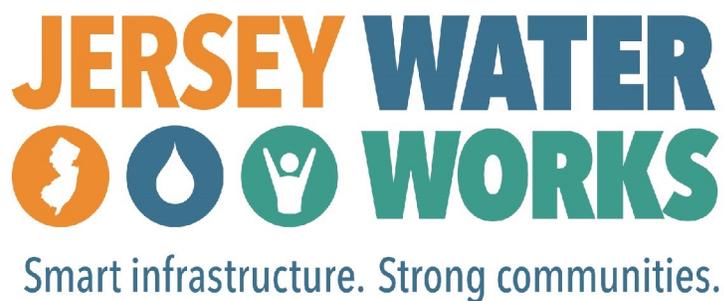


**Promoting Affordability of Public Water and Sewer Service
for Low-Income Households in New Jersey:
Policy Options**

**Prepared for the Jersey Water Works Asset Management and
Finance Committee¹**

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About Jersey Water Works

Jersey Water Works is a collaborative effort of **many diverse organizations and individuals** who embrace the common purpose of transforming New Jersey's inadequate water infrastructure by investing in sustainable, cost-effective solutions that provide communities with clean water and waterways; healthier, safer neighborhoods; local jobs; flood and climate resilience; and economic growth. **New Jersey Future** facilitates the work of the collaborative.

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Promoting Affordability of Public Water and Sewer Service for Low-Income Households in New Jersey: Policy Options

*Creating and maintaining great twenty-first-century communities will require resilient water systems supported by and for their host cities and towns; and they will require **affordable** access to clean water for everyone.*

—Jersey Water Works, *Our Water Transformed* (Dec. 2017)²

*A major deterrent to proper investment in water infrastructure is **affordability** . . . Municipalities with a larger share of low-income residents find it difficult to raise rates to fund water infrastructure upgrades due to the detrimental effect higher rates will have on those residents. The result is underinvestment, which is a losing proposition . . . However, while increasing rates can adversely affect low-income households, as several witnesses noted, these effects are not inevitable and can be avoided . . .*

—New Jersey Legislature, Joint Legislative Task Force on Drinking Water Infrastructure, *Final Report* (Jan. 2018)³

PURPOSE

This discussion paper presents policy options for improving affordability of water and wastewater service for lower income residents in New Jersey—for the benefit not only of those customers, but of all New Jerseyans who depend on their local utilities for clean, safe, and reliable water and sewer service. Jersey Water Works aims to use it to spark discussion among state and local policy makers, utility managers, water and sewer customers, community organizations, and other public sector, private sector, and non-profit stakeholders, and to use it as a basis for further analysis and development of priority recommendations. The paper is based on a review of existing literature from around the country; research on existing New Jersey laws and programs; and interviews with leaders representing or associated with a wide range of stakeholders, including publicly and privately owned utilities, state regulators, affordable housing developers and advocates, consumer advocates, environmental justice advocates, business, and labor.

EXECUTIVE SUMMARY

Across the country, the affordability of water and sewer service has become a significant and growing concern, for water and sewer utilities and customers alike. Rates have long been rising much faster than inflation and income growth, and are anticipated to continue rising significantly. New Jersey is not exempt from these challenges, given the state's need for major investments in aging water infrastructure, coupled with the state's high cost of living and rising income inequality.

Even as utilities look to ratepayers for the vast majority of the funds needed to modernize failing, outdated infrastructure, there are practical limits on how much some ratepayers can afford. Low-income customers, in particular, can face water and sewer utility costs that represent a significant, and growing, share of their household income. When they cannot afford to pay those bills, they face water shutoffs and liens on their property, which can lead to serious consequences for health and access to housing.

These outcomes fall not only on the most vulnerable in our society, but everyone who depends on safe, clean, and reliable public water and sewer service. If utilities are to sustainably generate the revenue they need for operations, maintenance, and capital investments, which benefit everyone, they must find equitable ways to generate revenue that do not place undue burdens on those least able to pay.

Interviews we conducted with a sampling of New Jersey stakeholders revealed a high level of interest in efforts to ensure affordability of water and sewer service for low-income customers. This interest was not limited to utilities and community-based organizations, which experience the most immediate impacts when low-income residents are unable to pay their water bills. For example, contractors and labor representatives, who have a particular interest in job creation through water infrastructure investment, not only recognized the importance of addressing affordability in order to enable sustainable infrastructure investments, but also saw opportunity for low-income water efficiency assistance to create jobs. Meanwhile, affordable housing advocates and developers identified rising water costs as a challenge to maintaining affordable rents.

Studies have identified several types of programs that are used to provide means-tested assistance to low-income customers who struggle to pay their water and sewer bills. As a group, these programs are often referred to as "customer assistance programs," or CAPs. Some provide short-term assistance to help manage arrears or avoid disconnections (e.g., through flexible payment terms or temporary hardship assistance). Others provide ongoing reductions in customer bills, either directly (through discounts) or indirectly (through water efficiency interventions that reduce bills by reducing usage).

There is no federal CAP for water and sewer customers. No state currently operates a CAP at the state level (although in some states, utility commission-regulated water and sewer systems are required by law to offer "flexible payment" options). At the local level, only a minority of water and wastewater utilities around the country offer CAPs, and they tend to be limited in scope and underfunded. In New Jersey, investor-owned systems are required to offer specified flexible

payment options, but otherwise there are no state-administered or state-mandated CAPs, and voluntary local programs seem to be especially rare. This stands in contrast to the gas and electric utility sectors, where federal, state, and local customer assistance programs are well established around the country, including in New Jersey.

CAPs are not the only approach available to reduce water and sewer costs for low-income households. It is equally important to examine how a utility's underlying rate structure affects the size of low-income customers' bills. For example, rate structures that rely heavily on fixed charges, as opposed to volumetric charges, will tend to disadvantage low-income customers, as they tend to use less water than higher-income customers. For the same reason, declining block rates or uniform rates will tend to result in less affordable bills for low-income customers than inclining block rates. Reforming a utility's basic rate structure can go a long way to reducing burdens on low-income customers, reducing the need for additional, income-based assistance.

To be sure, there are many challenges to using CAPs and revised rate structures to address low-income water affordability. Some of these challenges have been faced by gas and electric utilities, and the water sector can learn from that experience by examining state- and local-level CAPs available in the energy sector. Other challenges arise from differences in the governance and organization of the water and wastewater utility sector as compared to the energy sector and will require unique approaches. Key challenges include: the current lack of federal- or state-level policies, programs, or funding to promote low-income water affordability; the large number of local water and sewer utilities, the small size of many of them, the absence of rate regulation for most of them, and the degree of concentrated poverty in the service areas of some of them; legal uncertainties about utilities' authority to provide assistance; and the fact that many low-income residents pay for water and sewer costs indirectly as part of their rent, rather than as customers billed by a utility.

In addition to CAPs and equitable rate structures, utilities and policy makers can also improve affordability for low-income customers—and for all customers—through strategies that help control utilities' capital and operating costs. These include: optimizing utilities' operations, maintenance, and capital programs; taking advantage of state grants and low-cost loans to finance infrastructure investments; increasing the amount of state and federal grant funding for water infrastructure, with a priority for disadvantaged communities; ensuring that rate revenues are not diverted to non-utility purposes; and, in appropriate circumstances, regionalization of small systems.

The state Legislature, state agencies, individual water and wastewater utilities, and the federal government can draw from a wide range of policy options—none of them mutually exclusive—to ensure water and sewer service is affordable for all New Jerseyans. These include the following:

State Policies

- Enact legislation creating a statewide low-income affordability program and establishing a state policy of ensuring universal access to water and sewer service, similar to existing programs and policies in the energy sector.

- Provide formal clarification—such as through an Attorney General’s opinion—of publicly-owned utilities’ ability under existing law to use rate revenues for customer assistance programs.
- Enact new legislation that expressly allows publicly owned utilities to use rate revenues for customer assistance programs.
- Enact new legislation that requires utilities to implement measures to improve affordability for low-income customers.
- Use existing Board of Public Utilities (BPU) regulatory authority to improve affordability for low-income customers of investor-owned utilities.
- Utilize state programs, policies, funding, and technical assistance to encourage local utilities to adopt customer assistance programs and/or improve their rate structures.
- Make greater use of existing low-income energy efficiency programs to provide water efficiency assistance.
- Require water utilities to make customer usage data available to wastewater utilities for use in volumetric billing.
- Increase state funding for water infrastructure.
- Prioritize economically disadvantaged communities in the distribution of existing and new state funds.
- Adopt policies and programs that promote cost-efficient operation of water and wastewater systems, such as effective rules for asset management planning (including water loss control), technical assistance and funding to replace old, inefficient system components, and peer-to-peer programs to support utilities with limited resources.
- Develop or expand efforts to promote various regionalization options for small systems.
- Prohibit transfer of utility revenues to general municipal budgets, except as appropriate to pay for services rendered to the utility by the municipality.
- Improve transparency and accountability by requiring systems to report on key metrics related to rates, customer bills, and low-income affordability.
- Address the effect on renters of rising water and wastewater costs by developing innovative policy approaches.

Local- and Utility-Level Policies

- Adopt low-income customer assistance programs.
- Adopt more equitable rate structures.
- Advocate for state legislation to authorize low-income discounts, as needed.
- Advocate for statewide low-income affordability programs.
- Advocate for increased state funding for water infrastructure.
- Identify technical assistance needs for developing local affordability solutions, and work with state agencies to obtain that assistance.
- Use utility management and financial strategies that reduce costs for all ratepayers, including system optimization; improved asset management; cost-effective alternatives to

traditional gray infrastructure; taking full advantage of available state financial assistance; and avoiding transfer of any rate revenues out of the utility's budget.

- Explore regionalization options.
- Focus on solutions to low-income affordability challenges when developing long-term capital investment programs.
- Analyze local data and engage with local community organizations to understand the nature of scope of the affordability challenges and develop local solutions.

Federal Policies

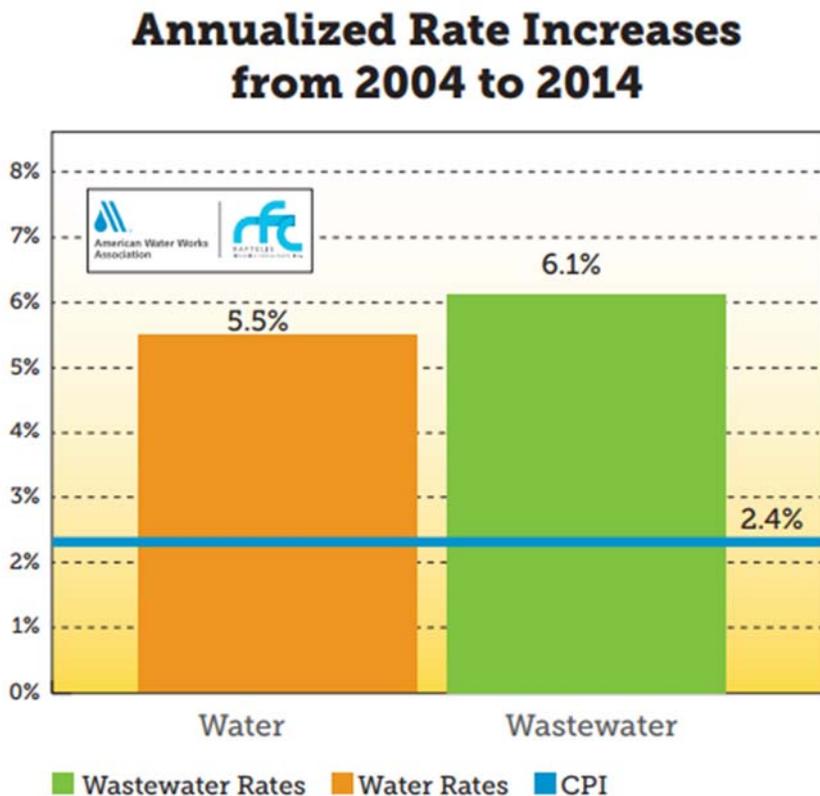
- Create a federal water affordability program, similar to existing programs in the energy sector, that provides both financial assistance and water efficiency assistance to low-income water and sewer customers.
- Increase federal funding for water infrastructure, with a priority for disadvantaged communities.
- Raise the cap on “additional subsidization” under the State Revolving Funds (SRFs), to enable states to make better use of available resources and encourage them to contribute more state funds.
- Allow states to use SRF funds to help water and sewer systems pay for local water affordability programs.

I. INTRODUCTION

Water affordability can be defined as “the ability of individual customers to pay for water and sewer services to meet their basic needs while maintaining the ability to pay for other essential costs.”⁴ By this measure, water affordability is a growing challenge across the country.

Nationally, from 2004 to 2014, water and sewer rates increased more than twice as fast as the consumer price index (CPI), a standard measure of inflation for consumer goods and services. (See Figure 1 below.) Although per capita and per household residential water demand has been decreasing for over two decades,⁵ per household water and sewer costs have been increasing rapidly—even more rapidly than other housing expenses.

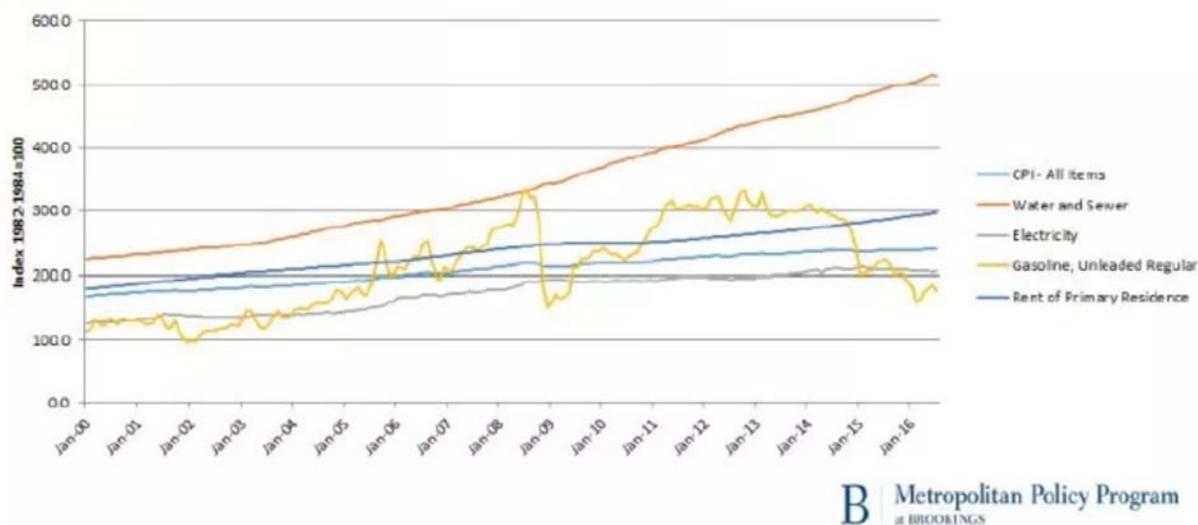
For example, from the mid-1980s through 2000, water and sewer costs increased about 50 percent faster than the CPI, and exceeded by far the rate of increase in gas, electric, and telephone costs.⁶ From 2000 to 2016, according to a Brookings Institution analysis, household water and sewer costs more than doubled, again exceeding the general rate of inflation by about 50 percent, and far exceeding the rate of increase in rent, electricity, rent, and gasoline. (See Figure 2.)



For more information, see the Water and Wastewater Rates webpage at awwa.org

Figure 1. Average annual percent change in water and wastewater rates vs. CPI, 2004–2014.⁷

Increase in Monthly Price of Water and Sewer Services, Consumer Price Index, 2000 to 2016



Source: Brookings analysis of Consumer Price Index (CPI) data, seasonally adjusted. Note that water and sewer costs refer to the "water and sewerage maintenance" category, as defined in the CPI.

Figure 2. Increase in household water and sewer costs vs. CPI and other expenses, 2000–2016.⁸

At the same time, as the Brookings Institution analysis notes, household incomes have stagnated.⁹ This means that water and sewer bills are not only increasing in absolute dollar terms, but also as a percentage of income, especially for low-income households.

Decades of underinvestment, and the resulting need to rehabilitate, replace, and modernize aging water and wastewater infrastructure, are major drivers of increasing water and sewer rates. Substantial upward pressure on rates is expected to continue for the foreseeable future, as communities make major investments needed to comply with federal and state requirements and ensure clean water for all. The American Society of Civil Engineers’ 2016 “report card” on New Jersey’s infrastructure graded water infrastructure a *C*, estimating \$8.58 billion in investment needs over 20 years, and wastewater infrastructure a *D*, estimating \$17.48 billion in investment needs over 20 years.¹⁰ Even if federal and state infrastructure grant funding increases substantially, rate revenues will almost certainly remain, as they are today, the primary source of funding for those investments.

These trends make meeting water and sewer bill obligations a challenge—and likely a growing one—for many low-income households, both nationally and in New Jersey. Income inequality in New Jersey remains stubbornly high.¹¹ Recent research sponsored by Jersey Water Works shows that, for many low-income New Jersey residents, the cost of basic amounts of water and sewer service already exceeds 4 percent of household income (an imperfect metric sometimes used as an indicator of affordability challenges).¹² The study calculated the local costs of 60,000 gallons of usage, which the authors considered to be representative of annual per-household indoor water use in the state.¹³ In nearly all communities, at that level of water use, there are some people for whom water and sewer costs exceed 4 percent of household income. In some places, however, this is true for a very large share of the population. For example, in three counties (Essex, Hudson, and Camden), water and sewer costs exceed 4 percent of household income for all

customers in the bottom 20 percent of county household income. At the municipal level, in twenty-one communities around the state, costs exceed that threshold for customers in the bottom 25 percent of income. Within some areas of concentrated poverty (e.g., at the census tract level), costs exceed that threshold for all customers except those in the top 20 percent of income.¹⁴

Moreover, although low-income households generally use less water than higher-income households (chiefly because of lower outdoor water use), they may often have relatively higher indoor usage due to the poor condition of plumbing often found in low-income housing. Low-income residents often occupy dwellings with pipes and fixtures that are disproportionately older, and therefore less water-efficient and more prone to leaks, contributing to high water bills.¹⁵ Therefore, while the Jersey Water Works analysis reflects costs for a volume of water intended to meet basic indoor water needs, many low-income customers may be facing actual costs for indoor water use that are even higher, but have limited ability to reduce those expenses if the cost of plumbing repairs and upgrades is beyond their means.¹⁶ Additionally, customers with larger household size than assumed in the analysis would also face higher actual costs.

According to the Water Research Foundation, “nationally about 15 percent of residential water customers are low-income households that are constantly at risk of payment problems”—and low-income households are three times more likely than other households to have their water and/or sewer service disconnected for unpaid or overdue bills.¹⁷

A recent national report analyzing data on water disconnections illustrates that shutoffs are a widespread concern around the country; in seventy-three cities from which the authors obtained data, they tallied nearly 570,000 residential shutoffs in 2016.¹⁸ When service is disconnected, potential outcomes include poor health conditions, loss of housing (through tax liens and foreclosures, or loss of subsidized housing vouchers), and even loss of parental custody of children.¹⁹ Further, bill nonpayment is only one customer response to unaffordable bills. In order to pay unaffordable bills, and avoid water shutoffs, some customers cut spending on other essential expenses, including housing, medicine, transportation, food, and school supplies, or switch off between paying energy bills and water bills. Reduced spending on these other daily needs has its own adverse consequences for health, employment, and other social outcomes.²⁰

Rising water and sewer rates can also affect the cost of living for residents who do not pay the water bill directly. Rising water and sewer rates increase the operating costs for the owners of affordable multifamily housing, who typically receive and pay the water and sewer bills. These costs are either passed on to renters, reduce the funds available for other core operation and maintenance needs in these buildings, or reduce the landlord’s net earnings on the property. As a result, increasing water and sewer costs can affect noncustomer renters, by limiting the availability of quality, affordable rental housing.

When low-income customers are unable to pay water or sewer bills, there are significant consequences not only for the health and well-being of customers in arrears, but also for the financial health of a utility—and, therefore, for all of the utility’s customers. A high rate of customer nonpayment due to unaffordable bills means either that the costs of filling budget gaps will be reallocated to other paying customers, or that the system will not generate sufficient

revenues to provide clean, safe water and sewer services. It can also increase the utility's cost of borrowing, as credit rating agencies take into account a utility's collection rates.²¹ Conversely, ensuring the affordability of water and sewer service for low-income households helps not only those particular households, but also helps maintain the financial stability of water and sewer systems as a whole, benefiting all customers. When low-income customers are billed an amount they can afford, they are much more likely to pay those bills, voluntarily and on time, providing a more stable, predictable revenue stream for the utility.

Studies in Indiana and Colorado, for example, have shown that affordable bill programs help energy utilities improve their bottom lines through increased customer revenues and/or increased "net back" (i.e., customer revenue minus the costs of collecting unpaid bills).²² In New Jersey, an evaluation of the state's main low-income energy assistance program, the Universal Service Fund (USF), found that, when assistance reduced participants' energy costs as a share of their household income, those customers' likelihood of making full payment on their gas and electric bills increased substantially.²³

It is not a novel idea to apply these financial lessons to the water sector, and national leaders in the water utility sector have come to embrace them. In 2010, a report by the Water Research Foundation and U.S. Environmental Protection Agency (EPA) stated:

The cost of collections and bad debt are generally accepted cross-subsidies because they are regarded as unavoidable costs of doing business. Ironically, customer assistance programs have been shown to be capable of producing more total revenue for the dollars expended . . . This result is documented not only in the short-term, but there are also long-term cost reductions to be won by helping to break the perpetual cycle of nonpayment problems and providing a framework for continuous improvement of collections.²⁴

Similarly, in 2017, the American Water Works Association's (AWWA) executive director for government affairs wrote that:

Frequent service shutoffs and resolving bad debt from customers who cannot afford their rates can be more expensive for a utility than instituting a CAP and assisting customers in paying their bills . . . The benefit to the utility of having discounts or lower rates for low-income customers is the increased likelihood of collecting payment from these customers.²⁵

Even AWWA's formal technical guidelines reflect this concept, to some degree; "the past two editions of the American Water Works Association's 'M1' [the industry standard manual for water rate setting] outline the ways that not having affordability programs can hurt a utility's bottom line."²⁶ Most recently, in October 2018, AWWA adopted its first-ever formal policy statement on affordability, which recognizes that low-income "affordability challenges can occur in any community, regardless of size, location, demographic makeup, and income distribution;" states that addressing these challenges is important to ensure that utilities are "financially sustainable;" and "strongly recommends the adoption of policies and procedures by utilities,

regulators, and governmental entities to address the affordability challenges experienced by some of their residential customers.”²⁷

There are many policy tools available to reduce water and sewer costs for low-income households. Some approaches, mirroring practices that are widely used in the energy sector, use means-tested assistance to help low-income customers reduce their water and sewer costs or manage arrears. These are often referred to as customer assistance programs (CAPs). Other strategies focus on revising a utility’s underlying rate structure to be more equitable. These include approaches that do not expressly consider a customer’s income, but have the effect of reducing burdens for low-income customers, such as reducing reliance on fixed charges or adopting tiered (inclining block) rates.

Importantly, means-tested assistance and more equitable rate structures can go hand in hand. A focus on rate design can even be considered a first line of defense. When a change to a utility’s rate structure reduces burdens on low-income customers, there is a smaller “affordability gap” to be filled by means-tested assistance.

Utilities and the state can also improve affordability for low-income customers—and for all customers—through complementary strategies such as optimizing efficiency of operations, using best practices in asset management, taking full advantage and increasing the availability of low-cost financing and grants for capital projects, preserving all utility rate revenues for use by the utility, and exploring various forms of regionalization.

In New Jersey, many of these approaches are not widely used, at present. Section II examines the various types of CAPs and how they are used in the water sector around the country, including in New Jersey. For purposes of comparison, Section II also describes CAPs offered to New Jersey’s electric and natural gas utility customers. Section III describes how utilities can improve low-income affordability by revisiting the underlying rate structures they apply to all customers. Section IV outlines the various challenges that would need to be overcome to successfully use CAPs and rate structure reforms as statewide solutions to low-income water affordability. Section V describes complementary approaches that utilities, municipalities, and the state can take to reduce, or limit the growth of, utilities’ revenue needs, thereby reducing costs for all customers. Finally, section VI presents policy options that utilities and policy makers in New Jersey should consider to improve affordability of water and wastewater services for low-income households in New Jersey.

II. CUSTOMER ASSISTANCE PROGRAMS (CAPs)

CAPs provide means-tested assistance to low-income water and sewer customers to help make their bills more affordable. Some CAPs provide only short-term assistance to help manage arrears or avoid disconnections, or offer flexibility on the timing of future payments without reducing the size of the bill. Others provide ongoing reductions in customer bills, either directly (through discounts) or indirectly (through water efficiency interventions that reduce bills by reducing usage).²⁸

This section examines the various types of CAPs and how they are used in the water sector around the country, including in New Jersey. For purposes of comparison, this section also describes CAPs offered to New Jersey's electric and natural gas utility customers.

A. Types of CAPs

Generally, CAPs can be classified in the following categories:²⁹

CAPs that provide ongoing bill reductions:

- Bill Discount—Reduces an eligible low-income customer's bills by a flat dollar amount or a percent discount. Can be used to reduce the fixed service charge, the volumetric consumption charge, or both. Additionally, discounts can be tiered by income.
- Percentage-of-Income Payment Plan—Rate design that prevents water bills from exceeding a certain percentage of the customer's income.
- Lifeline Rate—A low rate for an initial amount of water, to cover most or all of a household's basic needs, such as drinking, cooking, and sanitation. Water consumption above the lifeline amount is charged at a higher rate. Can be applied to all customers, or just to low-income customers.
- Water Efficiency Assistance—Direct financial assistance (through rebates or upfront subsidies or direct replacement of fixtures) for efficiency improvements like leak repairs or replacement of inefficient fixtures or appliances.

CAPs focused on improving ease of payment, managing arrears, and avoiding imminent shutoffs:

- Flexible Payment Terms—Aids customers in managing bills and arrears through various methods, including but not limited to:
 - Payment plans
 - Connection loans
 - Managing arrears
 - Levelized/annualized billing (splits annual costs into 12 equal amounts to avoid payment spikes that challenge those on fixed incomes)

- Bill timing (allow customers to choose payment dates or switch to quarterly or monthly billing schemes)
- Temporary Assistance—Short-term or one-time grants to prevent water shutoffs or restore service for households facing unexpected hardships. Often limited to one use per year.

Most or all of these CAPs can be offered in combination with each other. For example, water efficiency assistance is an important complement to any ongoing bill-paying assistance. Reducing excessive water usage reduces a customer’s bill, thereby reducing the size of the bill discount or other assistance required to keep the customer’s bill affordable.

Appendix A, at the end of this paper, provides a comparison of the various types of CAPs, including positive attributes, challenges or limitations, and other considerations. Appendix B highlights a first-of-its-kind approach (for the water sector) recently adopted in Philadelphia, which relies on the percentage-of-income approach.

Each type of CAP presents its own program design issues, many of which are beyond the scope of this paper.³⁰ Likewise, this paper will not address best practices for effective outreach and enrollment of eligible customers, which are critical to the success of CAPs but often receive insufficient attention. Finally, consumer protections regarding billing procedures, interest charges, late fees, shutoffs, and other penalties for nonpayment should be considered in connection with efforts to maintain affordable access to water and sewer service, but are beyond the scope of this paper.³¹

B. Water and Wastewater CAPs Around the Country

There is no federal program of low-income assistance for water and sewer customers, such as there is for gas and electric customers (i.e., the Low Income Home Energy Assistance Program, or “LIHEAP”).³² However, participants in federally funded energy efficiency programs for low-income customers may be eligible for certain types of water efficiency assistance that help reduce both energy and water bills.³³

There are also no CAPs for water and sewer customers administered at the state level, anywhere in the country.³⁴ However, some states, including New Jersey, do allow low-income energy efficiency assistance funds to be used for certain water efficiency retrofits (such as low-flow faucet aerators and showerheads) that result in both water and energy savings for low-income customers by reducing hot water usage.³⁵ Additionally, in January 2019, California’s State Water Resources Control Board published recommendations for a statewide low-income assistance program, which would use state funds to directly subsidize low-income households’ water costs. A state law enacted in 2015 required the Board to develop this proposal; further state legislation would be required to implement it.³⁶

Around the country, all existing CAPs appear to be at the local utility level. Although many water and sewer utilities offer one or more CAPs, these utilities remain in the minority. In 2016, the U.S. EPA conducted an extensive survey of water and wastewater utilities around the country

to identify existing CAPs. The study found that fewer than thirty percent (228 utilities) of 795 utilities surveyed offered one or more CAPs.³⁷ Large utilities that serve more than 100,000 people were more likely to provide assistance programs than medium utilities that serve 10,000 to 100,000 people, but even among large utilities such programs remain the exception, rather than the rule. (This survey did not include small utilities that serve fewer than 10,000 people.)

Table 1. Customer Assistance Programs Offered by U.S. Drinking Water and Wastewater Utilities in the 2016 U.S. EPA survey.

Type of Drinking Water and Wastewater Utilities Reviewed	Number of Utilities Reviewed	Number of Utilities Found to Have One or More Programs	Total Number of Programs ¹ Identified During Review
Large Utilities (>100,000 people)	620	190 (30.6%)	308 (84.4%)
Medium Utilities (10,000–100,000 people)	175	38 (21.7%)	57 (15.6%)

¹ Of 795 utilities reviewed, 228 utilities offer a total of 365 CAPs.

Surveys of existing CAPs show a need for significant improvement to both program design and funding levels. These programs often provide only short-term assistance, and often are not well funded. Utilities have tended to rely on limited, outside sources of funding for their CAPs, rather than treating CAPs as a typical operations cost to be funded with rate revenues.

According to the 2016 EPA survey, low-income households are the most common subpopulation served by CAPs. A significant number of CAPs also target seniors, customers with disabilities, and customers facing temporary financial hardship. “Eligibility for utility billing assistance is [often] based on successful enrollment in assistance programs offered by other agencies or organizations, which lowers the administrative costs to the water utility, makes the process easier for recipients, and generally accelerates the reach of the CAP.”³⁸ (See Figure 3.)

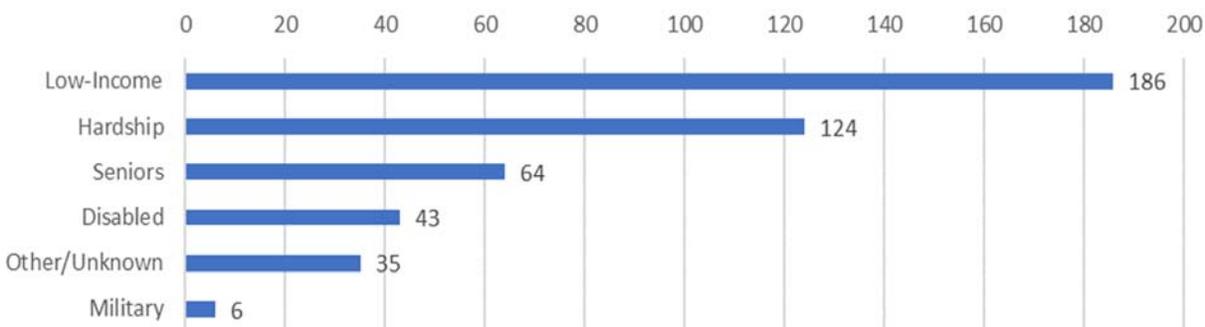


Figure 3. Number of CAPs serving various subpopulations, according to 2016 EPA survey.

Existing CAPs often provide only limited assistance. EPA’s survey found that about half of CAPs are not designed to provide ongoing bill reductions for low-income customers. Rather, they focus on assisting customers already in arrears, or in imminent danger of falling into arrears, by offering temporary assistance and flexible payment plans. The other half of CAPs provide ongoing bill reductions, primarily through bill discounts and, much less frequently, through water efficiency assistance or lifeline rates. (See Figure 4.)

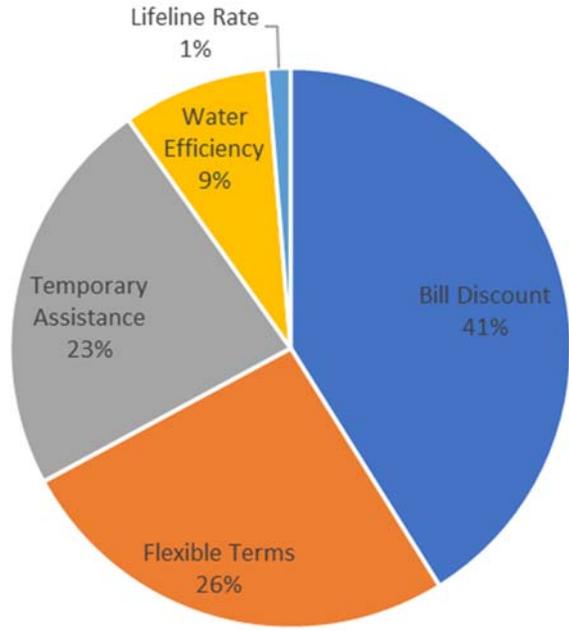


Figure 4. Relative proportions of each type of CAP as reported in the 2016 EPA survey.

According to a 2010 survey by the Water Research Foundation (WRF), most CAPs have very modest budgets. (See Figure 5.) Costs of administering a CAP can include: the resources needed to administer the program, including outreach and eligibility determination; foregone revenue from reduced rates and fees, as well as reduced water demand attributable to water efficiency improvements; and the resources needed to pay for water efficiency services and devices.³⁹ (It is critical, however, to consider not only the budgetary costs of a CAP, but also the financial benefits. As discussed in Section I above, successful CAPs can actually yield increased customer revenues and decreased collection costs, which can offset some or all costs of the program.)

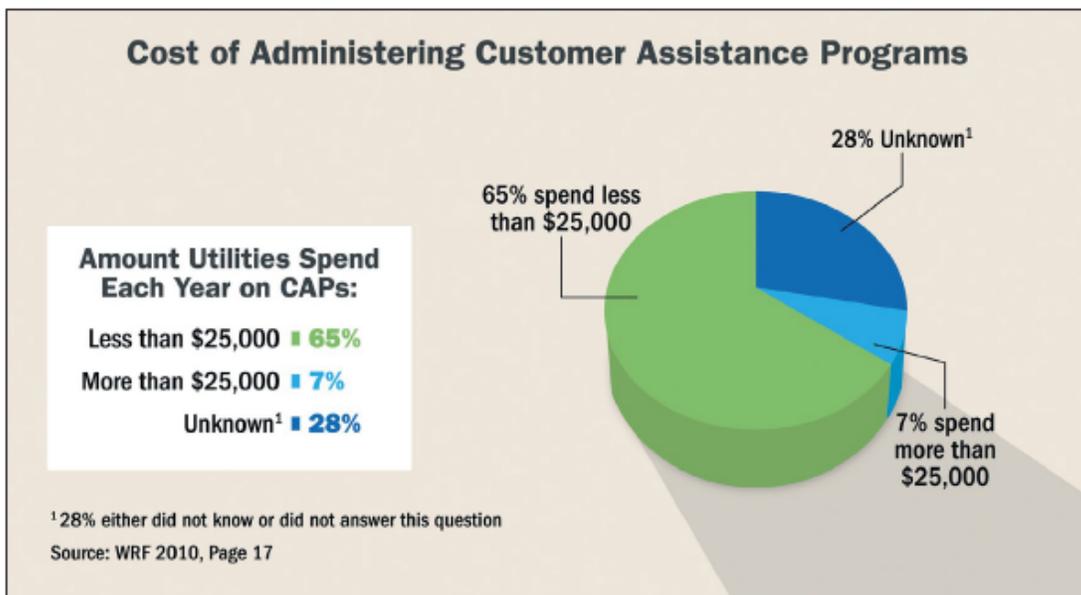


Figure 5. Costs of administering CAPs, Water Research Foundation.

Potential funding sources for CAPs include: rate revenues; alternative utility revenue sources (such as leasing space for cell towers on utility property); voluntary contributions from customers (such as giving customers the option to “round up” their bills); voluntary contributions through employee programs; donations from external nonprofits; grants from local, state, or federal governments; and general tax revenues.

In practice, the 2010 WRF survey found that utilities relied most often on partnerships with local nonprofits for CAP funding. In contrast, the WRF study found only a small minority of programs that were funded directly out of the utility’s budget. (See Figure 6.) Utilities’ reliance on outside sources of funding—together with the absence of state or federal funding for low-income water and sewer assistance—is a major reason why CAPs tend to have limited budgets.

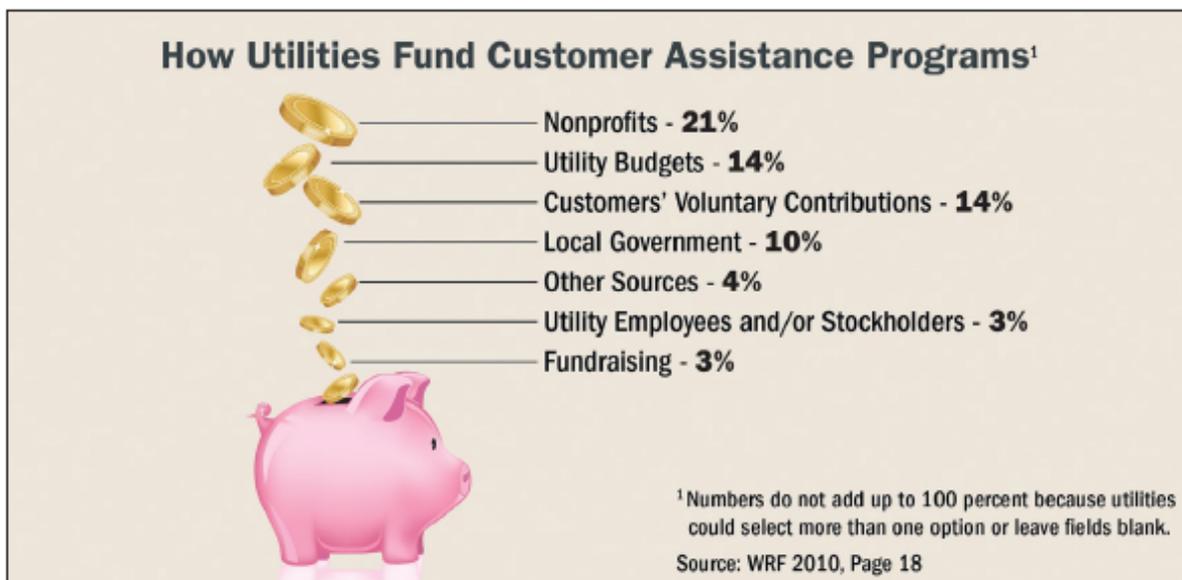


Figure 6. How utilities fund customer assistance programs, Water Research Foundation.

Although a utility’s own rate revenues can provide the most robust and reliable source of CAP funding, the law in many states is unclear as to utilities’ authority to use rate revenue for this purpose. Nonetheless, recent studies have found many examples of rate-funded CAPs around the country, and this is an evolving area of law.⁴⁰ (See Part IV for further discussion of legal issues in New Jersey.)

C. Water and Wastewater CAPs in New Jersey

For publicly owned water and sewer utilities in New Jersey, state law specifically authorizes, at the utility’s option, discounts to certain categories of seniors, people with disabilities, and military service members deployed overseas. There is no information available on how many utilities actually offer these discounts. As discussed in Section IV, state law is unclear on whether these utilities can offer discounts to other low-income customers, and it does not speak directly to other forms of CAPs. EPA’s 50-state survey of large and medium-sized utilities, published in 2016, did not identify any publicly owned New Jersey water or wastewater utilities with CAPs.⁴¹

In limited circumstances, state law authorizes a de facto CAP, of sorts, for residents of municipalities that host regional sewage treatment plants. This law allows certain sewerage authorities and utility authorities to provide a “host community benefit” bill discount, up to 40 percent, to customers within the municipality where a sewage treatment plant is located.⁴² Since it is likely that sewage treatment plants disproportionately reside in low-income communities, those benefitting from host community benefit rates are often low-income households. For example, residents in Camden, one of the poorest communities in the state, receive a 40 percent discount from the Camden County Municipal Utilities Authority (CCMUA). CCMUA charges city residents \$220 annually, while nonresidents pay \$352.⁴³

For investor-owned utilities in New Jersey, which are subject to state regulation of rates, the Board of Public Utilities (BPU) has authority to approve CAPs that directly reduce low-income customers’ bills. New Jersey American Water (NJAW) and SUEZ appear to be the only BPU-regulated utilities currently offering these types of assistance, and only New Jersey American Water provides any form of ongoing assistance to low-income customers, as opposed to one-time assistance. The programs offered by those two utilities are described below.

Additionally, investor-owned utilities must comply with BPU’s consumer protection rules. This includes a requirement to offer customers at least two “flexible payment” options: leveled billing⁴⁴ and extended payment plans for overdue bills.⁴⁵

Finally, statewide energy efficiency assistance programs may offer some water-related assistance for low-income utility customers. New Jersey has reported to the U.S. Department of Health and Human Services that water conservation assistance is a permitted use of funds under the state’s LIHEAP “weatherization” program.⁴⁶ Similarly, the “Comfort Partners” program funded by BPU and energy utility ratepayers includes certain water conservation measures (low-flow aerators and showerheads; and water heater and hot water pipe insulation) as eligible forms of assistance for low-income energy utility customers.⁴⁷

New Jersey American Water (NJAW): Help2Others (H2O)

NJAW’s Help2Others (H2O) program offers the following to customers under 300 percent of the federal poverty line: flexible repayment terms, temporary assistance (in the form of one-time credits of up to \$500, available once every three years), and bill discounts (which provide an ongoing credit equal to the amount of the fixed service charge). Additionally, customers receiving the fixed service charge credit who are also receiving Social Security benefits or Medicare, are eligible for a discount on the monthly Distribution System Improvement Charge. The program is administered by NJ SHARES, a nonprofit that administers other assistance programs in the energy utility sector.⁴⁸

The program is funded by rate revenues. NJAW’s costs are recoverable from all customer classes, pursuant to a BPU order.⁴⁹

In 2016, NJAW provided \$39,130 in bill credits to 169 households;⁵⁰ this was less than half as much funding as two years earlier.⁵¹ Also in 2016, 1,900 households received the discount on the

fixed service charge, compared to 5,500 in 2014.⁵² It seems that the program is far from reaching all eligible customers, but the reasons are presently unknown.

SUEZ Water

SUEZ provides only a temporary assistance program, with maximum grants of \$100 to customers who are in a temporary financial crisis. Like NJAW's programs, this program administered through NJ SHARES, a nonprofit organization.⁵³ Other details on the program are presently unavailable.

D. Comparison with New Jersey's Energy Assistance Programs

In contrast to New Jersey's water and wastewater customers, all of the state's gas and electric customers benefit from multiple programs that offer low-income assistance.

Affordability became a nationwide issue for electric and natural gas utilities long before it was a concern in the water and wastewater industries. Around the country, CAPs are common in the energy sector. Programs run by individual electric and gas utilities generally fall into the same categories as the water and wastewater CAPs described in Section II.A. Moreover, in the energy sector, CAPs exist at both the state and federal levels. These state and federal programs often work in tandem with, or provide funding to, programs administered at the utility level.

In New Jersey's water sector, utility managers, regulators, and policy makers can gain insight by examining the state's gas and electric CAPs. While important differences between the water and energy utility sectors must be considered, there are opportunities to learn from the energy sector's long experience with low-income affordability programs and adapt those lessons to the water sector.

Below are summaries of the main statewide CAPs that support low-income or other electric and gas customers in New Jersey. These include programs that provide percentage-of-income limits on energy costs, fixed discounts or credits, temporary assistance, arrearage forgiveness, energy efficiency assistance, and seasonal protections against shutoffs. Several of these programs were created by a 1999 state law, the Electric Discount and Energy Competition Act, which included a declaration "that it is the policy of this State to . . . Ensure universal access to affordable and reliable electric power and natural gas service."⁵⁴ Some individual utilities offer additional programs, such as flexible bill payment options, but this paper has not attempted to catalogue such utility-specific programs.⁵⁵

Additionally, all gas and electric utilities must comply with the same BPU consumer protection rules that apply to investor-owned water and sewer utilities. As noted above, this includes requirements to offer a levelized billing option and extended payment plans for overdue bills.

1. Percentage-of-income limits on utility costs

NJ Universal Service Fund^{56,57,58,59,60,61,62,63}

New Jersey's Universal Service Fund (USF) is supported by the Societal Benefits Charge (SBC), a monthly surcharge on customer utility bills (including residential and nonresidential customers). The state Board of Public Utilities sets the amount of the SBC; it also approves the budgets and eligibility criteria for programs funded by SBC revenues, not all of which are low-income assistance programs. The USF, specifically, provided \$130 million in assistance to nearly 185,000 low-income households in the 2016–2017 program year, supplementing the federally funded (and state-administered) LIHEAP.

- **Source of Funds:** Surcharge on utility bills, based on each customer's gas and electric usage. The average charge for residential customers was \$2/month in program year 2016–2017 (combined electric and gas). However, the majority of revenue to the program came from charges to nonresidential ratepayers (i.e., commercial and industrial).
- **Eligibility:** For energy bill assistance, households must have gross incomes at or below 175 percent of the Federal Poverty Level and must spend more than three percent of annual income on either electricity or natural gas. If the household uses electricity to heat the home, the household must spend more than six percent of income on electricity.
- **Assistance Provided:** Under USF, families receive enough financial assistance to prevent their energy bills from consuming more than six percent of annual household income. The benefit is calculated based on a customer's annual household income and gas and electric bills, taking into account any discounts the customer receives from the Lifeline program and LIHEAP. Each energy and gas utility administers the program for its own customers.

2. Fixed dollar-amount credits

NJ Low-Income Home Energy Assistance Program (LIHEAP)—Ongoing Bill Discounts⁶⁴

The Low-Income Home Energy Assistance Program (LIHEAP) is a seasonal program created to help low-income households with heating and medically necessary cooling costs. The application period is typically from October to April. New Jersey's LIHEAP is similar to those implemented by other states, which are largely funded by the federal government. Limited funds often prevent LIHEAP from reaching all eligible households in a given year. LIHEAP is administered together with the USF program; applicants apply to both benefit programs at the same time.

- **Source of Funds:** LIHEAP is funded through the U.S. Department of Health and Human Services.
- **Eligibility:** Households must have gross incomes at or below 200 percent of the Federal Poverty Level.
- **Assistance Provided:** Families receive direct funding or, in some cases, the benefits are forwarded to their service provider. The amount of LIHEAP heating benefit is determined by income, household size, fuel type, and heating region. The benefit amount for medically necessary cooling assistance is \$200 in New Jersey.
- **Cost:** LIHEAP is funded by the federal government and administered in partnership with local community action agencies.

Lifeline^{65,66,67}

The Lifeline Program is an annual energy assistance benefit, for electric and natural gas, that aids certain seniors and residents with disabilities. The program is administered by the NJ Department of Health and Human Services. The benefit is available both to customers receiving a gas or electric bill and to tenants who have electric and gas costs included in their rent payments.

- **Source of Funds:** The Lifeline Program is funded by the SBC.
- **Eligibility:** Residents who receive federal Supplemental Security Income (SSI) benefits or meet the Pharmaceutical Assistance to the Aged and Disabled (PAAD) eligibility requirements.
- **Assistance Provided:** \$225 annual credit on utility bill, or annual check payable to tenants whose gas and electric utilities are included in rent. (SSI recipients receive the Lifeline assistance as an \$18.75 supplement to their monthly SSI benefit.) State reimburses utilities for the value of Lifeline credits appearing on the utility bill.
- **Cost:** \$70 million in 2016.

3. Temporary Assistance

Payment Assistance for Gas & Electric (PAGE)^{68,69}

Payment Assistance for Gas & Electric (PAGE) is an annual assistance program designed to provide temporary aid for electric and natural gas bills to households experiencing economic hardship. It is administered by the Affordable Housing Alliance—a private, 501(c)3 corporation.

- **Source of Funds:** Board of Public Utilities “Unclaimed Utility Deposits Trust.”
- **Eligibility:** To qualify, households must fit the income criteria as shown in Table 2, have a demonstrated past-due balance, must not be receiving USF or LIHEAP benefits, and have less than \$10,000 in liquid assets.
- **Assistance Provided:** Households receive a one-time grant of up to \$1,500 to help alleviate past-due balances and pay current bills.⁷⁰
- **Cost:** Between October 2017 and March 2018, PAGE distributed \$1,359,380 in grants to 1,563 households.

Table 2. PAGE Program Income Range for Eligibility (2017)

Household Size	1	2	3	4	5	6	7	8	9
Min. Annual Income	\$24,132	\$32,496	\$40,860	\$49,212	\$57,576	\$65,940	\$74,292	\$82,656	\$91,020
Max. Annual Income	\$57,307	\$74,940	\$92,573	\$110,207	\$127,840	\$145,473	\$148,778	\$152,085	\$155,392

Source: <http://www.njpoweron.org/page-requirements.html>

NJ SHARES Program^{71,72}

NJ SHARES is an independent, nonprofit 501(c)3 corporation that assists energy customers in temporary financial crisis who do not qualify for assistance through state or federal programs.

- **Source of Funds:** Contributions, gifts, and grants.
- **Eligibility:** Recipients must be suffering from a financial crisis, such as job loss, injury, or illness, and be behind on their energy bills. They must also have an income level that excludes them from LIHEAP or USF benefits but does not exceed 400 percent of the federal poverty level.
- **Assistance Provided:** Grant of up to \$700 for a heating source (gas or electric), and up to \$700 for electric service.
- **Cost:** NJ SHARES spent over \$3.2 million in 2017 on all programming (including water and telephone assistance and administrative costs).

4. Forgiveness of arrears

Fresh Start Program^{73,74}

The Fresh Start Program forgives past due balances on energy bills and improves customer payment records. Customers enrolling in USF for the first time are automatically enrolled in Fresh Start, which is only available for the first year of participation in USF. In program year 2016–2017, nearly 13,000 households received \$5 million in benefits from the program.

- **Source of Funds:** The Fresh Start Program is a component of the USF program, which is funded by Societal Benefits Charge.
- **Eligibility:** Households must have a balance of \$60 or more on their energy bills as they enter the USF program.
- **Assistance Provided:** If households pay current monthly charges on time and in full every month for 12 months, their pre-USF program overdue balance will be forgiven.
- **Cost:** In 2016, the program cost was \$5.5 million.

5. Energy efficiency assistance

NJ Comfort Partners^{75,76,77,78}

NJ Comfort Partners provides energy efficiency assistance to qualifying low-income households.

- **Source of Funds:** NJ Comfort Partners is funded by the Societal Benefit Charge, which also funds the Universal Service Program (see above).
- **Eligibility:** Households at or below 225 percent of the federal poverty line are eligible for Comfort Partners. Households that receive USF, Lifeline and/or Pharmaceutical Assistance to the Aged and Disabled (PAAD) are also eligible. The customer must also use the home as a primary residence and be the ratepayer of record with the electric or gas utility.
- **Assistance Provided:** Participants receive free installation of an array of cost-effective energy efficiency measures, as well as personalized energy education and counseling. From 2001 through early 2018, Comfort Partners helped over 109,000 families.
- **Cost:** \$29 million in FY 2017. (Since 2010, annual spending has been relatively consistent, with the exception of FY 2013, when Comfort Partners provided nearly \$48 million in assistance.)

Note: The New Jersey Clean Energy Program (NJCEP) released a draft Strategic Plan in May 2018, which proposes a new energy efficiency program for multifamily housing; that program would include “particular attention . . . to affordable-rate housing,” with the potential for “increased incentives” for owners of such buildings.

Weatherization Assistance Program^{79,80,81,82,83, 84}

The state’s Weatherization Program provides assistance to seniors, residents with disabilities, and low-income residents to weatherize their homes, improving heating system efficiency and conserving energy.

- **Source of Funds:** Federal grants to the state from the U.S. Department of Health and Human Services (HHS) and the U.S. Department of Energy (DOE). Since 2010, the program has received \$32.5 million in grant funding from DOE’s Weatherization Assistance Program; from 2010 to 2017, the state weatherized an average of 500 homes per year using DOE funds. Additionally, up to 15 percent of the state’s LIHEAP funding (provided by HHS) may be directed to the program in any given year.
- **Eligibility:** For DOE-funded assistance (through the federal Weatherization Assistance Program), recipients must have a total household income at or below 200 percent of the federal poverty level.
- **Assistance Provided:** In connection with the American Recovery and Reinvestment Act in 2009, the state reported that low income families would save “an average of \$413 in reduced first-year energy costs.” In 2018, the maximum amount of assistance provided per housing unit is approximately \$7,000.

6. Seasonal protection against shutoffs

Winter Termination Program (WTP)⁸⁵

The BPU forbids any electric and natural gas utility service providers under BPU regulatory authority from executing power shutoffs against certain groups of customers between November 15 and March 15.

- **Eligibility:** Under this policy, customers who are enrolled in low-income assistance programs including Lifeline, LIHEAP, Work First New Jersey/Temporary Assistance to Needy Families (WFNJ/TANF), federal Supplemental Security Income (SSI), and Pharmaceutical Assistance to the Aged and Disabled (PAAD) are all protected from service shutoffs during this time period. There is also a catchall category that protects all customers who are unable to pay their bills due to circumstances outside of their control.
- **Assistance Provided:** Eligible customers are protected from service shutoffs.

III. EQUITABLE RATE STRUCTURES

Low-income “customer assistance” programs typically focus on ways to reduce low-income customers’ costs relative to what those customers are charged under a utility’s current rate structure. However, utilities seeking to address low-income affordability challenges should also examine how their underlying rate structure affects the size of the bills received by low-income customers in the first instance. Reforming a utility’s basic rate structure can go a long way to reducing burdens on low-income customers, reducing the need for additional, income-based assistance. Indeed, one academic expert has compared equitable rates to “inoculation” (i.e., low-cost preventive medicine applied to a whole population) and CAPs to “clinical therapy” (i.e., assistance that must be tailored to an individual’s circumstances after a problem has arisen).⁸⁶ Rate structure reforms, which affect the distribution of costs among customers, can go hand-in-hand with a full-cost pricing approach that allows a utility’s total revenues to cover its operating and capital expenses.⁸⁷

Avoiding excessive reliance on fixed charges and adopting tiered (or “inclining block”) volume-based rates are two steps that can significantly reduce water costs for many low-income households.⁸⁸ Low-income customers tend to use less water than the average customer. This is largely because outdoor use for landscape irrigation comprises a large share of average customer water use, but low-income customers are less likely to have large outdoor water use. Because low-income customers tend to have lower usage, rate structures that rely significantly on volumetric charges will tend to result in more affordable bills for low-income customers, as compared to rate structures that rely more heavily on fixed charges.⁸⁹

When shifting allocations between fixed and volumetric charges, care must be taken to ensure that variability in water demand does not undercut the need for revenue stability. There is a rich and growing body of literature and practice in this field, and utilities use various strategies in conjunction with volumetric charges to limit revenue variability.⁹⁰

Among the many possible volumetric rate structures, inclining block rates (a higher per gallon rate for larger increments of use) will tend to result in more affordable bills for low-income customers than either uniform rates (the same per gallon rate regardless of usage) or declining block rates (lower per gallon rates for larger increments of usage). Inclining block rates can be explicitly structured to ensure that the volume included in the lowest-cost block, or tier, matches the amount of water deemed necessary to support basic indoor water needs, including drinking, cooking, and sanitation; this approach is often known as a “lifeline” rate. When considering the affordability implications of any tiered rate structure, however, it is important to consider unintended consequences for those low-income households that have larger than average household sizes, which increases the volume that these particular customers require to meet basic needs.⁹¹

Low-income customers may also benefit from rate structures that charge for stormwater services based on impervious area, or on some other surrogate for the amount of runoff a property contributes to the public sewer system. (In early 2019, New Jersey enacted legislation authorizing municipalities to charge for stormwater services based on impervious area.⁹²) Because low-income customers tend to have relatively smaller homes with less impervious area,

they can be disadvantaged by rate structures that charge for stormwater services on the same basis as wastewater services, as is often the case for combined sanitary and storm sewer systems. Such rate structures can also disadvantage residential customers as a whole because nonresidential properties with large impervious area, but limited water or wastewater usage, would not be charged their fair share for the stormwater burden they place on the sewer system.

Notably, the rate structures suggested above—reducing reliance on fixed charges, using inclining block rates, and adopting stormwater fees—can also benefit water and sewer systems by incentivizing all customers to conserve water and utilize sustainable stormwater management practices.

Finally, interest charges, late fees, and other financial penalties for nonpayment are distinct from the basic rates charged for service, but nonetheless affect the ability of customers to afford their bills and have a disproportionate effect on customers who are already struggling to make consistent on-time payments. Utilities can assess their practices to determine whether they are unnecessarily punitive or counterproductive or impose undue burdens on low-income customers. This topic is generally beyond the scope of this paper.⁹³

IV. CHALLENGES TO USING CAPs AND RATE STRUCTURE REFORMS TO ADDRESS AFFORDABILITY

In the water and wastewater utility sector, providing effective assistance to low-income customers poses challenges that require innovative policy responses. Some of these challenges have been faced by the energy sector, and the water sector can learn from that experience. Other challenges arise from major differences in the governance and organization of the energy utility sector as compared to the water sector and will require different approaches.

The lack of state and federal policies, programs, or funding leaves each water and wastewater utility on its own to address affordability.

The state's Electric Discount and Energy Competition Act, adopted in 1999, provides that "it is the policy of this State to . . . Ensure universal access to affordable and reliable electric power and natural gas service."⁹⁴ In contrast, there is no state law or policy concerning universal service or affordability of water and wastewater service.

Further, the Electric Discount and Energy Competition Act created the "Societal Benefits Charge," a surcharge on residential and nonresidential electric and gas bills, which provides hundreds of millions of dollars annually for low-income energy assistance. The state also receives federal funding to support low-income energy assistance, under LIHEAP and the Weatherization Assistance Program. In contrast, there is no state or federal funding for low-income water and sewer customer assistance.

New Jersey lacks a statewide, unified mechanism to address low-income affordability in water and wastewater utilities. Establishing such a mechanism is complicated by the fact that service is provided under two distinct models of service delivery, one private (investor-owned) and one public.

Water and wastewater utilities have evolved to be delivered under two models, in some cases by public agencies and in others by investor-owned utilities. This makes adopting and implementing low-income affordability programs a complex task—in many ways much more so than it is for energy utilities.

As measured by population served, publicly owned systems provide 60 percent of the state's drinking water utility service and almost all of the state's wastewater utility service. Investor-owned utilities, which are rate-regulated by BPU, provide about 40 percent of the drinking water service and a small percentage of wastewater utility service.⁹⁵

Investor-owned systems are subject to BPU rate regulation through a quasi-judicial ratemaking process, which includes participation by a designated consumer advocate and provides a forum for in-depth technical analysis of rate design and trends in ratemaking. However, apart from basic consumer protection requirements noted above, BPU has no low-income affordability policy or program that applies across all of its regulated water and wastewater utilities, although it has approved such programs for some utilities it regulates.

There is also no state law or regulation mandating publicly owned water and wastewater utilities to establish low-income affordability programs. State law authorizes these systems to provide certain types of affordability programs, but for others types the law is ambiguous. Publicly owned systems set their rates locally through their annual budget process and, while the state reviews these budgets, the state does not oversee the setting of rates, per se. Decision makers for these systems have no statewide forum for technical analysis of rate design, although they do have some access to technical rate information through the continuing education programs offered by professional and industry organizations.

In the energy sector, by contrast, a handful of utilities provide gas and electric service across New Jersey. All of these are regulated by BPU, which must approve of their rates, bearing in mind the affordability and universal service goals established by state law. BPU also establishes surcharges on gas and electric bills to fund low-income assistance programs and plays a key role in approving, overseeing, and/or implementing such programs.

Most of the state's water and wastewater utilities are small, with limited managerial capacity and a small customer base.

A large majority of the state's water utilities serve 10,000 or fewer people (with some much smaller than that), and about 40 percent of wastewater utilities treat one million gallons per day or less.⁹⁶ Smaller systems often have limited small staff and administrative capacities. This could make independent administration of means-tested affordability programs challenging, although rate structures reforms to improve equity may be relatively easier to administer.⁹⁷ In contrast, in the energy sector, the entire state is served by a handful of large electric and gas utilities with very large budgets, sophisticated billing systems, and greater opportunities to achieve economies of scale.

Concentrated poverty afflicts many communities served by large water and sewer systems.

Many medium and large utilities serve populations with a relatively high median income, which may provide the opportunity to self-fund low-income affordability programs. However, some medium and large utilities serve populations with a high proportion of low-income households. If those systems were to rely exclusively on revenue from residential customers to fund means-tested CAPs, they may be unable to do so at a level sufficient to meet the need.

It may be possible for these systems to fund low-income programs using revenue from both their residential and nonresidential customers. Depending on the costs of a particular program, some may raise concerns that raising nonresidential rates would affect local competitiveness for business investment. Notably, however, in New Jersey's energy sector, the state-run Universal Service Fund pools the revenue from surcharges on residential and nonresidential customer bills statewide to provide funding for low-income affordability programs.

Without express authorization in state law, publicly owned water and sewer utilities are uncertain whether they are allowed to use rate revenues to fund low-income assistance, even though existing law may actually provide adequate authority in some or even all cases.

Investor-owned utilities can obtain BPU authorization to use rate revenues to offer low-income assistance, as illustrated by New Jersey American Water’s low-income assistance program, described above. For publicly owned water and sewer systems, however, the law is unclear.

Publicly owned systems seem to face no legal obstacles to providing certain forms of assistance, such as flexible payment arrangements, that make it easier to pay bills without offering customers a discount or other financial benefit on the basis of income. Lower “lifeline” rates for an initial increment of usage sufficient to meet basic needs, if applied to all customers regardless of income, likewise should be acceptable under current law. Other forms of means-tested assistance, when funded by rate revenues, present more complex issues under the laws governing the rates of publicly owned systems.

All publicly owned systems are expressly authorized to offer discounts to certain low-income customers who are elderly or disabled, and to military service members who are actively deployed in time of war, but otherwise do not directly address discounts for low-income customers.⁹⁸ Apart from these specifically authorized discounts, state law generally calls for publicly owned systems to charge “uniform” rates across classes of customers, although there are important distinctions depending upon whether the system is owned directly by a county or municipality or by a utilities authority or sewerage authority (i.e., a separate legal entity created under state law specifically to own and operate the publicly owned system). Utilities authorities and sewerage authorities are allowed to deviate from a uniform rate structure when they deem it to be “practicable and equitable.”⁹⁹ County owned and municipally owned systems do not have the benefit of that statutory language; neither are they expressly prohibited from offering low-income discounts more widely.¹⁰⁰

Where the law is silent or ambiguous, water and sewer systems may be able to make a “business case” for income-based affordability programs. As discussed above, such programs can increase the stability of customer revenues and reduce a utility’s collections costs, thereby providing a financial benefit to all ratepayers.¹⁰¹ If a system were to adopt a program, and face a legal challenge, however, courts are generally deferential to local rate setting decisions; the New Jersey Supreme Court has explained that courts have a “limited role when reviewing municipal rates for utility services . . . [Rates will be overturned] only if patently unreasonable.”¹⁰²

The ambiguity in existing law may make publicly owned systems reluctant to adopt new means-tested affordability programs. The state Senate passed legislation earlier this year (S. 276) to explicitly authorize publicly owned water and sewer utilities to offer discounts to low-income customers, without regard to age or disability.

A large proportion of low-income households pays for water and sewer costs only indirectly through rent—not as customers of a utility—which makes those households hard to reach with typical customer assistance programs.

A large share of low-income households that receive water and sewer service do not actually receive a water or sewer bill from a utility. These are mostly renters, and their landlords are responsible for paying the water and sewer bills. Multifamily buildings, in particular, are typically master metered for water and the landlord is the account holder.¹⁰³ In many cases,

renters in one- and two-family homes also pay for water and sewer indirectly through their landlord. In all of these instances, water and sewer costs affect the residents' cost of living only indirectly as part of their rent.¹⁰⁴ Further, as noted above, to the extent that certain affordable housing owners are unable to pass along water and wastewater costs to tenants, those costs reduce the funds available to the landlord for other core building operation and maintenance needs, potentially limiting the availability of quality affordable rental housing.

The lack of a customer relationship with a water or wastewater utility makes it challenging to deliver assistance to these households to mitigate the effect of water and sewer charges on their cost of living.

There is no agreed-upon metric or threshold for water and sewer affordability.

In the energy sector, state policy defines 6 percent of household income as an affordable amount for low-income customers to pay for electric and gas service, combined. There is no widely agreed-upon affordability metric or threshold for household-level affordability of water and sewer service, either in New Jersey or elsewhere around the country. Even in the absence of such thresholds, the state and/or utilities can offer substantial assistance to reduce costs for eligible low-income households. But developing targets or thresholds would greatly assist policy makers in designing (and tracking the progress of) programs that actually ensure affordable water and sewer bills for all low-income customers. Jersey Water Works embarked in 2018 on a project to explore these issues.

V. COMPLEMENTARY STRATEGIES: REDUCING COSTS FOR ALL RATEPAYERS

In addition to a focus on customer assistance programs and rate structures, policy makers can also support water affordability by using strategies that help reduce costs for all ratepayers. These include: optimizing utilities' operations, maintenance, and capital programs; taking advantage of state grants and low-cost loans to finance infrastructure investments; increasing the amount of state and federal grant funding for water infrastructure, with a priority for disadvantaged communities; investing in cost-effective water conservation and efficiency measures; ensuring that rate revenues are not diverted to nonutility purposes; and, in appropriate circumstances, regionalization of small systems.

A. System Optimization, Asset Management, and Cost-Effective Investments

Optimizing the efficiency of a utility's operations (including through operational changes and strategic capital investments) is an important tool to help maintain affordable bills for all customers. Box 1 below explains how the Camden County Municipal Utilities Authority (CCMUA) was able to use cost efficiency measures, along with state grants and low-interest loans, to improve its infrastructure while avoiding significant rate increases—current rates are well below those in place at the beginning of the program, when adjusted for inflation. While utilities may not be able to replicate the specific circumstances and results of CCMUA, most will be able to improve their operational efficiency to some extent through similar means, and all can take advantage of state loans when available to reduce financing costs.

More broadly, as summarized by the U.S. Environmental Protection Agency, asset management is “the practice of managing infrastructure capital assets to minimize the total cost of owning and operating these assets while delivering the desired service levels.”¹⁰⁵ As the New Jersey Department of Environmental Protection (NJDEP) explains, proper asset management helps utilities reduce life cycle costs of their infrastructure, by prioritizing repair or replacement of critical infrastructure before it breaks down and requires even more expensive interventions.¹⁰⁶ For example, one New Jersey wastewater utility manager estimates that emergency repairs can be five to seven times more costly than planned repairs.¹⁰⁷ Similarly, effective asset management can reduce ongoing hidden costs, such as the avoidable expense of producing large amounts of treated drinking water that are lost from leaky distribution systems (“real water loss”) or unbilled to certain customers due to inaccurate water meters (“apparent water loss”). Leaks from water distribution systems can also impose an unseen cost on sewer systems, as the leaked water often finds its way into wastewater pipes, adding to the flow that the wastewater utility must treat. Cost-effective efforts to reduce water losses help reduce these costs, for both water and wastewater utilities, helping to mitigate the extent of rate increases needed for other necessary capital and operating expenses.¹⁰⁸

Box 1.

Camden County Municipal Utilities Authority’s Environmental Management System, Along With Strategic Use of State Grants and Loans, Limits Rate Increases.

CCMUA is an example of a utility that has undertaken extensive cost-saving measures and seen lower-than-average bill increases over the last two decades. CCMUA implemented an ISO 14001 Environmental Management System (EMS) in 1999 in order to optimize efficiency. It has resulted in improvements in environmental performance, water quality, odor control, and cost efficiency. CCMUA is one of only 35 utilities nationwide with a certified EMS.

In addition to the EMS, CCMUA controls costs by relying whenever possible on grants and low-interest loans from the NJ Water Bank (a joint program including State Revolving Funds and bond proceeds from the NJ Infrastructure Bank) to finance capital investments, selecting capital projects where annual debt service is less than or equal to annual Operations & Maintenance (O&M) cost savings from new equipment, and otherwise reducing O&M costs through automation. With this no-cost or low-cost state financing, CCMUA has, since 1997, replaced virtually all of its primary treatment assets.

As a result of these efforts, CCMUA’s annual wastewater rate for residential customers has only risen by 4.45 percent since 1996. When adjusted for inflation, the real cost of wastewater for Camden County residents has declined significantly over the past 20 years.

Notably, the various elements of the EMS program not only reduced costs and improved wastewater treatment systems, but also reduced CCMUA’s environmental footprint. One aspect of the program, for example, involves a multiyear effort to convert the utility’s sewage treatment plant to use renewable energy sources. The project, which will be completed in 2019, utilizes:

- On-site solar
- Biofuels (methane) generated from sewage sludge
- Off-site agreement with an energy utility—trading effluent (to be used by an energy utility as cooling water) for power supply

Sources:

- (1) Conversation with Andy Kricun, CCMUA executive director, 2017.
- (2) Maykuth, Andrew. “Wastewater for electricity: South Jersey utility in swap deal with trash-to-energy plant.” *The Philadelphia Inquirer*, Sept. 28, 2017, <http://www.philly.com/philly/business/energy/wastewater-for-electricity-south-jersey-utility-in-swap-deal-with-trash-to-energy-plant-20170928.html>.
- (3) A. Kricun, “Planning for Optimal Utility Performance in a Sustainable, Cost Effective, Manner” (June 12, 2012), p. 24, <https://www.epa.gov/sites/production/files/2016-01/documents/planning-for-optimal-utility-performance-in-a-sustainable-cost-effective-manner.pdf>.
- (4) Jersey Water Works, *Our Water Transformed* (2017), p. 36, http://www.jerseywaterworks.org/wp-content/uploads/2017/11/JWW_OurWaterTransformed.pdf.

Under the state’s Water Quality Accountability Act, adopted in 2017, drinking water utilities are required to develop asset management plans by April 2019.¹⁰⁹ NJDEP also requires wastewater systems with combined sewer overflow permits to develop asset management plans.¹¹⁰ Yet, Jersey Water Works observes that “despite recent progress, effective asset management has not become an established, routine, expected function of many water supply and wastewater utilities.”¹¹¹ The Joint Legislative Task Force on Drinking Water Infrastructure, in its final report and recommendations, echoed Jersey Water Works’ call for effective implementation of these new asset management requirements, as well as improved asset management by other utilities not currently subject to these requirements (including wastewater utilities), in order to ensure high quality water and sewer service for all New Jersey residents at an affordable cost.¹¹²

When investing in new infrastructure, rate impacts can also be mitigated for all customers by maximizing the use of cost-effective alternatives to traditional “gray” infrastructure, such as water efficiency and green infrastructure strategies, to help meet water supply and water quality needs.¹¹³

Finally, peer-to-peer programs and information sharing mechanisms can enable systems with limited resources to learn about best practices and receive technical support from water utility leaders at larger systems.¹¹⁴

B. State Infrastructure Funding: Low-Cost Financing and Grants

As discussed above, major capital improvements to water and sewer systems are a primary driver of increasing water and sewer bills, though the CCMUA example above shows that some improvements can actually reduce rates. Utilities can mitigate the rate impacts of investments by taking advantage of opportunities to obtain low-cost financing and, where available, grant funding, from the state and federal governments. Moreover, the state could take steps to increase the total amount of funding available.

The primary source of state water infrastructure funding is the New Jersey Water Bank (Water Bank). The Water Bank is jointly administered by the New Jersey Infrastructure Bank (NJIB) (formerly known as New Jersey Environmental Infrastructure Trust, or NJEIT), and NJDEP. It offers low-interest loans to municipalities, counties, regional authorities, and water purveyors for water, wastewater, and stormwater infrastructure projects. NJIB and NJDEP co-administer the Drinking Water State Revolving Fund and Clean Water State Revolving Fund (the “SRFs”). In addition to low-interest loans, certain projects are eligible for principal forgiveness from the Water Bank, essentially transforming loans into grant-like funding. A limited set of planning grants are also available, such as for asset management plans that result in capital projects.¹¹⁵ In some circumstances, there are also opportunities to reduce existing debt service costs by refinancing loans from past infrastructure projects. The CCMUA case study in Box 1 provides a good example of this approach.

Small systems (towns with less than 10,000 people) can receive grants from the Rural Development Administration.¹¹⁶

State elected officials can also consider devoting additional state funds to water and wastewater infrastructure investments and prioritizing such funds for economically disadvantaged communities (including by offering grants, rather than loans, to such communities). These were key recommendations of the state’s Joint Legislative Task Force on Drinking Water Infrastructure in January 2018.¹¹⁷ Jersey Water Works identified numerous other states that have dedicated significant state funds beyond their SRF programs.¹¹⁸

C. Preserving Rate Revenues for Use by the Utility

New Jersey law currently allows some publicly owned water and sewer utilities to transfer a portion of annual revenues to the general municipal budget, for use on unrelated local government expenses.¹¹⁹ The Joint Legislative Task Force on Drinking Water Infrastructure reported that, in one set of 100 New Jersey municipal and authority budgets, approximately \$80 million had been transferred in a three-year period.¹²⁰ When these transfers take place, bills paid by water or sewer customers are being put to purposes unrelated to the provision of water or sewer service, which would otherwise be funded by the municipality’s general tax revenues.¹²¹ Moreover, the utility becomes unable to use the funds in the following year to reduce rates or to mitigate the need for rate increases. Reducing or eliminating the use of this practice would help ease upward pressure on rates for all customers. Legislation has been introduced to repeal this authority.¹²²

D. Regionalization

Although affordability is not necessarily a function of a system’s size, affordability problems (and, for that matter, operational challenges) can sometimes be acute for small systems, which do not benefit from the technical, financial, and managerial economies of scale often enjoyed by larger systems, and whose small customer base can make it difficult to fund public water or wastewater infrastructure at a level needed to ensure reliable access to clean and safe water and wastewater service. Around the country, various approaches to regionalization—ranging from physical or managerial merger of systems (i.e., consolidation), to simply partnering on use or purchase of various equipment and services—have been used to help reduce the costs of providing the necessary level of service to all customers.¹²³ Consolidation can be effected through the creation of a new governing body that takes responsibility for multiple existing public systems, as well as acquisition of one public or private system by another existing system. In any particular case, consideration of the pros and cons of consolidation or of the comparison among various forms of consolidation is very case-specific and raises many complex financial, operational, and political issues.¹²⁴ Given the highly fragmented nature of water and wastewater utilities in New Jersey, all of these regionalization approaches deserve consideration, in appropriate cases.

VI. POLICY OPTIONS

Drawing on the discussion above, this final section offers a menu of policies that can improve the affordability of water and sewer services for low-income New Jerseyans—to the benefit not only of those households but also of everyone who relies on high quality water and wastewater service. (As this paper offers policy options, rather than recommendations of the authors, the list below is not arranged in order of priority.)

Many of these policies can be implemented at the state level, others at the local or individual utility level, and some in partnership across these levels. Federal policies, of course, also affect water infrastructure costs and affordability in New Jersey, and this paper includes a few examples of federal policy changes that New Jersey leaders may wish to support.

Critically, these various policy options are not mutually exclusive. Indeed, in the energy sector, many of these approaches have long been recognized as complementary and are commonly used in tandem. For example, flexible payment arrangements and temporary assistance can offer practical help to avoid missed payments and address past arrears, while low-income bill discounts and targeted efficiency assistance can work together to reduce bills on an ongoing basis. Similarly, reforming a utility’s basic rate structure, which can go a long way to reducing burdens on low-income customers, can be coupled with means-tested assistance that closes the remaining affordability gap. And any efforts targeted to low-income customers can be coupled with strategies that reduce costs for all customers.

A. State-Level Policy Options

- **Enact legislation creating a statewide low-income affordability program and establishing a state policy of universal access to water and sewer service, similar to existing programs and policies in the energy sector.** As noted above, New Jersey enacted a law two decades ago declaring that “it is the policy of this State to . . . Ensure universal access to affordable and reliable electric power and natural gas service.” That same law created some of the existing CAPs that support gas and electric customers. Similarly, new state legislation could define “ensuring universal access to affordable and reliable water and sewer service” as state policy and establish one or more types of CAPs to serve that goal.

New state programs could be funded from a dedicated funding source or from general state revenues, or a combination. One funding model, from the energy sector, is for utilities to impose a small surcharge on water and wastewater bills and pool the resources at the state level. (Notably, some stakeholders have expressed concerns about this approach based on the experience in the energy sector, where funds from the Universal Service Fund have often been diverted to unrelated state programs.)

A statewide program would take some of the burden from individual utilities, which would not need to administer or fund comprehensive affordability programs individually—a task that many utilities, especially smaller ones, may lack the capacity to carry out. Many aspects of a statewide program, such as eligibility determinations and

enrollment, could also be administered jointly with existing energy assistance programs, reducing administrative costs. As noted above, although no statewide water affordability programs exist in the United States, California is developing plans for such a program; New Jersey may be able to draw from approaches under consideration there, in addition to the approaches already used in New Jersey's energy sector.¹²⁵

- **Provide formal clarification—such as through an Attorney General's opinion—of publicly owned utilities' ability under existing law to use rate revenues for CAPs.** As explained above, ambiguity in existing law is likely one reason that publicly owned water and wastewater utilities in New Jersey have not adopted CAPs. Part IV, above, suggests several potential interpretations of existing law that could allow these systems to establish CAPs funded by rate revenues. The state Attorney General could issue a formal opinion advising publicly owned utilities of the scope of their authority under existing law. While such an opinion would not have a binding legal effect, it could carry significant weight in convincing water and sewer systems to adopt CAPs and would help them defend CAPs against potential legal challenge.
- **Enact new legislation that expressly allows publicly owned utilities to use rate revenues for CAPs.** New state legislation could resolve legal uncertainty by expressly authorizing publicly owned water and wastewater utilities to offer reduced rates to low-income customers or otherwise use rate revenues to fund low-income customer assistance. (The state Senate passed legislation earlier this year (S. 276 / A. 3864) to authorize such discounts.)

The state recently enacted legislation to authorize the creation of local stormwater utilities and stormwater utility fees.¹²⁶ That new authority could be amended to include language authorizing low-income discounts, to avoid creating the same legal ambiguities that currently exist for water and wastewater utilities.

- **Enact new legislation that requires utilities to implement measures to improve affordability for low-income customers.** State legislation could not only allow, but also require, both publicly and privately owned utilities to implement measures to improve affordability for low-income households. Utilities would need guidance and clear standards for developing such local programs, provided through some combination of specific legislative criteria and agency issuance of implementing regulations and guidance.

For certain types of CAPs—such as those that provide ongoing bill reductions through reduced rates, discounts, and/or water efficiency assistance—some utilities may have limited financial or administrative capacity to establish new programs on their own. Therefore, a hybrid option could be considered, whereby individual utilities are required to do what they can feasibly do (or contract with social service providers), and state-level assistance (directed either to utilities or directly to customers) would step in to fill the gaps.

Other types of CAPs are simpler to administer, for systems of all sizes, and could be mandated as a form of consumer protection. For example payment plans, leveled billing, and choice of bill timing do not relate to the size of a customer's bill, but rather to the utility's billing and collection methods. These programs offer customers practical help to avoid missed payments, manage arrears, and avoid imminent shutoff. Already, as noted above, all BPU-regulated utilities—including water and sewer, as well as gas and electric—are already required to offer customers a leveled billing option and to offer extended payment plans for overdue bills. No such requirements exist for publicly owned water and sewer systems in New Jersey. The state could expand these protections to customers of publicly owned systems and, further, ensure that these protections are, at a minimum, consistent with current best practices applicable to energy utilities around the country.

- **Use existing BPU regulatory authority to improve affordability for low-income customers of investor-owned utilities.** As noted above, apart from certain flexible payment options that BPU-regulated utilities must provide, there are no low-income affordability programs or policies that apply across-the-board to all BPU-regulated water and sewer utilities. BPU has approved only limited programs for certain individual water utilities. BPU could use its existing authorities—either through rulemaking or individual rate cases—to drive new and improved affordability efforts by the water utilities it regulates. This could include both low-income assistance programs and rate structure reform. Notably, California's Public Utilities Commission is currently undertaking a rulemaking to address water affordability for the water utilities it regulates, though no specific proposal has been formulated; both rate structure reforms and means-tested assistance programs are under consideration, and New Jersey may be able to learn from that effort.¹²⁷
- **Utilize state programs, policies, funding, and technical assistance to encourage local utilities to adopt CAPs and/or improve their rate structures.** There are many ways the state could “nudge” utilities to improve their practices on low-income affordability, without imposing any new mandates. Some potential examples are listed here. There are likely many others.
 - **As a condition of eligibility for state financial assistance,** require systems to adopt certain best practices to improve low-income affordability. This was previously a requirement in Massachusetts, for example, where all systems receiving state water infrastructure funds were required to “adopt[] a pricing system . . . which provides for assurance of service to households who by reason of low income are unable to pay the charge for service otherwise applicable.”¹²⁸
 - **Provide SRF or other state funding to utilities to support local low-income affordability programs,** as a supplement to financial assistance for capital projects.¹²⁹ On a limited basis, Delaware is using some of its SRF funds for this purpose.¹³⁰
 - **In connection with NJDEP's implementation of Clean Water Act (CWA) requirements (such as combined sewer overflow plans),** encourage municipal dischargers to improve low-income affordability, as a way to enhance their ability to raise the total rate revenue to meet regulatory requirements. Around the

country, many wastewater systems have argued that low-income affordability concerns limit their “financial capability,” at the community level, to comply with CWA requirements. In response, EPA notes that “uniform rate structures may place a disproportionately high financial burden on households with low incomes”; “strongly encourages municipalities to consider establishing lower rates or subsidies for low income customers”; and “encourage[s] communities to consider and adopt rate structures that ensure that lower income households continue to be able to afford vital wastewater services.”¹³¹

- **Collaborate across agencies to promote best practices for utilities.** For example, BPU has significant experience and expertise with low-income assistance in the energy sector, which could be shared with publicly owned water and wastewater systems that BPU does not regulate. NJDEP, the NJIB, and the Department of Community Affairs could draw on BPU’s expertise, as well as technical materials developed by others (such as EPA, water research organizations, etc.), to deliver information to publicly owned systems about best practices in equitable rate setting and low-income affordability. These agencies could also provide hands-on technical assistance to utilities to implement best practices.
- **Help utilities evaluate bill non-payment costs relative to affordability program costs.** Focusing on utilities with significant numbers of low-income households or significant residential customer arrears, the state could help utilities assess the cost they incur from nonpayment of customer bills with and without affordability programs, to identify opportunities to increase net revenue by creating or expanding such programs.
- **Make greater use of existing low-income energy efficiency programs to provide water efficiency assistance.** As discussed in Part II above, New Jersey’s existing programs that provide energy efficiency assistance to low-income customers are able to fund direct installation of fixtures and appliances that simultaneously save energy and water. These programs, including Comfort Partners and LIHEAP, could devote more attention to replacement of faucets, showerheads, dishwashers, and clothes washers with water-efficient models that reduce demand for hot water. Notably, a wide range of stakeholders interviewed expressed enthusiastic support for water efficiency assistance, including individuals from the affordable housing, labor, contractors, environmental justice, and water utility sectors. To increase incentives, efficiency program providers could receive credit for both the energy and water savings they generate, not just the energy savings.
- **Require water utilities to make customer usage data available to wastewater utilities for use in volumetric billing.** Wastewater rates that rely entirely on fixed customer charges tend to disproportionately burden low-income customers. Many systems in New Jersey use this approach.¹³² By transitioning to volumetric billing (partially or entirely), based on water usage, these systems could improve affordability for their low-income customers. To ensure that wastewater systems have access to water usage data for billing purposes, state legislation could require water utilities to provide their customer usage

data for billing purposes when wastewater utilities request it for the customers they have in common.

- **Increase state funding for water infrastructure.** The Joint Legislative Task Force on Drinking Water Infrastructure, among others, has called on the state to increase significantly the total amount of state dollars dedicated to water, wastewater, and stormwater infrastructure.¹³³ Creating a dedicated funding source, as is done for certain other types of critical infrastructure, would help insulate this funding from the uncertainty of year-to-year appropriations. Additionally, investor-owned utilities have suggested that they be made eligible for SRF assistance, to the extent allowed by federal law.
- **Prioritize economically disadvantaged communities in the distribution of existing and new state funds.** In regard to both new and existing funds, the state has significant discretion in prioritizing projects and applicants for assistance under the State Revolving Funds and other funding programs. It also has significant discretion concerning the subsidized interest rates to be charged to particular applicants and, within a federally established cap, concerning the use of grants rather than loans to provide assistance. Using this discretion, NJIB could evaluate its current efforts—which already provide important benefits to economically disadvantaged communities—and identify ways to increase the delivery of assistance to communities with the greatest financial need. The state could also make sure to take full advantage of opportunities to leverage existing funds, including through issuing bonds to be repaid from the SRF (a model utilized by the NJIB) and using the Water Bank to provide loan guarantees that reduce the interest rates on private borrowing (a practice allowed under federal law, but which no states have taken advantage of).¹³⁴ Similarly, the state can authorize and provide funding for the NJIB to provide a discount or interest rate buy-down of loan interest rates to financially challenged, publicly owned systems (e.g., systems with low credit ratings), to reduce the cost of private borrowing. Investor-owned utilities have also suggested that, if they are made eligible for SRF assistance, identification of economically disadvantaged areas could include specific communities within the service area of a larger investor-owned utility.
- **Adopt policies and programs that promote cost-efficient operation of water and wastewater systems,** such as effective rules for asset management planning (including water loss control) and technical assistance and funding to replace old, inefficient system components. For example, NJDEP is currently developing rules concerning asset management plans under the state’s Water Quality Accountability Act. Effective asset management rules, and accountability for compliance with those rules, would promote practices that reduce life cycle costs of water and wastewater infrastructure. The state can also promote peer-to-peer programs and information sharing mechanisms that enable water utility leaders to share best practices and technical support with utilities that have more limited resources.
- **Develop or expand efforts to promote various regionalization options for small system challenges.** For small systems in particular, various approaches to regionalization—ranging from physical or managerial merger of systems (i.e.,

consolidation), to simply partnering on use or purchase of various equipment and services—may help reduce the costs of providing the necessary level of service to all customers. The state could provide additional technical and financial assistance to enable place-specific evaluation of these options.

- **Prohibit transfer of utility revenues to general municipal budgets, except as appropriate to pay for services rendered to the utility by the municipality.** As discussed above, state law currently allows some publicly owned water and sewer utilities to transfer a portion of annual revenues to the general municipal budget, for use on unrelated local government expenses.¹³⁵ Repealing or amending this law to eliminate or carefully circumscribe such transfers would help ease upward pressure on rates for all customers. Legislation (A 3375) was introduced in 2018 to repeal this authority.¹³⁶
- **Improve transparency and accountability by requiring systems to report on key metrics related to rates, customer bills, and low-income affordability,** such as rate structures and schedules of rates and charges, customer assistance programs, usage and bill profiles for residential customers, and data on customer arrearages, disconnections, and lien sales resulting from nonpayment. Some states publish the results of annual water rate surveys of all systems.¹³⁷ In New Jersey, however, such information, especially for publicly owned utilities, resides only with individual utilities;¹³⁸ it is extremely challenging to collect and analyze this data, from hundreds of individual utilities, to inform policy decisions.¹³⁹ For investor-owned utilities, although BPU possesses data on rates that BPU approves, this data is not collected in a single place and posted by BPU. BPU also does not collect data on metrics such as customer arrears or shutoffs.¹⁴⁰ Better data, updated regularly, is needed to ensure that policy solutions are tailored to meet the need and are achieving their objectives. Improved transparency will help local ratepayers hold their water systems accountable for improving local practices. Greater transparency of utility data would also aid efforts to develop thresholds for household-level affordability and track progress against them.
- **Address the effect on renters of rising water and wastewater costs by developing innovative policy approaches.** As discussed in Part IV, a large percentage of low-income New Jersey residents are renters who do not directly pay a water bill. Nationally, the water sector is just beginning to grapple with how to mitigate the effect of water costs on the cost of living for this population. A recent report by the Water Research Foundation highlights potential approaches.¹⁴¹ Similarly, California’s State Water Resources Control Board recently outlined options for delivering assistance to low-income households, regardless of whether or not they are direct customers of a water utility.¹⁴² These sources identify the following options, along with examples of where they are currently used: vouchers to tenants or discounts to landlords; water efficiency assistance for multifamily buildings; credits on tenants’ energy utility bills; tax credits; credits added on to existing electronic benefit transfer programs (e.g., Supplemental Nutritional Assistance Program); and helping tenants access existing assistance programs that are not focused on water, as a way to help tenants afford rent and therefore indirectly afford water and sewer service.

B. Local- and Utility-Level Policy Options

Many of the state policy options listed above aim to promote best practices at the local level, by individual utilities, or at providing financial assistance directly to those utilities or their customers. Therefore, recommendations at the local level are largely a mirror image of the state recommendations: adopting best practices for low-income assistance and equitable rate structures, and advocating for state legislation and new and improved forms of state technical and financial assistance.

- **Adopt low-income customer assistance programs.** As described in Part IV, water and sewer utilities systems appear to face no legal obstacles to providing certain forms of assistance, such as flexible payment arrangements (which are, in fact, required for BPU-regulated utilities). However, some types of CAPs—particularly those that are means-tested and funded by rate revenues—present more complex issues under state law. Yet, existing law may actually provide more authority than is sometimes believed. Investor-owned utilities can obtain BPU approval of low-income assistance programs funded by rate revenues. Publicly owned systems have authority to offer discounts specifically to low-income customers who are seniors or have disabilities. Both publicly and privately owned systems may find legal support for broader efforts by identifying “equitable” considerations, or by making a business case for ensuring all customers can afford (and therefore pay) their bills. Where utilities purchase their water supply or wastewater treatment services on a wholesale basis from a regional utility, the retail utilities could also explore opportunities to tap into the wholesale utility’s rate revenues to support local customer assistance programs.¹⁴³ Utilities and municipalities can seek formal opinions from the state Attorney General’s office to clarify the scope of their authority under existing law.

Whether created under existing law or potential new legislation, local programs can combine multiple forms of customer assistance, including programs that provide ongoing reductions in customer bills directly (e.g., through reduced rates or discounts) or indirectly (through improved water efficiency), and programs such as flexible payment arrangements and temporary assistance, which can offer practical help to avoid missed payments and address past arrears. The cost of these programs can be reduced when coupled with adoption of more equitable rate designs that tend to reduce costs for low-income customers.

Appendix A provides more detailed information on the various types of CAPs, identifying positive attributes, challenges or limitations, and other considerations, including the ways that various types of CAPs can complement each other. Appendix B highlights a first-of-its-kind approach (for the water sector) recently adopted in Philadelphia, which has received attention nationwide as an innovative model. Utilities should also consider innovative approaches for ensuring that renters in need are able to benefit from assistance programs; as noted above, a recent report by the Water Research Foundation highlights potential approaches.¹⁴⁴ To efficiently administer CAPs and reach eligible customers, water and wastewater utilities can partner with social service agencies that already administer other forms of means-tested assistance.

- **Adopt more equitable rate structures.** Reforming a utility’s basic rate design can go a long way to reducing burdens on low-income customers and can be simpler to administer at the local level than some CAPs would be. More equitable rate structures also reduce the “affordability gap” that remains to be addressed with CAPs; some experts point to rate designs as a first line of defense to improve low-income affordability. As described in Part III, key strategies include avoiding excessive reliance on fixed charges and utilizing tiered, or inclining block, rates. For combined wastewater and storm sewer systems, funding stormwater management through impervious area-based fees, rather than through wastewater charges, can also be helpful.

In regard to fixed charges, wastewater utilities have a major opportunity for improvement in many parts of the state. A recent Jersey Water Works-sponsored study of 323 New Jersey municipalities found that over two-thirds relied entirely on a fixed charge for residential sewer service, with no consideration at all of usage.¹⁴⁵ In places where water and sewer systems operate independently, local water utilities can provide customer usage data to wastewater utilities to allow for volumetric wastewater charges.

In regard to tiered rates, to avoid unintended consequences for customers with large families, the volume of water included in the lowest tier should allow some adjustment for household size.

- **Advocate for state legislation to authorize local affordability initiatives, as needed.** Local officials and utility leaders can urge their state legislators to adopt legislation authorizing low-income discounts.
- **Advocate for statewide low-income affordability programs.** Local officials and utility leaders can urge their state legislators to create and fund statewide affordability programs, such as the options described above.
- **Advocate for increased state funding for water infrastructure.** Local officials and utility leaders can advocate for new, dedicated state funding for water, wastewater, and stormwater infrastructure.
- **Use utility management and financial strategies that reduce costs for all ratepayers.** Part V identifies several critical steps that utilities can take to reduce the cost of delivering safe and sufficient water and sewer service to all customers. These include system optimization efforts; improved asset management; using cost-effective alternatives to traditional gray infrastructure (including green stormwater infrastructure and water conservation and efficiency measures); taking full advantage of available state financial assistance; and avoiding transfer of any rate revenues out of the utility’s budget. Utilities with limited resources can also participate in peer-to-peer programs, where those programs exist, to learn about best practices and receive technical support from water utility leaders at larger systems.

- **Explore regionalization options.** For small systems, in particular, various approaches to regionalization—ranging from physical or managerial merger of systems (i.e., consolidation), to simply partnering on use or purchase of various equipment and services—may help reduce the costs of providing the necessary level of service to all customers.
- **Focus on solutions to low-income affordability challenges when developing long-term capital investment programs.** Some systems may feel constrained in their ability to undertake major new capital investments—even in the face of regulatory pressure to do so—because of concerns about how rate increases would affect low-income customers. This challenge also provides an opportunity to focus on solutions to low-income affordability as part of developing long-term spending plans. For example, when Portland, Oregon, was first required to implement a long-term plan to reduce combined sewer overflows (CSOs) in the 1990s, that regulatory compliance obligation spurred creation of the city’s first low-income customer assistance program.¹⁴⁶ More recently, Cleveland Heights, Ohio, needed to increase rates to comply with a CSO consent decree, but accompanied this rate increase with a new discount of 40 percent to customers at or below 200 percent of the federal poverty level to mitigate the impacts on low-income customers.¹⁴⁷
- **Identify technical assistance needs for developing local affordability solutions, and work with state agencies to obtain that assistance.** Part VI.A describes various ways in which state agencies could support voluntary efforts by local systems to adopt best practices. Utility managers and local leaders can identify their own greatest needs for technical assistance and communicate those to state officials, and work collaboratively with the state to develop new resources that meet local needs.
- **Analyze local data and engage with local community organizations to understand the nature and scope of the affordability challenges and develop local solutions.** Local water and sewer systems should examine their low-income customers’ costs in relation to ability to pay, as well as data on arrearages, shutoffs, and other indicators of low-income affordability challenges. (As described above, a recent Jersey Water Works report provides a snapshot, for water and sewer systems serving the vast majority of the state, of the current cost of meeting basic indoor water needs in relation to several affordability metrics.)¹⁴⁸ By consulting community organizations and other local stakeholders, such as poverty and housing advocates, water systems can gain a better understanding of how this issue plays out locally, along with essential input on potential solutions.

C. Federal Policy Options

Although state and local policy makers in New Jersey obviously cannot change federal policies, they do have the opportunity to call on their Congressional representatives and other federal officials to act. The following are several examples of actions that Congress could take to improve water affordability nationwide.

- **Create a federal water affordability program, similar to existing programs in the energy sector, that provides both financial assistance and water efficiency assistance to low-income water and sewer customers.** In 2003, EPA’s National Drinking Water Advisory Council’s Affordability Work Group—comprised of representatives of utilities, cities, state water agencies, tribes, academia, and consumer, public health, and environmental organizations—first called for such a program, which could be similar to the existing Low Income Home and Energy Assistance Program.¹⁴⁹ It could also include water efficiency assistance analogous to the federal Weatherization Assistance Program. Several federal bills to create a pilot program were introduced in 2017–2018.¹⁵⁰
- **Increase federal funding for water infrastructure, with a priority for disadvantaged communities.** Over the last three decades, federal funding for drinking water, wastewater, and stormwater infrastructure has declined precipitously (although there have been modest increases in the last few years). Many leaders from both major political parties have called for increased federal investment in these systems. Further, increased federal funding could include significant new money for grants, not only loans, and could prioritize aid to communities with the greatest economic need.
- **Raise the cap on “additional subsidization,” under the State Revolving Funds, to enable states to make better use of available resources and encourage them to contribute more state funds.** Congress appropriates SRF funding each year, which is distributed by EPA to states according to a needs-based formula. States are required to provide a minimum 20 percent match to the annual federal contribution. New Jersey’s SRF and the jointly funded Water Bank provide assistance primarily in the form of low-interest loans, but states can use their SRFs to provide “additional subsidization,” such as principal forgiveness loans (grant-like funds), capped at an amount that equals 30 percent of their annual federal SRF funding.¹⁵¹ States that commit funds beyond the minimum federal match—for example, by leveraging SRF funds with state bonds to be repaid from the SRF—are still limited by the cap on additional subsidization. Congress could reward states that leverage their SRFs, such as New Jersey, by increasing their cap on additional subsidization; this would allow the state to use leveraged funds for grants to local systems, rather than loans, and could include a requirement to prioritize disadvantaged communities. Other contributions of state funds to a state’s SRFs, apart from leveraging existing SRF funds, could also trigger an increased cap; this would encourage states to contribute extra funds from annual appropriations or other dedicated funding streams, which has not been the practice in New Jersey.¹⁵²
- **Allow states to use SRF funds to help water and sewer systems pay for local water affordability programs.** Under the Clean Water SRF (which supports wastewater and

stormwater systems), states can use additional subsidization, akin to grants, to support local low-income affordability programs, but only in limited circumstances. This existing authority applies only if a system serves an area that is not classified as economically disadvantaged, the system receives SRF funds for a capital improvement, and low-income customers within the service area will be burdened by rate increases attributable to repaying the SRF loan.¹⁵³ In conjunction with increasing total SRF funding, Congress could amend the law to authorize the use of Clean Water and Drinking Water SRF to help any system eligible for SRF support develop and implement a low-income affordability program, even when the need for such support is not related to a specific SRF-funded infrastructure project.

APPENDIX A: COMPARISON OF TYPES OF CUSTOMER ASSISTANCE PROGRAMS (CAPs)¹⁵⁴

Program Type	Advantages	Challenges / Limitations (not including legal issues)	Other considerations
<p>Bill Discount</p> <p>Reduces an eligible low-income customer’s bills by a flat dollar amount or a percent discount. Can be used to reduce the fixed service charge, the volumetric consumption charge, or both. Additionally, discounts can be tiered by income.</p>	<p>Provides an ongoing reduction of bills for eligible customers.</p> <p>Targets households that have ongoing difficulty paying water and/or sewer bills.</p> <p>Offers flexibility for program structure, such as sliding-scale discounts. Can apply to any type of rate structure.</p>	<p>May not ensure affordability, depending on customer income, amount of discount, and size of the initial bill to be discounted.</p>	<p>Administrative burden is lessened if a utility can partner with an existing social service program, or energy assistance program, to determine eligibility and enroll customers.</p> <p>Some believe this would distort the price signal for efficient water usage. In contrast, others contend that, when a customer’s bill is unaffordable and therefore not paid in full, the face value of the bill does not effectively incentivize efficiency.* If there is any diminished price signal, pairing discounts with water efficiency assistance (discussed below) can remedy this issue.</p> <p>Does not address other factors that may cause particular customers to have high bills, such as leaky pipes and older, inefficient fixtures and appliances.</p>
<p>Percentage-of-Income Payment Plan (PIPP) or Income-Based Rates</p> <p>Rate design that prevents water bills from exceeding a certain percentage of the customer’s income.</p>	<p>Targets households that have difficulty paying water and/or sewer bills.</p> <p>Maintains affordable levels of water bills.</p>	<p>More complex to administer than uniform discounts.</p> <p>No widely agreed-upon threshold for the percentage of income deemed “affordable.”</p>	<p>Some believe this would distort the price signal for efficient water usage. In contrast, others contend that, when a customer’s bill is unaffordable and therefore not paid in full, the face value of the bill</p>

Challenges /			
Program Type	Advantages	Limitations (not including legal issues)	Other considerations
	<p>Assistance is ongoing and tailored to a customer's economic need.</p> <p>Consistent with some models from energy programs.</p>		<p>does not effectively incentivize efficiency.¹⁵⁵ If there is any diminished price signal, pairing discounts with water efficiency assistance (discussed below) can remedy this issue.</p> <p>Does not address other factors that may cause particular customers to have high bills, such as leaky pipes and older, inefficient fixtures and appliances.</p>
<p>Lifeline Rates</p> <p>A low rate for an initial fixed amount of water to cover basic needs. Water consumption above the lifeline amount is charged at a higher rate.</p>	<p>Can be made available to all households or targeted specifically to low-income households.</p> <p>Designed specifically to promote affordable water to meet core household water needs.</p> <p>Maintains a price signal to promote water conservation.</p>	<p>May penalize large households if amount of usage eligible for the lifeline rate does not take household size into account.</p> <p>May penalize customers in older housing with inefficient fixtures and leaky plumbing that uses excessive amounts of water to meet basic needs.</p> <p>Implementation more complex if targeting only low-income households.</p>	<p>Consider adjusting the size of the lifeline block to take into account the number of people in the household.</p> <p>Can be paired with water efficiency assistance to help customers keep their usage below the level that qualifies for the lifeline rate.</p>

Program Type	Advantages	Challenges / Limitations (not including legal issues)	Other considerations
<p>Flexible Terms</p> <p>Program type which aids customers in managing bills and arrearages through various methods, including but not limited to:</p> <ul style="list-style-type: none"> • Payment plans • Connection loans • Managing arrearages • Levelized/annualized billing (splits annual costs into 12 equal amounts) • Bill timing (allow customers to choose payment dates or switch to quarterly or monthly billing schemes) 	<p>Considered highly effective and popular for gas and electric utilities.</p> <p>Can reduce administrative costs of bill collection.</p> <p>Can make future on-time payments more likely.</p>	<p>Not designed to reduce bills for low-income customers on an ongoing basis.</p>	<p>Monthly billing (as opposed to quarterly billing) can help customers with budget planning.</p> <p>Some measures, like levelized billing and bill timing, are revenue neutral.</p> <p>Forgiving arrearages may reduce utility revenue, but also reduce collection costs.</p> <p>New technology like prepaid meters and smart meters support options for utilities to provide flexible terms and payment plans.</p>
<p>Temporary Assistance</p> <p>Also known as:</p> <ul style="list-style-type: none"> • Crisis assistance • Emergency assistance • Grants • One-time reductions <p>Short-term or one-time grants to prevent water shutoffs or restore service for households facing unexpected hardships. Often limited to one use per year.</p>	<p>Targeted assistance helps customers during times of greatest need.</p> <p>Can provide a backstop to help prevent service disconnection.</p>	<p>Not designed to maintain affordability for low-income customers on an ongoing basis.</p> <p>Level of assistance may not be enough assistance to prevent a service disconnection.</p> <p>Can have relatively high administrative costs.</p>	<p>Water and sewer utilities often partner with another organization (such as a social services agency or nonprofit) to administer the program.</p>
<p>Water Efficiency</p> <p>Also known as:</p> <ul style="list-style-type: none"> • Water conservation 	<p>Addresses a long-term cause of high water bills, since low-income customers are more</p>	<p>Rebates for new fixtures and appliances—as opposed to direct installation at the</p>	<p>Can be a good complement to other forms of assistance, increasing the likelihood that they achieve intended</p>

Challenges /			
Program Type	Advantages	Limitations (not including legal issues)	Other considerations
<ul style="list-style-type: none"> • Rebate program • Direct replacement program <p>Direct financial assistance (through rebates or upfront subsidies or direct replacement of fixtures) for efficiency improvements like leak repairs or replacement of inefficient fixtures or appliances.</p>	<p>likely to have old, inefficient fixtures and/or poor plumbing.</p> <p>Reduces both energy and water bills, since reducing hot water usage (e.g., from faucets, showers, dishwashers, clothes washers) saves both energy and water.</p> <p>Can be administered and/or funded in conjunction with energy efficiency assistance programs.</p> <p>Contributes to broader community goals, beyond affordability, in regard to sustainable water management and energy use reduction.</p>	<p>utility’s expense—may not be effective with low-income households that lack cash for upfront purchase costs.</p> <p>Low-income customers are more able to participate when direct assistance is provided, but direct installation is more complex to implement.</p>	<p>outcomes. For example, direct efficiency assistance can help customers keep their usage below the level that qualifies for a low “lifeline rate.” Further, to the extent that low-income discounts reduce price signals to conserve, direct water efficiency assistance mitigates that effect.</p> <p>Replacing showerheads and installing faucet aerators can significantly reduce water usage at low cost to the utility.</p> <p>Toilets are the largest single water user in homes, so toilet replacement can tremendously reduce usage—especially when very old toilets (e.g., 3.5 to 7 gallons/flush for toilets installed in the 1980s) are replaced with modern, efficient toilets (1.28 gallons/flush “WaterSense” specification).</p> <p>“Every state that has adopted a home energy affordability program has incorporated an energy efficiency component into that affordability initiative.”¹⁵⁶</p> <p>Major opportunities for water cost savings in the multifamily housing context.¹⁵⁷</p>

APPENDIX B: PHILADELPHIA'S NEW WATER AFFORDABILITY PROGRAM

Philadelphia, PA—Tiered Assistance Program (TAP)

In 2017, Philadelphia launched the nation's first percentage-of-income payment plan for water and wastewater. The program, created by local legislation that passed in 2015, aims to ensure that water rates for residential customers living near the poverty level are affordable based on a percentage of household income. It is called the "Tiered Assistance Program" because participating customers are charged one of three different rates, depending on their household income in relation to the federal poverty level.

Subject to a minimum bill of \$12 per month:

- Customers with household income less than 50 percent of the federal poverty level will receive monthly bills calculated as 2 percent of their monthly income.
- Customers with household income between 50 and 100 percent of the federal poverty level will receive monthly bills calculated as 2.5 percent of monthly income.
- Customers with household income between 100 and 150 percent of the federal poverty level will receive monthly bills calculated as 3 percent of monthly income.

Participating customers must agree to use any free water conservation measures offered to them.

Customers who earn up to 250 percent of the federal poverty level can apply to be enrolled in a payment plan that includes making affordable back payments. There is also a provision for "earned forgiveness" of arrearages as long as payment plans are kept current.

Customers in arrears must be given an opportunity to enroll in the new program before the Water Department takes any enforcement actions for nonpayment.

The city is required to post information about the program "clearly and conspicuously" online and make information available in Spanish, as well as in English.

The law requires participants to prove their income no more than once a year.

Sources:

- (1) University of Michigan Water Center, "Water Affordability Based on Income: The Tiered Assistance Program in Philadelphia," http://graham.umich.edu/media/pubs/Water-CS-Philadelphia-Tiered-Assistant-Program_0.pdf.
- (2) Joan Jacobson, "Keeping the Water On: Strategies for addressing high increases in water and sewer rates for Baltimore's most vulnerable customers," *The Abell Report*, November 2016, <https://www.abell.org/sites/default/files/publications/Keeping%20the%20Water%20On.pdf>.

APPENDIX C: LIST OF INTERVIEWEES

The authors interviewed representatives of the following organizations to inform the development of this paper.

- Publicly and privately owned water and sewer utilities:
 - American Water Works Association, New Jersey Section
 - Association of Environmental Authorities of NJ
 - Camden County Municipal Utilities Authority
 - Middlesex Water Company
 - Newark Water & Sewer Department
 - North Hudson Sewerage Authority
 - New Jersey American Water
 - New Jersey Utilities Association
 - Passaic Valley Sewerage Commission
- Regulatory agencies
 - NJ Board of Public Utilities
 - NJ Department of Community Affairs
- Consumer advocates
 - NJ Division of Rate Counsel
 - NJ Citizen Action
- Affordable housing advocates and developers
 - Housing and Community Development Network
 - Fair Share Housing Center
 - Community Investment Strategies
- Community/environmental justice organizations
 - Ironbound Community Corporation
- Business
 - NJ Business & Industry Association
 - Utility Contractors Association of NJ
- Labor
 - NJ Work Environment Council

ENDNOTES

¹ Lead authors are Larry Levine, Director of Urban Water Infrastructure & Sr. Attorney, Natural Resources Defense Council (NRDC); and Vivian Chang & Chris Gough, interns, New Jersey Future. Rinku Kapoor, NRDC legal intern, contributed research. The Jersey Water Works Asset Management and Finance Committee (including individuals from the government, utility, non-profit, academic, and other sectors) reviewed a draft and approved this paper for release. Special thanks to committee members, Peggy Gallos, Andrew Hendry, Alan Karnovitz, Andy Kricun, Fred Pocci, Donald Shields, Chris Sturm, Dan Van Abs, and David Zimmer for their detailed comments on drafts and input throughout the development of this paper, and to all interviewees identified in Appendix C. Finally, the Committee thanks Valley National Bank and the Geraldine R. Dodge Foundation for their financial support of this project. The views expressed herein do not comprise the official positions of the organizations represented by the authors, contributors, or reviewers of this report, or of the philanthropic funders who supported this project.

² Jersey Water Works, *Our Water Transformed: An Action Agenda for New Jersey's Water Infrastructure*, December 2017, http://www.jerseywaterworks.org/wp-content/uploads/2017/11/JWW_OurWaterTransformed.pdf (emphasis added).

³ The Joint Legislative Task Force on Drinking Water Infrastructure, *Final Report*, January 16, 2018, http://www.njleg.state.nj.us/legislativepub/reports/tdwi_final_report.pdf (emphasis added).

⁴ M. Teodoro, "Measuring Household Affordability for Water and Sewer Utilities," *Journal AWWA*, Jan. 2018.

⁵ Walton, "U.S. Household Water Use Continues to Decline," *Circle of Blue*, Nov. 8, 2017, <https://www.circleofblue.org/2017/world/u-s-household-water-use-continues-decline/>

⁶ D. Van Abs and T. Evans, *Assessing the Affordability of Water and Sewer Utility Costs in New Jersey—Phase I Report: Methodology Review and Preliminary Assessment*, September 2018, p. 13, <https://www.jerseywaterworks.org/wp-content/uploads/2018/09/Van-Abs-and-Evans-2018.09.09-Assessing-Water-Sewer-Utility-Costs.pdf>.

⁷ "Annualized Rate Increases from 2004 to 2014," American Water Works Association, <https://www.awwa.org/Portals/0/Awwa/Professional%20Development/AnnualizedRateIncreases.pdf>.

⁸ J. Kane and L. Broaddus, "Striking a better balance between water investment and affordability," Sept. 12, 2016, <https://www.brookings.edu/blog/the-avenue/2016/09/12/striking-a-better-balance-between-water-investment-and-affordability/>.

⁹ J. Kane and L. Broaddus, "Striking a better balance between water investment and affordability," Sept. 12, 2016, <https://www.brookings.edu/blog/the-avenue/2016/09/12/striking-a-better-balance-between-water-investment-and-affordability/>.

¹⁰ American Society of Civil Engineers, "2016 New Jersey Infrastructure Report Card" (see "Key Facts"), <https://www.infrastructurereportcard.org/state-item/new-jersey/>. See also U.S. Environmental Protection Agency (EPA), *Drinking Water Infrastructure Needs Survey and Assessment – Sixth Report to Congress*, March 2018, https://www.epa.gov/sites/production/files/2018-10/documents/corrected_sixth_drinking_water_infrastructure_needs_survey_and_assessment.pdf; EPA, *Clean Watersheds Needs Survey 2012 – Report to Congress*, Jan. 2016, https://www.epa.gov/sites/production/files/2015-12/documents/cwns_2012_report_to_congress-508-opt.pdf.

¹¹ Stephen Stirling, "37 percent of people in N.J. are among the working poor, study says," *NJ.com*, January 16, 2017, https://www.nj.com/news/2017/01/37_percent_of_people_in_nj_are_among_the_working_poor_study_says.html; "Meir Rinde, "Why is New Jersey's Poverty Rate So High?," *WNYC News*, January 28, 2016, <https://www.wnyc.org/story/why-new-jersey-poverty-rate-so-high/>.

¹² Van Abs and Evans, *Assessing the Affordability of Water and Sewer Utility Costs in New Jersey—Phase I Report: Methodology Review and Preliminary Assessment*, September 2018, <https://www.jerseywaterworks.org/wp-content/uploads/2018/09/Van-Abs-and-Evans-2018.09.09-Assessing-Water-Sewer-Utility-Costs.pdf>.

¹³ Citing recent research sponsored by NJDEP, the study states that "urban households in New Jersey, which would have limited outdoor demands, have per capita demands of roughly 42 to 58 gpcd [gallons per capita per day]; this range is comparable to the 60,000 gallons per year used here." The study also notes that 60,000 gallons equals 63 gpcd at New Jersey's 2010 average household size of 2.61 people, or 40 gpcd for a four-person household. *Id.* at p. 25.

¹⁴ With available data, the study was not able to distinguish between households that are direct customers of a water or sewer utility (who are predominantly homeowners) and those that are not (which is the case for many renters). Accordingly, a statement about water costs for households in the bottom 20 percent of household income in a county or city is not equivalent to a statement about costs for 20 percent of water or sewer customers in that location. The effects of water and sewer costs on renters are more complex, and are addressed briefly in other sections of this paper.

¹⁵ For example, toilets are the largest single water user in homes, but old toilets (e.g., 3.5 to 7 gallons/flush for toilets installed in the 1980s) use about three to five times more water than modern, efficient toilets (1.28 gallons/flush for toilets meeting the voluntary “WaterSense” specification).

¹⁶ Further, low-income customers, in the aggregate, could over time bear a larger share of a water system’s costs as compared to other residential customers, if water use reductions accrue disproportionately to non-low-income customers, whose homes are more likely to have the modern, water-efficient fixtures and appliances used in new construction and remodeling.

¹⁷ Water Research Foundation, *Best Practices in Customer Payment Assistance Programs*, 2010, pp. xxi, 28, <http://www.waterrf.org/publicreportlibrary/4004.pdf>.

¹⁸ Food & Water Watch, *America’s Secret Water Crisis: National Shutoff Survey Reveals Water Affordability Emergency Affecting Millions*, October 24, 2018, https://www.foodandwaterwatch.org/sites/default/files/rpt_1810_watershutoffs-web2.pdf. The report’s authors were unable to obtain shutoff data from the small number of New Jersey utilities they contacted.

¹⁹ Unitarian Universalist Service Committee, *The Invisible Crisis: Water Unaffordability in The United States*, May 2016, http://www.uusc.org/sites/default/files/the_invisible_crisis_web.pdf; National Consumer Law Center, *Review and Recommendations for Implementing Water and Wastewater Affordability Programs in the United States*, March 2014, <http://www.nclc.org/images/pdf/pr-reports/report-water-affordability.pdf>; NJ Department of Community Affairs, *Housing Choice Voucher Program—Administrative Plan—Appendix A*, Exhibit 14-7, [https://www.nj.gov/dca/divisions/dhcr/forms/docs/NJDCA_Admin_Plan_Appendix_A-Administrative_Exhibits\(2017\).pdf](https://www.nj.gov/dca/divisions/dhcr/forms/docs/NJDCA_Admin_Plan_Appendix_A-Administrative_Exhibits(2017).pdf).

²⁰ D. Rockowitz, et al., *Household Water Security in Metropolitan Detroit: Measuring the Affordability Gap*, University of Michigan Poverty Solutions, August 2018, <https://poverty.umich.edu/10/files/2018/08/PovertySolutions-PolicyBrief-0818-r2.pdf>.

²¹ S&P Global, “Affordable For Now: Water And Sewer Rates At U.S. Municipal Utilities,” October 24, 2018, https://www.capitaliq.com/CIQDotNet/CreditResearch/RenderArticle.aspx?articleId=2119033&SctArtId=461951&from=CM&nsl_code=LIME&sourceObjectId=10740499&sourceRevId=9&fee_ind=N&exp_date=20281023-22:33:25.

²² Roger D. Colton, *Water Bill Affordability for the City of Philadelphia*, April 9, 2015, <http://www.povertylaw.org/files/docs/Colton%20City%20Council%20comments--April%208%202015--Final.pdf>; Roger D. Colton, *Baltimore’s Conundrum: Charging for Water/Wastewater Services that Community Residents Cannot Afford to Pay*, November 2017, https://www.foodandwaterwatch.org/sites/default/files/baltimore_water_study-final_report-2017.pdf.

²³ Colton, *Baltimore’s Conundrum*, pp. 19-20, 45. It has been argued that affordable bills can also benefit utilities by improving the effectiveness of price signals for water conservation. See Colton, *Water Bill Affordability for the City of Philadelphia for the City of Philadelphia* (“When customers cannot afford to pay their water bill bills, in other words, price signals are not effective.”). However, some argue that a low-income assistance program, if not well designed, can diminish price signals to conserve.

²⁴ Water Research Foundation, *Best Practices in Customer Payment Assistance Programs*, 2010, p. 91, <http://www.waterrf.org/publicreportlibrary/4004.pdf>.

²⁵ G. Tracy Mehan, et al., “Addressing Affordability as a Necessary Element of Full-Cost Pricing,” *Journal AWWA*, 109, no. 10 (October 2017) (internal quotations omitted), http://aquadoc.typepad.com/files/affordability_full-cost_pricing_jawwa20o2017.pdf.

²⁶ UNC Environmental Finance Center, *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs: A Guide for Water and Wastewater Utilities*, 2017, at p. 18 (emphasis added), <https://efc.sog.unc.edu/sites/www.unc.edu/files/Pathways%20to%20Rate-Funded%20CAPs.pdf>.

²⁷ AWWA Policy Statement: “Affordability,” adopted by the AWWA Executive Committee on Oct. 24, 2018, <https://www.awwa.org/Policy-Advocacy/AWWA-Policy-Statements/Affordability>.

²⁸ While the term “customer assistance program” is widely used, some advocates draw a distinction between “assistance” and “affordability” programs. From that perspective, an “affordability” program is designed to ensure that all customers, regardless of income, can afford water and sewer service on an ongoing basis. In contrast, programs that reduce costs, to some degree, for a class of eligible customers, but provide benefits that are either short term or are not large enough to meet the needs of all program participants, would be considered “assistance.” For example, a uniform discount (e.g., \$20 per month) for all eligible customers could be considered “assistance,” rather than a program designed to ensure “affordability,” because \$20 may be sufficient to make some participants’ bills affordable, and yet fall short of what is needed to ensure affordability for others who have higher bills or lower incomes.

²⁹ EPA’s national survey identified all of these except the “percentage of income payment plan” (PIPP) approach; although PIPPs have a long history in the energy sector, the very first PIPP in the water sector was adopted in 2017, in Philadelphia, after EPA’s report was published. See Appendix B for a summary of Philadelphia’s program. For information on PIPPs in the energy context, see here: U.S. Department of Health and Human Services, “Overview of Percentage of Income Plans (PIPP) compiled by the LIHEAP Clearinghouse,” January 2014, <https://liheapch.acf.hhs.gov/docs/PIPPupdate.pdf>.

³⁰ For example, any type of assistance program must establish customer eligibility criteria, identify mechanisms for administering eligibility criteria and delivering assistance, and determine the specific size of the benefit. Appendix A of this report, which outlines the advantages and challenges associated with each type of CAP, addresses these issues to a limited extent.

³¹ In New Jersey, BPU-regulated systems (but not publicly owned systems) are subject to consumer protection rules that prohibit late fees for residential customers and establish minimum requirements concerning shutoff notices, dispute resolution, and the content and clarity of bills. N.J.A.C. 14:3-7.1 through -7.8. BPU’s website provides a plain-language summary of some (but not all) of these consumer protections. See “Consumer Rights,” State of New Jersey Board of Public Utilities, accessed April 23, 2019, <https://www.nj.gov/bpu/assistance/rights/index.html>.

³² In one very limited circumstance, “when water is used for air conditioning, such as in an evaporative cooler,” LIHEAP may be used for assistance with water bills: “LIHEAP Frequently Asked Questions for Consumers,” U.S. Department of Health and Human Services, January 19, 2016, <https://www.acf.hhs.gov/ocs/resource/consumer-frequently-asked-questions#Q3>.

³³ States have the option to use LIHEAP “Weatherization Assistance” funds for water conservation and replacement of water heaters. (See model LIHEAP program form here—p. 15: <https://www.mass.gov/files/documents/2018/06/08/draftfy19liheapstateplan.pdf>.) As of 2016, a majority of states, including New Jersey, have chosen to include water conservation in their LIHEAP programs. (See pp. 14-15 here: https://liheapch.acf.hhs.gov/sites/default/files/webfiles/docs/LIHEAP_Weatherization_Report.pdf.)

³⁴ At least one state, Massachusetts, has legislative authorization to implement such a program, but the state’s website shows no evidence that the program actually exists, suggesting that funds are not being appropriated to implement it. Under the authorizing statute, enacted in 1996, the program may provide assistance of up to 25 percent of eligible participants’ annual water and wastewater bills. The program was envisioned to be administered by the state housing agency, in conjunction with the federally funded Low Income Home Energy Assistance (LIHEAP) program, which provides low-income assistance for electric and gas bills. See Mass. Gen. Laws ch. 23B, § 24B.

³⁵ In NJ, the LIHEAP weatherization program includes water conservation as an eligible project. (See pp. 14-15 here: https://liheapch.acf.hhs.gov/sites/default/files/webfiles/docs/LIHEAP_Weatherization_Report.pdf.) Up to 15 percent of NJ’s annual LIHEAP funding may go towards the LIHEAP Weatherization Program. (See p. 17 here https://www.state.nj.us/dca/divisions/dhcr/offices/docs/liheap_handbook.pdf.) Also, the New Jersey “Comfort Partners” program, funded by energy utility ratepayers through the Board of Public Utilities, includes water conservation retrofits as eligible projects (including low-flow aerators and showerheads, as well as hot water pipe insulation that reduces the amount of time water must be left running to get hot water from a faucet or shower). (See <http://www.njcleanenergy.com/residential/programs/comfort-partners/comfort-partners>.) Comfort Partners reports

that it has also funded repairs to water heaters and boilers that are “wasting water and energy.”
http://www.njcleanenergy.com/files/file/Comfort_Partners/CP_100K_Perrini_Case-Study_12-4-15g.pdf.

³⁶ California State Water Resources Control Board, “Options for Implementation of a Statewide Low-Income Water Rate Assistance Program (Draft),” Jan. 3, 2019,
https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/assistance/.

³⁷ U.S. Environmental Protection Agency, *Drinking Water and Wastewater Utility Customer Assistance Programs*, April 2016, https://www.epa.gov/sites/production/files/2016-04/documents/dw-ww_utilities_cap_combined_508.pdf.

³⁸ U.S. Environmental Protection Agency, *Drinking Water and Wastewater Utility Customer Assistance Programs*.

³⁹ Water Research Foundation, *Best Practices in Customer Payment Assistance Programs*.

⁴⁰ UNC Environmental Finance Center, *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs*.

⁴¹ U.S. Environmental Protection Agency, *Drinking Water and Wastewater Utility Customer Assistance Programs*.

⁴² To qualify, a sewerage authority’s or utility authority’s host city must have a population of more than 79,000 (for utilities authority) or 80,000 (for sewerage authority) but less than 88,000, be located in a county with a population of more than 455,000 but less than 510,000, and its treatment plant must be within the city’s boundaries. N.J.S.A. § 40:14A-8.1; N.J.S.A. § 40:14B-23.1.

⁴³ Telephone Interview with Andrew Kricun, Executive Director, Camden County Municipal Utilities Authority, July 21, 2017. According to the executive director of CCMUA, in addition to compensating for the community burdens of a generally undesirable land use (i.e., a sewage treatment plant), other rationales for a host community benefit are that the host city loses out on tax revenues associated with the treatment plant property; and that it costs more money to convey wastewater from customers outside of the city to the treatment plant than it does to convey wastewater from customers within the city. Id.

⁴⁴ N.J.A.C. 14:3-7.5(b) (utilities that do not bill on a flat rate must offer a “budget billing plan” that “allow[s] a customer to pay a predetermined monthly rate...based on the customer’s average usage”).

⁴⁵ N.J.A.C. 14:3-3A.4(g)(3) (residential shutoff notices must inform the customer of the option to enter into “a reasonable deferred payment agreement”); N.J.A.C. 14:3-7.7(a) (when a customer informs the utility that he or she is unable to pay a bill, “the utility shall make a good faith effort to provide the customer with an opportunity to enter into a fair and reasonable deferred payment agreement(s), which takes into consideration the customer’s financial circumstances”).

⁴⁶ U.S. Department of Health and Human Services, LIHEAP Clearinghouse, *Weatherization: Coordinating LIHEAP and WAP*, July 2016, p. 15,

https://liheapch.acf.hhs.gov/sites/default/files/webfiles/docs/LIHEAP_Weatherization_Report.pdf. According to the state Department of Community Affairs (DCA), up to 15 percent of the state’s LIHEAP funding may be directed to the LIHEAP Weatherization Program in any given year. DCA, Division of Housing and Community Resources, “Home Energy Assistance Program Handbook” (undated), p. 17,

https://www.state.nj.us/dca/divisions/dhcr/offices/docs/liheap_handbook.pdf. (The cited handbook is identified at the following link as the current version of that publication: <https://www.nj.gov/dca/divisions/dhcr/offices/hea.html>.)

⁴⁷ NJ BPU, New Jersey’s Clean Energy Program, “Comfort Partners,” accessed August 23, 2018,

<http://www.njcleanenergy.com/residential/programs/comfort-partners/comfort-partners>. Other assistance related to reducing hot water use, such as repairs to water heaters and boilers that are “wasting water and energy,” is also available from Comfort Partners. NJ BPU, New Jersey’s Clean Energy Program, “Comfort Partners Reaches Another Milestone: 100,000 Homes Are Now More Energy Efficient” (undated),
http://www.njcleanenergy.com/files/file/Comfort_Partners/CP_100K_Perrini_Case-Study_12-4-15g.pdf.

⁴⁸ “Low Income Program,” New Jersey American Water, accessed September 7, 2018,
<https://amwater.com/njaw/customer-service-billing/low-income-program>.

⁴⁹ NJ BPU, *In the Matter of the Petition of New Jersey-American Water for an Increase in Rates for Water and Sewer Service and Other Tariff Modifications*, Docket No. WR03070511, Order of the Board dated February 19, 2004 (see p. 13, paras. “q” and “r”).

⁵⁰ NJ BPU, *In the Matter of the Petition of New Jersey-American Water*.

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- ⁵¹ In 2014, the program provided \$92,453 of bill credits to 327 households. U.S. Environmental Protection Agency, *Drinking Water and Wastewater Utility Customer Assistance Programs*.
- ⁵² “Low Income Program,” New Jersey American Water; U.S. Environmental Protection Agency, *Drinking Water and Wastewater Utility Customer Assistance Programs*.
- ⁵³ “Need Help With Your SUEZ Water Bill?” NJ SHARES, November 16, 2015, <http://www.njshares.org/%5C/supportingdocs/SUEZ-WATER-CARES-Required-Documents.pdf>.
- ⁵⁴ This law, among other things, created the “Universal Service Fund” and “Societal Benefits Charge” discussed below. P.L. 1999, Chapter 23, sections 2 & 12 (codified at N.J.S.A. 48:3-50, 48:3-60), available here: http://www.njcleanenergy.com/files/file/23_.pdf.
- ⁵⁵ For example, PSE&G offers extended payment plans for customers in arrears, as well as levelized billing options for all customers. PSE&G, “If You Need Help Managing Your Energy Bill,” accessed October 16, 2018, <https://nj.pseg.com/saveenergyandmoney/gethelppayingyourbill/strugglingtopay>.
- ⁵⁶ Tom Johnson, “Explainer: Societal Benefits Charge Fuels Clean Energy, Other Programs,” *NJ Spotlight*, August 6, 2013, <http://www.njspotlight.com/stories/13/08/05/societal-benefits-charge-sbc/>; New Jersey Board of Public Utilities. “NJCEP Strategic Planning Stakeholder Focus Groups,” January 26, 2017, <http://www.njcleanenergy.com/files/file/NJCEP%20Strategic%20Plan%20Slides%2001-26-17.pptx>.
- ⁵⁷ Johnson, “Explainer: Societal Benefits.”
- ⁵⁸ “Universal Service Fund Frequently Asked Questions,” New Jersey Department of Community Affairs, accessed August 27, 2018, <https://www.state.nj.us/dca/divisions/dhcr/faq/usf.html>.
- ⁵⁹ “Energy Assistance: Universal Service Fund FFY 2018 Fact Sheet,” New Jersey Department of Community Affairs, accessed August 27, 2018. <https://www.state.nj.us/dca/divisions/dhcr/offices/hea/fincomefact.html>.
- ⁶⁰ Johnson, “Societal Benefits.”
- ⁶¹ “New Jersey Office of Legislative Services Analysis of the New Jersey Budget: Fiscal Year 2018–2019,” New Jersey Legislature, accessed September 7, 2018, <https://www.njleg.state.nj.us/legislativepub/govbudget2018-2019.asp>. (providing link to additional details on NJ BPU budget: https://www.njleg.state.nj.us/legislativepub/budget_2019/BPU_response_2019.pdf).
- ⁶² Johnson, “Explainer: Societal Benefits.”
- ⁶³ “Low Income Home Energy Assistance Program / Universal Service Fund – FFY 2019 Fact Sheet,” New Jersey Department of Community Affairs, accessed April 24, 2019, https://www.nj.gov/dca/divisions/dhcr/offices/docs/usfhea_fact_sheet.pdf.
- ⁶⁴ “Energy Assistance: Universal Service Fund,” New Jersey Department of Community Affairs.
- ⁶⁵ “Lifeline Program Summary,” New Jersey Department of Human Services, Division of Aging Services, accessed September 6, 2018, <https://www.state.nj.us/humanservices/doas/home/lifelinedetail.html>; and N.J.S.A. 48:2-29.15 et. seq.
- ⁶⁶ “New Jersey Office of Legislative Services Analysis of the New Jersey Budget: Fiscal Year 2018–2019,” New Jersey Legislature.
- ⁶⁷ “Residential Customers: Assistance,” New Jersey Board of Public Utilities, 2017, <https://www.state.nj.us/bpu/residential/assistance/>.
- ⁶⁸ “PAGE Requirements.” NJ Power On, accessed August 28, 2018, <http://njpoweron.org/page-requirements.html>.
- ⁶⁹ “New Jersey Office of Legislative Services Analysis of the New Jersey Budget: Fiscal Year 2018–2019,” New Jersey Legislature.
- ⁷⁰ “PAGE Home Energy Assistance Program,” NJ Power On, accessed August 28, 2018, <http://njpoweron.org/>.
- ⁶³ “NJ SHARES provides energy assistance to moderate and fixed-income households experiencing a financial crisis,” NJ SHARES, accessed August 28, 2018, <http://www.njshares.org/aboutNJShares/energy-assistance.asp>.
- ⁷² NJ SHARES, *2017 Annual Report*, 2017, <http://www.njshares.org/media/NJ-SHARES-Annual-Report-Current.pdf>.
- ⁷³ “Universal Service Fund Frequently Asked Questions,” New Jersey Department of Community Affairs.

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- ⁷⁴ “New Jersey Office of Legislative Services Analysis of the New Jersey Budget: Fiscal Year 2018–2019,” New Jersey Legislature.
- ⁷⁵ “Comfort Partners,” New Jersey’s Clean Energy Program, accessed August 27, 2018, <http://www.njcleanenergy.com/residential/programs/comfort-partners/comfort-partners>.
- ⁷⁶ “Public Service Electric & Gas,” LIHEAP Clearinghouse, 2017, <https://liheapch.acf.hhs.gov/Utility/NJ/pseg.htm>.
- ⁷⁷ New Jersey’s Clean Energy Program. “New Jersey’s Clean Energy Program FY19–FY22 Strategic Plan Draft.” April 26, 2018. <http://njcleanenergy.com/files/file/Library/Compliance%20Filings/NJCEP%20FY19-FY22%20Strategic%20Plan.pdf>.
- ⁷⁸ Applied Public Policy Research Institute for Study and Evaluation (APPRISE), *Low-Income Energy Efficiency Opportunities Study*, December, 2017, https://www.edf.org/sites/default/files/APPRISE_Low-Income-Energy-Efficiency-Opportunities-Study-2017.PDF.
- ⁷⁹ “Weatherization Assistance Program,” New Jersey Department of Community Affairs, accessed August 28, 2018, <https://www.state.nj.us/dca/divisions/dhcr/offices/wap.html>.
- ⁸⁰ U.S. DOE Weatherization Assistance Program, *2018 New Jersey State Plan and Application*, accessed September 6, 2018, https://www.state.nj.us/dca/divisions/dhcr/offices/docs/wap/2018_DOE_State_Plan.pdf.
- ⁸¹ “Weatherization Assistance Program,” State of New Jersey Recovery and Reinvestment Plan, accessed August 28, 2018, <https://www.nj.gov/recovery/programs/wap.html>.
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- ⁸³ New Jersey Department of Community Affairs, Division of Housing and Community Resources, *Home Energy Assistance Program Handbook*, (undated), p. 17, https://www.state.nj.us/dca/divisions/dhcr/offices/docs/liheap_handbook.pdf. (The cited handbook is the most recent version of that publication, per the following website, accessed October 8, 2018, <https://www.nj.gov/dca/divisions/dhcr/offices/hea.html>.)
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- ⁸⁵ “Residential Customers: Assistance,” New Jersey Board of Public Utilities.
- ⁸⁶ Manny Teodoro, “Inoculation and Therapy,” September 19, 2018, <http://mannyteodoro.com/?p=610>.
- ⁸⁷ See, generally, “Pricing and Affordability of Water Services,” U.S. Environmental Protection Agency, accessed April 23, 2019, <https://www.epa.gov/sustainable-water-infrastructure/pricing-and-affordability-water-services>.
- ⁸⁸ Water Research Foundation, *Best Practices in Customer Payment Assistance Programs*, Chapter 10; Greg Clumpner, “Social Justice and Water Rates: Impacts of Rate Design on Low-Income Customers,” *Journal AWWA*, 110, no. 7 (July 2018), <https://doi.org/10.1002/awwa.1115>. (*Journal AWWA* is behind a paywall. However, an abridged version of the Clumpner paper can be found at the end of the following presentation: <https://www.cacities.org/Resources-Documents/Education-and-Events-Section/Municipal-Finance/2017-Session-Materials/Embedded-Social-Justice-Are-Utility-Rates-Really>.)
- ⁸⁹ Water Research Foundation, *Best Practices in Customer Payment Assistance Programs*, Chapter 10; Greg Clumpner, “Social Justice and Water Rates: Impacts of Rate Design on Low-Income Customers,” *Journal AWWA*, 110, no. 7 (July 2018), <https://doi.org/10.1002/awwa.1115>. (*Journal AWWA* is behind a paywall. However, an abridged version of the Clumpner paper can be found at the end of the following presentation: <https://www.cacities.org/Resources-Documents/Education-and-Events-Section/Municipal-Finance/2017-Session-Materials/Embedded-Social-Justice-Are-Utility-Rates-Really>.)
- ⁹⁰ For example, see Pacific Institute, *Water Rates: Conservation and Revenue Stability*, <http://www.pacinst.org/wp-content/uploads/2013/01/water-rates-conservation-and-revenue-stability.pdf>; Shadi Eskaf, “Base Charges Customized Based on Customer Water Use,” July 31, 2014, <http://efc.web.unc.edu/2014/07/31/base-charges-customized-based-customer-water-use/>.
- ⁹¹ Water Research Foundation, *Best Practices in Customer Payment Assistance Programs*, Chapter 10.

⁹² S. 1073, enacted March 18, 2019 as P.L. 2019, c.42, <https://www.njleg.state.nj.us/bills/BillView.asp?BillNumber=S1073>.

⁹³ As noted above, consumer protection rules currently prohibit BPU-regulated utilities (but not publicly owned systems) from charging late fees to residential customers. N.J.A.C. 14:3-7.1(e).

⁹⁴ Electric Discount and Energy Competition Act. P.L. 1999, Chapter 23, sections 2 & 12 (codified at N.J.S.A. 48:3-50, 48:3-60), available here: http://www.njcleanenergy.com/files/file/23_.pdf.

⁹⁵ UNC Environmental Finance Center, *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs*. Ninety-nine percent of the state population receives drinking water utility service. Ninety-one percent receives wastewater utility service. Id. Others rely on private wells and on-site wastewater treatment system (e.g., septic systems).

⁹⁶ UNC Environmental Finance Center, *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs*.

⁹⁷ Manny Teodoro, “Inoculation and Therapy,” September 19, 2018, <http://mannyteodoro.com/?p=610>.

⁹⁸ N.J.S.A. §§ 40A:26A-10.1 (municipal and county wastewater systems), 40A:31-10.1 (municipal and county water systems); N.J.S.A. § 40:14A-8.2 (sewerage authorities); §§ 40:14B-21.2, 40:14B-22.2 (utilities authorities). As described above, in Part II.C., state law also authorizes discounts for residents of certain municipalities that host regional sewage treatment plants, which amounts to a de facto low-income assistance program given the demographics of communities where treatment plants are often located.

⁹⁹ N.J.S.A. § 40:14A-8 (sewerage authorities); §§ 40:14B-21, 40:14B-22 (utilities authorities).

¹⁰⁰ N.J.S.A. §§ 40A:26A-10 (wastewater), 40A:31-10 (water).

¹⁰¹ This legal argument is suggested by a recent national report on state laws regarding water and wastewater customer assistance: UNC Environmental Finance Center, *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs*, at pp. 17-18.

¹⁰² *Meglino v. Twp. Comm. of Eagleswood Twp.*, 103 N.J. 144, 152 (N.J. 1986).

¹⁰³ Similar issues may arise for low-income households that own condominium units, where water and sewer costs are billed to a condominium association, with those costs allocated by share of ownership in the condominium rather than by water usage of any individual unit.

¹⁰⁴ The extent to which water bills affect tenants’ cost of living may depend on variables including whether the housing is publicly subsidized, rent-regulated, or market rate; whether (and by what method) the owner of a master metered multifamily building apportions the property’s water bill among individual tenants; and whether utilities allow renters of single-family homes to assume responsibility for a water or sewer account, in place of the property owner. Other ongoing research, sponsored by Jersey Water Works member Natural Resources Defense Council, aims to better characterize these issues in New Jersey.

¹⁰⁵ “Asset Management for Water and Wastewater Utilities,” USEPA, accessed August 24, 2018, <https://www.epa.gov/sustainable-water-infrastructure/asset-management-water-and-wastewater-utilities>.

¹⁰⁶ “Asset Management Policy Program: Life Cycle Costs,” NJDEP, last modified January 9, 2019, <https://www.nj.gov/dep/assetmanagement/lifecycle.html>.

¹⁰⁷ Personal communication, Andrew Kricun, Executive Director, Camden County Municipal Utilities Authority, 2018.

¹⁰⁸ The New Jersey Legislature’s Joint Task Force on Drinking Water Infrastructure, relying on analysis sponsored by Natural Resources Defense Council, states that utilities could save an estimated \$22.5 million per year from cost-effective reductions in water loss (including both leakage and “apparent losses” resulting from inaccurate billing and metering). Those savings could provide a revenue stream sufficient to raise and repay \$350 million in bonds (assuming a four percent interest rate and a 25-year repayment schedule) to fund investments in fixing leaky distribution systems, without increasing water rates. New Jersey Legislature, Joint Legislative Task Force on Water Infrastructure, *Final Report*.

¹⁰⁹ “Water Quality Accountability Act,” NJDEP, accessed August 24, 2018, https://www.state.nj.us/dep/watersupply/g_reg-wqaa.html.

¹¹⁰ “Asset Management Policy Program: Status,” NJDEP, accessed August 24, 2018, <https://www.nj.gov/dep/assetmanagement/status.html>.

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- ¹¹¹ Jersey Water Works, *Our Water Transformed*, p. 37.
- ¹¹² New Jersey Legislature, Joint Legislative Task Force on Water Infrastructure, *Final Report*.
- ¹¹³ For example, see Jersey Water Works, *Balancing Green and Gray Solutions to CSO Management*, 2018, <https://www.jerseywaterworks.org/wp-content/uploads/2018/12/Balancing-Green-and-Gray-CSO-FINAL.pdf>. Some of the many examples of water and sewer utilities finding green infrastructure and water efficiency to be cost-effective alternatives to exclusive reliance on gray infrastructure can be found in the following reports: Natural Resources Defense Council, *Rooftops to Rivers II*, February 7, 2015, <https://www.nrdc.org/resources/rooftops-rivers-ii-green-strategies-controlling-stormwater-and-combined-sewer-overflows>; Natural Resources Defense Council, *Waste Less, Pollute Less: Using Urban Water Conservation to Advance Clean Water Act Compliance*, August 28, 2014, <https://www.nrdc.org/resources/waste-less-pollute-less-using-urban-water-conservation-advance-clean-water-act-compliance>.
- ¹¹⁴ “Final Synthesis Released on EPA’s Peer-to-Peer Convening,” National Association of Clean Water Agencies, July 25, 2017, <http://www.nacwa.org/news-publications/news-detail/2017/07/25/final-synthesis-released-on-epa-s-peer-to-peer-convening>.
- ¹¹⁵ “New Jersey Infrastructure Trust,” New Jersey Infrastructure Bank, <https://www.njib.gov/njeit/>; NJDEP & NJEIT, *Funding Water Infrastructure for New Jersey*, May 2017, https://www.nj.gov/dep/dwq/pdf/NJEIFP_Funding_Booklet20170517.pdf.
- ¹¹⁶ U.S. Department of Agriculture, Rural Development, “Water and Environment Programs,” accessed April 16, 2019, <https://www.rd.usda.gov/programs-services/all-programs/water-environmental-programs>.
- ¹¹⁷ New Jersey Legislature, Joint Legislative Task Force on Water Infrastructure, *Final Report*.
- ¹¹⁸ See *Our Water Transformed*, p. 62; and Chang, *Upgrading Our Water Systems: A National Overview of State-level Funding Initiatives for Water Infrastructure*, June 2017, <https://www.njfuture.org/wp-content/uploads/2017/06/Jersey-Water-Works-Water-Infrastructre-Funding-Report-6-2017.pdf>.
- ¹¹⁹ See, e.g., N.J.S.A. § 40A:5A-12.1 (authorizing utilities and sewerage authorities to transfer to a local municipal or county budget any “undesignated fund balance or unreserved retained earnings” up to 5 percent of the annual costs of operation of the authority).
- ¹²⁰ The Joint Legislative Task Force on Drinking Water Infrastructure, *Final Report*.
- ¹²¹ This practice is distinct from another, that of shared services, where a utility pays a municipality for provision of services (e.g., billing, legal, vehicle maintenance) legitimately linked to the utility operations. Appropriate shared services agreements provide a net benefit to the utility customers, who otherwise would need to obtain these services through outside contracts or increased internal staffing.
- ¹²² A. 3375, introduced 2/12/2018, <https://www.njleg.state.nj.us/bills/BillView.asp?BillNumber=A3375>.
- ¹²³ Bipartisan Policy Center, *Safeguarding Water Affordability*, September 2017, pp. 26-30, <https://bipartisanpolicy.org/wp-content/uploads/2017/09/BPC-Infrastructure-Safeguarding-Water-Affordability.pdf>.
- ¹²⁴ For example, a series of recent publications by the US Water Alliance explores various factors to consider when evaluating consolidation. “Utility Consolidation,” US Water Alliance, <http://uswateralliance.org/initiatives/utility-consolidation>.
- ¹²⁵ “Water Conservation Portal—Low-Income Water Rate Assistance Program,” California State Water Resources Control Board, https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/assistance/.
- ¹²⁶ S. 1073, enacted March 18, 2019 as P.L. 2019, c.42, <https://www.njleg.state.nj.us/bills/BillView.asp?BillNumber=S1073>.
- ¹²⁷ California Public Utilities Commissioner, Proceeding No. R-17-06024, https://apps.cpuc.ca.gov/apex/f?p=401:56:0::NO:RP,57,RIR:P5_PROCEEDING_SELECT:R1706024.
- ¹²⁸ Roger D. Colton, *State Legislative Steps to Implement the Human Right to Water*, March 2015, p. 11, <http://www.detroitmindsdyng.org/wp-content/uploads/2015/11/2015-colton-cali.pdf>.
- ¹²⁹ States are authorized to provide grants from the Clean Water State Revolving Fund (CWSRF) to help municipalities receiving infrastructure funding implement low-income affordability programs, if low-income customers will be burdened by rate increases attributable to a CWSRF-funded capital project. 33 U.S.C. § 1383(i)(1). Federal law does not authorize states to do this under the Drinking Water State Revolving Fund.

¹³⁰ See “DNREC Environmental Finance, DPH Office of Drinking Water, Water Infrastructure Advisory Council announce additional subsidization assistance program for low-income subgroups,” Delaware Dept. of Natural Resources and Environmental Control, June 15, 2016, <http://www.dnrec.delaware.gov/News/Pages/DNREC,-DPH,-Water-Infrastructure-Advisory-Council-announce-additional-subsidization-assistance-for-low-income-subgroups.aspx> and “Delaware Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF), January 3, 2018, <http://www.dnrec.delaware.gov/fab/Documents/Workshop-webinar%20presentations/CWSRF%20-%20DWSRF%20Workshop.pdf>.

¹³¹ EPA, “Assessing Financial Capability for Municipal Clean Water Act Requirements,” January 31, 2013, (memorandum from EPA headquarters to regional offices), https://www3.epa.gov/npdes/pubs/sw_regionalmemo.pdf.

¹³² See Van Abs and Evans, *Assessing the Affordability of Water and Sewer Utility Costs in New Jersey*, at Appendix B.

¹³³ New Jersey Legislature, Joint Legislative Task Force on Water Infrastructure, *Final Report*.

¹³⁴ Natural Resources Defense Council, *Go Back to the Well: States and the Federal Government are Neglecting a Key Funding Source for Water Infrastructure*, May 2018, <https://www.nrdc.org/sites/default/files/state-revolving-fund-water-infrastructure-ip.pdf>.

¹³⁵ See, e.g., N.J.S.A. § 40A:5A-12.1 (authorizing utilities and sewerage authorities to transfer to a local municipal or county budget any “undesignated fund balance or unreserved retained earnings” up to 5 percent of the annual costs of operation of the authority).

¹³⁶ <https://www.njleg.state.nj.us/bills/BillView.asp?BillNumber=A3375>

¹³⁷ For example, the University of North Carolina Environmental Finance Center (EFC) compiles information on water rates from 13 states, extracted from annual surveys performed in those states by government agencies, municipal or utility associations, consulting firms, or nonprofit research organizations. In six of these states, a state government agency is responsible for this data collection; this may be the state environmental agency (Ohio and Alabama), water infrastructure finance agency (Arizona, South Carolina, and Georgia), or public utility commission (Wisconsin). See <https://efc.sog.unc.edu/project/utility-financial-sustainability-and-rates-dashboards>.

¹³⁸ NJAC 7:19-6.5(a)(4) – requires almost all water systems to “[f]ile water rate structures which provide incentives for water conservation with the Department [of Environmental Protection] and the Board of Public Utilities, as appropriate.” The law includes no timeline for when or how often to file, and it appears that, in practice, these filings are made only when a system files an application for a water supply permit, permit renewal, or permit modification.

¹³⁹ For an extensive effort to collect this data from hundreds of individual utilities and municipalities, see Van Abs and Evans, *Assessing the Affordability of Water and Sewer Utility Costs in New Jersey*.

¹⁴⁰ Personal communication with Eric Hartsfield, BPU staff, October 2017 (regarding data on shutoffs and arrears).

¹⁴¹ Water Research Foundation, *Customer Assistance Programs for Multi-Family Residential and Other Hard-to-Reach Customers*, 2017, <http://www.waterrf.org/PublicReportLibrary/4557.pdf>.

¹⁴² California State Water Resources Control Board, *Options for Implementation of a Statewide Low-Income Water Rate Assistance Program (Draft)*, Jan. 3, 2019, https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/assistance/.

¹⁴³ This approach is now used in the Detroit area, where municipal utilities that purchase water from the Great Lakes Water Authority (GLWA) may receive CAP funding from GLWA. See “WRAP Empowers Communities to Assist Residents in Need,” GLWA, July 13, 2017, <https://outreach.glwater.org/LinkClick.aspx?fileticket=Q4TaBainyQ8=&tabid=146>.

¹⁴⁴ Water Research Foundation, *Customer Assistance Programs for Multi-Family Residential and Other Hard-to-Reach Customers*.

¹⁴⁵ Van Abs and Evans, *Assessing the Affordability of Water and Sewer Utility Costs in New Jersey*. Of those municipalities relying entirely on fixed charges, with no volumetric component, nearly 30% relied only on local property taxes to pay for sewer service.

¹⁴⁶ Blake, B., Portland Water Bureau, “Workable Programs for Low Income Utility Rate Assistance,” <https://www.youtube.com/watch?v=doW9rTq3pI0&feature=youtu.be> (presented at EPA webinar on June 7, 2016, starting at 32:12 in the video); American Water Works Association, “AWWA Approves First Affordability Policy

Statement,” October 24, 2018, <https://www.awwa.org/AWWA-Articles/ArticleId/4941/cid/157/portland-oregon-leader-in-tackling-water-affordability-challenge?category=connections-article>.

¹⁴⁷ All customers received a letter explaining the reason for the rate increase and the availability of the new low-income assistance program to mitigate the effect of the increase:

https://www.clevelandheights.com/DocumentCenter/View/1999/SewerPLanMailer_Corrected

¹⁴⁸ Van Abs and Evans, *Assessing the Affordability of Water and Sewer Utility Costs in New Jersey*.

¹⁴⁹ National Drinking Water Advisory Council, *Affordability Work Group, Recommendations of the National Drinking Water Advisory Council to the U.S. EPA on its National Small Systems Affordability Criteria*, July 2003, https://www.nclc.org/images/pdf/energy_utility_telecom/water/recommendations_july2003.pdf.

¹⁵⁰ See S. 3564, “Low-Income Water Customer Assistance Programs Act of 2018,” <https://www.congress.gov/bill/115th-congress/senate-bill/3564>; S. 3015, “Water Affordability Act of 2018,” <https://www.congress.gov/bill/115th-congress/senate-bill/3015>; H.R. 2328, “Low-Income Sewer and Water Assistance Program Act of 2017,” <https://www.congress.gov/bill/115th-congress/house-bill/2328>.

¹⁵¹ 42 USC 300j-12(d)(2) and 33 USC 1383(i)(3).

¹⁵² Natural Resources Defense Council, *Go Back to the Well*.

¹⁵³ 33 U.S.C. § 1383(i)(1).

¹⁵⁴ Information in this appendix is drawn from published sources, including the following, as supplemented by the expertise of contributors to and reviewers of this paper: Water Research Foundation, *Best Practices in Customer Payment Assistance Programs*; Black & Veatch, *Evaluation of Low-Income Assistance Programs*, June 2017, <https://www.mysuezwater.com/sites/default/files/SWNYLowIncomeStudyDraftReport06152017.pdf>; Joan Jacobson, *Keeping the Water On: Strategies for addressing high increases in water and sewer rates for Baltimore’s most vulnerable customers*, November 2016, <http://www.abell.org/sites/default/files/publications/Keeping%20the%20Water%20On.pdf>.

¹⁵⁵ Roger D. Colton, *Baltimore’s Conundrum: Charging for Water/Wastewater Services that Community Residents Cannot Afford to Pay*, November 2017, https://www.foodandwaterwatch.org/sites/default/files/baltimore_water_study-final_report-2017.pdf.

¹⁵⁶ Roger D. Colton, *Baltimore’s Conundrum: Charging for Water/Wastewater Services that Community Residents Cannot Afford to Pay*, November 2017, at 39 https://www.foodandwaterwatch.org/sites/default/files/baltimore_water_study-final_report-2017.pdf (quoting Carroll, Colton and Berger (2007). *Ratepayer Funded Low-Income Energy Programs: Performance and Possibilities*, at 132, Apprise, Inc.: Princeton (NJ)).

¹⁵⁷ The Water Research Foundation’s 2017 report on water customer assistance programs for multifamily residential buildings cited a 2015 University of Florida study that found that water efficiency improvements in multifamily housing units can result in per-household water use reductions of 57–66 percent, with a savings (for customers of the particular utility studied) of \$346–400 in annual water and wastewater costs. *Customer Assistance Programs for Multi-Family Residential and Other Hard-to-Reach Customers*, 2017, <http://www.waterrf.org/PublicReportLibrary/4557.pdf>; Florida Department of Agriculture and Consumer Services, Office of Energy, *Florida Multifamily Efficiency Opportunities Study*, January 2015, <http://www.freshfromflorida.com/content/download/60388/1263496/MFEOpportunities>. A 2018 report, based on a pilot program in Chicago, found that water efficiency improvements in multifamily affordable housing could reduce water and sewer charges by about 22 percent. Enterprise Community Partners, *Sustainable By Design: Increasing Water Efficiency and Reducing Cost in Affordable Housing, A case study of the Chicago Water-Efficiency Pilot*, April 2018, <https://www.enterprisecommunity.org/download?fid=9310&nid=6660>. A 2008 report by the U.S. General Accounting Office (GAO) reported that water efficiency retrofits are a major opportunity for local public housing authorities. GAO, *HUD Has Made Progress in Promoting Green Building, but Expanding Efforts Could Help Reduce Energy Costs and Benefit Tenants*, GAO-09-46, pp. 14-15, <https://www.gao.gov/assets/290/282596.pdf>.