EPA webpage delves into resources about asset management. It also includes workshop materials with a story line to help a reader visualize how a utility manager may practice asset management.

[Water Works: The Job Creation Potential of Repairing America's Water Infrastructure](#) (pgs. 6-8) This resource looks at the impact of water infrastructure investment on economic development within communities.

Racial equity impact assessments
[Race Forward: The Center for Racial Justice Innovation](#) suggests ten guiding steps for completing a REIA

1. Identify stakeholders
2. Engage stakeholders
3. Identify and document racial inequities
4. Examine causes of inequities
5. Clarify the purpose of the project
6. Consider adverse impacts
7. Advance equitable impacts
8. Examine alternatives or improvements
9. Ensure viability and sustainability
10. Identify success indicators.

[Racial Equity Impact Assessment \(REIA\)](#) Racial equity impact assessments (REIA) look at how a particular action or decision will affect different racial and ethnic groups.³⁸ The outcome of a REIA should present an analysis of proposed policies, practices, budgetary decisions, initiatives, and other related inputs, evaluating how those factors might adversely impact already vulnerable communities. This webpage provides an overarching explanation of a racial equity impact assessment and gives examples of REIAs in practice.

[Racial Equity Impact Assessment Toolkit](#) This toolkit provides several resources on how to do a racial equity impact assessment.

[Great Lakes Water Infrastructure Project Issue Brief: Water Affordability](#) (pgs. 1-2) This brief summarizes how increasing water rates disproportionately affect financially distressed households and offers best practices related to water affordability.

[The Invisible Crisis: Water Affordability in the United States](#) (pgs. 42-45) This report discusses the consequences and threats of not having affordable water, and highlights how equitable rate structures and affordability programs can help alleviate the crisis.

[River Network and WaterNow Alliance: Building Trust Between Community Groups and Water Systems](#). This developing initiative is working to provide a roadmap with recommendations and best practices for “partnership-building” that it defines as “efforts to develop a strong and authentic relationship between a local community group and water system that is built on trust and focused on achieving shared goals related to equitable and sustainable water management.”

38 Applied Research Center. (2009, March 31). *Racial Equity Impact Assessment Toolkit*. Race Forward.
<https://www.raceforward.org/practice/tools/racial-equity-impact-assessment-toolkit>.

Infrastructure

Objectives

- Realize the effect that aging, neglected water infrastructure has on water affordability
- Understand how federal, state, and local governments pay for water infrastructure
- Identify which government programs can be used to fund infrastructure projects
- Learn about federal legislative efforts that support affordability and equity outcomes

What is Water Infrastructure?

Water infrastructure refers to the network of pipes, tunnels, pumping stations, and treatment facilities that collect, clean, and transmit drinking water to our homes, and collect, clean, and discharge wastewater back into the environment.

Beyond these conventionally recognized components of a water system network, there are other tools, technologies, and techniques that serve to manage, supply, protect, and conserve water: rain gardens, smart meters, drought-tolerant landscaping, efficient appliances, groundwater aquifers, etc.¹ These advancements, practices, and efforts should be recognized as distributed infrastructure.

1 Koehler, C. (2018, May 16). *Financing the Future of Water Infrastructure Just Got a Whole Lot Easier*. WaterNow Alliance.
<https://waternow.org/2018/05/16/financing-the-future-of-water-infrastructure-just-got-a-whole-lot-easier/>

1. **Why Water Infrastructure Matters**
2. **Financing Water Projects**
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WHY WATER INFRASTRUCTURE MATTERS

The state of water infrastructure directly impacts water affordability. To ensure clean and reliable water service, local utilities must make strategic investments and upgrades to infrastructure systems. But utilities struggle to sufficiently fund this work — through fees and rate increases, they have begun shifting this financial obligation to customers, whose contributions have become a larger share of maintenance and improvement costs.² This is burdensome for all customers; those in low-income, disadvantaged, and vulnerable communities are especially challenged to pay these higher water bills³.

Historically, federal and state governments were the predominant funders of water infrastructure projects, as they were responsible for almost all infrastructure development at the turn of the 20th Century. After World War II, urban infrastructure systems were expanded using federal dollars (and sometimes private industrial monies),⁴ and data shows that up to the 1980s, federal government spending increased concurrently with state and local government spending. Furthermore, federal contributions came largely in the form of grants that water and wastewater utilities did not have to repay. But since then, federal government spending has decreased and leveled off while state and local government spending has continued to grow.⁵ And this reduced federal funding now comes mainly in the form of low-interest loans, which may not be accessible to communities with poor bond ratings or insufficient revenue to repay.

To compound matters, the drop-off in federal funding has coincided with infrastructure having reached or surpassed its utility, functioning, and need for updating. Water infrastructure can last anywhere between 15 to 100 years (depending on the material), and as of 2017, much of the country's water infrastructure was anywhere from 60 to 130 years old.⁶

2 American Water Works Association, and Water Environment Federation. (2017). *The United State(s) of Water: The Midwest*. Water Environment Federation. https://www.wef.org/globalassets/assets-wef/3---resources/for-the-public/value-of-water/awwa-wef-toolkit-infographics/wef_valueofwater_poster_midwest_final.pdf

3 Duke Nicholas Institute, and The Aspen Institute, Energy and Environment Program. (2020). *Water Affordability and Equity: RE-Imagining Water Services*. The Aspen Institute. <https://www.aspeninstitute.org/wp-content/uploads/2020/12/Water-Forum-Consolidated-Report-2020.pdf>

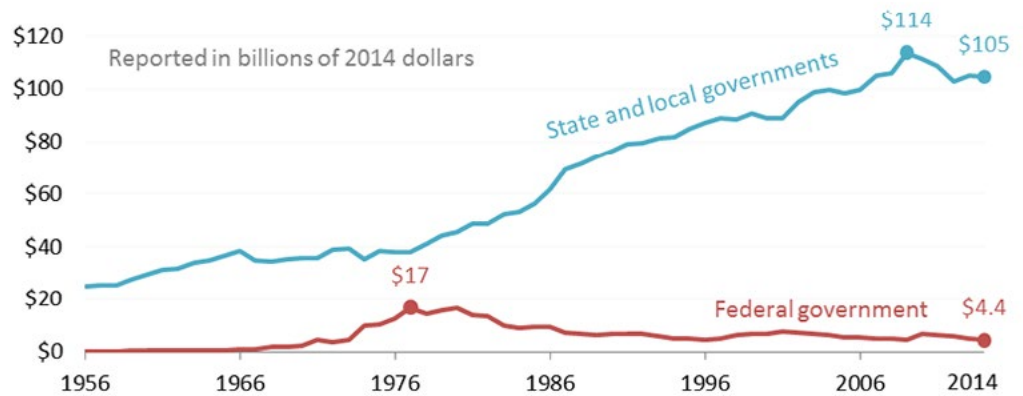
4 Sedlak, D. (2019, March 3). *How Development of America's Water Infrastructure Has Lurched Through History*. The Pew Charitable Trust. <https://pew.org/35mMYCF>

5 Bartlett, S., Cisneros, H., Decker, P., Heartwell, G., Warnock, A., Campanelli, B., ... Nellenbach, M. (2017, September). *Safeguarding Water Affordability*. Bipartisan Policy Center. <https://bipartisanpolicy.org/wp-content/uploads/2019/03/BPC-Infrastructure-Safeguarding-Water-Affordability.pdf>

6 American Water Works Association, and Water Environment Federation. (2017). *The United State(s) of Water*. Water Environment Federation. https://www.wef.org/globalassets/assets-wef/3---resources/for-the-public/value-of-water/awwa-wef-toolkit-infographics/wef_valueofwater_poster_usa_final.pdf

State and local government spending on water and wastewater utilities continued to grow while federal spending declined since the 1980s

State and local governments spent 24 times as much as the federal government in 2014



Graphed by the Environmental Finance Center at the University of North Carolina, Chapel Hill.

Source: Congressional Budget Office supplemental data for the *Public Spending on Transportation and Water Infrastructure, 1956 to 2014* report (March 2015). Displays public spending on supply systems for distributing potable water as well as wastewater and sewage treatment systems and plants. Real spending is shown after adjusting nominal spending to their 2014 dollar equivalent using infrastructure-specific price indexes.

Today, wastewater infrastructure is undersized (i.e. the pipes cannot adequately serve the current population size), and water supply infrastructure is leaky: Each year, the United States loses approximately 6 trillion (6,000,000,000,000) gallons of treated water from leakage and water main breaks. And the trifecta of an old water system, deferred maintenance, and reduced federal government support is further complicated and exacerbated by the risks and threats of climate change (ex. increasingly severe storms and flooding events).

[At the time of publishing] the current federal administration determined that addressing aging infrastructure should be a 21st Century priority, and it proposed the largest infrastructure investment since WWII with its American Jobs Plan. In addition to focusing on infrastructure projects (which include modernized and climate-resilient drinking, waste, and stormwater systems), the Plan is grounded in equity and affordability considerations which acknowledge that many low-income and BIPOC communities are, and have been, disproportionately impacted by aging infrastructure.

It is important to emphasize that the American Jobs Plan is a proposal: If it is carried forward, elements and details will undoubtedly change and evolve. Advocates can monitor congressional progression of policy and bills related to [Water Resources Development](#) and [Water Affordability](#), and should also subscribe to the [River Network Federal Water Policy Update Peer Group](#).

TAKEAWAY

- As utilities work to make needed investments, customers bear the brunt of the cost, and water bills become more unaffordable.
- Historically, the federal government played a significant role in funding water infrastructure investment, but this is less the case today. Local water utilities bear much of the significant financial burden to make critical investments.
- Water infrastructure is old, prone to failures, and is further stressed by a changing climate.

FINANCING WATER PROJECTS

Addressing U.S. water infrastructure needs will require billions of dollars. Though the federal government is no longer the main source of capital for water and wastewater infrastructure projects, increased federal funding and financing is crucial, and utilities can still access well-established funding programs at all levels of government. Additionally, they can explore financing strategies (e.g. bonds, fees, and bundling) to bring in needed resources.



	
Clean Water State Revolving Fund (CWSRF)	Water and Wastewater Utility Rates
Drinking Water State Revolving Fund (DWSRF)	Stormwater Utility Fees
USDA Rural Development	Bonds
Natural Resources Conservation Service Source Water Protection	
The Water Infrastructure Finance and Innovation Act (WIFIA)	
Section 319(h) Grants	
CoBank	
Economic Development Administration, Department of Commerce (EDA)	
Community Development Block Grant (CDBG) Program	
Appalachian Regional Commission (ARC)	
Hazard Mitigation Assistance (HMA) Program Grants	
Federal Disaster Funding (FEMA, HUD, USDA, EPA, and SBA)	

Program Considerations for Achieving Equitable and Affordable Outcomes

While its programs (understandably) have different eligibility requirements pertaining to financial status, demographics, and geography, federal support must benefit socially and economically disadvantaged communities.

Tip



Well-designed federal water infrastructure programs should aim to prioritize urban and rural communities that are less equipped to maintain and improve their water infrastructure; support local customer assistance programs; and incentivize solutions that make water services more affordable.⁷

⁷ Enobakhare, R., Blount, L. G., Boyd, T., Gavin, V., Smith, K., Hammer, B., ... Rose, K. (2018, October 23). *Water, Health, and Equity: The Infrastructure Crisis Facing Low-Income Communities and Communities of Color — and How to Solve It. Clean Water for All.* https://www.policylink.org/sites/default/files/CWC_Report_Full_report_lowres.pdf

Additional considerations to improve equity and affordability include:

Advocates should encourage their states to take a very thorough approach to the Environmental Protection Agency (EPA) Infrastructure Needs Survey and Assessment: The more “need” that a state demonstrates, the more federal funding that state can receive.

Assist communities that do not have robust asset management plans or shovel-ready projects. These communities may lack capacity to develop resources but should not be excluded from infrastructure funding. Rather, they should be provided with the resources and knowledge to develop management best practices and build capacity.

Weigh criteria that isn’t directly related to water infrastructure. Funding projects in areas with little green space or poor health outcomes, for example, might indirectly prompt parallel investment in critical water infrastructure.⁸

Account for capacity to submit a competitive proposal. If available monies are limited, and communities that lack sufficient administrative capacity must compete with better resourced communities, they are less likely to secure funding. Developing or designating targeted financing opportunities for low-income, disadvantaged, or priority communities can both neutralize such competition and ensure that equity goals can come to the fore of funding decisions.

Offer comprehensive and technical support as part of project funding. Low-capacity communities often need help navigating grant requirements, so providing planning, implementation, and monitoring assistance, and/or specialized engineering, data analysis or administrative expertise, can better assure project tracking and outcomes.

FEDERAL FUNDING FOR WATER INFRASTRUCTURE

The overarching goal of many federal water infrastructure investment policies and programs is to make financing accessible and inexpensive; in turn, utilities should not be as compelled to implement steep rate increases, and affordability outcomes can improve overall.

This publication is occurring right after the end of one administration and only a few months into a very different administration. It is therefore important to consider that there may be substantial changes in federal and the related state programs as a result of this change in administration.

⁸ Ibid.

The Water Resources Development Act⁹

Federal monies for water projects tend to come through the Water Resources Development Act (WRDA, and sometimes referred to as the Water Resources Reform and Development Act). Typically passed every two years (i.e. biennially), WRDAs amend U.S. Army Corp of Engineers authorizations.

WRDAs include significant changes related to water utility financing. Given that they are passed fairly regularly, these Acts can serve as a great organizing and anchoring point for advocates: Align outreach with WRDA developments and contact federal legislators during those times to voice concerns and suggestions.

Clean Water¹⁰ and Drinking Water State Revolving Funds¹¹ (SRFs)

Together, the Clean Water and Drinking Water State Revolving Funds form the largest source of federal funding for water infrastructure. Every year, Congress puts aside capitalization grants to fund SRFs, and in order to receive the grant, a state is expected to provide a 20 percent match of its allotment (and this match cannot use federal dollars.)

While the EPA supplies and manages SRFs, they are administered at the state level and function as loan programs (a significant change in the history of water financing, replacing the earlier Construction Grants program). SRFs are deemed “revolving” because the state can use the interest that its borrowers repay to make new loans. So, theoretically, SRF dollars should exist into perpetuity.

Annually, states that receive SRFs must develop an Intended Use Plan (IUP) for the upcoming fiscal year. One element of an IUP is a comprehensive list of all projects that are seeking funding.

Supporting efforts to secure this match is another place where advocates can help.

Intended Use Plan – A published document that identifies the planned uses of all Clean Water and Drinking Water State Revolving Fund programs. Intended use plans describe how those funds will be used to support the overall goals of the programs, and explain how the projects have been prioritized (also see “project priority list” entry).

Closer Look



Generally, to be eligible for SRF capital, a project must be accounted for in an Intended Use Plan, so inclusion in an IUP document is critical.

9 Sawyers, A. D. (2015, January 6). *Interpretive Guidance for Certain Amendments in the Water Resources Reform and Development Act to Titles I, II, V and VI of the Federal Water Pollution Control Act*. U.S. Environmental Protection Agency.

https://www.epa.gov/sites/production/files/2015-04/documents/water_resources_reform_and_development_act_guidance.pdf

10 Office of Water. (2021, February 11). *Learn about the Clean Water State Revolving Fund (CWSRF)* [Overviews and Factsheets].

U.S. Environmental Protection Agency. <https://www.epa.gov/cwsrf/learn-about-clean-water-state-revolving-fund-cwsrf>.

11 Office of Water. (2020, May 14). *How the Drinking Water State Revolving Fund Works* [Overviews and Factsheets]. U.S. Environmental Protection Agency <https://www.epa.gov/dwsrf/how-drinking-water-state-revolving-fund-works>.

While states produce their IUPs differently, most include a short list of projects that the state intends to fund, or a Project Priority List (PPL). Applications are assessed against established criteria (e.g. public health indexes, sustainability, and/or ability to pay), and the projects that rank the highest will typically receive funding. As an example, if a state has been advocating for comprehensive asset management, it may offer more points to applicants that already have asset management structures and practices in place, increasing the likelihood that those projects will be green-lighted.

There are limited federal guidelines for how a state must administer its SRF program, and each state creates its own selection process to determine which projects it will fund. However, public participation is a key stipulation¹² — states are required to seek public review and comment on the PPL that’s included in the draft Intended Use Plan (as well as other IUP provisions). States engage the public mainly by releasing public notices that explain how to access the IUP, sharing the dates for public meetings, and outlining the process for submitting comment.

Differences Between the Clean Water and Drinking Water SRF Programs

The Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) differ in three key ways: project type, allocation process, and program set-asides.

Project Type

The CWSRF is used mainly wastewater systems and nonpoint source projects (e.g. for bioswales and permeable pavement). The DWSRF is designed to help drinking water systems meet federal water regulations.

Across the last two decades, there has been an important evolution that recognizes the Integrated Water Resources Planning approach (discussed in [Utilities Section](#)) as a standard for planning water projects — a more integrated and holistic approach can highlight new funding sources and revisit existing sources that states and utilities have not fully explored . The federal government has issued several related guidelines via the 2009 American Recovery and Reinvestment Act (ARRA), the 2014 Water Resources Development Act, and the 2018 America’s Water Infrastructure Act of 2018 (AWIA).

Quiz

Some federal priorities of SRF funding include: (choose all that apply)

- a. Carrying out green stormwater infrastructure projects
- b. Serving environmental justice communities
- c. Improving water and energy efficiency
- d. Implementing stormwater management

Answers: a,b,c,d

Set-Asides – A percentage of State Revolving Loan funds that go toward general activities such as operator certification and technical training, i.e. set-asides are not used to directly fund infrastructure projects.

¹² Office of Water. (2020, December 15). *EPA 816-F-00-015 Fact Sheet: Public Participation in the DWSRF Program*. U.S. Environmental Protection Agency. <https://www.epa.gov/dwsrf/reports-and-fact-sheets-about-drinking-water-state-revolving-fund-dwsrf>

Allocation Process

The “formula” for deciding what percentage of the DWSRF funds a specific state receives is built into the Safe Drinking Water Act (SDWA). Every four years, utilities receive an Infrastructure Needs Survey and Assessment for the next 20 years. (Utilities that utilize asset management, emergency management, and capital improvement planning processes will have more reliable numbers for this survey.) The last survey, which covered January 1, 2015 through December 31, 2034, found that water utilities needed \$472.6 billion in infrastructure investments — this is likely a conservative estimate given that many utilities have not engaged in a comprehensive planning process. Green stormwater infrastructure and source water protection projects may not have been sufficiently represented in this survey, and emergent infrastructure challenges such as lead and per- and polyfluoroalkyl substances (PFAS) were not as prominent (a change in law now requires that lead, in particular, be factored in to the survey assessment.)

States receive at least one percent of total DWSRF dollars, and the more need a state is able to demonstrate (when compared to other states), the larger its allocation will be.¹³

Green Stormwater Infrastructure (or Natural Infrastructure) – To learn more about green stormwater infrastructure and its benefits, check out the Center for Neighborhood Technology [Green Values Strategy Guide: Linking Green Infrastructure Benefits to Community Priorities](#).

Closer Look



Therefore, advocates can encourage that their states take a very thorough approach to this survey. You can review summary results from the most recent [EPA Infrastructure Needs Survey and Assessment](#) and find how the EPA allotted [DWSRF funds to states from 2014-2016](#).

Section 205(c)(3) of the 1987 Water Quality Act,^{14,15} outlined the original CWSRF allotments, which went to all 50 states, Puerto Rico, Washington D.C., and U.S. territories. In 2000, the “formula” was slightly tweaked, but the basic allocations remain largely the same, and the criteria used to establish the allotments are unknown.

An [EPA Clean Watersheds Needs Survey](#) is conducted periodically to assess the financial investment necessary to comply with the Clean Water Act; for many years, it has been recommended that the results be used in the CWSRF allotment process, and that is currently an ongoing

13 Tiemann, M. (2018). *Drinking Water State Revolving Fund (DWSRF): Overview, Issues, and Legislation* (No. R45304). Congressional Research Service. <https://fas.org/sgp/crs/misc/R45304.pdf>

14 Office of Water. (2021, March 22). *Clean Water State Revolving Fund (CWSRF) Allotments of Federal Funds to States* [Data and Tools]. US EPA. <https://www.epa.gov/cwsrf/clean-water-state-revolving-fund-cwsrf-allotments-federal-funds-states>

15 U.S. Environmental Protection Agency. (May 2016). *Review of the Allotment of the Clean Water State Revolving Fund (CWSRF) Report to Congress*. U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2016-05/documents/review_of_the_allotment_of_the_cwsrf_report.pdf

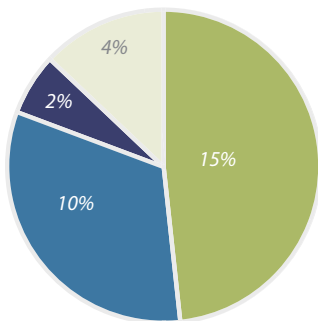
Quiz

States can use DWSRF funds for which of the following (choose all that apply)

- a. Implementing local water infrastructure projects (ex. fix leaking pipes)
- b. Training utility staff across the state (ex. operator certification, asset management)
- c. Operating and maintenance costs
- d. Administering DWSRF loan program
- e. Providing local assistance

Answers: a, b, d, e.
c is wrong because operation and maintenance is not funded by the SRFs

Breakdown of DWSRF Program Set-Asides



Local Assistance and Other State Programs (15%)

State Program Management (10%)

Administration and Technical Assistance (4%)

Small System Technical Assistance (2%)

discussion. Advocates can access mapping tools and other data from the 2012 survey, which can give them some background on the reported needs of their states.

Program Set-Asides

While the overall DWSRF goal is to implement water infrastructure projects at the local level, set-asides are a common mechanism for the federal government and states to encourage a specific type of water project. Through this program, states can set aside around 31 percent of their capitalization grants.¹⁶

Rather than going directly to specific projects, that 31 percent can be used for capacity development, operator certification, and source water protection, a broad term that encompasses land conservation, green stormwater infrastructure, and stormwater management. Set-aside initiatives may be established statewide (e.g. widely available asset management training) or rolled out through third-party technical assistance providers that target a certain aim (e.g. Georgia used a portion of its set-aside to for a consultant to help all the smallest water systems in the state with leak detection for a few years.) And, some states, such as North Carolina, also have used these DWSRF set-asides for [statewide rates surveys and interactive dashboards](#) that benefit all utilities in the state.

Specifically, the 31 percent is composed of the following subsets:

Administration and Technical Assistance (4%)

Most states use this to cover a portion of their loan program administration and help utilities complete their loan applications, but there is an opportunity for providing direct technical assistance to water systems that serve sizable populations (10,000-plus).

Small System Technical Assistance (2%)

This is reserved to assist utilities that serve small populations (less than 10,000) — their small size creates unique challenges, and funding aims to build their capacity and support them in new project planning; the funds also can cover the cost of a third-party provider to offer direct assistance.

¹⁶ Office of Water. (2020, May 14). *How the Drinking Water State Revolving Fund Works [Overviews and Factsheets]*. U.S. Environmental Protection Agency. <https://www.epa.gov/dwsrf/how-drinking-water-state-revolving-fund-works>

State Program Management (10%)

This portion addresses source water protection directly and develops infrastructure capacity (regardless of system size); water operator certification is also specified under this set-aside.

Local Assistance and Other State Programs (15%)

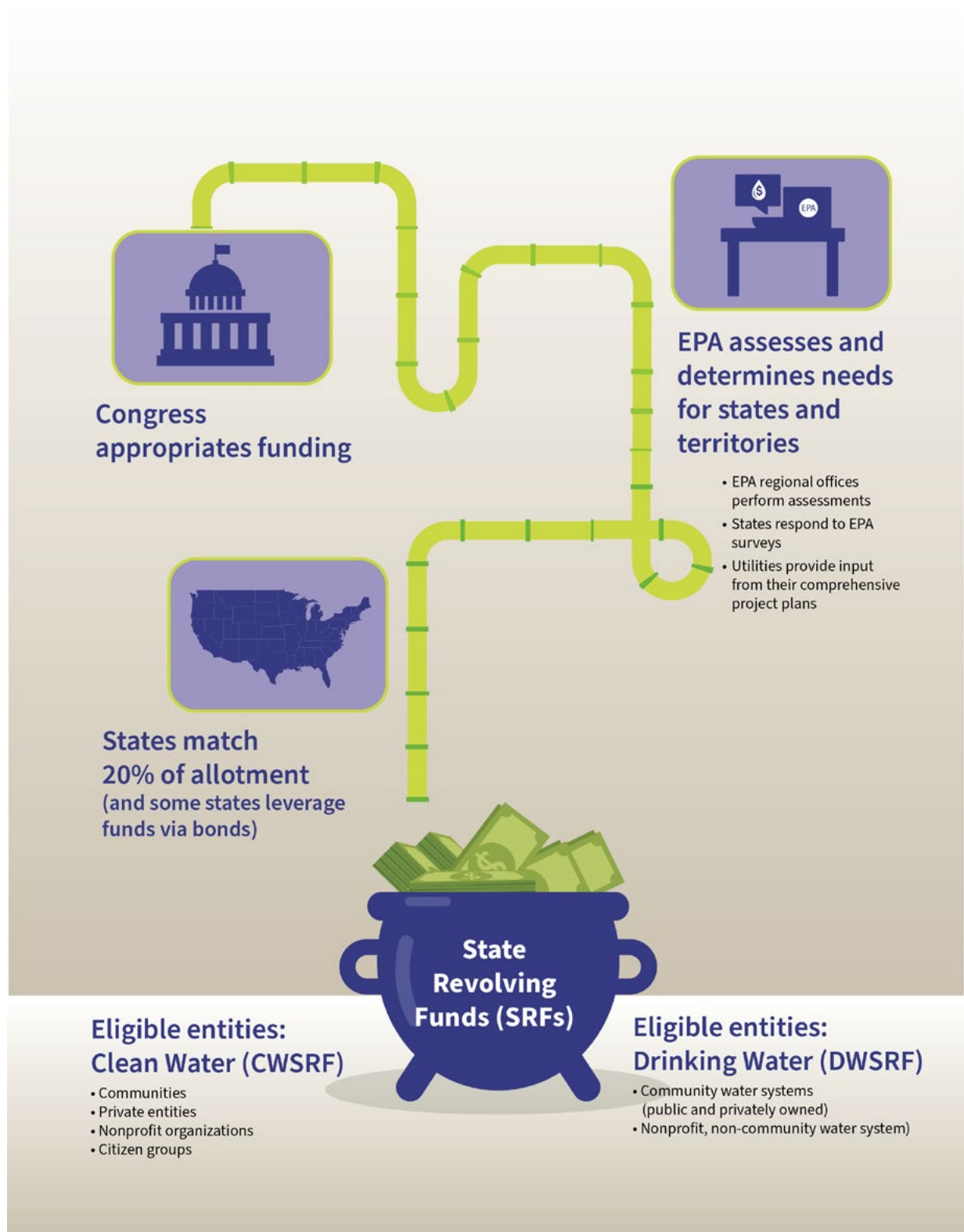
Source water protection is more broadly defined under this set-aside. These funds are a good fit for when multiple utilities want to merge, a process sometimes referred to as “regionalization” or “consolidation”; also addresses source water protection more broadly.

Most states do not set aside all 31 percent, though there has been a recent uptick in the amount that states set aside; historically they’ve only used half of the amount allowed. A balance can be struck — if the majority of water utilities cite significant water loss problem, it makes sense to provide water loss training and pay for statewide leak detection work, even if it means that less money is available to a utility might want to replace leaking water lines.

Tip



Ultimately states determine how narrowly they want to apply DWSRF funds, and changing the SRF process is a big lift. Advocates can focus their efforts on pushing forth the projects that they’d like to see advance and offering feedback on how set-asides can be targeted. Intended Use Plans will delineate how much a state is setting aside; if there is a high incidence of a specific problem (e.g. high levels of water loss), but the DWSRF program is not receiving many loan applications for these types of projects, advocates may make the case for using set-aside funds to produce water loss case studies and training.



Tribes and SRFs¹⁷

Currently, the EPA can use up to 2 percent of its DWSRF monies to support infrastructure projects in Indian Country. It allocates SRF dollars under the [Drinking Water Infrastructure Grants Tribal Set-Aside Program \(DWIG-TSA\)](#). Both federally recognized tribes and non-tribal entities whose public water systems serve federally recognized tribes are eligible to receive funds.

Because DWIG-TSA is a grant program, tribal nations do not have to repay investment costs. However, this also means that these funds do not “revolve,” so the tribal program is completely reliant on federal government appropriations; additionally, if a tribe receives set-aside grant funds, the Safe Drinking Water Act restricts how loan and grant funds can be in conjunction with one another.

Similar to the state allocation process, funds are allotted based on the Drinking Water Infrastructure Needs Survey, and an Indian Health Service Sanitation Deficiency System report that documents feasible drinking water infrastructure projects. Eligible DWIG-TSA projects can address:

- Safe Drinking Water Act remediation
- action level exceedance
- system deficiency
- drinking water outages
- risk of failure related to major treatment or distribution system components
- services to homes that lack access to safe drinking water
- operational efficiencies to reduce operation and maintenance costs

Under limited circumstances, the expansion, consolidation, or building of a new public water system may also be deemed as an eligible project. In 2016, the Water Infrastructure Improvements for the Nation Act included training and operator certification programs as eligible projects.

Compared to the reported level of infrastructure need, the level of DWIG-TAS funding is low; for example, the Government Accountability Office found that between 1987 and 2012, tribes received fewer SRF dollars per amount of need than each of the states.¹⁸

When communicating with utility staff and decision-makers, advocates can increase the efficacy of their efforts by using industry terminology, for example, zeroing in on “source water protection” rather citing “conservation,” broadly.

17 U.S. Environmental Protection Agency. (2020, October 19). EPA Pacific Southwest (Region 9) Drinking Water Tribal Set-Aside Program [Other Policies and Guidance]. U.S. Environmental Protection Agency. <https://www.epa.gov/tribal-pacific-sw/epa-pacific-southwest-region-9-drinking-water-tribal-set-aside-program>

18 Sham, C. H., Gillette, C., ERG, Vasi, J., JVasi Consulting, Baer, K., and Ollervides, P. (2019). *Drinking Water Guide: A Resource for Advocates*. River Network. https://www.rivernetwork.org/wp-content/uploads/2019/04/drinking_water_guide.pdf.

DOING MORE WITH THE STATE REVOLVING FUNDS (SRFS)

After receiving money from federal SRF programs, states have some flexibility in how they distribute the money to their communities. States create policies around interest rates, priority projects, subsidization, and which communities and projects receive that subsidization. In creating these policies, states should consider opportunities that benefit low-income communities and identify ways to extend their SRF allocations.

Focus on Low-Income Frontline Communities

According to Section 1452 of the 196 Safe Drinking Water Act (SDWA) of 1996, a disadvantaged community is “the service area of a public water system that meets affordability criteria established after public review and comment by the State in which the public water system is located.” Later, the 2018 America’s Water Infrastructure Act (AWIA) mandated that each state define their disadvantaged communities and authorized the EPA to award grants to states to assist small, underserved, and disadvantaged communities with SDWA compliance and addressing drinking water contamination.

Over time, the EPA has implicitly required that states take note of and provide allowances for such disadvantaged communities, which should now receive 6-35 percent of a SRF capitalization grant in the form of subsidies. And allowing states flexibility to set their own program criteria and establish definitions relevant to their unique populations affords SRF programs certain built-in mechanisms to provide special assistance to low-income communities,” such as favorable borrowing terms.¹⁹

¹⁹ Heaney, C. (n.d.). *Comparison of Drinking Water State Revolving Fund (DWSRF) Programs and other Federal Assistance to Disadvantaged Communities in EPA Region 4*. Environmental Finance Center at the University of North Carolina. <https://efc.sog.unc.edu/sites/default/files/DWSRFDisadvantagedCommunitiesinRegion4.pdf>

Quiz

To receive SRF funding, state plans must account for the federal definition of “disadvantaged communities.”

- a. True
- b. False

Answer: b. States are responsible for both defining their disadvantaged communities and subsequently, ensuring that those communities receive SRF-back subsidies.

Advocates should review Intended Use Plans to see how states are defining their disadvantaged communities and identify what communities are marked to receive subsidies:

- Does the “disadvantaged communities” definition make sense, do you find it to be reflective and encompassing of your state?
- Do the project decisions adequately reflect the needs of your state and its front-line communities?
- Do these communities represent your view of a front-line community? Do they high BIPOC representation? Do they contain pollution hotspots or other indicators of environmental injustice?

Advocates should encourage states to establish and revise their criteria for disadvantaged communities; below are alternative and/or additional indicators, including some that are used by utilities to define their service populations:

- Median Household Income
- % Unemployment
- % Not in the labor force
- % of all people with income below poverty
- % with Social Security income
- % with Supplemental Security income
- % with cash public assistance income
- % with Food Stamp/Supplemental Nutrition Assistance Program (SNAP) benefits
- Age dependency ratio
- Population decline

Providing Additional Subsidization Within the SRF Programs

States can both assist front-line communities and incentivize distributed infrastructure progress by “subsidizing” SRF loans. A common form of subsidization is principal forgiveness or, essentially, a partial grant that is available to certain applicants. But the determination of eligibility differs from state to state, and due to the high concern over water affordability, states such as Georgia and Kentucky²⁰ have been reevaluating their criteria for

20 Flores, C. (2018, July 5). *Metrics to Determine Principal Forgiveness Eligibility: Highlighting EPA Region 4* [web log]. <https://efc.web.unc.edu/2018/07/05/metrics-to-determine-principal-forgiveness-eligibility-highlighting-epa-region-4/#more-5827>

principal forgiveness eligibility.²¹

The federal government has also been pushing states to take a broader view on project eligibility, to encourage more green projects. In 2009, the American Recovery and Reinvestment Act required that states provide subsidization as principal forgiveness, or negative interest rates for green projects, which can protect water quality and quantity and improve affordability over the long-term. Later, the 2014 Water Resources Reform and Development Act encouraged states to offer additional subsidization to recipients that meet certain criteria, or to projects that relate to water and energy efficiency, stormwater management, and “sustainable project planning, design, and construction.”²²

Linked Deposit Program

Linked deposit programs help finance projects on private property. In a linked deposit arrangement, the state CWSRF program purchases a reduced-rate certificate of deposit from a private bank. The bank in turn loans individuals those deposited funds (at a slightly lower interest rate) for small water quality projects.

The Ohio CWSRF developed this type of linked deposit program in 1984, building on CWSRF provision to “earn interest on fund accounts.”²³ Since then other states, such as Maine and Iowa have adopted this approach for farm-related runoff issues, stormwater projects and to repair and replace homeowner septic systems.

Here’s an example breakdown of the process, supposing an Iowa homeowner is replacing a septic tank:

The homeowner is pre-approved for a loan, and the bank underwrites and signs the documents. The homeowner can patronize a bank where it already has an existing relationship, and the SRF does to take on the default risk (as it’s been assumed by the bank)

Advocates should look at how these subsidies are being issued within a state, as it can have an important trickle-down effect whereby local utility customers may be spared sharp rate increases.

21 Isaac Berahzer, S., Flores, C., and Hughes, J. (2018, May). *Affordability and Principal Forgiveness in the State Revolving Fund Programs of the Environmental Protection Agency Region 4 States*. Environmental Finance Center at the University of North Carolina. <https://efc.sog.unc.edu/resource/affordability-and-principal-forgiveness-state-revolving-fund-programs-environmental>

22 Sawyers, A. D. (2015, January 6). Interpretive Guidance for Certain Amendments in the Water Resources Reform and Development Act to Titles I, II, V and VI of the Federal Water Pollution Control Act. U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2015-04/documents/water_resources_reform_and_development_act_guidance.pdf

23 U.S. Environmental Protection Agency CWSRF Branch. (2017, May). *Financing Options for Nontraditional Eligibilities in the Clean Water State Revolving Fund Programs*. U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2017-05/documents/financing_options_for_nontraditional_eligibilities_final.pdf

See the [“Funding for Individual Wells and Septic Systems”](#) section for more details on private property financing programs.

Quiz

Creative and effective uses of SRF funds include:

(choose all that apply)

- a. Selling bonds
- b. Backing loan guarantees on behalf of utility borrowers
- c. Providing municipal bond insurance
- d. Financing projects on private property via a “linked deposit” program

Answers: a, b, c, d

The SRF program deposits the principal amount of the loan into an account opened by the bank. With the principal accounted for, the bank cannot charge the homeowner more than 3 percent interest

The SRF program withdraws its principal from the reserve account as the homeowner repays the loan. The funds that remain in the account will equal the outstanding loan principal. The state deposit earns no interest, so the bank has been provided with no-cost funds and the homeowner has received a lower interest rate.

Iowa started this program in 2005 and has since deposited more than \$92 million in banks across the state for linked deposit purposes.

The Role of Bonds and Leveraging in the SRFs²⁴

States can sell bonds to stretch and grow the amount of available financial assistance available at the local level. Bonds are also an important tool for leveraging SRF dollars, and there are two ways this leveraging can happen:

SRF-backed loan guarantees

Think of an SRF-backed loan guarantee as akin to co-signing a loan for your teenager’s first car: You are telling the bank that you will repay the loan if your child cannot. In this case, with such an assurance from the state, utilities can access funds from private financial markets more easily and cheaply (via lower interest rates). The EPA and other entities have identified this approach as being particularly well-suited for green stormwater infrastructure projects.

Municipal bond insurance

This offering results in lower interest rates for the entity that’s seeking private financing. Admittedly, the SRFs have some risk exposure, however, these programs have a very strong track record of low defaults on their own loans. So, if SRFs can apply the same level of underwriting for guarantees and bond insurance, the financial losses from defaults should also be low.

Federal statutes were specifically designed to allow for this type of leveraging as a low-cost way to increase financial impact. It increases the amount of money that is available to the state (alongside the federal capitalization

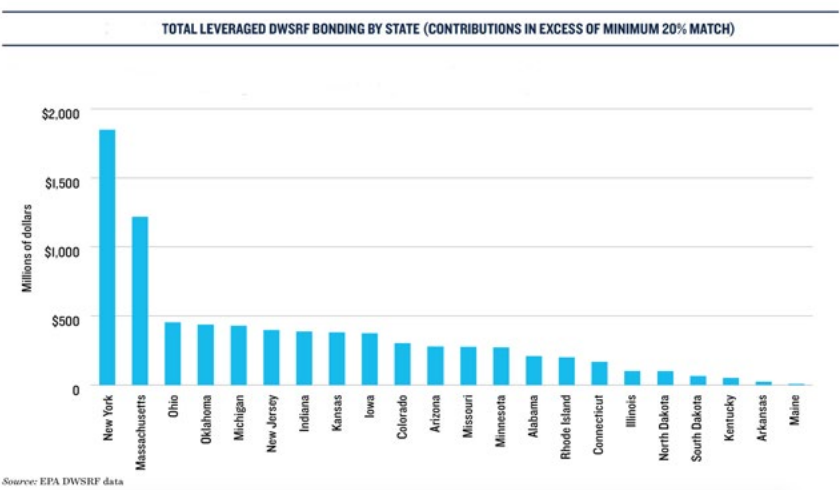
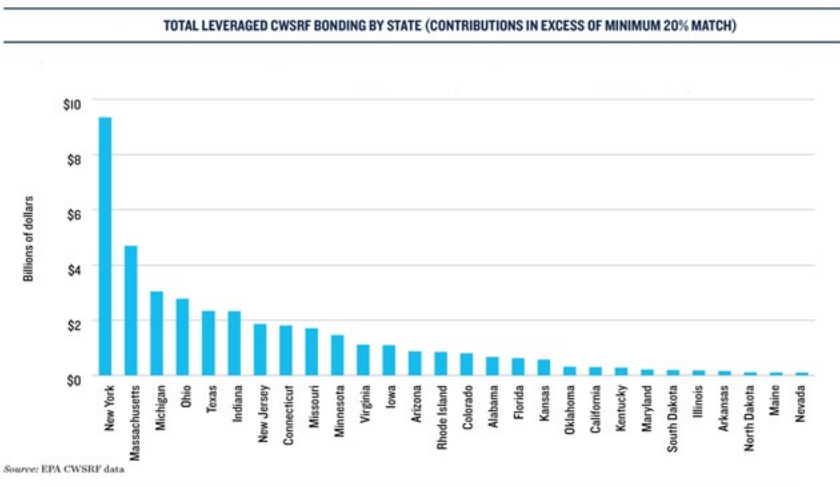
²⁴ Moore, R.. (2018, May). *Go Back to the Well: States and the Federal Government are Neglecting a Key Funding Source for Water Infrastructure*. National Resources Defense Council. <https://www.nrdc.org/sites/default/files/state-revolving-fund-water-infrastructure-ip.pdf>

The complexity of SRFs is what makes them powerful, and states that are not fully leveraging their capabilities are leaving money on the table at the expense of their residents.

grant and the state match), as the bond proceeds are deposited in the SRF and the debt service payments would be made from future SRF revenues.

Indiana, Massachusetts, New York, and Ohio are good examples of state that regularly issue bonds to leverage their SRF programs, but less than half of states are acting on this option, which undermines the power that SRFs were designed to wield.²⁵

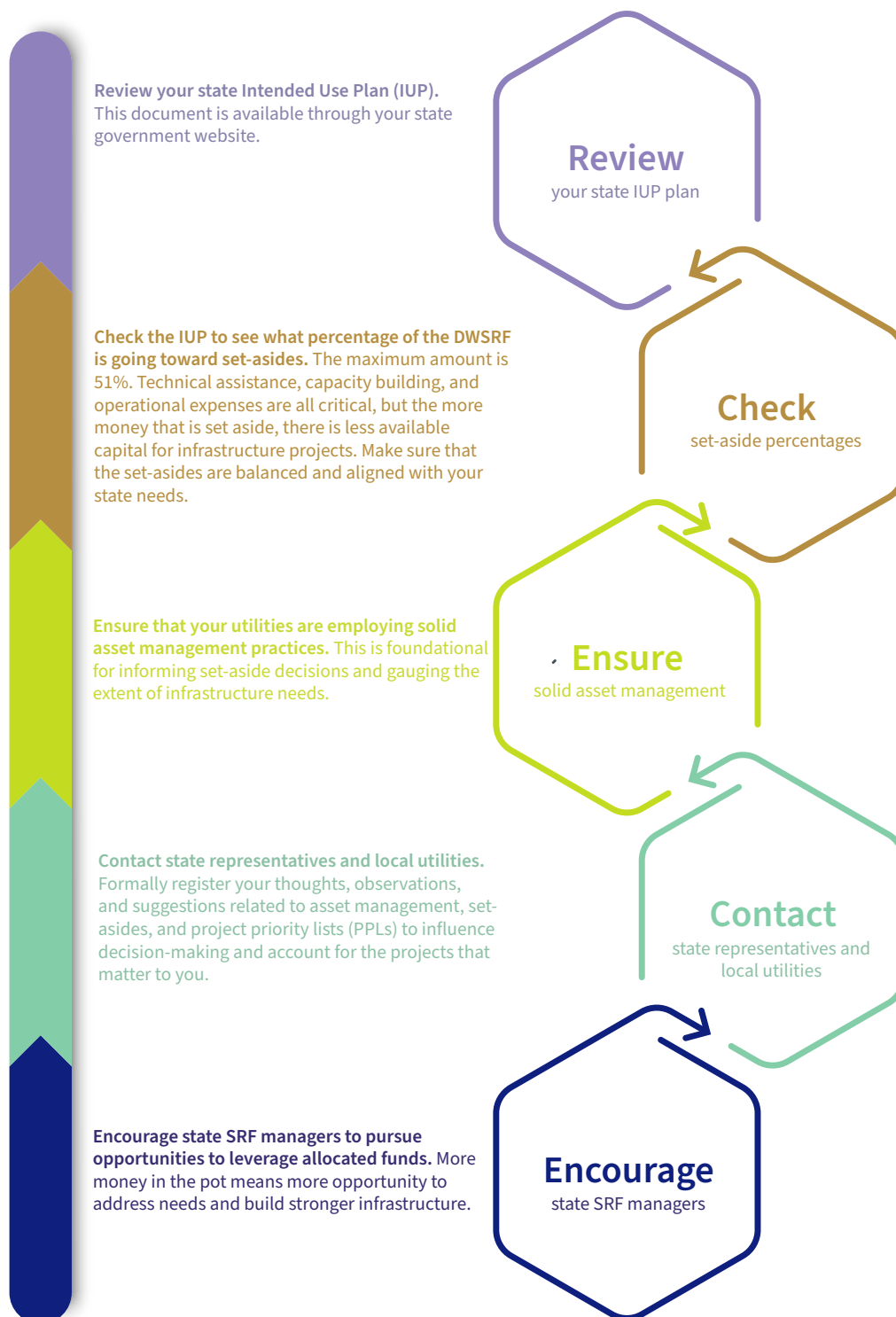
Advocates can review this [Natural Resources Defense Council \(NRDC\) report](#) to see the list of states that are currently exercising leveraging options; if your state is not on this list, contact your [DWSRF](#) and [CWSRF](#) contacts and ask that they take advantage of this option.



Moore, R.. (2018, May). *Go Back to the Well: States and the Federal Government are Neglecting a Key Funding Source for Water Infrastructure*. National Resources Defense Council. <https://www.nrdc.org/sites/default/files/state-revolving-fund-water-infrastructure-ip.pdf>.

25 Moore, R.. (2018, May). *Go Back to the Well: States and the Federal Government are Neglecting a Key Funding Source for Water Infrastructure*. National Resources Defense Council. <https://www.nrdc.org/sites/default/files/state-revolving-fund-water-infrastructure-ip.pdf>.

How Can Advocates Work to Influence How SRFs Are Spent?



See the [Decision-Making and Influence](#) section for additional resources (ex. the EPA Water Finance Clearinghouse) for identifying state-level funding sources and matching projects to the needs of your community

To reiterate: Public participation is an integral and mandated element of the SRF allocation process. At the federal level, the EPA requires public participation compliance as a condition of SRF receipt, and one of the 1996 Amendments to the State Drinking Water Act indicates that better information be provided to the general public. States must facilitate meaningful review of the short and long-term goals of their SRF programs, including but not limited to the priority scoring system for ranking projects; the comprehensive and shorter prioritized list of projects; the overall financial status of the funding program; and a description of corresponding set-asides. When visiting the SRF program websites, flag the dates and locations for public hearings to where the Intended Use Plans will be discussed, and note other means to register your comments, e.g. via the web site, email or phone. (Also: Although DW and CW SRF programs have slightly differing requirements, in many states, both programs are run by the same staff, and thus, the public participation process should be the same.)

OTHER SOURCES OF FEDERAL PUBLIC FUNDING

There are several other federal funding sources (many of which also are run at the state level). The following list provides an overview of some of these programs, later, in this section, there is information about [what type of projects](#) can be funded by each of these individual financing programs.

Advocates should note that many of these programs attached equity elements that must be fulfilled. Further, individual states may have their own state-specific funding programs, apart from these federally-funded programs.

USDA Rural Development

Currently this United States Department of Agriculture (USDA) program is the only federal program focused on rural water and wastewater infrastructure, it offers 13 programs, and issues grants and loans specifically for communities with populations of fewer than 10,000.

Natural Resources Conservation Service Source Water Protection

A significant new funding source that emerged when the [2018 Farm Bill](#) mandated that [10 percent of funds](#) authorized for conservation programs needed to be used specifically for drinking water protection; the amount translates to approximately [\\$4 billion over the next 10 years](#).

The Water Infrastructure Finance and Innovation Act (WIFIA)²⁶

Water Infrastructure Finance and Innovation Act (WIFIA) – Established in 2014, WIFIA is a federal water infrastructure financing program whereby communities can cover up to 49 percent of project costs using low-interest WIFIA funds, which can support a broad array of water infrastructure investment efforts.

WIFIA was established in 2014. Now past its pilot phase, it is quickly becoming an important funding program for large, multifaceted water projects. Projects that receive WIFIA funding must be leveraged, i.e. financed with other funding sources (e.g. bonds, loans, grants, or equity); program loans can be up to 49 percent of the total project costs. One of the benefits of WIFIA (compared to other government loan program) is the ability for borrowers to customize terms.

In addition to government entities, corporations, trusts, partnerships, and joint ventures, both SRFs can submit WIFIA applications. All DWSRF and CWSRF projects are eligible for WIFIA funding, as well as these project enumerated below:

- Enhanced energy efficiency projects at drinking water and wastewater facilities
- Brackish or seawater desalination, aquifer recharge, alternative water supply, and water recycling projects
- Drought prevention, reduction, or mitigation projects
- Property acquisition (if it is integral to the project or will mitigate the environmental impact of a project)
- Projects secured by a common security pledge or submitted under one application by an SRF program

WIFIA acclimates its offerings to both large and small communities; minimum project size is \$20 million for large communities and \$5 million for communities of 25,000 or fewer. The program also provides loans via the State Infrastructure Financing Authority Program (created through the 2018 America's Water Infrastructure Act), which allows was created to allow borrowers to finance combinations of drinking or clean SRF projects in a single application.

²⁶ Office of Water. (2021, April 15). *Water Infrastructure Finance and Innovation Act (WIFIA)* [Collections and Lists]. U.S. Environmental Protection Agency. <https://www.epa.gov/wifia>

In general, applicants are finding the WIFIA application process to be longer longer and more involved than applying for SRF programs; as an example, a \$699 million application from San Francisco Public Utilities to upgrade and replace solids handling processes (which had significant environmental justice benefits) was submitted 12/22/2017 and the loan closed 07/27/2018. Turnaround times may improve as WIFIA completes more rounds of funding.

Section 319(h) Grants

This program helps states and tribal organizations conduct their nonpoint source management programs (e.g. reducing nutrients from septic tanks and farmland).

CoBank

CoBank is a cooperative bank that offers loans and other financial solutions to water cooperatives, water companies, and not-for-profit municipal systems. Additionally, it coordinates with government loan programs and facilitates processes for its customers.

Economic Development Administration, Department of Commerce (EDA)

EDA offers two programs for municipalities: [Public Works](#), which focuses on the physical infrastructure of “distressed” communities and [Economic Adjustment Assistance](#), which offers implementation grants for infrastructure improvements. The goal of the programs is to improve economic development through job creation.

Community Development Block Grant Program (CDBG)

Provided through the Department of Housing and Urban Development (HUD), CDBG offers grants based on the population size, classified as either entitlement (larger cities) or non-entitlement communities (cities with populations less than 50,000 and counties with populations of less than 200,000). An important note when using or considering CDBG funds is that at least 70 percent must benefit low- and moderate-income communities for a state-specified period.

Appalachian Regional Commission (ARC)

Only available in 13 states/for certain regions located along the Appalachian Mountains, ARC offers grants to water and wastewater utilities for critical infrastructure, and business and workforce development. Match requirements vary based on the economic status of counties; for those located in distressed areas, grants can cover up to 80 percent of project costs.

Hazard Mitigation Assistance (HMA) Program Grants

State emergency management agencies distribute HMA grants and administer Federal Emergency Management Administration (FEMA) funds to develop and implement resilient infrastructure projects, and help utilities reduce or eliminate damages from natural hazards and rapidly recover from disruptions to service. Green infrastructure projects are often relevant to areas affected by natural disasters.

Federal Disaster Funding

FEMA, USDA, EPA, and HUD, as well as the Small Business Administration, all offer disaster funding assistance through various programs. Programs may define “disaster” differently but can certainly include flooding or droughts. Additionally, some programs such as the FEMA Public Assistance Grant, require that the disaster be recognized via official declaration from the president.

TAKEAWAY

- Both SRFs are federal-state partnership programs — states receive a certain percentage of Congressional funds (provided they match 20 percent of the allotment) and administer the program at the state level.
- States establish their own selection process and project criteria to decide which projects will be funded; projects are documented in Intended Use Plans (IUPs) and Project Priority Listings (PPLs).
- EPA law orders that states must make public participation part of their project decision-making process.
- Advocates can make a case for using set-aside funds to provide case studies and training to address specific water related issues.
- Tribal organizations can receive SRF dollars based on location, the Drinking Water Infrastructure Needs Survey, and the Indian Health Service home count data.
- There are several other federal/state grant and loan programs that operate similar to the DWSRF and CWSRF model (i.e. federally funded, run at the state level).
- The Water Infrastructure Finance and Innovation Act (WIFIA) is an important funding program for large, multifaceted water projects, and all projects that are eligible for SRF funding are also eligible for WIFIA funding.

LOCAL FUNDING

Local governments and utilities also contribute funding for water projects. Because such a large portion of federal funding comes in the form of loans (not grants), local governments must generate the funds to repay these loans; water and wastewater customer charges represent the major source of these repayment funds. New customer connection fees are another significant source of local funding, as are the issuance of bonds.

Quiz

Water and wastewater utilities should fund infrastructure projects by which of the following means? (choose all that apply)

- a. Revenues from water and wastewater rates
- b. Taxes from education funds
- c. Connection fees

Answers: a, b, c

Stormwater Utility Fees

In the last few decades, thousands of local governments across the country have created an additional utility specifically to address stormwater infrastructure needs,²⁷ and customers incur a stormwater fee in addition to existing wastewater and water supply fees. Typically, the utility assigns fees based on customer class (i.e. one fee for residential users, another fee for commercial and industrial users that is often higher than the residential fee). Or, the utility determines how much a site contributes to stormwater runoff and sets the fees based on the amount of impervious surface area (e.g. driveways and patios); frequently this fee can be reduced if the site owner replaces such surfaces with pervious materials that encourage infiltration.

Rate Structures of Water and Wastewater Utilities²⁸

Rate design has a major influence on water affordability. (Find more details on rate setting in the [Utilities section](#).) Some water and wastewater utilities self-fund big capital projects without borrowing or getting a grant from an external entity; commonly called PAYGO (pay as you go), the utility sets the rate structure such that, each year, it generates costs for capital projects. As the utility collects this “extra” revenue, it must spend it right away, or set aside the money for future spending related to associated projects.

Find more details on rate setting in the [Utilities section](#).

27 Campbell, C. W. (2019, June 26). *Storm Water Utility Survey*. Western Kentucky University. <https://www.wku.edu/seas/undergradprogramdescription/stormwaterutilitysurvey.php>.

28 River Network. (2019, October 4). *Setting Water Rates Considering Customer Affordability and System and Resource Sustainability Aiming*. YouTube. <https://www.youtube.com/watch?v=fU21B7sSFW4&t=2129s>

Watershed – An area of land that drains or “sheds” water into a specific waterbody (creek, river, lake etc.)

A challenge with this approach is that local governments may want to use these readily available funds for other needs that are unrelated to water infrastructure, like park facilities or road improvements. Water utilities should have written financial policies that reduce the risk of funds being siphoned in this way.

Tip



Advocates can work with third party financial advisors or a utility advisory board, if applicable, to monitor whether funds remain intact for their original purpose. They can also help develop partnerships between local governments and local nonprofit watershed groups — local utilities face a lot of competition from other applicants when competing for federal and state money (especially for grant funds), and applications that include partnerships and collaboration among multiple organizations tend to score higher.

BONDS

Bonds are a type of investment whereby money is lent to the bond issuer in exchange for interest payments. These instruments have an important, and perhaps growing, role in infrastructure financing; the Government Finance Officers Association has a digestible description of bonds in the introduction section of its primer on [Understanding Financing Options Used for Public Infrastructure](https://www.nasact.org/Files/News_and_Publications/White_Papers_Reports/2019_PFN_Primer.pdf).

A more intricate way to finance water projects, issuing a significant bond usually involves many administrative processes, typically taking a team of two dozen experts. So while a few states have lowered the administrative burden enough and can issue bonds for fairly small amounts, they make more sense for obtaining large amounts of capital.

Municipal bonds (or muni bonds) are debt obligations issued by governments that can be bought by individual investors through bond dealers, bank brokerage firms, and, in rare cases, directly from the local government.²⁹ Traditionally, there are two main types of municipal bonds that relate to water infrastructure: general obligation (GO) bonds, and revenue bonds.

General Obligation (GO) Bonds

Backed by the full faith and credit of the local government that parents the water or wastewater utility, GO bonds are generally less risky to the buyer.

29 Government Finance Officers Association. (January 2019). *Understanding Financing Options Used for Public Infrastructure*. Public Finance Network. https://www.nasact.org/Files/News_and_Publications/White_Papers_Reports/2019_PFN_Primer.pdf.

Revenue Bonds

Because they are backed by utility-generated rates and fees, revenue bonds are a little riskier, and as a result, typically offer higher interest rates than GO bonds.

There also are emerging bond types that are more tailored to water issues.

Green Bonds

Somewhat of a catchall phrase, green bonds back projects that produce a positive environmental impact or outcome. In 2013, Massachusetts was the first entity to issue a green bond,³⁰ selling \$100 million worth of 20-year notes to pay for projects outlined within its capital plan. Since then, the issuance of green bonds has been a growing trend, and the popularity of green bonds is connected to a bigger trend of corporate social responsibility (CSR) investing, environmental, social and governance (ESG) investing, and “impact investing.”

Environmental Impact Bonds (EIBs)

EIBs are similar to green bonds (in that they fund projects with environmental sustainability/resiliency outcomes), but they use a “pay for success” model that ties financial return directly to project attainments. Washington D.C. issued the first EIB in the country, to address stormwater issues; in 2019, Atlanta issued the first publicly-traded EIBs.

Case studies for these two efforts, and another example from Virginia, can be found in the [Additional Information and Resources](#) section at the close of this section.

TAKEAWAY

- Some local governments have used rate design to generate money for water infrastructure projects, which can affect water affordability at the community level.
- Advocates can monitor whether utilities are properly using revenues that have been marked for capital projects. They can also help develop partnerships between local governments and local nonprofit watershed groups to improve the chance that grant applications are funded (and therein, reduce the likelihood that customers end up shouldering water infrastructure improvement costs).

30 The World Bank. (2015). *What Are Green Bonds?* The World Bank.
<https://documents1.worldbank.org/curated/en/400251468187810398/pdf/99662-REVISED-WB-Green-Bond-Box393208B-PUBLIC.pdf>

FUNDING FOR INDIVIDUAL WELLS AND SEPTIC SYSTEMS

About 10 percent of the U.S. population is not connected to a public water system for their drinking water. Even more Americans (20 percent) are not connected to a public wastewater system.

Public water and wastewater services may never be provided to households that are situated in areas with challenging topography, or where the population density is too low to merit a centralized water supply system. Instead, these mostly rural and tribal households get water from private wells on their property, and/or have onsite septic tanks that handle their wastewater; for example, in Alaska, only approximately 67 percent of households are serviced by public wastewater systems, but even in the highly developed Atlanta metro area, about 12,000 new septic tanks are installed every year.³¹

When this infrastructure fails, these households have limited financing options, such as:

Section 319(h) Grants

Usually, a local government entity has to apply for the grant and then reimburses homeowners (usually a group in the same residential area as opposed to on an individual basis) for their septic tank repair costs. In some states, additional consideration is given to grant applications that demonstrate strong partnerships between the local government and a local nonprofit watershed groups.

Linked Deposit Programs (via SRF programs)

Some states have used linked deposits to fund septic tank replacement.

Rural Decentralized Water Systems Grant Program

This program includes funding to repair septic tanks, for “rural” homes, as defined by the USDA. The Agency also runs the Household Water Well Program that helps qualified nonprofits and tribes create a revolving loan fund to increase access to clean, reliable water and septic systems for households in eligible rural areas. (The program application window updates annually, check the [Federal Register website](#) for any recent updates.)

Linked deposits are explained in the [“Doing More with SRFs”](#) section of this section.

31 Isaac Berahzer, S. (2020, December 14). How Septic Tanks May be Affected by the Pandemic [web log]. <https://www.ibenvironmental.com/blog/2020/12/14/how-septic-tanks-may-be-affected-by-the-pandemic>

Water Well Trust

This [program](#) aims to provide low-income Americans who live without access to safe drinking water financing for the construction or rehabilitation of water wells; the program is only available in certain states.

TAKEAWAY

- Bonds are a type of investment where an investor lends money to the bond issuer in exchange for interest payments.
- Bonds make more sense for very large amounts of funding
- Limited financing options are available for wells and septic systems infrastructure projects. Typically, local government entities have to apply for grants, and then they reimburse customers — advocates can boost the chances of a local government receiving these funds by encouraging partnerships with local watershed nonprofits.

MULTI-SOURCE FUNDING

Funding for a single water project sometimes comes from a variety of different funding programs, which can help stretch and leverage limited funding availability. Organizations such as [The Nature Conservancy](#) promote the advantages of creating a diverse funding portfolio for water projects, and the EPA and USDA have sought to increase “co-funding” of water projects; in recognition of the complexity of coordinating funding and managing multiple application processes, the EPA report [“Funding Collaboration: Maximizing the Impact of Project Funding to Increase Compliance and Enhance Public Health”](#) highlights the challenges states have encountered and provides corresponding solutions.

Several communities and states have been successful in implementing or facilitating the implementation of multi-source funding projects. In 2020, the city of Florence, South Carolina received an EPA [AQUARIUS](#) award for “Excellence in Innovating Finance” for using its revenue funds, along with funding from Community Development Block grants, the Economic Development Administration (EDA), USDA-Rural Development, the South Carolina Rural Infrastructure Bank, and the State Transportation Infrastructure Bank, to consolidate the Town of Timmonsville, providing the municipality with its

Quiz

The CWSRF differs from the DWSRF in that the CWSRF: (choose all that apply)

- Does not have as many set-asides as the DW SRF
- Funds wastewater treatment plant upgrades
- Funds chlorine for water treatment

Answers: a, b

own water system and improving system efficiency. (Prior to this AQUARIUS award, the Florence received a 2019 EPA [PISCES](#) award for similar efforts to address a variety of sewage problems.)

To overcome the challenge of myriad application forms, varying requirements, and limited capacity due to the low number of staff, the state of Nevada created the Nevada Water and Wastewater Review Committee, made up of various funding organizations that developed a pre-application process to help match funding sources to project types, and also help small rural water systems with the application process.³² Similarly, Georgia Funders' Forum is a committee of funding organizations that meets quarterly to discuss potential collaboration and learn about changes in the various programs.³³

Closer Look



With limited dollars, and a federal emphasis on multi-funded projects, advocates can use these examples, and other models outlined at the [close of the section](#), to encourage their utilities to pursue and coordinate diverse funding arrangements.

From an equity standpoint, advocates and communities should have some voice in choosing GSI projects over gray infrastructure, where relevant.

Gray Infrastructure – The network of pipes, tunnels, pumping stations, and water and wastewater treatment facilities, that make up community water systems (also referred to as “traditional” water infrastructure); “gray” refers the color of the infrastructure, and is also used as a contrast to “green infrastructure.”

The majority of U.S. water infrastructure is gray infrastructure.

TYPES OF WATER INFRASTRUCTURE PROJECTS

Large centralized water infrastructure — treatment plants, pipes, and detention ponds, often referred to as gray infrastructure — has long been the dominant approach to providing and treating water. A complementary water management system is distributed infrastructure, i.e. projects that are distributed or scattered across a jurisdiction, and “includes permeable pavements, green roofs, rain gardens, smart meters, drought-tolerant landscaping, leak detection devices, water efficient appliances, graywater systems, rainwater catchment, point-of-use water treatment and more.”³⁴

Green Stormwater Infrastructure Systems (GSI)

Green stormwater infrastructure is a specific type of distributed infrastructure that can provide multiple benefits to a community, such as improved air and water quality, recreational opportunities, pollinator habitats,

32 Office of Water. (2012, October). *Funding Collaboration: Maximizing the Impact of Project Funding to Increase Compliance and Enhance Public Health* (EPA 816-F-12-007). U.S. Environmental Protection Agency. <https://www.epa.gov/sites/production/files/2015-04/documents/epa816f12007.pdf>

33 Georgia Funders' Forum. IB Environmental. (n.d.). <https://www.ibenvironmental.com/georgia-funders-forum>

34 Koehler, C. (2018, May 16). *Financing the Future of Water Infrastructure Just Got a Whole Lot Easier*. WaterNow Alliance. <https://waternow.org/2018/05/16/financing-the-future-of-water-infrastructure-just-got-a-whole-lot-easier/>

Centralized infrastructure systems collect, treat, and distribute water and wastewater at a central location (i.e. a treatment plant). Such systems make up the majority of water and wastewater infrastructure networks.

Definitions vary, but in the context of this toolkit, distributed infrastructure systems refers to water collection, treatment, and distribution occurring throughout a community or service area. Water utility staff sometimes referred to this as decentralized infrastructure, in contrast to a centralized system that relies on a large water treatment and pumping station, or wastewater treatment plant, to perform these same processes.

and lower energy bills (due to the air cooling effects).³⁵

Overall, distributed projects tend to be less energy-intensive, more resilient, and employ nature-based processes (i.e. bioinfiltration and evapotranspiration). But given that large centralized projects represent the traditional approach to addressing water infrastructure, there is a comfort level in terms of accounting and budgeting for these gray infrastructure projects. Additionally, green projects are often distributed across a jurisdiction which may make them more difficult to manage, and if some aspects of a distributed infrastructure project include private property, utilities may be reluctant to pay because in many cases, they must justify the expense and prove that the investment benefits the community at-large. Federal agencies and public financing programs have been working to communicate that these types of projects do qualify for public funds because of their broader community benefit.³⁶

Closer Look



However, it is also important to note that some types of GSI (trees, as an example) are tied to property value increases, which may benefit some but can create displacement concerns for low- or moderate-income households.³⁷ GSI strategies must be paired with affordability efforts to avoid such displacement, and community stakeholders should be engaged in GSI decision-making processes to spot issues and identify solutions³⁸ — homeownership strategies such as co-ops, land trusts, and property tax freezes can help stabilize existing neighborhoods, and preservation of affordable rental housing through purchase or partnerships with landlords are complementary strategies.

Lead Service Lines

Lead service lines have emerged as another important type of distributed infrastructure that needs to be addressed urgently. At the utility level, there is variability in how lead service line replacement is funded, and this is further complicated by whether the service line (from

35 Center for Neighborhood Technology. (2020, March 2). *Green Values Strategy Guide: Linking Green Infrastructure Benefits to Community Priorities*. Center for Neighborhood Technology. <https://www.cnt.org/publications/green-values-strategy-guide-linking-green-infrastructure-benefits-to-community>

36 Kammeyer, C., and Koehler, C. (2020, September 1). *How Distributed Water Infrastructure Can Boost Resilience in the Face of COVID-19 and Other Shocks*. Pacific Institute. <https://pacinst.org/how-distributed-water-infrastructure-can-boost-resilience-in-the-face-of-covid-19-and-other-shocks/>

37 Center for Neighborhood Technology, and SB Friedman Development Advisors. (2020, November 17). *Green Stormwater Infrastructure Impact on Property Values*. Center for Neighborhood Technology. <https://www.cnt.org/publications/green-stormwater-infrastructure-impact-on-property-values>

38 Center for Neighborhood Technology. (2020, March 2). *Green Values Strategy Guide: Linking Green Infrastructure Benefits to Community Priorities*. Center for Neighborhood Technology. <https://www.cnt.org/publications/green-values-strategy-guide-linking-green-infrastructure-benefits-to-community>

the water main to the interior of the home) is owned by the utility or the homeowner, as this will determine who is responsible for replacement costs; in many communities, half of the service line is owned by the utility (public side) and the other half is owned by the homeowner (private side).

Partial service line replacement does not get rid of the issues around lead in water, so replacing the entire service line is recommended. And the 2018 America's Water Infrastructure Act makes it very clear that these projects are eligible for federal funding (e.g. via SRFs): There is even language that states need to include a cost assessment of replacing lead service lines as part of the Needs Assessment survey that occurs every four years.

Many utilities have paid for the replacement of private side lead service lines using rate revenue and, in some cases, subsidized homeowner costs when they replace the private side themselves. For utilities that are on the fence about using SRF dollars for these types of projects, the EPA states that “replacement of the entire service line is DWSRF-eligible.”³⁹ Visit the [Environmental Defense Fund](#) to learn more about how communities are funding lead service line replacement, and how states are supporting and driving those efforts; the [Lead Service Line Replacement Collaborative](#) is another relevant resource.

Funding Sources for Centralized and Distributed Infrastructure

Public Funding Source	Types of Projects Funded
Clean Water State Revolving Fund (CWSRF)	Construction of publicly owned treatment works, nonpoint source reduction projects, national estuary program projects, decentralized wastewater treatment systems, stormwater (including green stormwater infrastructure), water conservation, efficiency, and reuse, watershed pilot projects, energy efficiency, security measures at publicly owned treatment works, and technical assistance. (Project types are detailed below).
Drinking Water State Revolving Fund (DWSRF)	Improvement of drinking water treatment systems, upgrading or retrofitting leaky or old pipes, improving water supply resources, replacing or constructing water storage tanks, infrastructure projects that protect public health, source water protection, water efficiency. (Project types are detailed below).
<u>USDA Rural Development</u>	Constructing water and waste facilities, organizations that provide technical assistance and training, preparing for or recovering from emergencies, water and waste disposal systems for Alaskan villages, and planning and developing applications for USDA Rural Development Water and Waste Disposal Direct Loan/Grant and Loan Guarantee Programs

³⁹ Office of Water. (2021, April 1). *Funding for Lead Service Line Replacement* [Collections and Lists]. U.S. Environmental Protection Agency. <https://www.epa.gov/ground-water-and-drinking-water/funding-lead-service-line-replacement>

<u>Water Infrastructure Finance and Innovation (WIFIA)</u>	Projects eligible for the SRF programs, enhancing energy efficiency at drinking water and wastewater facilities, alternative water supply projects, drought prevention, reduction, or mitigation projects, acquisition of a property if it is integral to the project, and a combination of projects secured by a common security pledge
<u>Section 319(h) Grants</u>	Technical assistance, financial assistance, education, training, technology transfer, demonstration and monitoring projects
<u>CoBank</u>	Upgrading existing infrastructure, building new water treatment plants and distribution systems, and integrating new technology
<u>Economic Development Administration, Department of Commerce (EDA)</u>	Water and wastewater systems improvements
<u>Community Development Block Grant Program (CDBG; HUD Funds)</u>	Acquisition of property and property for public purposes, construction or reconstruction of water and wastewater facilities, relocation and demolition projects, rehabilitation of public and private buildings, planning activities, activities relating to energy conservation and renewable energy resources, assistance to nonprofit and for profit entities for community development activities and economic development
<u>Appalachian Regional Commission (ARC)</u>	Projects that focus on economic opportunities, workforce, critical infrastructure, natural and cultural assets, and leadership and community capacity, community leadership
<u>Hazard Mitigation Assistance (HMA) Program Grants</u>	Projects that reduce disaster losses and protect life and property from future disaster damages, for example projects that reduce flooding
<u>Natural Resources Conservation Service Source Water Protection</u>	Conservation programs that protect sources of drinking water, increases incentives for agricultural producers to implement practices that benefit source water protection, and authorizes Natural Resources Conservation Service (NRCS) and their State Technical Committees to work with community water systems to identify state/local source water protection priorities.

The EPA has established [six \(6\) categories](#) for DWSRF funding.

DWSRF Project Categories	Examples
Treatment	Projects to install or upgrade facilities to improve drinking water quality to comply with SDWA regulations
Transmission and distribution	Rehabilitation, replacement, or installation of pipes to improve water pressure to safe levels or to prevent contamination caused by leaky or broken pipes
Source	Rehabilitation of wells or development of eligible sources to replace contaminated sources
Storage	Installation or upgrade of finished water storage tanks to prevent microbiological contamination from entering the distribution system
Consolidation	Interconnecting two or more water systems
Creation of new systems	Construct a new system to serve homes with contaminated individual wells or consolidate existing systems into a new regional water system

The EPA has cited [11 categories](#) for CWSRF funding.

CWSRF Project Categories	Examples
Construction of publicly owned treatment works	Assistance to any municipality or inter-municipal, interstate, or state agency for construction of publicly owned treatment works (as defined in CWA section 212).
Nonpoint source	Assistance to any public, private, or nonprofit entity for the implementation of a state non-point source pollution management program, established under CWA section 319.
National estuary program projects	Assistance to any public, private, or nonprofit entity for the development and implementation of a conservation and management plan under CWA section 320.
Decentralized wastewater treatment systems	Assistance to any public, private, or nonprofit entity for the construction, repair, or replacement of decentralized wastewater treatment systems that treat municipal wastewater or domestic sewage.
Stormwater	Assistance to any public, private, or nonprofit entity for measures to manage, reduce, treat, or recapture stormwater or subsurface drainage water.
Water conservation, efficiency, and reuse	Assistance to any municipality or inter-municipal, interstate, or state agency for measures to reduce the demand for publicly owned treatment works capacity through water conservation, efficiency, or reuse.

Watershed pilot projects	Assistance to any public, private, or nonprofit entity for the development and implementation of watershed projects meeting the criteria in CWA section 122.
Energy efficiency	Assistance to any municipality or inter-municipal, interstate, or state agency for measures to reduce the energy consumption needs for publicly owned treatment works.
Water reuse	Assistance to any public, private, or nonprofit entity for projects for reusing or recycling wastewater, stormwater, or subsurface drainage water.
Security measures at publicly owned treatment works	Assistance to any public, private, or nonprofit entity for measures to increase the security of publicly owned treatment works.
Technical assistance	Assistance to any qualified nonprofit entity, to provide technical assistance to owners and operators of small and medium sized publicly owned treatment works to plan, develop, and obtain financing for CWSRF eligible projects and to assist each treatment works in achieving compliance with the CWA.

TAKEAWAY

- Centralized infrastructure projects represent the traditional approach to water infrastructure funding (and they are the focus of most SRF-funded projects). Distributed infrastructure projects are often scattered across jurisdictions and can even be on private property, making it more challenging (yet possible) for traditional public utilities to pay for these projects.
- The EPA and other federal agencies have underscored the importance of distributed infrastructure projects and delineated how such projects are eligible for federal funding.
- This resource is a reference that matches types of infrastructure projects to applicable funding sources, and the EPA details the categories of water projects that can receive both CWSRF and DWSRF support.

WATER INFRASTRUCTURE FINANCE, EQUITY, AND ENVIRONMENTAL JUSTICE

Low-income communities and communities that are majority of Black, Indigenous, and people of color (BIPOC) face disproportionately high levels of negative environmental impacts, such as poor air quality, higher air temperatures in the summer, high levels of industrial pollution, increased flood risk, and older infrastructure

Even though projects undergo an environmental review process by a different department, Louisiana SRF program managers routinely use EJSCREEN as an additional step in their own internal review, looking for environmental justice impacts of new treatment plants and projects slated for undisturbed land.

that may be more prone to failures,⁴⁰ which can be directly attributed to histories of racist land use policies and practices (ex. redlining).

[Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations](#) requires that federal agencies identify how their actions (i.e. how the funding and financing programs they design and oversee) affect the environment, and the health of BIPOC and low-income populations “to the greatest extent practicable.” Agencies must create plans focused on environmental justice and promote nondiscrimination, and to help them meet these aims and objectives, the EPA developed [EJSCREEN](#), an online mapping tool that allows agencies to overlay or combine environmental and demographic indicators. The EPA also has outlined ways to fold environmental justice considerations into its [National Environmental Policy Act \(NEPA\)](#) review process.

Existing tools and legislation are starting points for framing and tracking issues of water finance equity, and holding decision-makers accountable.⁴¹ Similar to federal efforts and initiatives, when communities and states consider applying for federal water infrastructure funds, they should be addressing environmental justice inequities — an environmental justice evaluation can use demographic, economic, human health, and cultural/ethnic differences to address whether there “exists a potential for disproportionate risk” to a community that has been or is disproportionately burdened by historic and existing socioeconomic and environmental factors⁴²; the evaluation also should ensure that communities have been sufficiently involved in the decision-making process.⁴³ A water utility interested in applying for federal or state funds may explore how its planned project might be informed by EJSCREEN indicators and include some of the data from the mapping tool in its application. For example, IB Environmental interviews indicate that Louisiana SRF program managers routinely use EJSCREEN as an additional step in the interdepartmental

40 Cusick, D. (2020, January 21). *Past Racist “Redlining Practices” Increased Climate Burden on Minority Neighborhoods*. Scientific American. <https://www.scientificamerican.com/article/past-racist-redlining-practices-increased-climate-burden-on-minority-neighborhoods/>

41 Clinton, W. (1994, February 11). *Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*. The White House https://www.epa.gov/sites/production/files/2015-02/documents/exec_order_12898.pdf.

42 Younger, J., Bergstein, J., Denmark, R., Mueller, H., Hoberg, C., Vallette, Y., Seaborne, R. (1998, April). *Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses*. U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2014-08/documents/ej_guidance_nepa_epa0498.pdf

43 Kinnebrew, A. (2020, July 24). *How To Make Equitable Environmental Decisions With Community Input* [web log]. <https://www.ibenvironmental.com/blog/2020/7/24/ways-to-make-equitable-environmental-decisions-with-community-input>.

project review process, looking for environmental justice impacts of new treatment plants and projects slated for undisturbed land.

Additionally, given that infrastructure spending, and federal commitments and directives on climate change and environmental justice, change from administration to administration, advocates should be mindful to stay current with changes, align their work with timely priorities, and be proactive about tracking proposed initiatives and legislation — EJSCREEN is publicly available, and advocates can use this tool for grant writing or other community awareness efforts. [At the time of publishing], the current administration has chosen to emphasize these environmental justice issues through the White House Environmental Justice Advisory Council and a Climate Action Plan (two of its applicable callouts include developing a Climate and Environment Justice screening tool that builds off of EJSCREEN, and the Justice40 initiative, which aims to have 40 percent of all relevant federal funding go to disadvantaged communities)⁴⁴.

To read more about the links between water affordability and environmental justice, visit the [Affordability](#) section.

Tip



Advocates should understand their local needs, get to know their local and state elected officials, department heads, and water utility operators, and work with them to advocate for aligned funding that benefits vulnerable communities. [The River Network Federal Water Policy Update Peer Group](#) is a place where advocates can track federal policy changes.

There are other aspects to infrastructure projects that have notable equity and affordability implications. These include intergenerational equity, project readiness criteria, project sizing, and prioritizing GSI projects.

Intergenerational Equity

This concept may best be understood through example — it may take three years to fully fund and implement an infrastructure project that has a useful life of 30 years; present-day utility customers likely will bear the full burden of paying for this project through service-related fees and charges (which may result in unaffordable bills for some). Give the project's 30-year lifespan, present-day customers will be able to benefit from the investment, but so will future customers who contributed nothing to the project costs.

44 The United States Government. (2021, January 27). *FACT SHEET: President Biden Takes Executive Actions to Tackle the Climate Crisis at Home and Abroad, Create Jobs, and Restore Scientific Integrity Across Federal Government*. The White House. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/27/fact-sheet-president-biden-takes-executive-actions-to-tackle-the-climate-crisis-at-home-and-abroad-create-jobs-and-restore-scientific-integrity-across-federal-government/>.

Intergenerational equity (i.e. “equity over time”) refers to this split incentive dilemma, whereby a payer bankrolls a product or service, and a beneficiary benefits from that investment without having to contribute (in the prior example, the “payer” is the present-day water utility customer and the “beneficiary” is a future customer.)

A more equitable approach may call for taking out an SRF loan and amortizing the payments over time, such that in 10 or 20 years, the customers being served by the utility are helping pay for the infrastructure upgrade that serves them, too.

Project Readiness

Federal managers continuously monitor how fast states distribute their SRF allocations. This puts states under a significant amount of pressure to fund projects in a timely manner, and if a state is not loaning out its monies fast enough, it may lose that money to a more efficient state. This creates a bias towards “shovel-ready” projects, or projects that have been planned and can be implemented quickly; local governments with sufficient capacity may have a broad portfolio of shovel-ready projects (and then be more likely to secure the financing), whereas lower capacity communities may not have the ability and/or staff to structure shovel-ready projects, which compounds their infrastructure maintenance issues and further burdens customers.

There may be opportunity for lower capacity governments and utilities to partner with nonprofits and advocacy groups whose foundation funding may allow them to set-up pilot projects, or support the initial planning and design for larger projects. States should also work to ensure that their project readiness criteria is flexible enough so lower-capacity communities aren’t excluded from consideration and have a better chance at securing needed funding.

Project Sizing

The 2020 [H2Equity: Rebuilding a Fair System of Water Services for America](http://policyinnovation.org/wp-content/uploads/WaterEquity.pdf) report provides eight critical areas where investments can “improve health equity outcomes for all persons, but in particular among the economically and racially disadvantaged groups.” One of these eight is to “right-size infrastructure to fit community needs” and encourage utilities to lower their financial risk by including smaller scale projects.⁴⁵

Bioswale – A bioswale is a vegetated channel that uses natural processes to carry, retain, and infiltrate stormwater. A green stormwater infrastructure technique, bioswales are generally designed to have engineered soil and native plants that improve stormwater infiltration and retention capacity.

45 Vedachalam, S., Male, T., and Broaddus, L. (2020). *H2Equity: Rebuilding a Fair System of Water Services for America*. Environmental Policy Innovation Center. <http://policyinnovation.org/wp-content/uploads/WaterEquity.pdf>.

Oversized infrastructure make water services less affordable because there are fewer customers to absorb project costs. When utilities apply for SRF loans, advocates can ask some general questions around their growth projections. Perhaps more importantly, advocates should request that states provide good regulatory oversight for guiding infrastructure decisions: This is important given that growth levels have not materialized in many communities (e.g. Southeast coastal communities) and many rural communities in the Midwest and Northeast are experiencing populations decline. Ultimately, this leaves fewer people to both use water infrastructure and pay water bills, and SRF borrowers will run into problems repaying loans for oversized projects when those dollars would have been better spent on other types of projects.

When compared to gray infrastructure, distributed infrastructure projects lend themselves to a more phased integration and implementation — they tend to scale smaller/at the neighborhood level, require slighter investment efforts, and are designed to address specific community or district needs, such as using green stormwater infrastructure to reduce flood risk. These infrastructure systems are right-sized by nature, and pursuing a distributed infrastructure project strategy makes sense for both utilities and advocates.

Pursuing Greenstormwater Infrastructure (GSI) Projects

In addition to being a good strategy to employ and achieve right-sized infrastructure, GSI projects represent a more integrated way to manage stormwater and recharge aquifers, which protects drinking water supply. Some GSI approaches are less expensive in the short-term, and can therefore have a more immediate positive impact on water affordability. In the long-term, a GSI approach tends to be even more financially advantageous because of the many resulting community benefits.⁴⁶

Because the two SRF programs represent the largest source of public water infrastructure financing, it makes sense to look at how they can be used to facilitate GSI projects. According to federal regulations, both Drinking Water and Clean Water SRF dollars can be used to fund GSI projects such as bioswales, permeable pavers, and trees — the 2009 American Recovery and Reinvestment Act further

⁴⁶ Dean, B., and McGraw, J. (2020). *Increasing Funding and Financing Options for Sustainable Stormwater Infrastructure*. Center for Neighborhood Technology. <https://www.cnt.org/sites/default/files/publications/Increasing%20Funding%20and%20Financing%20Options%20for%20Sustainable%20Stormwater%20Management.pdf>

expanded SRF project eligibility criteria by establishing a “green project reserve” within both the DW and CW SRFs that prompted states to seek and find as many “green” projects when possible.

Since 2012, the EPA DWSRF Eligibility criteria pointedly states that “funds made available...to each State for Drinking Water State Revolving Fund capitalization grants may, at the discretion of each State, be used for projects to address GSI, water or energy efficiency improvements, or other environmentally innovative activities.”⁴⁷

Tip



*Given that each state determines the extent to which GSI projects can qualify for SRF financing, advocates can encourage their states to have a wider interpretation of what kinds of projects can be funded, and push that green projects be afforded more advantageous financial incentives such as lower interest rates and principal forgiveness (or partial grants). Science is showing that, in many cases, GSI is a more effective way to treat stormwater, so SRF programs need to be encouraged to give such projects weighted consideration.*⁴⁸

TAKEAWAY

- Executive Order 12898 exists to protect low-income and frontline communities and attend to environmental justice concerns. Existing tools such as EJSCREEN can be used to help identify and address issues of equity and inequity.
- DW and CW SRF dollars can be used to fund GSI projects.
- States determine which projects receive SRF funding, so advocates should encourage their states to think about how they qualify projects so GSI projects are successfully financed and incentivized.

⁴⁷ U.S. Environmental Protection Agency. (2017, June 13). *DWSRF Eligibility Handbook*. U.S. Environmental Protection Agency. <https://www.epa.gov/dwsrf/dwsrf-eligibility-handbook>.

⁴⁸ Green Nylen, N., and Kiparsky, M. (2015, February). *Accelerating Cost-Effective Green Stormwater Infrastructure: Learning from Local Implementation*. Berkeley Law. https://www.law.berkeley.edu/files/CLEE/GSI_Report_Full_2015-02-25.pdf

ADDITIONAL INFORMATION AND RESOURCES

Case Studies

Using SRFs for Lead Service Replacement

Across the country, lead service lines (LSL) have emerged as an urgent drinking water quality issue. Though these lines are traditionally and technically considered the responsibility of the homeowner, federal and state funding is supporting the replacement of these lines as a public responsibility by providing SRF loans to address the problem — in other words, in many states, instead of making the individual homeowners fund the repairs themselves, utilities are opting to pay for service line replacement by borrowing SRF money and repaying the loans from rate-payer revenues.

A [report](#) written by the Water Center at the University of Michigan highlights states that are using drinking water SRFs for lead service line replacement. Flint, Mich. became one of the best-known cities in the country that experienced lead exposure. In 2016, the legislature added \$100 million in supplemental grants to the Michigan drinking water SRF. Using the state's matching funds, Michigan used a total of \$120 million to replace lead service lines.

Beyond the emerging clarity that lead service lines can be replaced by the utility (as opposed to the homeowner) these projects are actually being prioritized in some states. Because federal law gives states the ability to decide project priority for SRF funds, some states have redesigned their criteria to focus on LSL replacement projects. In Wisconsin, the state directs its lower interest rates and loan forgiveness ("additional subsidization") on LSL replacement, and it also passed legislation that enables the use of water rates to pay for LSL replacement. In addition to those funding sources, the Wisconsin Department of Natural Resources has created the Private LSL Replacement Funding Program.

Other states, such as Indiana, Connecticut, and New Hampshire, offer additional points when ranking projects on their state SRF priority list. New Jersey uses principal forgiveness for LSL replacement, for up to 90 percent of project costs, and the remaining 10 percent can be covered by interest-free loans.

These states can serve as an example to others that are still concerned about using utility funds to replace lead service lines on private property, and how to prioritize this type of SRF project.

Denver Water Lead Reduction Program

In 2019, Denver Water implemented a Lead Reduction Program. The program allows the utility to adjust the pH level of water, create an inventory of lead service lines, replace lead service lines with copper lines, and provide a water pitcher, filter, and replacements to customers. There is no direct charge to Denver Water customers for pipe replacements or water filters. The utility plans to cover the cost of the program through water rates, bonds, new service fees, and hydropower generation. In addition to these funding sources, Denver Water plans to source funds from loans, grants, and possibly from partners.

Because there are an estimated 84,000 properties that need pipe replacement, Denver Water is prioritizing neighborhoods by risk level and underserved areas. The overall timeline of replacing all lead service pipes is 15 years; Denver Water has made it a top priority to communicate with its customers about proposed plans and information about lead and drinking water, an example of how city leadership can address LSL issues and frame the problem as a public responsibility.

Additional Reading: Water Infrastructure Funding and Policies

[Drinking Water State Revolving Fund Eligibility Handbook](#)

In 2017, the EPA prepared a detailed handbook to address DWSRF eligibility, especially on emerging types of projects such as “green projects, which are explored in “Appendix B” of the handbook.

[The WIFIA Program 2019 Annual Report \(EPA\)](#)

This brief report summarizes the latest progress made by the EPA under the Water Infrastructure Finance and Innovation Act. Taking a closer look at existing federal policies on water infrastructure will help advocates have a well-grounded understanding of federal policy, and with its multiple graphics, the report particularly useful for visual learners.

[Congressional Action on Resilient Infrastructure \(2017-2018, Environmental and Energy Study Institute\)](#)

This video offers a very brief exploration of how federal policies can be employed when addressing disaster and climate threats. This video is particularly useful auditory learners.

[America’s Aging Water Infrastructure \(Bipartisan Policy Center\)](#)

This report offers a concise list that describes the various federal programs which fund state and local water infrastructure.

[Understanding How the Money is Supposed to Flow Water Infrastructure Funding and Finance 101](#)

Part one of four, this webinar provides an overview of where water, wastewater, and stormwater utilities are positioned in the local government framework (e.g. local government departments, authorities, etc.), and how this positioning affects their financial flexibility. The webinar looks at the “fund accounting” approach in local government finance to better understand the rules that should keep rate revenues preserved for water, and viewers are offered a few ways to check the financial health of a utility.

Quiz

SRF funds can be used to support GSI projects.

- a. True
- b. False

Answer: True, states determine the amount and project eligibility.

[Water Infrastructure Financial Leadership: Successful Financial Tools for Local Decision Makers](#)

This report is written for local decision-makers to help them navigate water infrastructure investing processes. This document, which has interactive features throughout, also compiles existing resources and descriptions of successful community examples as tools to help inform water infrastructure investment decisions.

[Water, Health, and Equity: The Infrastructure Crisis Facing Low-Income Communities and Communities of Color and How to Solve It \(Clean Water for All\)](#)

This report studies the issue of poor water infrastructure in low-income communities and communities of color. The report's section titled "Policy Solutions for Healthy, Sustainable Water Infrastructure" offers four opportunities that federal funding offers for funding water infrastructure.

Other Resources and Innovations in Bonding

[Forest Resilience Bond \(Blue Forest\)](#)

The Forest Resilience Bond deploys private capital to finance forest restoration projects on private and public lands.

[Atlanta: First Publicly Offered Environmental Impact Bond \(Quantified Ventures\)](#)

Case study details the first-ever publicly offered Environmental Impact Bond with the Atlanta Department of Watershed Management.

[Green Bonds \(DC Water\)](#)

Details DC Water Green Bond Reports.

[Innovative Financing for Green Stormwater Infrastructure: Waves in Water Funding \(River Network/ IB Environmental\)](#)

The fourth of a four-part webinar series, this video provides an overview of the evolving use of green stormwater infrastructure (GSI) for water quality management nationally, and shares examples of how some traditional financing sources, such as the State Revolving Funds and local utility capital improvement plans, are now used to fund GSI projects.

[Financing Resilient Communities and Coastlines \(EDF\)](#)

Breaks down how environmental impact bonds are developed using wetland restoration in Louisiana as the case example.

[The Green Bond Market: An Overview for AMWA Utilities \(AMWA\)](#)

“An overview of how the green bond market originated, the definition of green bonds, a discussion of the development of principles and standards governing green bond issuances, and five brief examples describing experiences of AMWA members that issued green bonds between 2014 and 2016.”

[Bond Financing Distributed Water Systems: How to Make Better Use of Our Most Liquid Market for Financing Water Infrastructure](#)

Explores whether utilities can use bonds to finance distributed infrastructure on private property such as parking lots and landscaping through examining seven states.

[Prince George's County Urban Stormwater Retrofit Public Private Partnership](#)

An example of a functioning public-private partnership and using many different funding sources being brought together to fund a large project. The County relies on revenue bonds to fund project installations; the goal was to raise \$100 million. The bonds are being retired using stormwater utility fees revenue.

Other Resources for Greenstormwater Infrastructure

[Getting to Green: Paying for Green Infrastructure Financing Options and Resources for Local Decision-Makers](#)

This 2014 report includes examples of how to pay for GSI; pgs. 6-10 provide information and case studies on stormwater fees

[Utilizing SRF Funding for Green Stormwater Infrastructure Projects](#)

This report was prepared as a result of an agreement between the EPA and the City of Philadelphia to meet clean water goals with state-of-the-art green stormwater infrastructure project solutions and the limited involvement of CWSRFs. The purpose of the report is to analyze the potential of the CWSRFs to provide credit guarantees to green stormwater infrastructure projects within current program eligibilities and resources.

[Using the State Revolving Funds to Build Climate-Resilient Communities \(NRDC Water and Climate Team\)](#)

This report covers how to integrate water efficiency and green stormwater infrastructure into the SRFs program designs. It also covers how to reduce the flood risks of projects funded by the SRFs.

[EPA-Philadelphia Green Cities/Clean Water Partnership](#)

This report analyzes how the Clean Water SRF can provide credit guarantees to green stormwater infrastructure projects within current program eligibility and resources.

[Clean Water State Revolving Fund Green Project Reserve Report \(ARRA\)](#)

This report discusses the Green Project Reserve and how 20 percent of CWSRF program funding must be appropriated for projects that address green stormwater infrastructure, water and energy efficiency, or other environmentally innovative activities.

[Green Project Reserve Guidance for the Clean Water State Revolving Fund \(CWSRF\)](#)

EPA-provided resources related to the Green Project Reserve

Affordability

Objectives

- Understand what causes water to be unaffordable
- Recognize how unaffordable water bills affect vulnerable populations
- Identify the ways that governments (federal, state, and local) and utilities can work to make water more affordable
- Take note of how community members can influence decision-making related to water affordability

How Is Affordability Defined?

There are multiple ways to define “affordability.” Here, affordability seeks to convey that a household can pay for its water without having to sacrifice paying for or accessing other necessities related to housing, transportation, utilities, health care, food, and education. Low- and fixed-income households often face the choice of paying their water bill or paying for other competing priorities, such as medical or other utility bills, such as heat and electricity.¹

Affordability must be understood and considered in relation to individuals and the financial context of households, not as a standalone measure. This section examines affordability with respect to customers. *For information about affordability considerations at the enterprise/provider level, and with respect to rate-setting, visit the [Utilities section](#).*

1. [Why Affordability Matters](#)

2. [Considerations and Consequences Related to Water Affordability](#)

- a. Defining and Measuring Water Affordability
- b. Population Loss and Oversized Infrastructure
- c. Climate Change and Land Use Impacts
- d. Effects on Individuals and Households

3. [Affordability Policy and Practice: Federal Government](#)

- a. Increase Funding and Low-cost Financing for Water Infrastructure
- b. Create Direct Assistance Programs
- c. Address Water Shutoffs

4. [Affordability Policy and Practice: State Government](#)

- a. Establish Affordability Standards
- b. Incentivize Affordability Efforts and Remove Policy Barriers
- c. Prioritize Funding, Low-cost Financing, and Technical Assistance
- d. Institute Water Loss Prevention and Efficiency Programs
- e. State Case Studies

5. [Affordability Policy and Practice: Local Government/Water Utility](#)

- a. Set Equitable Rates and Transparent Billing Practices
- b. Create Customer Assistance Programs
- c. Develop Good Asset Management and Workforce Development Practices
- d. Assess Community Issues and Limit Water Shutoffs
- e. Local Government/Water Utility Case Studies

6. [Additional Information and Resources](#)

- a. Why Is Water Unaffordable?
- b. Impacts
- c. State Actions
- d. Utility Actions

¹ Sham, Written Chi Ho, Carolyn Gillette, Jumana Vasi, Vasi Consulting, Katherine Baer, and Paco Ollervides. “Drinking Water Guide: A Resource for Advocates.” Portland, OR: River Network, 2019. https://www.rivernetwork.org/wp-content/uploads/2019/04/drinking_water_guide.pdf

WHY AFFORDABILITY MATTERS

Unaffordable water bills are a growing crisis in the United States. Between 2010 and 2019, the cost of water services grew by 57 percent in 30 major cities.²

American's racial wealth gap and generational poverty issues are perpetuated by unaffordable water bills. In many municipalities, the water department or water utility can disconnect water and place liens on homes with unpaid water bills. A lien means that the city or utility can make a legal claim on the property in order to collect on the unpaid water bills.³ If a household ultimately cannot pay its past due bills within a certain time period, the city or utility can foreclose on the property and sell it to pay for the unpaid bills. Existing racial wealth gaps rooted in racist land use and home loan policies^{4,5} mean that Black communities in particular, and other communities of color, are more likely to face economic insecurity, unaffordable water bills, possible water disconnection, and an increased risk of foreclosure and eviction.⁷

See the [Infrastructure](#) section for more information about how the physical state of water systems impacts affordability.

Affordability—According to the Pacific Institute, water is affordable when its cost does not prohibit access to the resource, nor interfere with other essential expenditures (ex. food, shelter, electricity).

TAKEAWAY

- The rising cost of water and wastewater services must be understood within the context of a household's full financial situation.
- When water bills are unaffordable, low-income households are at risk of losing access to water, and possibly their homes and health.

2 Gallet, D., Pakenham, C., and Schneemann, M. (2020, February 7). *Water Affordability in Northeastern Illinois: Addressing Water Equity in a Time of Rising Costs*. Metropolitan Planning Council. <https://www.metroplanning.org/multimedia/publication/950>.

3 Montag, C. (2019, May). *Water/Color: A Study of Race and the Water Affordability Crisis in America's Cities*. The NAACP Legal Defense and Educational Fund, Inc. https://www.naacpldf.org/wp-content/uploads/Water_Report_FULL_5_31_19_FINAL_OPT.pdf?_ga=2.76987605.1172962889.1617385410-73927364.1617385410.

4 Gross, T. (2017, May 3). *A 'Forgotten History' Of How the U.S. Government Segregated America*. NPR. <https://www.npr.org/2017/05/03/526655831/a-forgotten-history-of-how-the-u-s-government-segregated-america>

5 Sabelhaus, J., and Clemens, A. (2020, July 27). *A Generational Perspective on Recent U.S. Homeownership Divergence by Income and Race*. Washington Center for Equitable Growth. <https://equitablegrowth.org/a-generational-perspective-on-recent-u-s-homeownership-divergence-by-income-and-race/>

6 Wilson, V. (2020, September 16). *Racial Disparities in Income and Poverty Remain Largely Unchanged Amid Strong Income Growth in 2019*. Economic Policy Institute. <https://www.epi.org/blog/racial-disparities-in-income-and-poverty-remain-largely-unchanged-amid-strong-income-growth-in-2019/>

7 Food and Water Watch. (2018). *America's Secret Water Crisis: National Shutoff Survey Reveals Water Affordability Emergency Affecting Millions* [PDF]. https://foodandwaterwatch.org/wp-content/uploads/2021/03/rpt_1810_watershutoffs-web2.pdf

CONSIDERATIONS AND CONSEQUENCES RELATED TO WATER AFFORDABILITY

The affordability of water service is influenced by several factors. First, there is not clear consensus about how to measure affordability, which makes it difficult to establish standards. Additionally, communities with significant population loss still have to maintain large water infrastructure systems yet have smaller populations from which to collect sufficient revenue, and this can result in higher water bills for individual households. Finally, old and aging water infrastructure is frequently overwhelmed by climatic changes or industrial and agricultural runoff, and necessary infrastructure upgrades are likely to be costly and burden low-income populations.

Defining and Measuring Water Affordability

According to the [Pacific Institute](#), water is affordable when its cost is not prohibitive and does not interfere with other essential household costs (i.e. food, shelter, electricity)⁸. However, operationalizing this fairly simple concept has proven challenging.

Traditionally, affordability is determined by assessing the annual cost of water bills as a percentage of a community's median household income (MHI). Some Environmental Protection Agency (EPA)-related documents have been misconstrued to deem that affordability is met if combined fees for water and wastewater service do not exceed 4.5 percent of MHI, yet this metric lacks vital context. Most critically, MHI does not accurately capture or reflect household vulnerability within a community. Further, the percentage-of-MHI measure was meant to gauge whether a community has the ability (or financial capacity) to pay for infrastructure investments over time; it was not designed to consider or account for current affordability at the individual or household level.⁹

8 Pacific Institute and the Community Water Center. (2012, June). *Water Rates: Water Affordability - Issue Brief*. Pacific Institute. <https://pacinst.org/publication/water-rates-water-affordability-need-to-know-brief/>

9 Sham, C. H., Gillette, C., ERG, Vasi, J., JVasi Consulting, Baer, K., and Ollervides, P. (2019). *Drinking Water Guide: A Resource for Advocates*. River Network. https://www.rivernetwork.org/wp-content/uploads/2019/04/drinking_water_guide.pdf

To provide a more nuanced look at water system finances and affordability, the American Water Works Association (AWWA) and other partners developed a new water affordability standard in 2019¹⁰. This new method looks at the prevalence of poverty in a community, and the combined impact of water, wastewater, and stormwater billing, to benchmark water affordability. The advised EPA Financial Capability Assessment¹¹ looks at two indices:

- Residential Indicator (a utility's ability to pay higher costs for needed infrastructure investments)
- Financial Capability Indicator (a utility's ability to obtain financing for and maintain for infrastructure investments).

The newly recommended methodology calls for the addition of the following metrics:

- Lowest Quintile Residential Indicator (cost per low-income household as a percentage of the Lowest Quintile Income)
- Poverty Indicator (five poverty indicators used to benchmark the prevalence of poverty within a service area)
 - o Percentage of Population with Income Below 200% of the Federal Poverty Level
 - o Percentage of Population with Income Below Federal Poverty Level
 - o the Upper Limit of the Lowest Income Quintile
 - o Lowest Quintile Income as a Percentage of Aggregate Income
 - o Percentage of Population Receiving Food Stamps/ SNAP Benefits¹²

Closer Look



Looking at these four metrics together can better contextualize how prevalence of low-income households in a community affects how feasible it is for a utility to implement water rate increases as a means of paying for infrastructure investments.

10 Raucher, R., Rothstein, E., and Mastracchio, J. (2019, April 17). *Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector*. The American Water Works Association.
<https://www.awwa.org/Portals/0/AWWA/ETS/Resources/DevelopingNewFrameworkForAffordability.pdf?ver=2020-02-03-090519-813>

11 Czerwinski, S. J., Fretwell, E., Fosler, R. S., Lindsey, G., and Pagano, M. A. (2017). *Developing a New Framework for Community Affordability of Clean Water Services* (No. 2210; p. 233). National Academy of Public Administration.
https://s3.us-west-2.amazonaws.com/napa-2021/studies/developing-a-new-framework-for-community-affordability-of-clean-water-servi/NAPA_EPA_FINAL_REPORT_110117.pdf

12 Office of Water. (2021). *2021 Financial Capability Assessment Guidance* (Draft Version) (p. 79). U.S. Environmental Protection Agency.
https://www.epa.gov/sites/production/files/2021-01/documents/2021_fca_guidance_-_january_13_2021_final_prepub.pdf

As of January 2021, the suggested methodology is still under review by the EPA Water Infrastructure and Resiliency Finance Center,¹³ and its adoption is not clear¹⁴. It's also important to remember that this new measure is still geared at helping the EPA assess capacity to pay for infrastructure investments at the community level, it does not to gauge affordability at the household level — in the 2020 *Beyond the Water Bill* report, CNT and IB Environmental applied this new standard to several communities to show the burden of current water bills on low-income households.

Population Loss and Oversized Infrastructure

The ongoing operation and maintenance of a water system requires a proportionate customer base. Ideally, a water infrastructure network is “right-sized” in accordance with its service population, and no customer bears an outsized responsibility in funding infrastructure improvements.

When population size changes, it directly impacts the amount of revenue that a water utility can collect, and thus, its ability to make infrastructure investments. Areas that have had significant population loss (e.g. cities that experienced deindustrialization during the 1970s and 1980s) have large water systems that are overbuilt for current service needs. When a customer base is declining or otherwise unsuited to generate sufficient revenue, and there are few growth-based opportunities for new revenue streams (ex. new business tax dollars), necessary infrastructure investments become less viable. For small water systems, especially those that serve majority low-income communities, any level of infrastructure investment might be burdensome for the customer¹⁵.

Inadequate water infrastructure investment increases the risk of water main breaks and leaky pipes — the volume of treated water that is lost in transmission is often charged to the customer, which is another factor that can cause water bills to balloon.

Right-sized infrastructure – Infrastructure is right-sized when the amount of gray water infrastructure (pipes, tunnels, treatment facilities) is proportional to the population

Quiz

Families could be better equipped to afford water bills if they: (Choose all that apply)

- a. Had access to billing assistance
- b. Obtained debt forgiveness
- c. Received bills based on income-level
- d. Were protected from water shutoffs

Answer: a, b, c

13 Office of Water. (2020, September 14). *2021 Financial Capability Assessment for Clean Water Act Obligations* [Overviews and Factsheets]. U.S. Environmental Protection Agency. <https://www.epa.gov/waterfinancecenter/2021-financial-capability-assessment-clean-water-act-obligations>

14 IB Environmental. (2021, March 5). What's on the Horizon for Measuring Water Utility Financial Capability? <https://www.ibenvironmental.com/blog/2021/2/26/whats-on-the-horizon-for-measuring-water-utility-financial-capability>

15 Martin, D. (2009, Summer). *Regionalization: A potential solution to affordability and capacity issues of small systems*. Rural Matters, 8–10. <https://www.rcap.org/wp-content/uploads/2016/01/RuralMatters-Summer2009-1.pdf>

Quiz

Families are at risk for which of the following when they are unable to afford water bills?

(Choose all that apply)

- a. Foreclosure
- b. Eviction
- c. Family separation
- d. Poor credit
- e. Public health concerns

Answer: a, b, c, d, e

Climate change – In the context of this toolkit, climate change refers to the extreme weather patterns that impact water cycles and water systems, including periods of increased rainfall or drought.



Profile:

Jarome Montgomery

Climate Change and Land Use Impacts

A changing climate (increasingly severe rain events, periods of drought, hotter days, etc.) also has a negative impact on water infrastructure. Fresh water supplies are being compromised, contaminated, and depleted through drought, and systems may need to be expanded to find new water sources. And extreme weather events can overwhelm older, less resilient water systems¹⁶.

Industrial agricultural practices, and factory water overuse and contamination, can be particularly taxing to water infrastructure and cause accelerated wear and tear. Furthermore, driven by property values, and the perceived economic and jobs boom, businesses are often incentivized to locate in economically disadvantaged communities¹⁷ whose water systems and customer base may both be strained.

Overworked, aging infrastructure may be incapable of sufficiently treating polluted water —treatment facilities may require costly upgrades because older infrastructure was not created to address contaminants such as lead and per- and polyfluoroalkyl substances (PFAS), or there may be emerging contaminants that don't have treatment protocols yet. Again, replacing or fixing worn infrastructure comes with a cost, and these costs are frequently passed along to customers via water bills.

Effects on Individuals and Households

The ability to afford clean and reliable drinking water is a cornerstone and foundational human right: Without water, individuals and households face a compounding set of social, environmental, and economic harms that can affect housing, earning ability, wealth creation, family stability, and personal and public health.

When a household's water service is shutoff, the community may place a lien on the home. This can result in foreclosure and eviction, which increases the risk of homelessness and mental health struggles, and increased rates of homelessness may weaken community morale¹⁸¹⁹.

16 EPA. (2020, November 19). *Climate Impacts on Water Utilities*. EPA. <https://www.epa.gov/arc-x/climate-impacts-water-utilities>.

17 Singh, R. K. (2019, February 8). *U.S. Steel Wins Tax Breaks from One of America's Poorest Cities*. Reuters. <https://www.reuters.com/article/us-steel-gary-insight/u-s-steel-wins-tax-breaks-from-one-of-americas-poorest-cities-idUSKCN1PX17D>

18 Montag, C. (2019, May). *Water/Color: A Study of Race and the Water Affordability Crisis in America's Cities*. The NAACP Legal Defense and Educational Fund, Inc. https://www.naacpldf.org/wp-content/uploads/Water_Report_FULL_5_31_19_FINAL_OPT.pdf?_ga=2.76987605.1172962889.1617385410-73927364.1617385410

19 Jones, P. A., and Moulton, A. (2016, May). *The Invisible Crisis: Water Unaffordability in the United States*. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/Invisible%20Crisis%20-%20Water%20Affordability%20in%20the%20US.pdf>



Profile: Nicole Hill

Unaffordable water also impacts sanitation and public health outcomes. Clean water is essential to preventing the spread of disease, and handwashing and cleaning with water are important in maintaining public health²⁰ — during the COVID-19 pandemic, the Centers for Disease Control advised regular hand-washing and, in response, the American Water Works Association (a leading water industry membership organization) recommended that water utilities ban shutoffs and provided guidance on restoring water connections in households²¹. To ensure public safety, many municipalities did, indeed, declare shutoff moratoriums and restore connections²².

Without water billing assistance, debt forgiveness, and/or income-based water bills, vulnerable families can experience cascading social and economic impacts. Consider a child custody example, when not paying water bills can result in water shutoffs and an inability to pay for reconnection; given these circumstances, a household may be deemed unfit for children, and a social worker or state official may temporarily separate children from their families²³, and studies show that family separation can negatively affect children’s mental well-being and development²⁴.

TAKEAWAY

- Failing to address the factors that impact water affordability will continue to financially burden low-income customers.
- Disconnected water service puts families at risk of foreclosure and eviction, creates public health concerns, and can exacerbate larger social and economic circumstances.

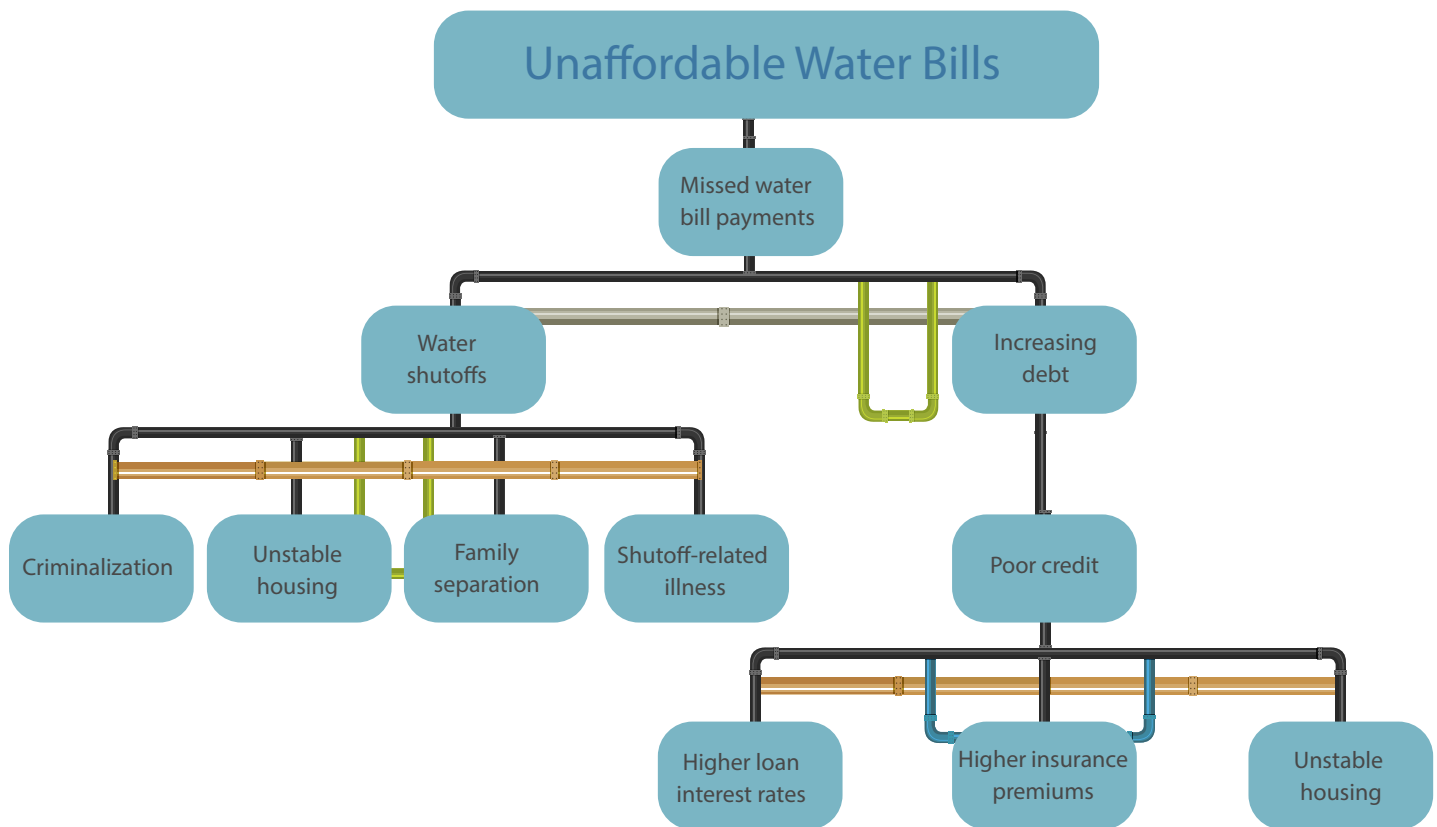
20 Jones, P. A., and Moulton, A. (2016, May). *The Invisible Crisis: Water Unaffordability in the United States*. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/Invisible%20Crisis%20-%20Water%20Affordability%20in%20the%20US.pdf>

21 AWWA. (2021). *Coronavirus (COVID-19)*. American Water Works Association. <https://www.awwa.org/Resources-Tools/Resource-Topics/Coronavirus>.

22 NEADA. (2020, October 19). *Summary of State Utility Shut-off Moratoriums due to COVID-19*. NEADA.ORG. <https://neada.org/utilityshutoffsuspensions/>

23 Jones, P. A., and Moulton, A. (2016, May). *The Invisible Crisis: Water Unaffordability in the United States*. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/Invisible%20Crisis%20-%20Water%20Affordability%20in%20the%20US.pdf>

24 Church, C., Mitchell, M., and Sankaran, V. (2017, May 1). *Timely Permanency or Unnecessary Removal? Tips for Advocates for Children Who Spend Less Than 30 Days in Foster Care*. American Bar Association. https://www.americanbar.org/groups/public_interest/child_law/resources/child_law_practiceonline/child_law_practice/vol-36/may-june-2017/timely-permanency-or-un-necessary-removal-tips-for-advocates-for/



AFFORDABILITY POLICY AND PRACTICE: FEDERAL GOVERNMENT

Federal policies and programs are critical because they offer opportunities to equitably fund and implement water infrastructure, and they can set the stage for water affordability and equity successes at the local level.

Closer Look



This toolkit was published during the waning phase of the COVID 19 global pandemic and at the start of a new federal administration, so federal legislation aimed at supporting communities and residents is frequently changing; for affordability-specific announcements at the federal level, track [congressional legislation](#), [EPA announcements](#), and also subscribe to the [River Network Federal Water Policy Update Peer Group](#).

To support water affordability and equity outcomes, federal entities can:^{25, 26}

- increase low-cost financing and funding for water infrastructure projects across the board.
- create direct assistance, water efficiency, and water loss prevention programs.
- discourage water shutoffs for customers who are unable to pay.

Each of these strategies must be informed by equity- and income-based eligibility criteria to ensure that federally funded programs prioritize vulnerable communities and improve affordability outcomes.

Increase Funding and Low-Cost Financing for Water Infrastructure

Throughout the 20th century, the federal government has been substantively involved in the investment of local water infrastructure²⁷. In fact, much of the funding made available at the federal level in the 1970s and 1980s was in the form of grants. Since the early 1990s, federal support in local infrastructure upgrades has been minimal, and where it does exist, is predominately in the form of loans, thus leaving local and state governments to cover the high costs of major infrastructure upgrades.

However, according to a 2019 [Environmental and Energy Study Institute report](#), Congress has shown more interest in supporting resilient water infrastructure, which may help improve water affordability and equity outcomes at the local level²⁸. At the federal level, Congress can authorize programs that offer low-cost financing (e.g. low-interest loans or tax-exempt bonds) or block grants for critical water infrastructure investments²⁹.

Quiz

How can the federal government promote equity in water affordability policy? (Choose all that apply)

- Prioritize funding support to low-capacity local governments
- Create a consumer bill of rights for water
- Increase high-cost financing opportunities to local governments
- Ban water shutoffs for households that cannot afford water bills
- Develop customer assistance programs for low-to-moderate-income, vulnerable households.

Answer: a, b, d, e

25 Enobakhare, R., Blount, L. G., Boyd, T., Gavin, V., Smith, K., Hammer, B., ... Rose, K. (2018, October 23). *Water, Health, and Equity: The Infrastructure Crisis Facing Low-Income Communities and Communities of Color — and How to Solve It. Clean Water for All.* https://www.policylink.org/sites/default/files/CWC_Report_Full_report_lowres.pdf

26 Jones, P. A., and Moulton, A. (2016, May). *The Invisible Crisis: Water Unaffordability in the United States.* US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/Invisible%20Crisis%20-%20Water%20Affordability%20in%20the%20US.pdf>

27 Bartlett, Steve, Henry Cisneros, Patrick Decker, George Heartwell, Aldie Warnock, Michele Nellenbach, Sarah Kline, Andy Winkler, Jake Varn, and Bryce Campanelli. "Safeguarding Water Affordability." Washington DC: Bipartisan Policy Center, September 2017. <https://bipartisanpolicy.org/wp-content/uploads/2019/03/BPC-Infrastructure-Safeguarding-Water-Affordability.pdf>

28 La Shier, B., Stolark, J., and Vaughan, E. (2019, April 10). *Issue Brief: Congressional Action on Resilient Infrastructure - Areas of Progress and Future Needs.* EESI. <https://www.eesi.org/papers/view/issue-brief-congressional-action-on-resilient-infrastructure-areas-of-progress-and-future-needs>

29 WIFIA. (2020, February). *WIFIA 2019 Annual Report.* Environmental Protection Agency. https://www.epa.gov/sites/production/files/2020-02/documents/wifia_2019_annual_report.pdf

Quiz

Which of the following are barriers water utilities/departments face when accessing federal financing opportunities?

(Choose all that apply)

- a. Poor credit ratings
- b. Lack of staff time to apply to opportunities
- c. Poor financial health to pay back loans
- d. Lack of shovel-ready projects
- e. Complicated application processes
- f. Lack of knowledge about opportunities

Answer: a, b, c, d, e, f

The Environmental Protection Agency is often responsible for implementing the funding and financing programs that are authorized by Congressional Acts (for example, the Drinking Water State Revolving Fund (SRF) is authorized by the Safe Drinking Water Act.³⁰) In 2016, the Bipartisan Policy Center published “[America’s Aging Water Infrastructure](#),” which outlined federal water infrastructure funding and financing programs³¹. [The Federal Programs that Fund Water/Wastewater Infrastructure](#) table outlines a variety of federal water infrastructure programs.

While many programs do have equity criteria and prioritize economically disadvantaged communities, those programs rarely are sufficiently funded, and in many cases, they offer financing (loans) which, even if low-interest, may not be accessible to low-income communities or communities with poor credit ratings. Increasing funding is critical to help utilities make the needed investments in their water supply and wastewater system without passing on rate hikes to their customers and creating an affordability burden — as the Clean Water for All Coalition notes in its 2018 “[Water, Health, and Equity](#)” resource, “increased funding for water infrastructure is mutually beneficial to several federal spending priorities, including environmental protections, public health, and economic stability.”³²

Closer Look



*An Economic Policy Institute estimate found that spending \$188.4 billion on water infrastructure over a five-year period would yield \$265 billion in economic activity and create 1.9 million jobs.*³³

Increased water infrastructure funding, however, must be targeted and distributed equitably. Eligibility criteria should look beyond shovel-readiness (i.e. projects that can enter into construction) and established asset management practices (e.g. a comprehensive strategy and plan for updating infrastructure), as many lower-

30 EPA. (2020, May 14). How the Drinking Water State Revolving Fund Works. EPA. <https://www.epa.gov/dwsrf/how-drinking-water-state-revolving-fund-works>.

31 Bipartisan Policy Center. (2016, September). *America’s Aging Water Infrastructure*. Bipartisan Policy Center. <https://bipartisanpolicy.org/wp-content/uploads/2019/03/BPC-Aging-Water-Infrastructure.pdf>.

32 Enobakhare, R., Blount, L. G., Boyd, T., Gavin, V., Smith, K., Hammer, B., Rose, K. (2018, October 23). *Water, Health, and Equity: The Infrastructure Crisis Facing Low-Income Communities and Communities of Color — and How to Solve It*. Clean Water for All. http://protectcleanwater.org/wp-content/uploads/2018/10/FINAL-CWC_Report_Full_report_lowres-003-3.pdf

33 Gordon, E., Hays, J., Pollack, E., Sanchez, D., and Walsh, J. (2011). *Water works: Rebuilding infrastructure, creating jobs, and greening the environment*. Economic Policy Institute. <https://www.epi.org/publication/water-works-infrastructure-report/>.

resourced communities do not have capacity or cannot demonstrate such criterion without additional support and assistance. In 2015, the Metropolitan Planning Council and Metropolitan Mayors Caucus interviewed several Illinois water utilities about their experience seeking and procuring State Revolving Fund loans, and even some relatively high-capacity communities indicated that the application process is complicated and the producing the required paperwork is overly arduous, which suggests that low-capacity communities also would face similar barriers to submit complete and competitive applications in a timely manner³⁴.

The application process for federal funding should be streamlined and criteria should prioritize disadvantaged communities that may need targeted support planning, implementing, and monitoring programs or projects. There should also be outreach to low-capacity communities that may lack the staff or time to identify funding opportunities to offer needed support so they can submit complete, on-time applications.



34 Metropolitan Planning Council. (n.d.). *Let the Dollars Flow: Streamlining Illinois' State Revolving Fund*. Metropolitan Planning Council. <https://www.metroplanning.org/work/project/16/subpage/3>.

Environmental Protection Agency (EPA)

Program	Clean Water State Revolving Fund		
Description	EPA provides grants to states, who then provide low-interest loans for wastewater treatment infrastructure, nonpoint pollution management, and estuary programs.		
Funding (grants) or Financing (Loans)?	Both	Level of Funding	2019: \$1.9 billion in federal capitalization dollars; \$260 million in additional subsidies for direct grants and principal forgiveness
Equity Provision?	Yes; federal statute requires that a certain percentage of loan funds be set aside (direct grants or principal forgiveness) for communities that can demonstrate economic hardship in the application phase		

Program	Drinking Water State Revolving Fund		
Description	EPA provides grants to states, who then provide loans for drinking water infrastructure		
Funding (grants) or Financing (Loans)?	Both	Level of Funding	2019: \$1.1 billion in federal capitalization dollars; \$321 million in additional subsidies for direct grants and principal forgiveness
Equity Provision?	Yes; federal statute requires that a certain percentage of loan funds be set aside (direct grants or principal forgiveness) for communities that can demonstrate economic hardship in the application phase		

Environmental Protection Agency (EPA)

Program	Water Infrastructure Finance and Innovation Act (WIFIA)		
Description	EPA provides low-interest (i.e. below market rate) loans to finance water infrastructure improvement projects		
Funding (grants) or Financing (Loans)?	Loans	Level of Funding	2020: \$6 billion in loans to finance \$12 billion in infrastructure investment projects
Equity Provision?	Yes and No —WIFIA funding criteria are “project impact, project readiness, and borrower creditworthiness,” and while project impact considers benefit to economically distressed areas, those communities may have poor credit and lack capacity to develop shovel ready projects (so funding requests may be denied).		

Department of Commerce, Economic Development Administration

Program	Public Works and Economic Development Program		
Description	Department of Commerce grants to small and disadvantaged communities to construct public facilities, including drinking water and wastewater facilities		
Funding (grants) or Financing (Loans)?	Grants (with some match requirements)	Level of Funding	2020: \$1.5 billion allocated from the CARES act for communities impacted by COVID 19; 2018: approximately \$150 million spent for public works projects
Equity Provision?	Yes; projects designed to drive down unemployment numbers are prioritized, and economically distressed communities receive technical assistance		

U.S. Army Corps of Engineers

Program	Corps Water Infrastructure Financing Program (CWIFP)		
Description	Army Corps of Engineers provides assistance for water and wastewater infrastructure projects, for specific locations (as authorized by Congress Appropriations Act)		
Funding (grants) or Financing (Loans)?	Loans	Level of Funding	2020: \$14.2 million allocated from FY 2021 Energy and Water Development and Related Agencies Appropriations Act ³⁵
Equity Provision?	No; eligible projects aim to reduce flood damage, restore aquatic ecosystems, improve waterway or coastal inland harbor navigation, and/or acquire property (or some combination of the above) ³⁶		

U.S. Army Corps of Engineers

Program	Environmental Infrastructure Assistance ³⁷		
Description	Army Corps of Engineers provides support in planning, design, and construction of drinking water and wastewater infrastructure projects in specific jurisdictions; funded projects must be named in Congress authorizing language		
Funding (grants) or Financing (Loans)?	Grants (with some match requirements)	Level of Funding	2021: \$100 million appropriated 2020: \$100 million appropriated
Equity Provision?	None specified		

35 Marine Log Staff. (2021, January 6). *USACE: CWIFP Gets First Funding*. Marine Log. <https://www.marinelog.com/coastal/inland/usace-cwifp-gets-first-funding/>.

36 U.S. Army Corps of Engineers. (2021). *CWIF Program Eligibility*. U.S. Army Corps of Engineers Headquarters Website. https://www.usace.army.mil/Missions/Civil-Works/Infrastructure/Revolutionize/CWIFP/cwif_prog_eligibility/.

37 Normand, A. E. (2021, January 26). *Army Corps of Engineers: Environmental Infrastructure Assistance* (p. 3). Congressional Research Service. <https://crsreports.congress.gov/product/pdf/IF/IF11184>.

Bureau of Reclamation

Program	Rural Water Supply Program ³⁸		
Description	Bureau of Reclamation provides assistance for individual projects and other projects via its rural water supply program		
Funding (grants) or Financing (Loans)?	Loans (primarily); grants available for traditional tribal reservation communities	Level of Funding	2020: \$145.1 million appropriated for construction operations and management
Equity Provision?	Yes; prioritizes rural and tribal reservation communities with poor, declining, or lacking water supply, or compromised water quality		

Department of Health and Human Services (DHHS), Indian Health Service (IHS)

Program	Sanitation Facilities Construction Program		
Description	IHS provides funding for water and wastewater infrastructure on tribal lands		
Funding (grants) or Financing (Loans)?	Grants	Level of Funding	Unable to find recent data
Equity Provision?	Yes; IHS allocates funds based on eight (8) criteria: health impact, deficiency level, adequate previous service, capital cost, local tribal priority, operations and maintenance capability, contributions, and local conditions. In its 2003 Program Criteria report, IHS states, “[Program] Equity is achieved in terms of equivalent outcomes rather than equal shares of any allocation ³⁹ .”		

38 Normand, A. E. (2020, April 7). *Bureau of Reclamation Rural Water Projects* (p. 21). Congressional Research Service. https://www.everycrsreport.com/files/20200407_R46308_e04882b7ee5c51431330d195cbb484a03299651f.pdf

39 Office of Environmental Health and Engineering and Division of Sanitation Facilities Construction. (1999). *Criteria for the Sanitation Facilities Construction Program 2003* (p. 206). Department of Health and Human Services, Department of Public Health Service, and Department of Indian Health Service. https://www.ihs.gov/sites/dsfc/themes/responsive2017/display_objects/documents/Criteria_March_2003.pdf

Department of Agriculture, Rural Development

Program	Water and Environmental Programs (WEPs)		
Description	Department of Agriculture provides funding for water and wastewater infrastructure projects in communities with populations less than 10,000		
Funding (grants) or Financing (Loans)?	Both	Level of Funding	2016: \$1.7 billion appropriated for loans and grants
Equity Provision?	Yes; several Water and Environment grant programs target native Alaskan villages, tribal lands, and colonies, and decentralized water systems, and offer crucial technical assistance and training		

Create Direct Assistance Programs

Federal direct assistance program would provide grants to municipalities and utilities expressly to improve water bill affordability for low- to moderate-income, vulnerable populations.⁴⁰

There is federal precedent for utility direct assistance programs. Established in the early 1980s, the Low-Income Home Energy Assistance Program (LIHEAP) authorizes block grant funds to states, tribes, and territories to operate energy assistance programs, and offers emergency contingency funding that has a flexible allocation protocol; states must comply with 16 program assurances, including requirements around outreach, type of assistance offered, and income-based eligibility requirements.⁴¹ LIHEAP has long enjoyed bipartisan support, in large part because of the easy-to-quantify public health benefits; for example, during hot summers or cold winters, LIHEAP subsidies ensure that low-

40 Nellenbach, M., Winkler, A., Yohannes, M., Ledonio, N., and Xiao, R. (2020, September). *Evaluating Proposals for a Federal Water Bill Assistance Program*. Bipartisan Policy Center. https://bipartisanpolicy.org/wp-content/uploads/2020/09/BPC_WaterBillAssistanceProgram-final.pdf.

41 Nellenbach, M., Winkler, A., Yohannes, M., Ledonio, N., and Xiao, R. (2020, September). *Evaluating Proposals for a Federal Water Bill Assistance Program*. Bipartisan Policy Center. https://bipartisanpolicy.org/wp-content/uploads/2020/09/BPC_WaterBillAssistanceProgram-final.pdf.

income households can pay their bills and avoid having their heat or air conditioning shut off. In 2020, Congress appropriated more than \$3 billion for LIHEAP block grants, and an additional \$900 million was made available for emergency support.

Given that both the water and energy sectors provide necessary services, both industries should have considerations that allow for equitable access to their respective resources. A Bipartisan Policy Center report evaluated proposals for water bill assistance programs and identified some of the lessons the water sector can learn from the energy sector — these lessons include avoiding duplication of program missions (which can be confusing for households), targeting those with the highest need, as defined by greatest burden on household income, and recognizing federal fiscal constraints to ensure future sustainability of direct assistance offers⁴². Additionally, in 2018, the [Low-Income Water Customer Assistance Program Act](#) was introduced in Congress (it did not pass), and it offers an example of what a federally administered direct assistance program could look like.

During the COVID-19 pandemic, in April 2020, U.S. House representatives submitted [H.R. 6552 - Emergency Water is a Human Right](#), which proposes the creation of a grant program to help low-income households afford drinking water and wastewater services. Adopting The Act would authorize a pilot program that would award mini-grants to water system operators to develop and implement customer assistance programs (CAPs), including percentage-of-income payment plans, direct billing assistance, lifeline rates, bill discounts, household conservation retrofits, among other efforts. The Act also required that utilities provide financial sustainability plans and would provide technical assistance to communities who needed support implementing the CAPs.^{43 44}

42 Nellenbach, M., Winkler, A., Yohannes, M., Ledonio, N., and Xiao, R. (2020, September). Evaluating Proposals for a Federal Water Bill Assistance Program. Bipartisan Policy Center. https://bipartisanpolicy.org/wp-content/uploads/2020/09/BPC_WaterBillAssistanceProgram-final.pdf.

43 Levine, L. (2018, October 31). *New Bipartisan Bill Aims to Advance Water Affordability* [web log]. <https://www.nrdc.org/experts/larry-levine/new-bipartisan-bill-aims-advance-water-affordability>.

44 Jones, P. A., and Moulton, A. (2016, May). *The Invisible Crisis: Water Unaffordability in the United States*. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/Invisible%20Crisis%20-%20Water%20Affordability%20in%20the%20US.pdf>

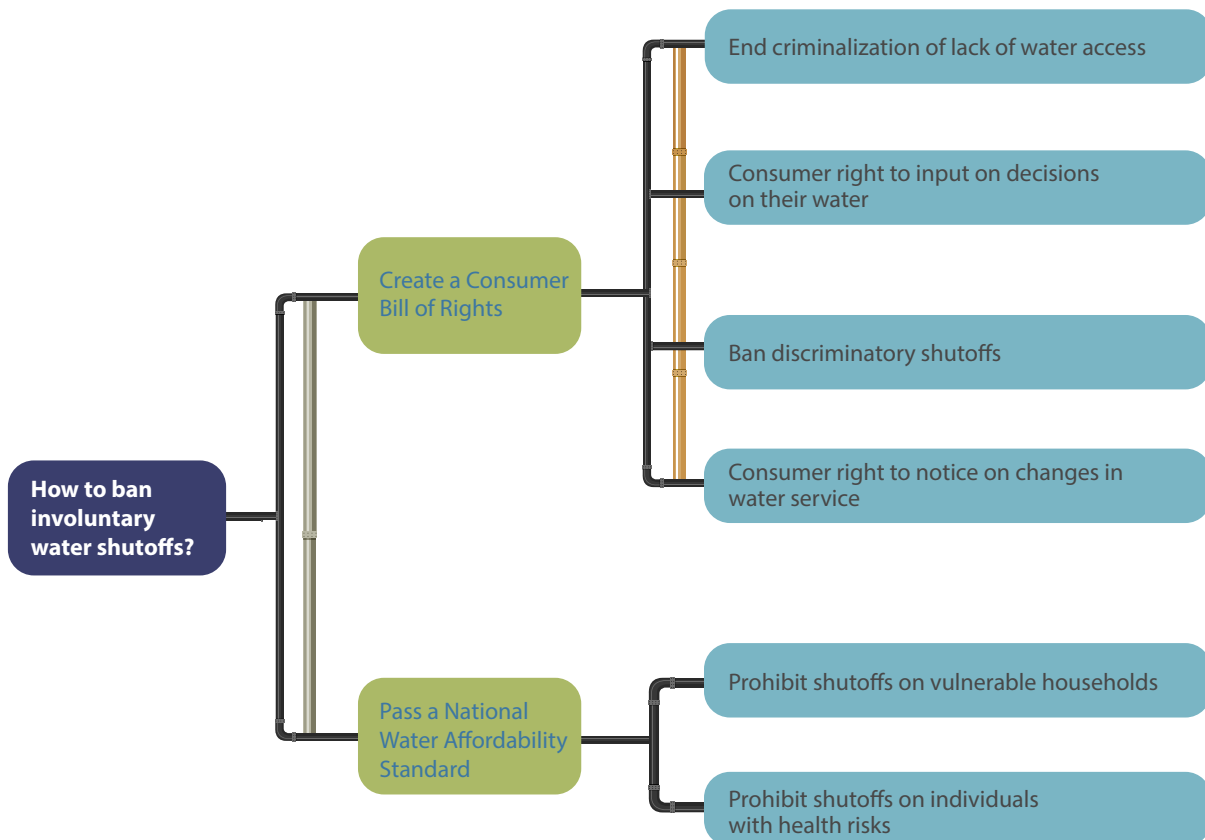
BIPOC – Black, Indigenous, and People of Color

Address Water Shutoffs

Water shutoffs are still a common practice, even during the COVID-19 pandemic — Natural Resources Defense Council (NRDC) analysis showed that a majority of states had not issued shutoff moratoriums, which disproportionately impacted low-income and BIPOC communities⁴⁵.

Federal efforts to ban (or at least limit) shutoffs would offer a layer of protection to already vulnerable households with burdensome energy, transportation, and housing costs, and those who can demonstrate financial need. And shutoff bans should be accompanied by increased for necessary and resilient water infrastructure investments that guarantee economically-disadvantaged communities reliable access to clean drinking water.

Opportunities to Ban Involuntary Water Shutoffs



45 Levine, L. (2020, December 17). *Mass Water Shutoffs Loom, Most States and the Feds Remain AWOL* [web log]. <https://www.nrdc.org/experts/larry-levine/mass-water-shutoffs-loom-most-states-feds-remain-awol>.

Quiz

Which of the following actions by utilities address the root causes of unaffordable water bills?

- a. Equitable rate structuring for water bills
- b. Customer assistance programs
- c. Improved asset management
- d. Moratorium on water shutoffs
- e. Accurate water use metrics
- f. Providing households with water efficiency measures

Answers: a, c, e, f

The 2016 Unitarian Universalist Service Committee “[The Invisible Crisis: Water Unaffordability in the United States](#)” report offers key insights into how federal policies can promote equity by banning involuntary water shutoffs. It recommends the creation of a consumer bill of rights that highlights the importance of legal support when trying to maintain utility services, and passing a national affordability standard to better ensure equitable outcomes (see above [Opportunities to Ban Involuntary Water Shutoffs](#)).

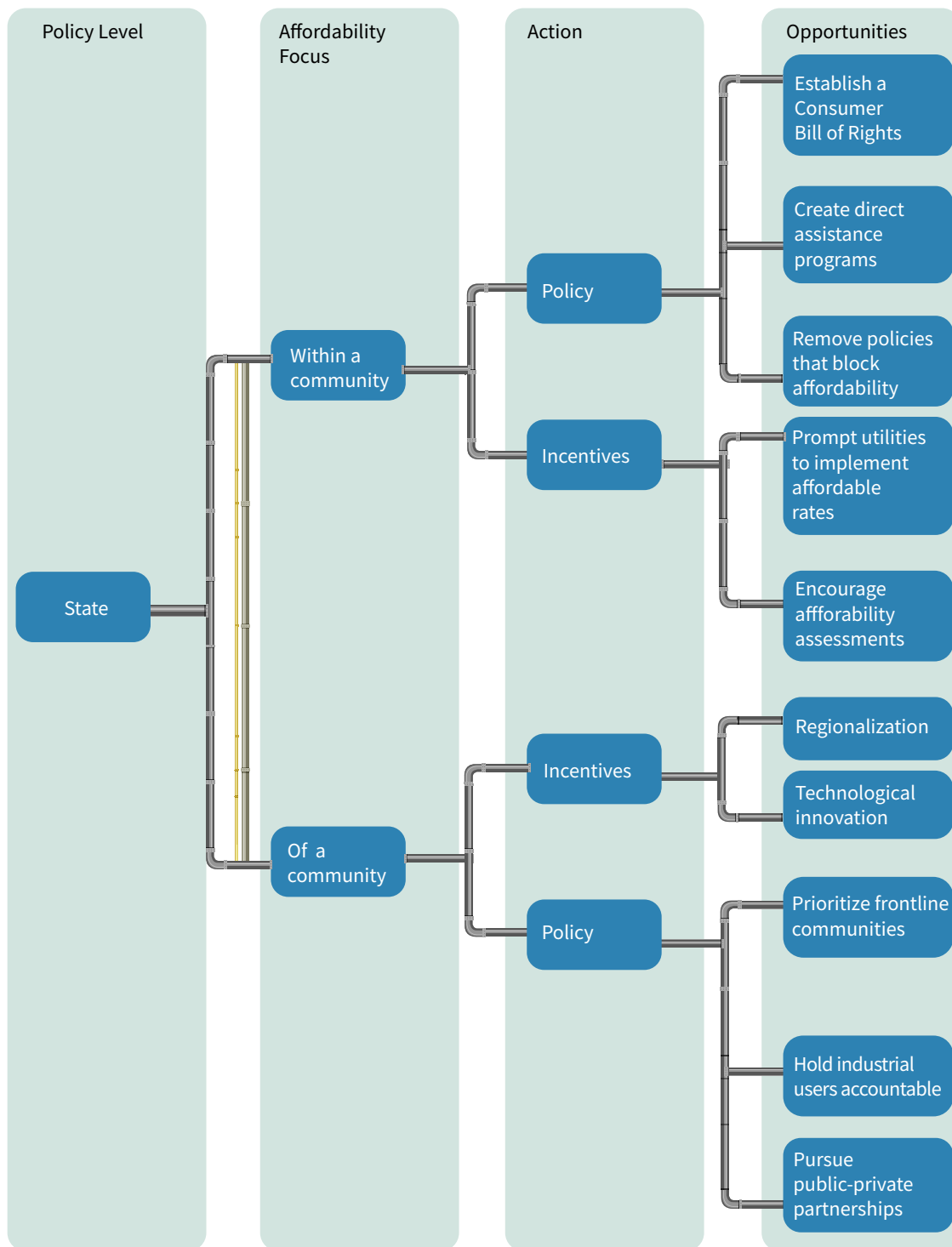
If [H.R. 6552 - Emergency Water is a Human Right](#) had passed, water shutoffs would have been prohibited during the COVID-19 pandemic, and provided \$1.5 billion in grants to assist low-income households who pay a high percentage of their household income for drinking water and wastewater service⁴⁶. While the bill did not make it out of committee, it will likely be reintroduced, and it remains an important example of how the federal government can support affordability and equity outcomes (notwithstanding an epidemic or pandemic).

TAKEAWAY

- The federal government has the power to earmark monies and authorize water infrastructure funding and financing programs. Through these programs, federal agencies can prioritize vulnerable communities by offering administrative and technical assistance in addition to grants
- There have been several federal legislative attempts to address the water affordability, ranging from funding direct assistance programs to banning involuntary water shutoffs.
- Federal financing and funding opportunities need to include equity provisions to ensure that communities with low-income residents can access opportunities. Such measures include analyzing and removing barriers that are tied to financial capacity, and providing funding from the start to end of a project, including administrative costs.
- The Low-Income Home Energy Assistance Program (LIHEAP) is an established, successful example of the federal government providing bill assistance directly to low-income households, and lessons learned from this program can inform a direct assistance program for water affordability.

⁴⁶ House - Energy and Commerce; Education and Labor; Transportation and Infrastructure, and Tlaib, R. R. [Bill], Congress.gov (2020). <https://www.congress.gov/bill/116th-congress/house-bill/6552?s=1&r=5>.

State Actions to Support Water Affordability



AFFORDABILITY POLICY AND PRACTICE: STATE GOVERNMENT



Profile:

RI State Treasurer Seth Magaziner

State governments have significant responsibility as it pertains to moving the needle on water affordability and equity outcomes. A useful approach to classifying this work is to think about affordability *within a community* and *of a community*.⁴⁷ Affordability *within a community* means that local utilities address water affordability at the household level. *Of a community* refers to the community's collective ability to afford water and related water infrastructure, also often referred to as its "capacity." (See State Actions to Support Water Affordability for a diagram of the policies and incentives that state legislatures can enact to support local utilities in both spaces.)

As the frequent administrators of federal funding and financing, states can tailor the sometimes-broad federal guidelines to ensure that their communities have clear guidance and support to implement successful initiatives. State governments can influence and support water affordability efforts in a variety of ways⁴⁸; specifically, states can:

- establish affordability standards.
- enact policies that incentivize and remove barriers to affordability efforts.
- prioritize funding and low-cost financing in achieving affordability outcomes.
- institute water loss prevention and efficiency programs.

⁴⁷ *State Insights on Renewing a Cross-Government for Water Affordability*. Aspen Institute. (2020, October 22). https://www.aspeninstitute.org/wp-content/uploads/2020/11/Summary-Report-Meeting-10_22_2020_final.pdf

⁴⁸ Berry, S., and Huckins, S. (2019). *One Water for America State Policymakers' Toolkit*. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/publications/State%20Policymakers%27%20Toolkit.pdf>

Establish Affordability Standards

Having a clear sense of what customers can afford is critical — traditionally, utilities and government policies have defined affordability by looking at percentage of median household income, but this approach is limited because it was not developed to measure household affordability, and it does not consider community context (e.g. poverty levels or impacts on the lowest income households). The result is that the affordability impacts are not considered for the 50 percent of households that fall below a jurisdiction's median income⁴⁹.

The American Water Works Association and other partners proposed a new water affordability method in 2019 to consider and set more accurate local affordability standards that inform rates, customer assistance programs (CAPs), and other means that affect water affordability. This new method looks at the prevalence of poverty in a community, and the collective impact of water, wastewater, and stormwater bills to benchmark water affordability⁵⁰. CNT created an interactive [Water Bill Calculator](#) that utilities or individuals can use to calculate water bill burden at the household and community level.

States can develop a tailored approach to provide more responsive affordability standards. To do so, states will need to better capture the number of people who cannot afford water and address the lack of consolidated data about how utilities establish water rates and charge for their services. One strategy states could consider is developing a dataset of all the households with unaffordable water bills and/or who have had water services shut off, and assessing how utilities manage non-payment.⁵¹ States need to be prepared to support utilities in collecting this data, as some may not have a collection process, their current tracking systems may not obtain this data, or, in some cases, they might push back on tracking requirements out of fear of negative public opinion (as was the case in California).⁵²

49 Raucher, R., Rothstein, E., and Mastracchio, J. (2019, April 17). *Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector*. The American Water Works Association. <https://www.awwa.org/Portals/0/AWWA/ETS/Resources/DevelopingNewFrameworkForAffordability.pdf?ver=2020-02-03-090519-813>.

50 Raucher, R., Rothstein, E., and Mastracchio, J. (2019, April 17). *Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector*. The American Water Works Association. <https://www.awwa.org/Portals/0/AWWA/ETS/Resources/DevelopingNewFrameworkForAffordability.pdf?ver=2020-02-03-090519-813>.

51 State Insights on Renewing a Cross-Government for Water Affordability. Aspen Institute. (2020, October 22). https://www.aspeninstitute.org/wp-content/uploads/2020/11/Summary-Report-Meeting-10_22_2020_final.pdf

52 Walton, B. (2018, November 20). *Counting Homes Cut Off from Water Is A Data Collection Nightmare*. Circle of Blue. <https://www.circleofblue.org/2018/world/counting-homes-cut-off-from-water-is-a-data-collection-nightmare/>.

Quiz

How can utilities work with residents to achieve water affordability?

- a. Use a one size fits all measure for water rates and programs
- b. Create a committee of residents to audit the water utility and take its recommendations seriously
- c. Conduct a needs assessment with community residents to understand specific problems

Answers: b, c

Disadvantaged Communities • While the exact definition is usually left to funder discretion, disadvantaged communities normally refers to communities with poor socioeconomic outcomes or existing environmental vulnerabilities (e.g. air and water pollution contamination, extreme flooding impacts, etc.) Many federal and state programs require that a portion of funding be set aside for disadvantaged communities or those with economic hardships.

Consumer Bill of Rights – A consumer bill of rights provides legal grounds for ratepayer complaints and provides guidance on rate-setting from a consumer protection angle.

This baseline data can help states regulate water affordability and water assistance programs. Additionally, to improve outcomes, the state should require that utilities evaluate their water affordability and water assistance programs, and if a program is inadequate, the state can consider intervention⁵³. It is critical to note, too, that states should support any mandates for data collection or customer assistance programs with accompanying funding and technical support. Without resources, only communities with the capacity to act will stay in compliance, and economically disadvantaged communities will struggle.

Incentivize Affordability Efforts and Remove Policy Barriers

One way to ensure that utilities are keeping rates affordable is for a state to enact a consumer bill of rights, which provides legal grounds for ratepayer complaints, provides guidance on rate-setting from a consumer protection angle, requires the implementation of direct assistance programs designed for vulnerable populations, and halts water shutoffs due to an inability to pay⁵⁴. In an effort to increase customer transparency, DC Water (Washington D.C.) created a [Consumer Bill of Rights](#).

Some states prohibit utilities from charging different rates to different customers. Amending such laws would grant utilities the opportunity to separate customer classes and charge rates based on a number of factors, including income⁵⁵. A consortium of water utility associations commissioned “[Navigating Legal Pathways to Rate-Funded Customer Assistance Programs](#),” and the report contains 2-3 summaries for each state that cite their policies around charging different rates to different residential customers.

To increase cost-efficiencies and resource sharing, many states have created laws to incentivize or mandate regionalization (i.e. the merging of smaller utilities). State support has entailed coordination, sharing best practices among utilities, creating flexible legislation that allows utilities to reorganize, adjusting governance to allow for regionalization, and encouraging watershed scale planning to implement more environmentally

53 Taylor, M., Orduño, S., Damaschke, M., Gaines, G., and Campbell, L. (2015, May 13). *Statement on Water Affordability vs. Water Assistance for DWSD Low Income Customers*. Michigan Welfare Rights Organization. <https://www.mwro.org/wp-content/uploads/2016/05/GLWAAffordability051315-final.pdf>

54 Grinshpun, M. (2020). (rep.). *Measuring and Addressing Water and Waste Water Affordability in the United States*. Boston University Institute for Sustainable Energy. Retrieved from <http://www.bu.edu/ise/files/2020/06/measuring-and-addressing-water-and-waste-water-affordability-in-the-united-states-june2020-final.pdf>

55 US Water Alliance. (2018). *Redefine Affordability for the 21st Century. One Water for America Policy Framework*. http://uswateralliance.org/sites/uswateralliance.org/files/publications/uswa_listen_big5_022318_a.pdf

and financially sustainable projects. And in lieu of regionalization, states also can incentivize larger systems to collaborate with smaller utilities as partners and share resources while maintaining separate governance structures;⁵⁶ a [2017 EPA report](#) outlines state programs and policies that support cooperative strategies among water supply systems.

To add capacity or help improve infrastructure efficiency (as means of increasing water the affordability), other states may consider legislation that facilitates partnerships between public utilities and private companies. Private companies can serve as consultants and deploy technology to help utilities improve capital planning, make asset management decisions, and add administrative capacity. Note that there is an important distinction between completely privatizing a water system and considering public-private partnerships — the former model presents cause to be wary, as advocates would have to engage state regulatory bodies when seeking affordable and equitable rates, whereas public-private partnerships focus on sharing resources and expertise, and integrating community engagement which ensures that equity measures are at the forefront, and democratic processes are being honored during any decision-making and planning efforts that would impact the general public⁵⁷.

States can also approve social impact investing to create impact bond funds that municipalities can use to implement sustainable water solutions. Impact bonds allow private investors to provide a loan to a public entity (in this case the utility) to cover upfront costs for projects that can provide both social and environmental benefits, and financial returns (loan terms differ, but the public entity pays back the investor.) This practice is seen more commonly in the global market, but as more investors seek socially-conscious opportunities for their wealth, there have been cases of environmental impact bonds implemented in the United States, primarily for stormwater management projects; for example, the Chesapeake Bay Foundation is using environmental impact bonds in Hampton, Va. to pilot green stormwater infrastructure projects to manage stormwater.⁵⁸

Social Impact Investing – Also called socially responsible investing, or ESG (environmental, social and governance) investing, social impact investing focuses on companies and organizations that promote ethical and conscientious considerations,

Green Stormwater Infrastructure (or Natural Infrastructure) – Green stormwater infrastructure refers to the practice of using nature-based water management techniques that protect, restore, or mimic the natural water cycle as a means of preventing flooding, improving ecosystem health, and offering many other community benefits.

56 *State Insights on Renewing a Cross-Government for Water Affordability*. Aspen Institute. (2020, October 22). https://www.aspeninstitute.org/wp-content/uploads/2020/11/Summary-Report-Meeting-10_22_2020_final.pdf

57 Food and Water Watch. (2016, February). *The State of Public Water in the United States*. https://foodandwaterwatch.org/wp-content/uploads/2021/03/report_state_of_public_water.pdf

58 Environmental Impact Bonds. Chesapeake Bay Foundation. (2021). <https://www.cbf.org/how-we-save-the-bay/programs-initiatives/environmental-impact-bonds.html>

Another way states can use the private market to support public systems is to create conditions for innovative water technology and ensure that bureaucratic red tape doesn't slow technological advancements. Streamlining processes; creating regional standards or specifications for innovation across multiple states; securely collecting, analyzing and sharing data/results; and allowing technology-testing opportunities can open the market⁵⁹. Also, there should be special attention to testing priorities, innovations, and safeguards as they relate to BIPOC and low-income populations, so as not to increase surveillance of vulnerable, targeted communities who already feel that their privacy is threatened or experience challenges when engaging with institutions.⁶⁰ Actions should seek to prevent and mitigate unintended consequences that could negatively and disproportionately impact vulnerable communities. Ensuring resident engagement in the design and rollout phases will be essential to develop trust for proposed technology innovations and changes.

For more information about impact investing, see the [Infrastructure](#) section.

Finally, states have a big role to play in regulating private industry water use, mainly by ensuring that big water polluters and users pay their fair share and don't externalize the cost of doing business to residential water customers — when the breadth of industrial use issues are addressed (e.g. rates, appropriate taxing, water pollution clean-up, etc.), it can lower how much residents pay. Industrial agriculture is another area where state intervention can support ecosystem health and community affordability outcomes, through funding conservation investments, elevating land management best practices, and developing policies to hold polluters accountable to water quality standards⁶¹. For example, the Wisconsin Department of Natural Services allows [Wisconsin Pollutant Discharge Elimination System](#) permit holders to use adaptive management strategies that reduce phosphorus as a means of complying with discharge standards (as opposed to merely treating phosphorous discharge, which is the primary contaminant

59 Berry, S., and Huckins, S. (2019). One Water for America State Policymakers' Toolkit. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/publications/State%20Policymakers%27%20Toolkit.pdf>

60 *End the Surveillance on Black Communities*. M4BL. (2020, June 24). <https://m4bl.org/policy-platforms/end-surveillance/>

61 Berry, S., and Huckins, S. (2019). One Water for America State Policymakers' Toolkit. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/publications/State%20Policymakers%27%20Toolkit.pdf>

from agricultural runoff). Shifting treatment costs and responsibilities to the industries that contribute to poor water quality can alleviate the inclination to pass along those costs to residents.

Prioritize Funding, Low-Cost Financing, and Technical Assistance

Asset Management – Asset management is the process by which utilities account for, track, and monitor the infrastructure that makes up water, wastewater, or stormwater systems.

Whether water infrastructure investments are planned (i.e. driven by strategic asset management decisions), or reactive (i.e. instigated by infrastructure failures such as water main breaks), they must be paid for.

While the federal government is largely responsible for creating water infrastructure funding and financing program and policies, states play an integral role in distributing federal funds that come through the Clean Water State Revolving Fund and Drinking Water State Revolving Fund, for example. Additionally, federal monies often do not cover enough of the costs that emerge at the local level, whether they pertain to infrastructure investments, or programs and initiatives related to water affordability. In the absence of sufficient federal and state funding and financing opportunities, utilities often rely on customers to generate sufficient revenue to cover investment needs, which creates affordability concerns.

Increasing the availability of low-cost financing and funding (grants) can minimize rate increases and preserve affordability while ensuring that infrastructure is adequately maintained. State governments should do gap or needs analyses and budget monies accordingly, and they also should set eligibility criteria in a way that prioritizes vulnerable, economically disadvantaged communities.

In addition, to make sure that the lowest-income households benefit from funding and project decisions, states can provide administrative support to municipalities who don't have a full cadres of resources when applying for financing.⁶² A few examples of administrative support may include walking through the grant application process; providing a preliminary check of the application to ensure that it has all necessary components; and dedicating staff time or money to helping municipalities gather necessary documentation and data. States also can provide water utilities with

⁶² *State Insights on Renewing a Cross-Government for Water Affordability*. Aspen Institute. (2020, October 22). https://www.aspeninstitute.org/wp-content/uploads/2020/11/Summary-Report-Meeting-10_22_2020_final.pdf

technical assistance that improves operations and delivery efficiencies and helps with financial management, both of which can reduce customer costs.⁶³

Institute Water Loss Prevention and Efficiency Programs

Every day, billions of gallons of treated water are lost through water main breaks and leaky pipes. This loss is not cheap — depending on where the leaks occur, utilities may recoup the costs via customer charges, either through a rate increase or an increased fixed fee, either of which potentially exacerbate water affordability issues⁶⁴.

The American Water Works Association issues industry recommendations and best practices on managing the massive volume of water lost to leaks and main breaks. Additionally, the Natural Resources Defense Council (NRDC) has developed two versions of model legislation to help utilities ascertain and address levels of loss (Version A, designed for states with regulatory agencies and utilities that have some routine practice with annual audits, creates a phased, comprehensive water loss audit program using validated reports to inform water loss standards. Version B, designed for states who don't have an established water loss audit practice, accounts for time to educate policymakers and utilities, and includes a prerequisite step of creating a water audit report.)⁶⁵ There is also an [NRDC interactive map](#) that shows how states are managing water loss.

63 Berry, S., and Huckins, S. (2019). *One Water for America State Policymakers' Toolkit*. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/publications/State%20Policymakers%27%20Toolkit.pdf>

64 NRDC. (2020, December 4). *Cutting Our Losses*. NRDC. <https://www.nrdc.org/resources/cutting-our-losses>.

65 NRDC. (2016, October 3). *Model State Legislation for Utility Water Loss Audits*. NRDC. <https://www.nrdc.org/sites/default/files/Model-State-Legislation-for-Utility-Water-Loss-Audits.pdf>

State Case Studies

The following case studies highlight state-level efforts to promote water affordability.

North Carolina, Combined Funding Programs⁶⁶

In 2013, North Carolina streamlined its Drinking Water SRF, Clean Water SRF, and Community Development Block Grant infrastructure funding to help bring about comprehensive community planning and position funds to have greater impact. As a part of its effort to improve efficiencies, the state provided grants to water utilities so they could assess their systems and determine next steps. The State Water Infrastructure Authority was created that same year to develop a master plan that would provide recommendations on how to optimize funding sources, share best and innovative practices for water management, and evaluate water system concerns.

California, Statewide Safe Drinking Water Solution (Funding)⁶⁷

In 2012, California passed AB 685, a bill that established water as a human right. Seven years later, the governor passed the Statewide Safe Drinking Water Fund to ensure that vulnerable communities have access to safe drinking water; in large part, the Fund was a response to strong stakeholder disapproval about a potential state-instituted water charge. The Fund (which mainly receives money from the Greenhouse Gas Reduction Fund) was included in the state budget and provided \$130 million to pay for drinking water systems operations and maintenance costs; it also can be used to support diverse efforts and populations such as water system consolidation, well-owners etc. Even with this breakthrough, following the pandemic, customers will owe water utilities more than \$1 billion in outstanding debt.



⁶⁶ Berry, S. and Huckins, S. (2019). *One Water for America State Policymakers' Toolkit*. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/publications/State%20Policymakers%27%20Toolkit.pdf>

⁶⁷ ACWA. (2019, July 24). *Statewide Safe Drinking Water Funding Solution*. Association of California Water Agencies. <https://www.acwa.com/trust/>

Texas Water Development Board⁶⁸ (Regionalization)

The Texas Water Development Board (TWDB) is responsible for the Texas water supply and manages SRF distribution. The TWDB provides low-cost financing (State Water Implementation Fund) to support the regionalization of smaller, economically struggling utilities and economically sound larger utilities. Additionally, it funds a Chief Financial Officer to improve financial management for economically distressed systems. TWDB has developed a program to aid utilities in developing asset management practices and creating capital improvement plans.

Kentucky, Senate Bill 409⁶⁹

Since the 1970s, Kentucky has actively been consolidating or regionalizing its (originally) 3,000-plus public water systems and treatment plants. In 2000, to create a planning process for water services, the state passed Senate Bill 409, which authorized the Kentucky Infrastructure Authority to develop programs to regionalize water systems and improve customer access to water. Regions that meet programming requirements can apply for state funding to support local water projects. The program has been a success — between 2000 and 2017, more than \$800 million of state funding went toward local project development. The law also allowed municipalities to share water services outside of municipal boundaries without annexation, improving access to water. On the administrative and peer-sharing side, the bill allowed funds to go toward the employment of water service coordinators in each region, and it created a council for regions to come together and share best practices.

California, Colorado and Minnesota, State Approval of Onsite Non-Potable Water Systems⁷⁰ (Efficiency)

Reuse technologies that treat non-potable water (e.g. used for toilet and irrigation purposes) can reduce usage, and thus, water costs. California, Colorado, and Minnesota have all passed policies or guidance to develop risk-based water quality standards to allow for onsite non-potable water systems. These policies establish when and where non-potable water reuse technologies are allowed, what an onsite system requires, and what the water quality standard should be — the legislation has improved the market for non-potable technology, brought down the cost of these systems, and increased options for addressing water affordability.

68 State Insights on Renewing a Cross-Government for Water Affordability. Aspen Institute. (2020, October 22). https://www.aspeninstitute.org/wp-content/uploads/2020/11/Summary-Report-Meeting-10_22_2020_final.pdf

69 Berry, S. and Huckins, S. (2019). *One Water for America State Policymakers' Toolkit*. US Water Alliance. <http://uswateralliance.org/sites/uswateralliance.org/files/publications/State%20Policymakers%27%20Toolkit.pdf>

70 Ibid.

TAKEAWAY

- States can create frameworks that direct utilities to report about water affordability efforts and outcomes. This may begin by requiring utilities to track data about which and how many customers encounter affordability concerns, and as the scope of the water affordability crisis becomes clear, states can delineate best practices to achieve improved outcomes.
- Regionalization, proactively managing sources of pollution, supporting public-private partnerships, removing barriers to income-based water rates, and providing administrative or technical support can help utilities reach affordability standards and better secure funding and financing.
- States can support water affordability by passing legislation that sets standards on maximum levels of water loss and relevant management practices.

AFFORDABILITY POLICY AND PRACTICE: LOCAL GOVERNMENT/WATER UTILITIES

Utilities and municipalities are on the frontlines of ensuring water affordability and equity. Within the legal and programmatic frameworks set by federal and state governments, local utilities and municipalities have the power to implement responsive and impactful policies and programming to achieve affordability outcomes; specifically, they can:

- set equitable rates and transparent billing practices.
- create customer assistance programs.
- develop good asset management and workforce development practices.
- assess community issues and limit water shutoffs.

Utilities also must remember to engage the most impacted neighborhoods or residents during any effort to address affordability concerns. In 2020, CNT and IB Environmental created an [Water and Community Affordability Action Planning Guide](#); its resources and downloadable worksheets can help residents and community leaders assess water and community affordability more broadly.

Equitable Rate Structure – Rate structures that account for consumer type and ability to pay (also see “equity” entry)

Set Equitable Rates and Transparent Billing Practices

When bills are kept affordable and transparent, households are more likely to pay the bill, subsequently increasing the utility's overall revenue.^{71,72} Equity in a rate setting context has many facets, one of which is considering a household's broader financial context (i.e. their ability to pay). Transparent billing practices (i.e. avoiding hidden or unexplained fees) help households benchmark usage from billing period to billing period.

Create Customer Assistance Programs

Water utilities should consider creating customer assistance programs (CAPs) that help low-income households, or households that face unforeseen financial circumstances; a 2016 EPA survey found that almost 29 percent of utilities offered a customer assistance program⁷³. CAPs can include a flexible water payment program, forgiveness of past debt after consistently paying a lower rate over a period of time, bill discounts, and free access to water conservation and efficiency fixtures to reduce water use and lower water bills. CAPs also benefit utilities by allowing them to practice corporate social responsibility, improve public relations, and enrich financial health by reducing administrative and service costs related to debt collection (e.g. cost of contracting with a debt collection agency) and service disconnection or reconnection⁷⁴.

Utilities are encouraged to partner with nonprofits and social service organizations that regularly interact with vulnerable customers. Also, it is imperative that utilities make sure their programs are accessible to all households, which may require meeting people where they are, implementing multiple methods of outreach and engagement, and ensuring that there are no disqualifying factors for those who would benefit from a CAP (i.e. being a renter, language barriers, documentation status, etc.)

71 Green, E. (2017, October 9). *US Households Under Pressure from Rising Water Bills*. The Source Magazine. <https://www.thesourcemagazine.org/us-households-pressure-rising-water-bills/>.

72 *State Insights on Renewing a Cross-Government for Water Affordability*. Aspen Institute. (2020, October 22). https://www.aspeninstitute.org/wp-content/uploads/2020/11/Summary-Report-Meeting-10_22_2020_final.pdf

73 Cromwell, K., Kostiuk, K., and Locklear, H. (2018, October 1). *The Future of Affordability Programs*. Water World. <https://www.waterworld.com/water-utility-management/article/16190095/the-future-of-affordability-programs>.

74 WIRFC, AWWA, AMWA, NACWA, NAWC, WEF, and WRF. (2016, April). *Drinking Water and Wastewater Utility Customer Assistance Programs*. EPA. https://www.epa.gov/sites/production/files/2016-04/documents/dw-ww_utilities_cap_combined_508.pdf.

Learn more about equitable rate setting and the benefits of transparent billing practices in the [Infrastructure](#) and [Utilities](#) sections, respectively.

Develop Good Asset Management and Workforce Development Practices

Aging and degraded water infrastructure is a leading driver of unaffordable water rates, because utilities pass on the burden of paying for water infrastructure investments to customers. Utilities must improve asset management and capital planning practices to ensure that infrastructure investments decisions are made cost-effectively and strategically, and infrastructure investments target economically disadvantaged communities that experience high water costs and have experienced historical disinvestment⁷⁵.

To further equity measures and improve economic outcomes in disadvantaged communities, utilities should commit to supporting workforce development and disadvantaged business enterprises (women-owned or minoritized-owned businesses) when seeking companies to update or replace infrastructure. By hiring disadvantaged business enterprises or supporting workforce development programs, the utility directly affects job opportunities and indirectly supports the financial stability of people who historically have been denied access to increasing their income and wealth-building potential⁷⁶.



Profile: [Rev. Falcia Campbell](#)

Assess Community Issues and Limit Water Shutoffs

Before utilities decide which programs or policies to pursue, they should first gather information on their infrastructure system, service area, and issues of chief concern to their customers (e.g. leaks, unaffordable bills, water quality concerns, etc.).⁷⁷ Additionally, they should ensure that water use metrics are accurate.⁷⁸

Critically, as utilities plan to develop strategies to achieve affordable water outcomes, they must commit to ceasing involuntary water shutoffs determined by inability to pay. A National Bureau of Economic Research study that

⁷⁵ Roller, Z., and Mayorga, D. (2017). *An Equitable Water Future: A National Briefing Paper*. US Water Alliance. http://uswateralliance.org/sites/uswateralliance.org/files/publications/uswa_waterequity_FINAL.pdf

⁷⁶ Ibid.

⁷⁷ Godwin, A. (2019, July 1). *Affordability Through Advanced Asset Management*. Water World. <https://www.waterworld.com/water-utility-management/asset-management/article/14037267/affordability-through-advanced-asset-management>.

⁷⁸ Hoffberger, C. (2015, September 4). *How Accurate Is Your Water Bill? Residents Complain They're Being Overcharged; City Disagrees*. The Austin Chronicle. <https://www.austinchronicle.com/daily/news/2015-09-04/how-accurate-is-your-water-bill/>.



Profile: [Avika Durr](#)

looked at the impacts of water shutoffs on COVID-19 rates suggested that if a nationwide moratorium on utility shutoffs has been in place from March-November 2020, there could have been close to 15 percent fewer deaths and an 8.7 percent reduction in infections.⁷⁹ In spring 2020, many municipalities and utilities did place temporary moratoriums on water disconnections, but due to a lack of data on the number of household shutoffs, it is unclear how many reconnections have occurred.

Outside of the context of a pandemic, the socioeconomic fallout and health impacts that result from having water shut off can be significant. From increased anxiety and depression, to bankruptcy filings and foreclosure warnings, water shutoffs rarely incentivize individuals to pay their bills: They simply compound generational poverty and leave already vulnerable communities in poorer conditions⁸⁰.



Profile: [Cheryl Gregg](#)

Local Government / Water Utility Case Studies

The examples on the next page share how local governments and utilities have worked to address the root causes of unaffordable water bills.



Profile: [Robbie Burks](#)



⁷⁹ Jowers, K., Timmins, C., Bhavsar, N., Hu, Q., and Marshall, J. (2021). *Housing Precarity and the COVID-19 Pandemic: Impacts of Utility Disconnection and Eviction Moratoria on Infections and Deaths Across US Counties*. National Bureau of Economic Research. <https://doi.org/10.3386/w28394>.

⁸⁰ Feinstein, L., Shimabuku, M., and Pierce, G. (2020, April 20). *When Utilities Shut Off Water for the Poor, We Are All at Risk*. Pacific Institute. <https://pacinst.org/when-california-utilities-shut-off-water-for-the-poor-we-are-all-at-risk/>.

The Philadelphia Water Department Affordability Program (Rate Structuring)

In 2017, Philadelphia adopted a water affordability program for low-income customers and those with financial hardships. The Tiered Assistance Program (TAP) is designed to help eligible customers afford their monthly water bills by charging them based on pre-tax monthly income instead of water usage. To continue water conservation, the program provides educational material, free leak detection tests, and low-flow plumbing fixtures⁸¹.

TAP customers include low-income households, seniors, and those with a special hardship such as (but not limited to) a growing household, job loss, serious illness, family loss, and domestic violence⁸². To ensure qualifications, the enrollment process requires submission of documents that prove residency and income eligibility, along with social security numbers of residents⁸³. (Important to note that the social security number requirement may limit access to mixed-status households, i.e. households with both documented and undocumented residents).

When customers file an application, they can request a 14-day water shutoff delay for the, and no shutoffs occur while the application is being reviewed⁸⁴. Those who qualify for TAP must make punctual payments for two years, and after that period, any previous bill balance is forgiven.

While the program is relatively new, and studying it can help other utilities understand the costs of administering such a program. Between January 1 and December 31, 2019, TAP had fully processed more than 23,000 applications and enrolled 13,701 customers. As of December 2019, there were 15,258 active TAP participants⁸⁵.

City of Atlanta Department of Watershed Management⁸⁶ (Customer Assistance Programs)

The City of Atlanta Department of Watershed Management is a regional utility. Since 1995 it has offer the “Care and Conserve” customer assistance program that, through a nonprofit partner, provides discounts on customer bills and water conservation measures/plumbing repair for income-eligible consumers. The “both and” aspect of the program alleviates addresses the immediacy of a household’s financial while, in the long term, seeking to address some of the causes of unaffordable bills long-term.

A key eligibility criterion is having an income that is 200 percent of the poverty index, as defined by the Federal Office of Management and Budget. The program has a special provision for income-eligible seniors, who are offered a 30 percent discount on their water and wastewater bills. The program is not accessible to renters, but the department is working with local housing authorities, and landlords that have applied to the program receive priority with repair requests to reduce costs that could otherwise be passed on to renters.

81 Kearns, D. (2017, November 8). RELEASE: *What Cities Can Learn from Philadelphia's Water Affordability Program*. Center for American Progress. <https://www.americanprogress.org/press/release/2017/11/08/442445/release-cities-can-learn-philadelphias-water-affordability-program/>.

82 Water Bill Customer Assistance. City of Philadelphia. (2020, November 30). <https://www.phila.gov/services/water-gas-utilities/pay-or-dispute-a-water-bill/water-bill-customer-assistance/>

83 Water Bill Customer Assistance. City of Philadelphia. (2020, November 30). <https://www.phila.gov/services/water-gas-utilities/pay-or-dispute-a-water-bill/water-bill-customer-assistance/>

84 Water Bill Customer Assistance. City of Philadelphia. (2020, November 30). <https://www.phila.gov/services/water-gas-utilities/pay-or-dispute-a-water-bill/water-bill-customer-assistance/>

85 Philadelphia Water Department. (2021, January). Direct Testimony of Susan M. Crosby and RaVonne A. Muhammad on behalf of The Philadelphia Water Department. Phila.gov. <https://www.phila.gov/media/20210115161911/PWD-Statement-No.-5-Direct-Testimony-and-Schedules-of-Susan-M.-Crosby-and-Ravonne-A.-Muhammad.pdf>

86 Isaac Berahzer, S. (2020, December 4). City of Atlanta Department of Watershed Management – Care and Conserve Program [web log]. <https://www.ibenvironmental.com/blog/2020/12/4/city-of-atlanta-department-of-watershed-management-care-amp-amp-conserve-program>

North Carolina, Orange County Water and Sewer Authority Customer Assistance Program⁸⁷ (Customer Assistance Programs)

In accordance with North Carolina state law, Orange County Water and Sewer Authority (OWASA) is prohibited from setting rates that are based on household income. In order to better support their low-income and fixed income customers, OWASA has increased payment periods, supported water conservation efforts, and shared program assistance information to households at risk for shutoff. The utility has also initiated a “Care to Share” program in which financially-able customers opt in to rounding their bill to the next dollar or contributing an additional amount to fund, and OWASA pairs these donations with local nonprofit dollars.

Even with the nonprofit cost share, the program isn’t fully funded. But the program structure exists and can be amended as the utility works to improve customer affordability outcomes.

Detroit, Extended Moratorium on Water Shutoffs

In 2014, Detroit made international headlines when tens of thousands had their water service disconnected due to inability to pay increasingly high water bills⁸⁸. In December 2020, Mayor Mike Duggan announced that the Detroit Water and Sewerage Department would extend its COVID-19-initiated moratorium on water shutoffs through 2022, citing the importance of access to clean water⁸⁹.

The extended moratorium has been cheered on by local frontline organizations such as We the People of Detroit and People’s Water Board Coalition, who have been calling for a similar program for many years. However, these groups know that a ban on shutoffs is not sufficient if rates and bill affordability aren’t addressed, so they are continuing to apply pressure to decision-makers, requesting a move away from temporary billing assistance to locally responsive water affordability.^{90 91}

As Detroit works to reconnect household water service, it will cover the costs of unpaid bills with state and federal support. This underscores the need for a highly coordinated and collaborative approach that makes addresses affordability as efficiently and compressively as possible⁹².

87 WIRFC, AWWA, AMWA, NACWA, NAWC, WEF, and WRF. (2016, April). *Drinking Water and Wastewater Utility Customer Assistance Programs*. EPA. https://www.epa.gov/sites/production/files/2016-04/documents/dw-ww_utilities_cap_combined_508.pdf

88 Rushe, D. (2014, September 29). *Blow to Detroit’s Poorest as Judge Rules Water Shutoffs Can Continue*. The Guardian. <https://www.theguardian.com/world/2014/sep/29/detroit-water-shutoffs-legal-judge-bankruptcy-revenue>

89 Ellison, G. (2020, December 9). *Detroit Water Shutoff Ban Extended to 2022, May Become Permanent*. Michigan Live. <https://www.mlive.com/public-interest/2020/12/detroit-water-shutoff-ban-extended-to-2022-may-become-permanent.html>

90 Rahman, N. (2020, December 8). *Detroit Water Shutoff Protections Extended Through 2022, Permanent Stop Planned*. Detroit Free Press. <https://www.freep.com/story/news/local/michigan/detroit/2020/12/08/watch-live-duggan-water-shut-offs-coronavirus-updates/6488968002/>

91 Lakhani, N. (2020, June 23). *Revealed: Millions of Americans Can’t Afford Water as Bills Rise 80% in a Decade*. The Guardian. <https://www.theguardian.com/us-news/2020/jun/23/millions-of-americans-cant-afford-water-bills-rise>

92 Williams, C. (2020, December 8). *City of Detroit to Continue Moratorium on Water Shutoffs*. AP NEWS. <https://apnews.com/article/health-coronavirus-pandemic-detroit-gretchen-whitmer-9a22bf11144cf2049e110718288b925a>

Phoenix Water Equity Initiative (Following Community Lead and Saying “No” to Disconnections)⁹³

According to a 2020 report by the Phoenix Water Services Department, it worked with a citizen advisory committee to audit its policies for barriers to affordable water access. The committee found that while the water rates were on the lower end when compared to major cities throughout the nation (low fixed charges that cover minimum essential water used), many households are below the poverty line and struggle to afford the bill, especially given that water, wastewater, and solid waste bills are bundled together as a “City Services Bill.”

As a result of the audit, through giving citizens a voice in the water management decision-making process, Phoenix was forced to think of water bill affordability in the context of other household bills when enforcing payment. The following recommendations were made:

- The utility can improve equity by addressing the fixed fee structure separate from the rate structure (appears to be higher when compared to other Arizona municipalities).
- Instead of continuing to increase late fees, the committee suggested removing late fees after service disconnection.
- In place of service disconnections, the utility should consider flow-restrictions (i.e. lowering water pressure to minimal levels) so households can have access necessary water and still be incentivized to pay missed bills

The committee also advocates for increased funding to the credit program to support additional households.

TAKEAWAY

- Utilities can more effectively improve water affordability with a two-pronged approach. First, reduce how much money customers are paying by implementing equitable rate structures and customer assistance programs. Second, ensure that utilities employ strong asset management practices that reduce the overall costs of managing the water system.
- Community activism is at the forefront of achieving water affordability. Coalition-building among individuals and groups can surface and amplify community issues, and effectively command the attention of decision-makers.

⁹³ Water Equity Initiative (p. 34). (2020). City of Phoenix Water Services Department.
https://www.phoenix.gov/waterservicessite/MediaAssets/WSD%20Home%20Page/EquityPaper_2020-06-23_Final.pdf

ADDITIONAL INFORMATION AND RESOURCES

Quiz

What actions should states consider in order to work towards equitable water affordability? (Choose all that apply)

- a. Establish water affordability standards based off the median household income
- b. Require utilities to complete program evaluation of customer assistance programs and implement next steps
- c. Support privatization of water utilities
- d. Amend state laws to allow income-based water bills
- e. Create policies to increase utility capacity, for example through coordination of services between utilities, regionalization, or collaboration between utilities
- f. Develop legislation to require that utilities work on water loss prevention and efficiency
- g. Roll back water regulations on private industries
- h. Set aside budget allocations for water affordability programs

Answers: b, d, e, f, h

Why Is Water Unaffordable?

[An Overview of the “New Normal” and Water Rate Basics](#) (pgs. 2-6)

This brief report by the Pacific Institute explores the reasons behind decreasing water affordability in the state of California (and are relevant for many cities across the United States).

[Project Issue Brief: Water Affordability](#) (pgs. 1-2)

This brief is part of the Center for Neighborhood Technology Great Lakes Water Infrastructure Project and discusses why water is unaffordable.

[Safeguarding Water Affordability](#) (pgs. 6-12)

This brief report, written by the Bipartisan Policy Center, highlights the key factors that increase pressure on utilities to raise costs of water for consumers.

[The Case for Fixing the Leaks](#) (pgs. 2-4)

This report, written by the Center for Neighborhood Technology, is a useful resource to learn more on the effect of water supply system aging infrastructure on water affordability.

The United State(s) of Water

Created by the American Water Works Association and the Water Environment, this series of infographics offer a brief overview of the key causes and potential solutions to work towards water affordability in the [United States overall](#), the [Midwest](#), and [Northeast](#).

[Water/Color: A Study of Race and Water Affordability](#) (pgs. 2-19)

This report by the NAACP delves into the historic actions and policies that have led to the lack of water affordability.

[Guardian Investigation into U.S. Water Poverty](#)

Guardian US commissioned an analysis of the cost and affordability of water and sewage services in 12 diverse American cities.

Impacts

[America's Secret Water Crisis: National Shutoff Survey Reveals Water Affordability Emergency Affecting Millions](#) (pgs. 2-13)

This report offers relevant information on the magnitude of water shut-offs, a key impact of unaffordable water bills, and the trends of water burden across multiple demographics; an accompanying primer can be found [here](#).

[Detroit's unaffordable water hints at a U.S. crisis to come](#)

This brief video provides an overview of the costly water crisis in Detroit, but the concerns apply widely across the nation. It is a useful start to understand the magnitude of how unaffordable water bills impact lives, and the reasons for the disproportionate impacts.

[The Invisible Crisis: Water Unaffordability in the United States](#) (pgs. 6-8, 11-13)

This report provides a detailed analysis of the United States water cost crisis. The third section of the report, titled "The Real Costs and Consequences of Unaffordable Water," offers a concise summation of the numerous consequences of unaffordable water bills on families and households.

State Actions

[Consumer Bill of Rights - Illinois](#)

This document is an example of what a state may use as a consumer bill of rights.

[Consumer Bill of Rights - Nevada](#)

This is an example of what a state might typically include in its consumer bill of rights.

[Measuring and Addressing Water and Waste Water Affordability in the United States – Boston University](#) (pgs. 27-28)

This report offers a succinct analysis of the opportunities that state government can take to improve the affordability of water.

[One Water for America State Policymakers' Toolkit](#)
(pgs. 3-19)

This report consolidates major ideas about a states' roles in water affordability policy. Based on listening sessions held by U.S. Water Alliance, the report provides several case studies from states across the nation for each of the seven big ideas.

[Redefine affordability for the 21st Century - US Water Alliance](#) (pg. 8)

This brief discusses water affordability solutions, from the utility to the federal level. In the relevant pages, potential solutions at the state level are discussed, along with case studies documenting implementation of these solutions.

[State Insights on Renewing a Cross-Government for Water Affordability](#) (pgs. 1-5)

This summary of a water issues forum discusses how state governments can support water affordability at the household and utility level.

Utility Actions

[A Water Utility Manager's Guide to Community Stewardship](#)
(pgs. 53-70)

This report helps utilities with different community engagement processes; the relevant pages highlight several case studies of utilities working with communities on different types of projects.

[Assessment of Water Utility Low-Income Assistance Programs](#) (pgs. 28-52)

This document, published by the Division of Water and Audits, is as a way to see how to improve customer assistance programs in California. It details different types of assistance, program eligibility, and recommendations.

[Beyond the Water Bill](#) (pgs. 2-12)

A recent Center for Neighborhood Technology report, this piece focuses on water utility bills, and mechanisms to make them more affordable. It includes an updated definition of affordability as well as how utilities can implement affordable water costs while maintaining operations.

Case Studies of Sustainable Water and Wastewater Pricing

(pgs. 5-20)

This document is a collection of case studies of how utilities around the United States are working towards setting rates at acceptable levels while covering maintenance and infrastructure costs.

Drinking Water and Wastewater Utility Customer Assistance Programs (pgs. 7-13, 24-28)

This report published by the EPA delves into the basics of customer assistance programs and provides example programs that utilities can implement. Additionally, it provides metrics on how utilities can determine the success of their customer assistance program.

Setting Small Drinking Water System Rates for a Sustainable Future (pgs. 31-32)

This report by the EPA informs how small systems can set water rates. It can be helpful to know what strategies utilities are currently using when advocating for affordability.

Thinking Outside the Bill (pgs. 7-12)

This report provides ideas to utilities on how to support water affordability for low-income households in their community.

Water Affordability in Northeastern Illinois (pgs. 30-44)

This report analyzes water affordability in northeastern Illinois and determines why water is unaffordable. It then moves onto various solutions that utilities and municipalities (across the nation) can implement in partnership with assistance from multiple levels of government and other organizations.

Water Rates: Water Affordability (pgs. 3-6)

This short report reviews water affordability programs in California and provides a multitude of options to help increase water affordability for low-income households.

An Equitable Water Future Cleveland (pgs. 10-14)

This document was developed by the Cleveland Water Equity Taskforce to advance equity in water management.

Statement on Water Affordability vs. Water Assistance for DWSD Low Income Customers (pgs. 1-8)

This statement written by advocacy organizations in Detroit criticizes the water assistance program; it also provides an example of how to write a statement and what are factors an advocate can consider when pushing for utility-based programs.

Ten Point Water Affordability Plan (pg. 1)

This is a 10-point plan developed by The Water Unity Table, a coalition of Detroit communities. It outlines the organizer and advocate perspectives on achieving water affordability.



Decision-Making and Influence

Objectives

- Identify ways to take action by reflecting and learning, connecting with community stakeholders and decision-makers, and advocating for change
- Access resources to find state- or utility-specific information related to financing opportunities, policy guidelines, and public meeting/comment requirements
- Understand how and when to communicate with decision-makers, and get involved during decision-making processes

1. Why Does Influence Matter?

2. Getting Started

- Reflect
- Share
- Learn
- Connect

3. Get Involved: Local / Utilities

- Learn About Your Utility
- Develop a Working Relationship with Your Utility
- Share Feedback and Insights

4. Get Involved: State

- Learn How Things Work in Your State
- Review State Plans, Surveys, and Local Utility Requirements
- Engage and Communicate with Decision-Makers

5. Get Involved: Federal

- Learn About Federal Policies that Influence Affordability
- Advocate for Increased Federal Funding, and Improved Equity and Affordability Guidelines
- Brainstorm Ways that Federal Funding Programs Might Be Improved

What Is Influence?

In the context of this resource, influence refers to the power to affect change at the local, state, or federal level. Influence can be exerted by individuals, organizations, or coalitions (of individuals and/or organizations). Stakeholder types could include residents, disadvantaged populations, commercial businesses, nonprofits, community organizations, labor unions, educational institutions, and customers, among others.

There are varied and myriad moments when advocates can employ their expertise about needs and priorities to influence outcomes. When thinking about federal, state and local/utility decision-making, opportunities may emerge around spending funds, developing processes, changing processes, and exploring new means and methods for accomplishing goals, for example.

For the purpose of this section, when the term “water” is referenced, it is referring to drinking water, wastewater, and stormwater collectively unless otherwise specified.

TAKEAWAY

As a community member, utilities and municipalities are responsible for providing safe, reliable and drinkable water to your taps, and ensuring that your local waterways are clean and healthy: You pay for these services, and these entities are responsible to you. You also should expect that utilities and municipalities have a way for you to communicate your water issues and broader concerns, so they can provide remedies and solutions.

The Decision-Making and Influence section distills the points of influence and action noted in the previous three sections. It offers advocates a practical set of recommendations for learning more about local water infrastructure systems and spotting factors that might compromise water affordability. It also provides advocates with a list of action items to influence decision-making at the federal, state, and local/utilities levels.

Affordability – According to the Pacific Institute, water is affordable when its cost does not prohibit access to the resource, nor interfere with other essential expenditures (ex. food, shelter, electricity).

WHY DOES INFLUENCE MATTER?

Water affordability and equity issues are inextricably linked to a broad set of societal issues: housing, economic security, climate change, and public health, among others. But because much of our water and wastewater infrastructure is underground, its essentiality to our everyday life is often out of sight. And now, we are experiencing a water infrastructure and water affordability crisis.

As infrastructure ages and is more frequently strained, water systems are experiencing failures: flooding, wastewater outfalls into water bodies, water main breaks, and chemical contamination. Necessary investments and repairs can increase water bills, burden low- and moderate-income customers, and lead to water shutoffs for households that are unable to pay higher bills.

River Network believes that “equitable water infrastructure investment” has been achieved when dollars are:

1. Directed by the community toward public health, and result in safe, clean, affordable and accessible drinking water, wastewater, and stormwater;
2. Distributed in a way that supports the communities that are most at-risk for environmental harm and have historically lacked investment, chiefly low-income communities and communities of color; and
3. Used to support the long-term sustainability of our waterways, water systems, and utilities.

Through its [Affordability](#), [Infrastructure](#), and [Utilities](#) sections, the River Network Equitable Water Infrastructure Toolkit has helped advocates understand the systems that must work to produce safe and reliable drinking water, wastewater, and stormwater:

In the [Affordability](#) section, advocates learned about what drives water to be unaffordable and explored opportunities to address affordability at the local, state, and federal levels.

In the [Utilities](#) section, advocates took a deep dive into the world of water utilities to understand how they are managed and regulated, how their decision-making impacts affordability outcomes, and what strategies can be pursued to improve water affordability.

In the Infrastructure section, advocates explored how water system improvements are financed, focusing special attention on federal programs, the states' role in administering those programs, and how equity can be built into these programs to improve outcomes.

To help advocates identify the interconnected nature of affordability, water utilities, and infrastructure, this Decision-Making and Influence section is organized by three arenas of influence: federal, state and local/utility. This allows advocates to think about strategies by audience (and given the nature of some advocacy efforts, note that some strategies will be listed in multiple categories).

GETTING STARTED

[Water infrastructure](#) impacts our day-to-day lives in many ways, both inside our homes (bathing and cooking) and out (recreation). When water quality and quantity are compromised, so too is our ability to move through our days...

- If our water is shut off, we cannot bathe or cook.
- If our streets or basements are flooded, it may be hard to get to work and our health may be impacted.
- If there are droughts, finding new sources requires thoughtful planning and consideration, and our quality of life may be compromised.



Profile: [Nanjemoy, Maryland](#)

However, because water infrastructure is largely underground and out of sight, it does not get as much proactive attention as other social issues or visible infrastructure like housing and roads.

Closer Look



Intersectionality – In the context of this toolkit, intersectionality refers to the interconnected nature of socioeconomic identity, and environmental and public health issue

Therefore, we invite readers to first consider a mindset shift. How can you build intersectionality between water infrastructure and other issues, like your health, housing, and/or economic vitality?

As those intersections become clearer, does water infrastructure take on a different meaning to you as a customer? As a renter or homeowner? As a resident? A neighbor? An advocate?

Consider the following as jumping-off points:

Reflect

- Consider the network of infrastructure that enables water to come through your household taps, toilets, and cleaning devices; what do you think goes on behind the scenes? Try visualizing.
- Why do some areas flood and others don't?
- How is that water being managed in your community? Does the system seem to be working, or can you identify water quality, access, or affordability issues?
- What connections can you make between water infrastructure and other social issues that you hear/care about?
- Are there any existing issue-based campaigns (affordable housing, jobs, etc.) that water infrastructure/affordability could be a part of?

Share

- Talk to your neighbors, families, and friends. When they think or talk about water, what issues are you picking up on? Cleanliness? Affordability? Conservation? Something else?

Learn

- Use the [CNT Water Bill Calculator](#) to help inform your case for water affordability.
- Monitor the usage listed on your water bill; if it discernably fluctuates month to month or quarter to quarter, your water supply system may have a leak. (This tactic works for both individual households and as a broader strategy that advocates can share with constituencies who may be concerned about water affordability/excess water usage.)

Advocacy – Advocacy refers to the various ways that stakeholders make their voices heard on issues that affect their lives and the lives of others in their communities, state, and country. It also involves helping policymakers find specific solutions to issues and problems.

Connect

- Community activism is a foremost means of assuring that water is clean, and that affordable and equitable outcomes are achieved. Coalition-building can surface and amplify community issues to command the attention of decision-makers, and many of the strategies noted in this section will be easier and/or more impactful if done in partnership. Also, many states have environmental policy groups that provide advocacy and watchdog support, and these bodies can be fantastic allies.

As advocates move through the following sections, they will see actions categorized one of three ways:

- Beginner (learning the basics, work that can be self-driven)
- Intermediate (digging deeper, work that may call for reaching out to experts or joining/forming a larger group)
- Advanced (building relationships with decision-makers, advocacy work that is most effective when done with a coalition)

Next to these Beginner, Intermediate, and Advanced classifications, advocates also will find the corresponding subject area (Infrastructure, Affordability, or Utilities) that indicates where a particular action or set of actions is discussed in more detail in the toolkit.

GET INVOLVED: LOCAL / UTILITIES

Power – The ability to organize resources (e.g. money) and people to implement an action or idea. Those with power have the ability to choose between desirable options.

Equity – In the context of this toolkit, equity refers to a policy and program development approach that prioritizes investment in communities which are most in need or most largely disadvantaged, taking into account the historical costs and barriers certain identities have faced due to discrimination.

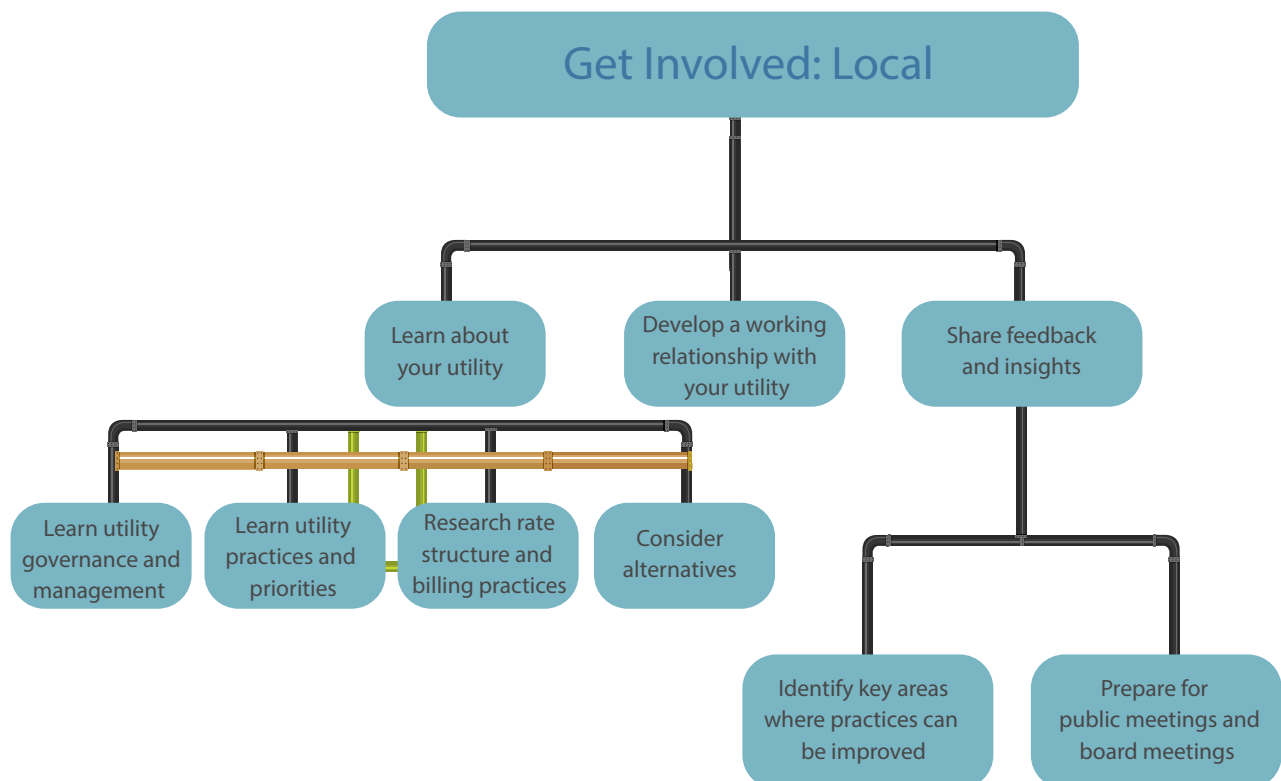
Refer to the [Infrastructure](#) section for more information about centralized and distributed infrastructure

Utilities and municipalities are on the front lines, the entities that are most directly connected with providing water services, ensuring that streams and rivers are clean and healthy, and interfacing with customers and residents. Within the legal and programmatic frameworks set by federal and state governments, local utilities and municipalities have the power to implement responsive and impactful policies and programming to achieve affordability, equity, and sustainable outcomes.

Utilities can improve water affordability by:

- implementing equitable rate structures and customer assistance programs to reduce how much customers pay for services.
- having effective operations, maintenance, and asset management practices.
- pursuing diverse project portfolios that includes distributed infrastructure (e.g. green stormwater infrastructure) that benefit both the community and the natural environment.

Advocates can use this section to guide their learning about local utility governance and management, develop a relationship with their water utility, and strategically advocate for local change, individually or with a coalition.



Learn About Your Utility

(Beginner, Utility)

Governance and Management Systems

Use the following questions to paint a clearer picture of your utility: how it operates and is regulated, how it manages assets, and how your billing and rate structures are determined. Visit the websites of your utility and/or municipal government for resources and information to help inform your answers to the below questions:

- Who manages my drinking water, wastewater, and stormwater services?
- Is my water utility publicly or privately-owned? Does it service a single community, or is it a regional authority?
- How is my utility governed? (Ex. Private board of directors? City council? Appointed or elected board or commission?)
- What is the process and oversight for rate-setting? Does it happen at city council meetings? At a state regulatory hearing? A water board of commissioners meeting?
- Who do I need to know at the utility and/or governing body to effectively advocate for water management and funding practices that support affordability outcomes?
- If my utility is publicly owned, does it commingle enterprise funds with municipal general operating funds?

(Beginner, Utility)

Water Loss Tracking

Every day, billions of gallons of treated water are lost through water main breaks and leaky pipes, and this loss has myriad implications for water affordability. Use [this NRDC interactive map](#) to find out state requirements around tracking water loss.

- What does your state require?
- If your state has some level of water loss tracking requirement, are there documents available that can tell you how much water your utility losses, and whether it is compliant with state guidelines? If not easily accessible, reach out to your utility or elected official for direction.

- If there is no uniform water loss auditing system, consider writing a letter to your state representative advocating for one to be instituted.

(Intermediate, Utility)

General Asset Management

A well-run utility has certain processes and documents in place that drive project prioritization. They may have generic versions of documents and plans on their websites, but due to concerns over security and terrorism, more detailed documents and plans (ex. delineated maps and blueprints) may not be publicly available. Also note that project priorities will likely change across time — for example, emergency interventions related to pipe breaks and storms will need to be addressed, and new regulations can also place projects ahead of what may have been planned.

Research publicly available documents or reports that outline your utility’s asset management plans, capital improvement plans, and/or financial reports. These documents and plans are usually developed over the course of several months and are ideally renewed after a few years, and projects included in these plans have the highest chance of being implemented. You can review these documents to verify that planned projects are not irrelevant or over-sized (i.e. based on an unrealistic growth calculation), and these plans also are good indicators of how your utility is integrating distributed infrastructure into its plans, incorporating green stormwater infrastructure, for example.

These documents can be found on local government websites or through an online search along the lines of “[utility name] utility asset management plan,” “[utility name] capital improvement plan,” or “[utility name] water infrastructure improvement plan.” Keep in mind that not all asset management plans are easily accessible or available, and these documents may not be clear or straightforward. Advocates might consider reaching out to their elected representatives for support or direction, and also consider reaching out to your utility by email or phone (as explained further in the [Infrastructure](#) section.)

Capital Improvement Plan – Capital improvement plans list all planned projects, equipment purchases, and major planning / engineering studies of a utility or municipality. These implementation plans provide a working blueprint for sustaining and improving the community infrastructure and typically include information about construction timeframes, and financing and funding needs.

Consider the following questions when reviewing relevant documents:

- When was the last time the asset management plan or capital improvement plan was updated?
 - When is the next version of this plan being developed?
- What aspects of an integrated water management plan does the utility consider, or what asset management planning is included?
 - Are the planned projects addressing current community problems such as flooding?
 - Are the planned projects addressing future issues related to climate change, for instance?
- Over what timeframe are investments planned for?
- Where are investments made?
 - Are they equally distributed throughout a community (i.e. investment is planned for and occurs everywhere regardless of higher need in some places)? Or are they equitably distributed throughout a community (i.e. investment is planned for and occurs in areas with higher need, such as areas with older infrastructure or a higher prevalence of flooding or water main breaks)?
- Can you tell if the projects are too large for the current and projected growth rates of the community?
- If too large, will that lead to unnecessarily high rates for customers, especially low-income ones?
- Is the utility taking advantage of the lowest interest rates to fund these projects over time?

Visit the [Utilities](#) section for a more in-depth review of utility management models.

(Intermediate, Utility)

Consider alternative decision-making and system management models

After reviewing utility asset management plans and other related documents, you may consider whether the existing way of doing things is ideal, especially as it related to affordability outcomes; perhaps an integrated water resource management or service sharing model may yield better results.

Browse reports and plans, and visit your local government and/or utility websites to get a sense of how decisions are made, see if you map out the process. If you can't find the information, consider reaching out to the utility or your elected official for guidance.

- Is it clear what the decision-making process is like? What is it? What informs infrastructure investment decisions?
- Think about the ways in which you would like your water system to be managed differently. Make a list of your top priorities e.g. fixing leaky pipes, reducing costs, implementing a conservation or efficiency program, using green stormwater infrastructure. Then think about how your utility might achieve these outcomes (e.g. water loss auditing, service sharing, etc.)

Research rate structure and billing practices

To find out what type of rate structure your utility uses, visit your utility and/or local government websites, or by reaching out to your elected official or utility operator. What type of rate structure does your utility use?

What kind of rate structure do you have?

- Flat Rates
- Decreasing Block Rate
- Increasing Block Rate
- Uniform Rate

What kind of rate structure would you like to have? Why?

- Flat Rates
- Decreasing Block Rate
- Increasing Block Rate
- Uniform Rate

Calculate how affordable your water bill is using the [CNT water bill calculator](#).

Use information in the [Utilities](#) section to understand the components on your water bill. Consider the factors on the bill that might drive up the total amount (e.g. charges other than water, billing frequency, etc.)

Based on what you've learned, would you deem this to be an equitable rate structure? Why/why not?

(Beginner Utility)

Compare your water rate structure to that of a different community (perhaps one in which you know people so you can get a firsthand account of their relationship to the water utility). Which utility makes [equity-informed decisions](#)? If the other community is more equity-informed, consider the socio-economic similarities or

differences between your communities: Could your community implement a similar process and achieve more equitable rates? Refer back to the [Utilities](#) section for more information about equitable rate setting and CAPs.

(Intermediate, Utility)

Speak with others in your community/organizations about their priorities, and come to a consensus on your collective priorities. After coming to decision, begin planning how your group will plan and act to affect this change.

Develop a Working Relationship with Your Utility

An advocate who wants to gain a better understanding of an issue, present an alternative, or object to a project or procedure, should start by contacting a utility staff member. A good decision-making board recognizes the knowledge and experience that staff hold as the ones most familiar with the utility. The board depends on the staff to present it with well-vetted options.

In general, contacting and working with staff early in the process results in more openness to collaboration and better-designed projects. River Network is developing a [trust-building resource](#), and some general tips follow:

- Sometimes, budgeting and program redesign decisions are made “behind closed doors,” followed by a perfunctory and minimally impactful public comment period. This may limit the extent of your influence — if you can find one, work with a coalition that has a relationship with the utility and/or local government decision-makers to find out how to best submit input and make priorities known early on.
- When possible, utility staff usually prefer to be approached before a major funding decision is being voted on or announced at a public meeting. Reviewing board meeting minutes and upcoming meeting agendas online can give an advocate notice of these decisions.
- Some utilities list staff contact information online. If that is not the case, calling a main number and describing your interest should get you connected to the relevant staff person who works in your interest area; in some cases, a caller may first have to go through public relations staff.
- Email the relevant person and then set up a phone call or in-person meeting.

If the staff does not respond to you after repeated

Conservation – Conservation is a sustainability practice that focuses on reducing water use to preserve natural resources

Source Water Protection– Utilities and private wells draw source water from rivers, streams, lakes, and springs — source water protection includes a wide variety of actions for safeguarding or improving the quality and/or quantity of drinking water sources and their contributing areas.

email/phone contact, then consider your first communication being at the public meeting. Note that there is usually a sign-up list where you would need to enter your name before the meeting in order to be allowed to make a comment.

- Begin to familiarize yourself with “industry-speak” to prepare for when you meet with utility staff. For example, whereas a customer might use the phrase “water conservation” to talk about using less water, utility staff may use “source water protection” to highlight the environmental benefit of conservation, especially in a regulatory compliance context. See the Glossary to help you prepare. When you meet with utility staff, ask them to explain if they use words or phrases you are not familiar with, or to explain concepts and issues with language that the general public is familiar with rather than “industry-speak.”

Share Your Feedback and Insights

Based on your research, identify the key areas where you believe the utility can improve practices, and come up with a plan to present this information to the utility and other local decision-makers.

- If water loss is an issue you are concerned with, advocate for improved water loss management — by reducing losses in the system, utilities save money and customers avoid water loss-related billing increases.
- If flooding is an issue, advocate for green stormwater infrastructure as a solution (as opposed or in addition to grey infrastructure updates), because it provides a broad array of community benefits beyond its explicit purpose.
- Consider environmental justice and equity provisions

(Intermediate, Infrastructure)

Review Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), which broadly directs federal agencies to address disproportionately high and adverse health and environmental impacts on low-income and BIPOC populations; develops strategies to implement environmental justice efforts; and promotes nondiscrimination in, and increased access to, federal programs. When you are advocating for equitable and affordable water infrastructure outcomes, you can remind decision-makers of these federal priorities.

(Advanced, Infrastructure)

Work with the local water utility to consider how planned projects may impact environmental justice, especially with respect to funding programs like the State Revolving Fund.

Explore available and possibly untapped financing and funding opportunities

(Intermediate, Infrastructure)

After reviewing the [multi-source funded projects](#) section in the [Infrastructure](#) section, encourage utility staff to pursue these types of funding arrangements.

(Intermediate, Infrastructure)

Applications that include partnerships and collaboration among multiple organizations tend to score higher. Advocates can boost the chances that a local government receives 319 funds by helping to develop these partnerships.

(Advanced, Infrastructure)

Advocates can encourage their utilities to take out low-interest loans to amortize large costs over time to keep rates affordable.

Explore/recommend improved financial and asset management practices and equitable and affordable rate structures

(Advanced, Infrastructure)

Work with third party financial advisors or a utility advisory board and monitor whether utility PAYGO funds remain intact for their original purpose. Also, monitor whether unreasonable fund transfers are occurring between the general fund and the water utility enterprise fund.

Consult other resources and examples to understand how local governments can make the needed changes in their financial accounting and asset management systems.

Groups such as the Government Finance Officers Association (GFOA) are producing articles and conference sessions on how to adapt to including green infrastructure in financial documents and systems.

In fact, in 2017 GFOA gave DC Water the Award for Excellence in Government Finance for the city's Environmental Impact Bond. The article "[Crosswalking between Gray and Green Infrastructure for Budget Officers](#)" also offers some tips on adapting the local government budget process to green stormwater infrastructure.



Encourage utilities to more effectively improve water affordability with a two-pronged approach: reduce how much money customers are paying and reduce overall costs of managing the water system. This could look like advocating for equitable rate structuring and customer assistance programs, while asking for improved asset management and equitable investment practices . (Learn more about how Utilities can influence affordability outcomes in the [Utilities](#) section.

(Advanced, Affordability)

Reach out to utility staff or review previous public meeting minutes and public announcements to find out when water rate setting occurs.

Work with local utilities during the rate setting and affordability program design processes to ensure that decision-makers are considering equity and affordability outcomes. Some strategies that advocates might suggest during the process include the following:

- Developing rate structures based on household's income.
- Setting a lifeline rate, or an affordable rate for a minimum, necessary amount of water used for daily life and charging higher rates for more water used.
- Creating customer assistance programs (CAPs). Some examples to offer to the utility include a flexible water payment programs, forgiveness of past debt after consistently paying a lower rate over a period of time, bill discounts, or free access to water conservation and efficiency fixtures, helping to reduce water use and lower water bills. (Learn more about [CAPs](#) in the [Affordability](#) section.

Prepare for and attend public meetings and board meetings

As mentioned above, it is best to contact a utility staff member to ask questions and raise concerns ahead of a public meeting. If you do not get a response, or you have already had extensive discussions with staff, then making a public comment at a meeting may be in order; in some cases, the staff may even suggest that you make a public comment.

You can find the time and location of the next meeting on the website for the utility. Apart from local-government specific websites, "directories" may exist for the state as a whole. Each state also has some sort of league of municipalities or municipal association. There are also

Though the act of appearing for a meeting and making comments in person is a powerful gesture, advocates may preface this with written comments to the staff/board, providing a heads-up so that staff can prepare responses, if appropriate.

similar associations for counties. In some cases, these associations provide a “directory” with a summary of all of their local government members that includes information about staff contact and meetings. For example, you can find information on the small community of Blakely, Ga. via the [Georgia Municipal Association](#), but, not all associations may offer this service of posting meetings.

Once you’ve identified the location and date of the meeting, determine whether you want to submit oral or written comments, or both.

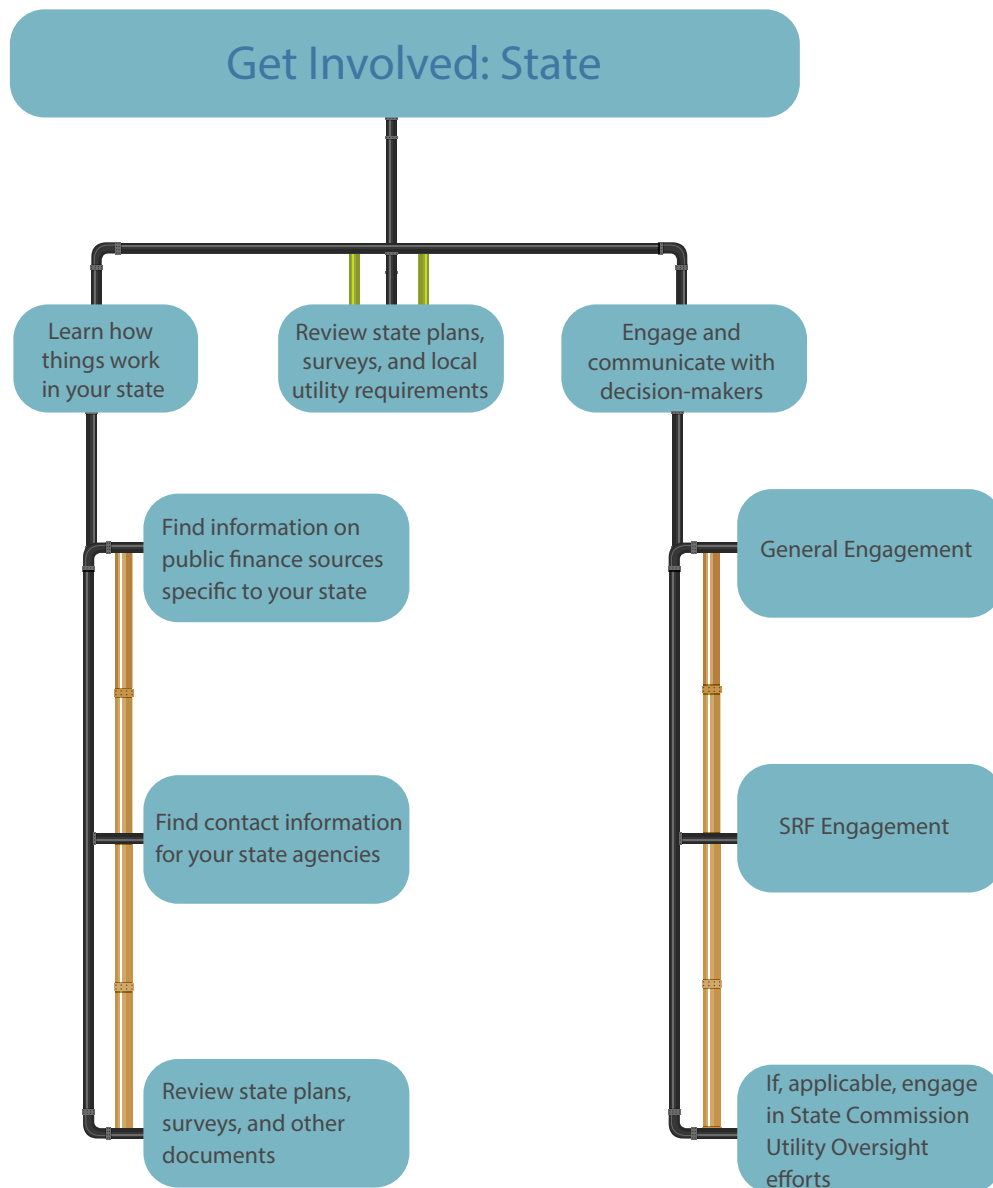
- Take a look at the agenda. Meeting agendas vary by utility. To make an informed vote, the governing board may be supplied with background documents on the topics being discussed.
- Request any background documents you see listed on the agenda; these can be requested by email or phone.
- Review these documents as well as past meeting minutes, and other publicly available documents on your utility or local government websites.

This can take a lot of time but will give advocates important context for the discussions, making them focused on the questions and suggestions they want to offer. Arriving on time is important to avoid disrupting the meeting. If you are unable to attend a meeting because it interferes with your job or other obligations, consider submitting a written statement in advance, or reach out to local groups working on these issues to see if they are attending or can attend and raise up your concerns.

GET INVOLVED: STATE

State governments have a significant role to play in moving the needle on water sustainability, affordability and equity outcomes. Often administering federal programs and/or federally sourced funding and financing, states can sharpen the sometimes-broad federal guidance, ensuring that local communities have clear guidance and support to implement successful local affordability initiatives.

Additionally, many states can hold utilities accountable for meeting water affordability, safety, and quality standards. This section begins with a short tutorial on how to find information on federal funding and financing opportunities accessible by your state. Then it suggests actions to advocate for improved affordability standards, better leverage SRF funds, and work with utility regulators.



Learn How Things Work in Your State

Find Information on Public Finance Sources Specific to your State

It is important to understand the relation between the federal requirements for spending funds from programs like State Revolving Fund (SRF) and Community Development Block Grants (CDBG) versus the role the states have in shaping these programs (refer back to the [Infrastructure](#) section for a refresher).

With this understanding, you may be able to suggest project types that your state does not regard as eligible or high priority. Many federal programs offer state-specific guidance (the Water Infrastructure Finance and Innovation Act being one main exception), so advocates should find out about their state's approach to each program. In addition, some funding sources, like the Appalachian Regional Commission, are only available to certain geographic areas.

To find a state-specific list of funding sources, advocates have the following main options:

[EPA Water Finance Clearinghouse](#)

This web-based portal helps communities identify funding sources for their state. It can also be used to tease out which sources fund different types of water projects, or which demographic criteria relate to each source.

The portal includes two searchable databases: one has funding sources for water infrastructure, the second contains resources, including reports, websites, and webinars on financing mechanisms and approaches that can help communities access capital for their water infrastructure projects. It appears that the different funding sources update the information at the Clearinghouse webpage themselves, thus, there may be some discrepancies on how current the information is.

[The Environmental Finance Center Network Smart Management for Small Water Systems Project](#)

For several years this network of Environmental Finance Centers published a [table of Funding Sources by State or Territory](#). This resource requires updates and maintenance to stay current and these updates are dependent on funding from an EPA grant for small water systems.

By clicking on a specific state from a map of the United States, an advocate could download a PDF table with the following headings:

Organization - *e.g. South Dakota Department of Environment and Natural Resources*

Program (key words) – *e.g. wastewater*

Eligibility – *e.g. Government Entity (yes/no); Non-Profit (yes/no); For Profit (yes/no)*

Purpose or Use of Funds – *e.g. The Clean Water State Revolving Fund (SRF) Program was established to provide low interest loans to governmental entities for clean water and non-point source pollution control projects. Government entities such as a municipality are eligible to apply. Eligible projects must be on the State Water Plan prior to submitting the funding application.*

How to Apply – *e.g. Applicant must submit an original application to the department, which can be accessed on the website. Applications must be postmarked or received on or before the first day of January, April, July, or October.*

Website – *e.g. <https://denr.sd.gov/dfta/wwf/consolidated/consolidated.aspx>*

Contact* – *e.g. Mike Perkovich, denrinternet@state.sd.us, 605-773-4216, 523 East Capitol Pierre, South Dakota 57501*
**Helpfully, contact information is provided for a specific person in each program.*

The Small Community Water Infrastructure Exchange (SCWIE)

This is a network of funding officials related to the Council of Infrastructure Financing Authorities (which is an association of states SRF programs). While its focus is on issues related to small water systems, SCWIE also maintains a list of contact information for the public finance programs for water and wastewater in each state. SCWIE has a very small staff and there may be a lag in updating the contact information on this website.

Statewide Support Groups

A main function of SCWIE is that it helps to maintain communication among the funding coordination bodies in each state. Most states have a group where the staff of the various funding programs listed above meet and coordinate their funding activities. The level of structure

and formality of these groups varies from state to state. In some states, the groups open up their meetings to the public which can be a venue for advocates to attend and make comments.

Find contact information for your state agency and department heads/regulators

[Clean Water State Revolving Fund](#)

[Drinking Water State Revolving Fund](#)

Review State Plans, Surveys, and Local Utility Requirements

(Beginner, Infrastructure)

Review the [Clean Watersheds Needs Survey](#) to be informed of the needs that your state has reported.

(Beginner, Infrastructure)

Visit the Intended Use Plan (IUP) for the state to find out what percentage of the 31 percent set asides are being used. (Learn more about DWSRF set-asides in the [Infrastructure section](#).)

(Beginner, Utility)

Download a 2-page summary on your state from the [Navigating Legal Pathways to Rate-Funded Customer Assistance Programs: A Guide for Water and Wastewater Utilities](#) publication to learn how water utilities are regulated.

(Beginner, Utility)

Some states require utilities to conduct water audits annually; others are more lax. You can find out what your state requires regarding water loss tracking by visiting [NRDC interactive map](#).

(Intermediate, Utility)

Look up your regional council (RC) or councils of government (COG) to find out what types of assistance they offer to utilities and whether your utility is taking advantage. In some cases, they provide free or low-cost assistance to utilities applying for water infrastructure funding. There is not a national searchable database for where to find local or regional councils, but advocates can look up their state and “council of governments” to find state specific resources.

Engage and Communicate with Decision-Makers

(Intermediate, Utility)

Reach out to the state public service commission, or advocacy and investigative office. In general, the latter type of organization “represents the state’s public interest” in utility regulation. Share your advocacy work with staff and ask how the regulatory office can further the efforts with either current regulations or new regulations.

General Engagement

(Intermediate, Affordability)

Refresh decision-makers about Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). Push for the following measures when advocating (writing or calling) for improvements from your state representatives:

- establish affordability standards.
- enact policies that incentivize local affordability efforts and remove barriers to affordability.
- prioritize funding and low-cost financing for use toward affordability outcomes.
- increase funding for infrastructure investments and low-cost financing or grants to help minimize direct investment costs passed on to ratepayers.
- advocate for a uniform water loss auditing system.
- institute water loss prevention and efficiency programs

(Intermediate, Infrastructure)

Advocates should encourage their state EPA program manager to answer the EPA Infrastructure Needs Survey and Assessment with detail and specificity because the more “need” a state demonstrates, the more federal funding the state will receive.

SRF Engagement

(Beginner, Infrastructure)

Contact the [SRF program managers](#) for your state and see if it has the state 20 percent match in hand to receive the federal money.

- Call/email the program manager and state that you support state efforts to secure a 20 percent match if the state does not currently have this earmarked in the budget.

Leveraging – The practice of using funds from a given source to attract other investment sources for a project. For example, when looking at the Water Infrastructure Finance and Innovation Act, common leveraging sources include SRF funds, private capital, and local investment, including bond issuance.

(Beginner, Infrastructure)

Review the [list of states](#) that are currently exercising SRF leveraging options (selling bonds, issuing SRF-back loan guarantees to utility borrowers, or providing municipal bond insurance). If your state is not on the list, ask your state SRF manager to consider this option.

(Intermediate, Infrastructure)

Review the state's intended use plan (IUP) online to familiarize yourself with state priorities for SRF funding

Typically, information about your state's IUP can be found on the state SRF webpages. Use a search engine to look up "[state name] intended use plan."

Ask your SRF managers about the process for changing the existing IUP, or at least request that your input be considered for the next IUP. Attend relevant public meetings that SRF managers are required to host regarding the IUP to ask questions and make comments on how the state is spending SRF money.

(Intermediate, Infrastructure)

Ask state legislators about taking advantage of leveraging SRF dollars as bonds.

(Advanced, Infrastructure)

Make the case to your state SRF program manager for using DWSRF set-aside funds to provide case studies and training on addressing drinking water loss or other high incident drinking water problems, like water contamination, in the state.

(Advanced, Infrastructure)

Advocates should look at how SRF subsidizations are implemented within a state, since it can have an important trickle-down effect, where ratepayers of local utilities may be spared sharp rate increases. Some steps to consider:

- Review the state's IUP to find how disadvantaged communities is defined.
- Look at the communities that are marked for receiving the subsidy – do they match your organization's view of frontline communities? Do they include communities with high POC percentages? Do hotspots of pollution or environmental injustice in your state appear on the list?

- If “no” to the above, your state SRF managers might need to reconsider its “disadvantaged communities” definition. (Review the bulleted list in the [Infrastructure](#) section for alternative and/or additional disadvantaged community criteria.)

(Advanced, Infrastructure)

Advocates can encourage their state SRF manager to take a wider interpretation of qualifying projects, or even provide financial incentives such as lower interest rates and principal forgiveness (partial grant) for green projects.

EPA eligibility criteria for projects are considered a guideline, and states are not obligated to be as broad in the projects that they fund, hence the term “at the discretion of each State.” Some states choose to stick to a narrower approach, funding more traditional gray infrastructure (e.g. pipes and treatment plants) instead of green infrastructure.

If Applicable, Engage in State Commission Utility Oversight Efforts

(Beginner, Affordability)

Using the information you learned in the Local Decision-Makers section, identify the type (private, public, regional authority) of water utility from which you receive water services.

(Beginner, Utility)

Write letters to the [regulatory utility](#) commissioners. A good practice is for a group of like-minded advocacy organizations to make their objections or suggestions together.

(Intermediate, Utility)

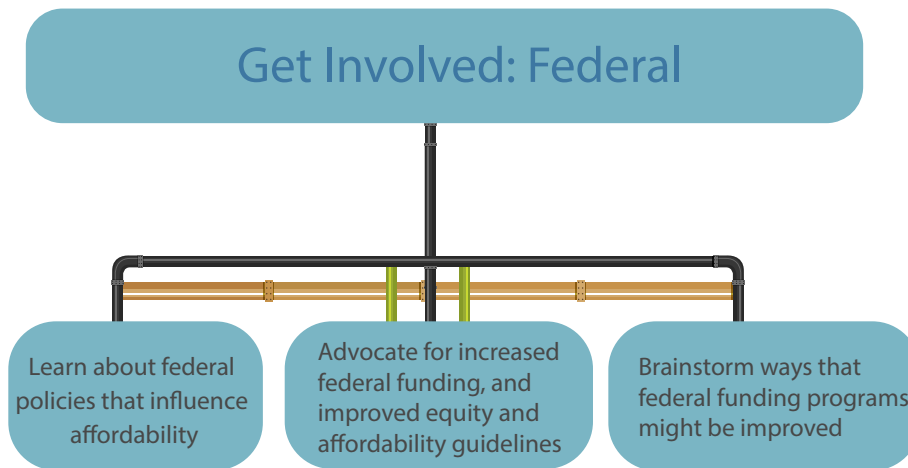
Just as with the local utility meeting, sign up and make comments at the meetings and rate cases of these commissions and state consumer protection organizations. It is helpful to reach out by email and/or phone before showing up at the public meeting and making comments there.

(Intermediate, Utility)

Attend rate case hearings to provide public input

(Advanced, Affordability)

Target state utility commissions (public utility commissions or public services commissions) when working with private water utilities when seeking affordable and equitable rates. Publicly owned water utilities are typically regulated by a local government or appointed governing board.



GET INVOLVED: FEDERAL

While local and state strategies for improving water affordability and equity outcomes are critical, the federal government has a role to play, as well. By increasing funding and low-cost financing, addressing water supply disconnections, or facilitating direct customer assistance programs, federal policies can often set the stage for water affordability and equity successes at the local level. To effectively influence decision-makers on desired policies, advocates should consider working with an organization or a coalition of groups (such as [Clean Water for All](#) or the [Water Equity and Climate Resilience Caucus](#)) to show broad support across stakeholder groups for a particular policy.

Learn About Federal Policies that Influence Affordability

(Beginner, Affordability)

[Track the latest congressional legislation](#) and [EPA announcements](#)

(Beginner, Affordability)

Subscribe to the [River Network Federal Water Policy Update Peer Group](#)

(Beginner, Infrastructure)

Review the [Clean Water for All](#) fact sheets for additional advocacy strategies

(Intermediate, Infrastructure)

Review [Executive Order 12898 \(Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations\)](#) to develop framing for issues of water finance equity and make the case for federal legislation.

(Intermediate, Infrastructure)

Become familiar with the Water Resources Development Act (WRDA) and the ways in which it significantly impacts availability of water infrastructure funding for states and communities. For example, research news articles on the current and previous year WRDA house-senate package to see what types of funding was approved for water investments. (Learn more about WRDA in the [Infrastructure](#) section.)

(Advanced, Affordability)

Identify one or two federal funding programs that might be helpful in tackling water affordability-challenges in your community, and learn about the federal policy and agency that houses the program. (You can find a list of federal programs in the Affordability section, [Federal Programs that Fund Water/Wastewater Infrastructure](#).)

Pay attention to eligibility requirements – is equity a consideration? Is the level of funding sufficient to meet the need? Consider working with others to organize a letter writing campaign, lobbying for improved eligibility criteria and increased funding.

(Advanced, Infrastructure)

Understand federal guidelines for set-asides and how states typically use them. Set-asides are an important area for advocates to understand because they are a common mechanism for the federal government and the states to encourage a specific type of water project. Instead of changing the overall SRF program, high profile project types can be targeted via the set-asides.

Advocate for Increased Federal Funding, and Improved Equity and Affordability Guidelines

(Intermediate, Affordability)

Working independently or with an organization or coalition, write or call federal legislators to advocate for increased funding for infrastructure investments and low-cost financing or grants to help minimize direct investment costs passed on to ratepayers.

[Find your Congressional representatives.](#) To support water affordability and equity outcomes, you can push for the following measures when lobbying to your federal legislators:

- Increase overall levels of water infrastructure funding including low-cost financing and funding for water infrastructure projects across the board.
- Create direct assistance, water efficiency, and water loss prevention programs.
- Discourage water shutoffs for customers who are unable to pay.
- To increase availability and flexibility of funding for local water infrastructure projects, push for WRDA changes.

Brainstorm Ways that Federal Funding Programs Might Be Improved

(Advanced, Infrastructure)

Develop your own federal grant for water infrastructure investment.

- What requirements would you include to make sure the projects improve water affordability outcomes?
- How would you structure eligibility requirements and criteria to ensure that those communities who would most benefit from support can gain access?
- What are the connections this Toolkit has made between federal funding programs and equitable and affordable outcomes? How would you include these in your grant program?
- Share your ideas with your congressional delegation and see how it might help push your ideas forward.

The following table is a useful tool to organize your thoughts and ideas.

Develop your own federal grant

Name of grant:

Grant features	Your ideas	Tips
Who can apply?		Is the grant only available to communities in a specific region (e.g. Great Lakes Region)? Do you have to be a local government to apply? Nonprofit? Water supply utility? Consider other sectors as well.
What are the goals of the grants?		What outcomes are you hoping to achieve with this grant? Are they measurable? Beyond the primary grant goals, are there other aligned outcomes you might expect to see? (i.e. if your primary goal is improved water infrastructure, might you also expect to see water affordability outcomes? Increased jobs? Improved health outcomes? Look back to the four key opportunities of federal funding from Water, Health, and Equity. These opportunities are summarized in the key take-aways subsection.
Who does the grant seek to serve?		Should the grant fund projects in low-income communities, tribal lands, rural communities, urban areas, etc.?
What are the grant eligibility criteria?		Who is eligible for funding? If the grant is available to utilities, do they need to serve a certain population? Are there any equity criteria (i.e., populations benefited are low-income or have been historically “disadvantaged?” Are the funds earmarked for certain programs (i.e., customer assistance programs) or types of water infrastructure (i.e., treatment plants versus water mains) Look back to the list of programs in at the “Federal Programs that Fund Water/Wastewater Infrastructure” chart and review An Equitable Water Future and the Water, Health, and Equity report for ideas on eligibility