

BEYOND THE WATER BILL

A Strategy Guide for Developing a Water and Community Affordability Action Plan

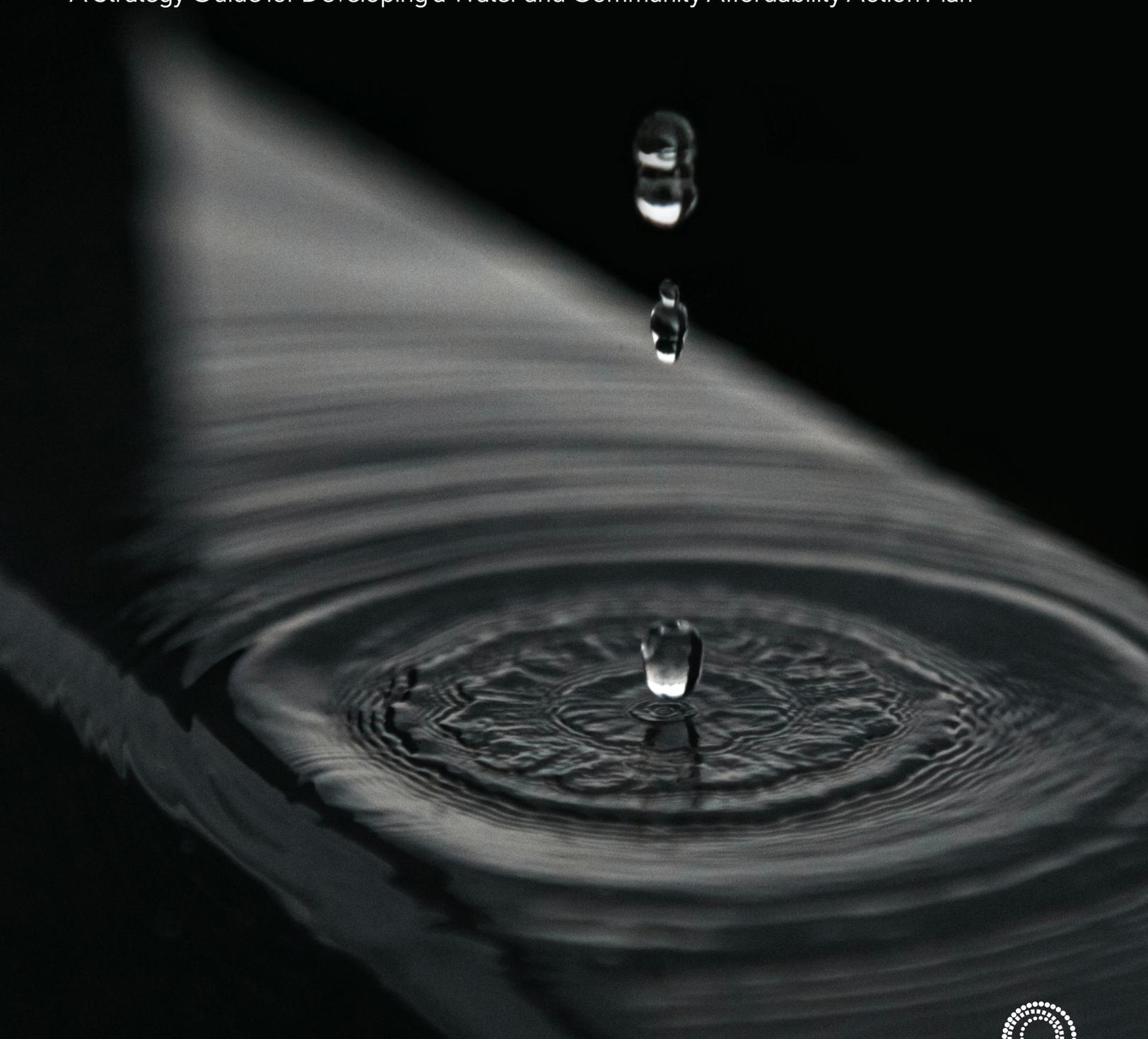


Photo by Ryan Kwok



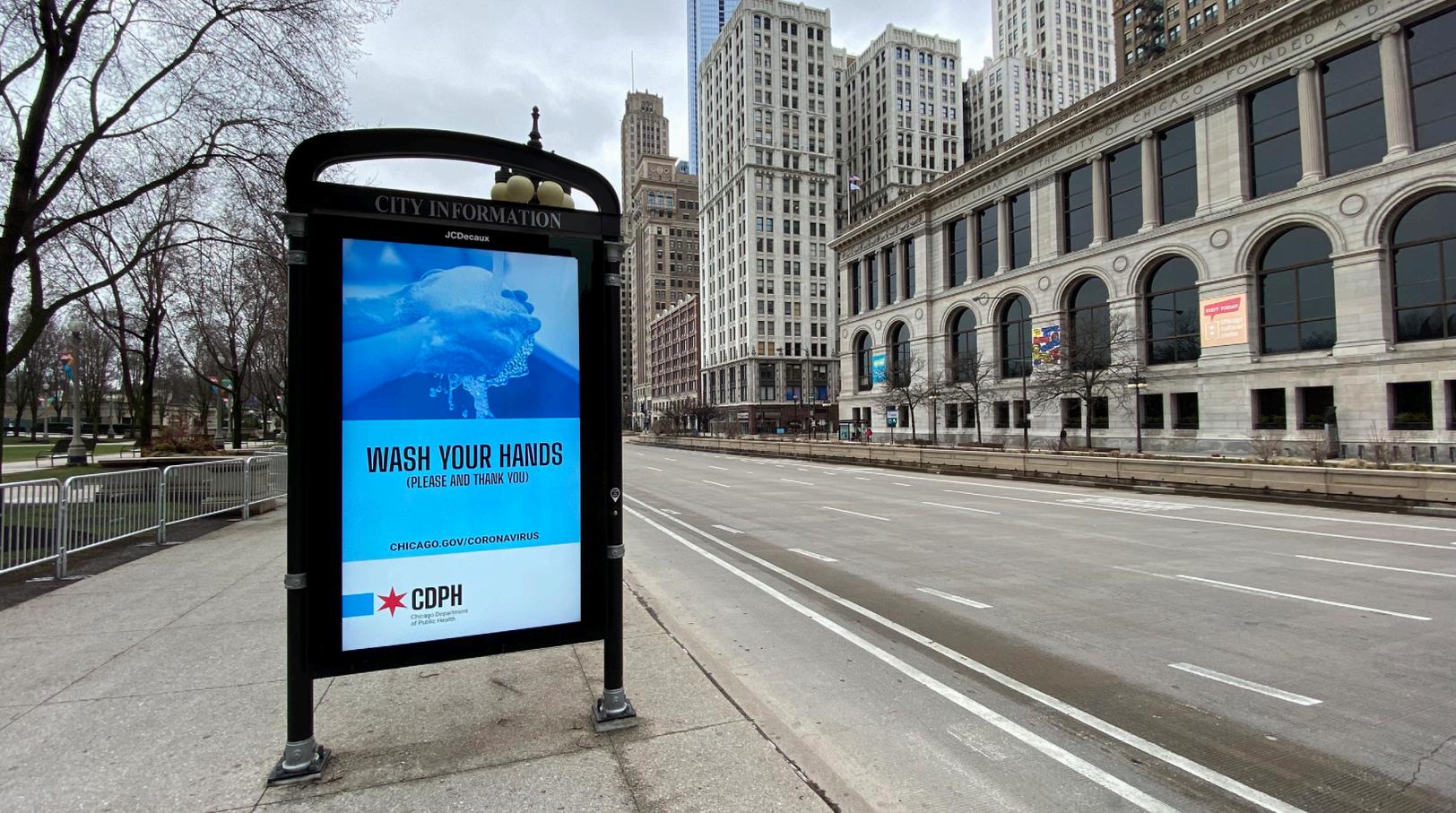


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INTRODUCTION

As this strategy guide went to publication, a global pandemic unlike anything we have seen in our lifetimes was underway. The essential nature of water in our lives is front and center as public officials and celebrities demonstrate handwashing techniques and water utility workers in some communities separate themselves from their families to shelter-in-place on-site and keep utilities operating.¹ Communities have declared moratoriums on water shutoffs and have called for water reconnections in households that had their water shut off, in large part in response to the demands of activists standing up for the rights of households facing an economic crisis as well as a health crisis. There is an increased recognition that this is not a time that any household should be without water.

However, clean and affordable water was essential before and it will continue to be when this immediate health crisis is over. The path ahead has many unknowns. Municipal budgets continue to shrink and millions of Americans, faced with reduced work hours, furloughs, and layoffs, struggle to pay utility bills—issues that are impacting Black, indigenous, and people of color (BIPOC) households even more strongly than others. It is unclear what the new normal for the economy will look like. All of this makes a close look at water and community affordability increasingly urgent.

¹ Masters, Clay. (March 2020). "Utilities Aim To Keep Specially-Trained Employees Healthy And Working." *Iowa Public Radio*. <https://www.iowapublicradio.org/post/utilities-aim-keep-specially-trained-employees-healthy-and-working#stream/0>

EXECUTIVE SUMMARY

The cost of water is on the rise due to decades of disinvestment in our community water supply, stormwater, and wastewater infrastructure systems. Across the country, the expense of water and sewer services has grown much faster than other household expenses over the past two decades.

The affordability impact on low, moderate, and fixed income households has been severe—as a share of income, water bills can be 5 times greater for households in the lowest income quintile as compared to high-income households.² Unaffordable water bills can have dire consequences, affecting credit, leading to water shutoffs, and creating public health emergencies.³

However, water bills are not the only factor driving community unaffordability. Households pay for energy bills, groceries, health care, housing, childcare, transportation, and other necessities. As water infrastructure investment needs continue to rise, it is necessary to look at all aspects of a community's cost of living to help households reach economic stability.

This Strategy Guide includes frameworks, worksheets, and strategies to support residents and advocacy groups as they work to understand water and community affordability challenges and develop strategies to implement community-wide affordability programs.

In this Strategy Guide, advocates will find:

- **An Overarching Framework on Water and Community Affordability:** How do we define and assess affordability?
- **The Utility Perspective on Water Affordability:** How do utilities influence water affordability? How do they balance customer assistance and affordability considerations with revenue needs?
- **An Affordability Action Planning Guide, which includes:**
 - An interactive calculator designed to help the user calculate their community wide or household-specific water and sewer bill burden (or how affordable or unaffordable the bill is)
 - Worksheets designed to help residents and advocates build a case for improved water and community affordability and create water and community affordability strategic action plans

² Consumer Expenditure Survey, U.S. Bureau of Labor Statistics. (September 2019). Table 1101. Quintiles of income before taxes: Annual expenditure means, shares, standard errors, and coefficients of variation, Consumer Expenditure Survey, 2018.

³ Unitarian Universalist Service Committee. (May 2016). "The Invisible Crisis: Water Unaffordability in the United States." http://www.uusc.org/sites/default/files/the_invisible_crisis_web.pdf

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A WATER AND COMMUNITY AFFORDABILITY FRAMEWORK

At its simplest, affordability of a service or good is the inexpensiveness of said service or good. Inexpensiveness, however, is entirely subjective based on income, expenses, and other cost of living considerations.

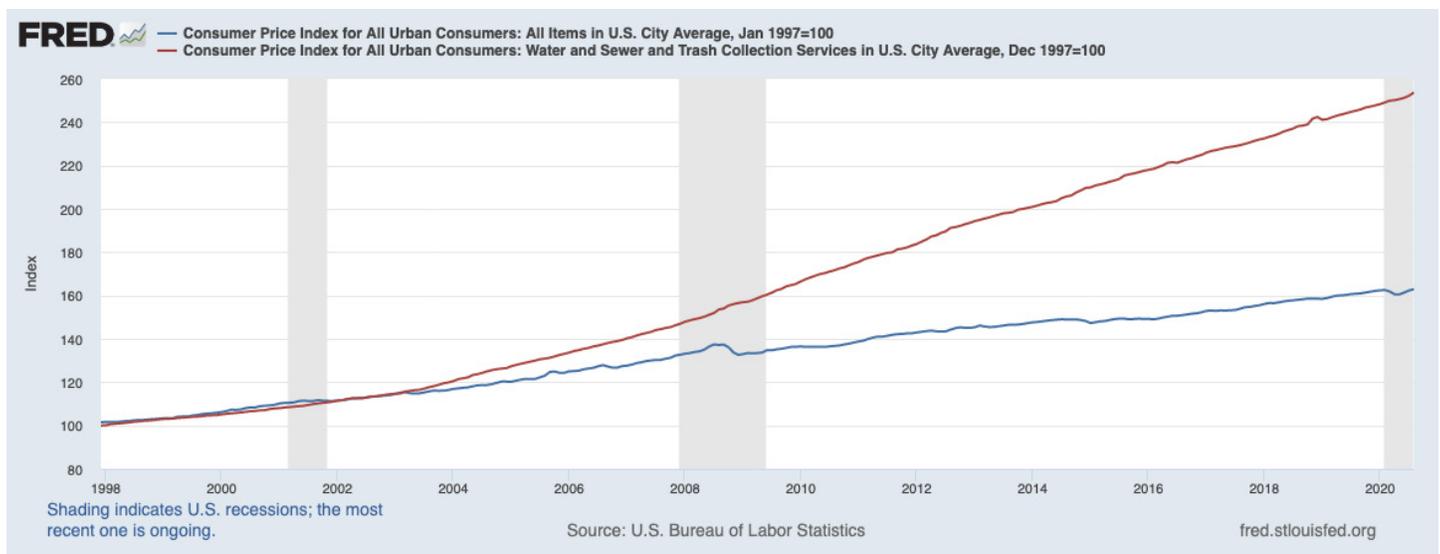
Affordability therefore could be better defined as the sweet spot where household expenses are lowered and incomes are increased enough that households achieve economic success, or have residual income remaining after paying for critical expenses covering shelter, food, utilities, childcare and other necessities. This Strategy Guide focuses principally on reducing expenses. Visit CNT’s Urban Opportunity Agenda for more information on the income side of the equation.



Water is a Growing Expense

Data from the Consumer Price Index shows that the expense of water, sewer and trash services has grown much faster than other household costs over the past two decades (see Figure 1). The affordability impact on low-income households has been severe—as a share of income, water bills can be 5 times greater for low-income households as compared as compared to high-income households. Unaffordable water bills can have dire consequences—affecting credit, leading to water shutoffs, and creating public health concerns.

Figure 1. CPI data showing water, sewer, and trash service expenses as compared to other household costs



Affordability Means More than Rates

As we consider water affordability we need to do so more broadly than just in terms of water rates. While water rate increases get a lot of attention in communities, the overall bill is the expense that affects households.

Consider the following factors:

1. Water bills may house other expenses beyond water supply

Households receive “water bills” covering water, sewer services, and, increasingly, stormwater services. Some bills even include services such as trash, recycling, or fire suppression (see Figure 2 for a sample bill from Cleveland, OH). All of these costs should be considered when determining bill affordability.

2. Fixed fees often make up a large portion of the total water bill

A large share of the water bill is often composed of fixed fees, which are fees collected to cover operations and maintenance of the water supply system. They are not influenced by water usage, so a household could still face a significant expense even if its water usage is very low. The role of fixed fees in paying for water systems and infrastructure should be examined to reduce the regressive impact of water bills on low-income households.

3. Inefficient or leaky water fixtures drive up costs

Older homes that have not seen needed efficiency improvements or fixture upgrades will use more water. Even if rates are relatively low on a per-gallon basis, total bills can be unaffordably high. Affordability efforts must include help for households to improve efficiency and fix leaks. Data on water use and water bill costs can help target efficiency programs. As has been the case in the energy sector, smart meters can make that data more available to customers or trusted partners, but only if data availability is prioritized as part of smart meter adoption.⁶

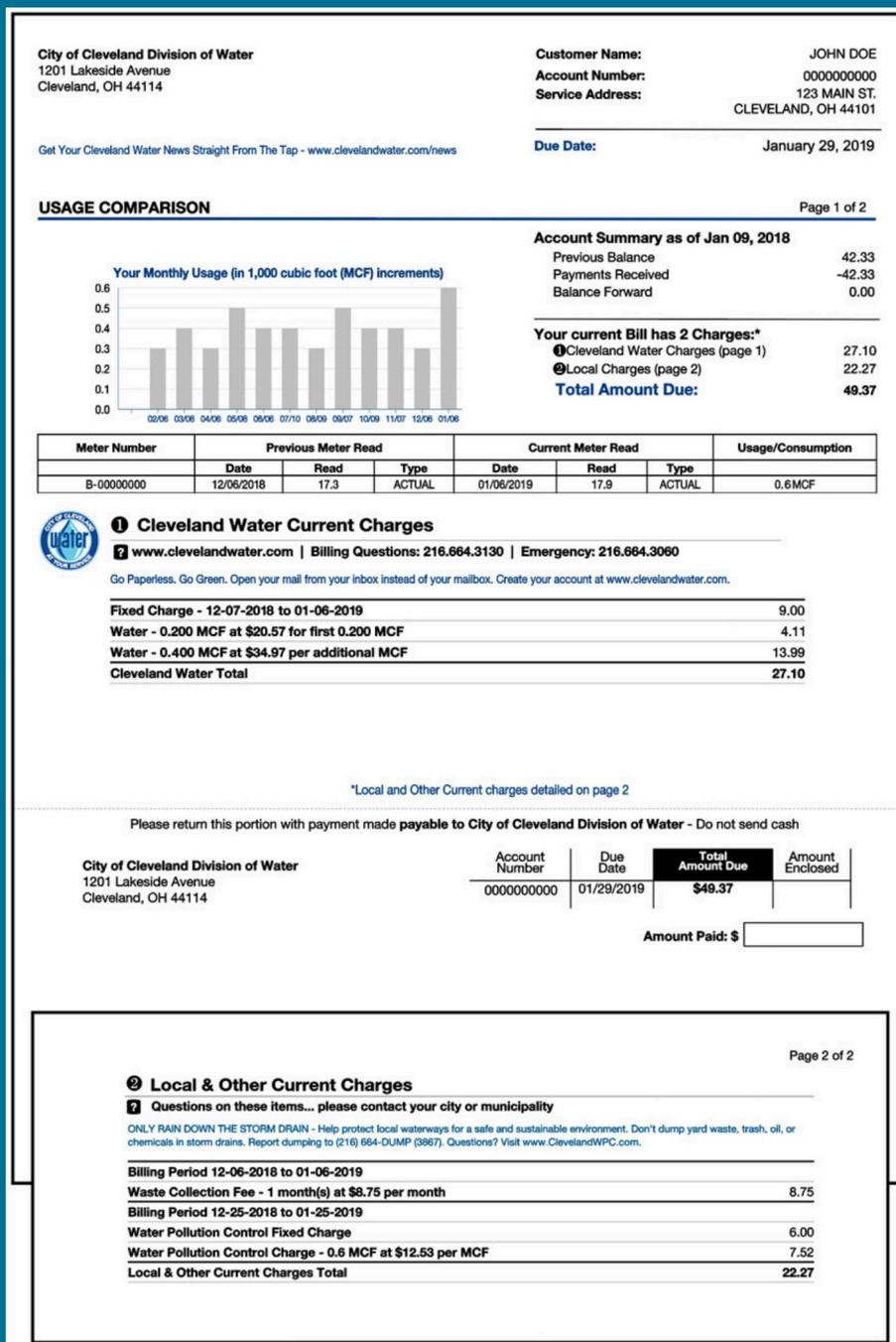


Figure 2. Sample bill from Cleveland, OH

⁶ Thill, David. (June 2019). "Illinois smart meter data illustrates demographic divides in electricity use," Energy News Network. <https://energynews.us/2019/06/27/midwest/illinois-smart-meter-data-illustrates-demographic-divides-in-electricity-use/>

4. Inability to pay bills could lead to penalty fees and reconnection charges

Households that struggle to pay their water bill may face additional costs—late payment fees, reconnection fees and financing charges. This could result in low-income households ultimately paying more for less water service than higher-income households that can afford their bills and thus avoid such charges.

5. The value of water (what residents are willing to pay) is defined by our perception of quality of service

Aside from the dollar amount of a given household's bill, how we value water also affects our sense of its affordability. If water is safe and clean and customers are assured that their payment is being used to keep the water system in good working order, they value and are willing to pay for water. If, on the other hand, the water coming out the tap is contaminated and undrinkable, customers will lose trust in the utility to upkeep the system, and no price will seem reasonable for that water.

6. Water reflects and amplifies inequality

Black, indigenous, and people of color (BIPOC) are more likely to experience economic inequality due to historical and current systemically racist policies and practices and will therefore experience higher bill burdens across the board (water, energy, transportation, etc.). BIPOC also experience health disparities, which further stress financial burdens. For instance, an unaffordable water bill may lead to nonpayment, which may lead to water shutoffs. Water shutoffs can sometimes cause a Centers for Disease Control and Prevention-recognized illness, Shut-off Related Illnesses (SRIs). SRI impacts to households that may have existing health disparities can lead to dire (and expensive) health complications.

In considering water and community affordability, it is critical to uncover race-based disparities in water infrastructure investment and water quality and consider affordability impacts and solutions through the lens of existing racial inequities.

⁷ Teodora, M. and Switzer, D. (2017). "The color of drinking water: Class, race, ethnicity, and Safe Drinking Water Act compliance". Journal AWWA. 109(9): 40-45.

⁸ Dig Deep and US Water Alliance. (2019). "Closing the water access gap in the United States: A national action plan." <http://uswateralliance.org/resources/publications>

Assessing Water Affordability

The conventional method used by the U.S. EPA to define an affordable water and sewer bill provides that the bill should make up no more than 5% of median household income in a community. To understand what that means to households of different incomes, consider a water and sewer bill of \$125 per month:

- For the median income household in the U.S. making \$62,000, a \$125 water and sewer bill per month is 2.5% of household income, which is affordable by EPA's standard.
- However, 20% of U.S. households made less than \$25,000 in 2018. For those households, a \$125 monthly water bill is 6% or more of their household income, an unaffordable share.

In an attempt to provide a more nuanced look at water system finances and affordability for lower-income households, the American Water Works Association (AWWA) and other partners developed a new water affordability standard in 2019. This new method looks at the prevalence of poverty in a community and the impact of a basic water, sewer, and stormwater bill on low-income households to benchmark water affordability. We have applied this standard to several communities to illustrate the burden of current water bills on low-income households (Table 1). [Visit our interactive calculator](#) to calculate your own bill burden.

Water Affordability vs. Assistance Programs

The (un)affordability of water is defined by looking at the percentage a water bill takes up of a household's income. Water affordability programs work to ensure that water bills take up no more than a specified percentage of a household's monthly income, particularly low-income households (see [Philadelphia, PA's Tiered Assistance Program](#)). Alternatively, water assistance programs tend to offer support to households on a case by case, bill by bill basis. Some examples of assistance programs include a one-time discount, a payment plan for an unaffordable bill, or even education around water conservation and efficiency.



Photo by CDC

Table 1. Water Affordability Assessment in Four Great Lakes Communities

City	Basic Monthly Water, Sewer, and Stormwater Bill ¹	Lowest Income Bracket ²	Water Bill as Share of Lowest Income Bracket	Share of Households Below 200% of Poverty Level ³	Water Affordability Assessment ⁴
Cleveland	\$102	\$830	12.2%	57%	Very High Burden
Cleveland Affordability Rate ⁵	\$66	\$830	8.0%	57%	High Burden
Detroit	\$90	\$849	10.6%	60%	Very High Burden
Detroit with Downspout Disconnect ⁶	\$63	\$849	7.4%	60%	High Burden
Chicago	\$47	\$1,737	2.7%	37%	Moderate- High Burden
Chicago Low Income (coming in 2020) ⁷	\$23	\$1,737	1.4%	37%	Moderate- High Burden
Buffalo	\$52	\$1,155	4.5%	51%	Moderate- High Burden
Buffalo Low Income Rate	\$47	\$1,155	4.1%	51%	Moderate- High Burden
Buffalo Very Low Income Rate ⁸	\$45	\$1,155	3.9%	51%	Moderate- High Burden
United States		\$2,120		30%	

Notes:

1. Basic monthly bill assumes 3,985 gallons (0.53 MCF, rounded up to 0.6 MCF) used per month and 2,000 square feet of impervious surface. Older buildings or larger households may have bills significantly higher than this.
2. Lowest Income Bracket is the upper income threshold of the lowest household income quintile in the community. This means 20% of households in the specified population earned less than that amount. Data Source U.S. Census Bureau, American Community Survey 2018: ACS 1-Year Estimates Table B19080
3. The share of households below 200% of the poverty line is used to inform the water affordability burden (see the following footnote). Poverty threshold in 2019 was \$21,330 for a family of 3. Data source U.S. Census Bureau, American Community Survey 2018: ACS 1-Year Estimates Table S1701
4. A Very High Burden community is one where 35% or more of households earn less than 200% of poverty level and water bills take up 10% or more of Lowest Income Bracket. A High Burden community exceeds that poverty threshold, but water bills are 7%-9% of Lowest Income Bracket. The Moderate-High Burden assessment applies to communities with a poverty rate at or above 35%, even if the basic utility bill is less than 7% of the Lowest Income Bracket.
5. Data Source <http://www.clevelandwater.com/customer-service/water-rates/rates-fees> and <https://www.neorsd.org/customers-service-page/sewer-rates-and-stormwater-fees/> and <http://www.clevelandwater.com/customer-service/water-rates/discount-programs>
6. Detroit offers a 25% discounted stormwater fee for a disconnected downspout. Data Source <https://detroitmi.gov/sites/detroitmi.localhost/files/2019-07/Water%20Rates%202019-2020%20Detroit%20Final%20for%20web.pdf> and <https://detroitmi.gov/sites/detroitmi.localhost/files/2019-07/Explanation%20of%20Charges%20-%20Residential%20Customers%20-%20FY2019-20%20Final.pdf>
7. Data Source https://www.chicago.gov/city/en/depts/fin/supp_info/utility-billing/water-and-sewer-rates.html and https://www.chicago.gov/city/en/depts/fin/provdrs/utility_billing/svcs/utility-bill-relief-program.html
8. Data Source <https://buffalowater.org/wp-content/uploads/2019/03/ScheduleofRatesFeesEffectiveJanuary12019.pdf> and <https://buffalosewer.org/app/uploads/2019/06/Final-SSR-19-20.pdf>

The real-world examples in Table 1 point to the affordability challenge communities are facing, especially those confronting the costs of repairing and replacing aging infrastructure. However, we know that water, sewer, and stormwater bills are not the only bills that customers are faced with. The new affordability standard

recommends considering the burden of housing costs for low income households as well. However, neither the existing U.S. EPA affordability measure nor this new calculation factors in the other critical monthly household expenses that families pay for, such as transportation and energy bills.

Assessing Community Affordability

Households pay for more than just water, which changes the conversation on what the overall bill burden might be. Affordability strategies should be applied to broader cost of living categories (housing, transportation, etc.) to help households reach economic stability.

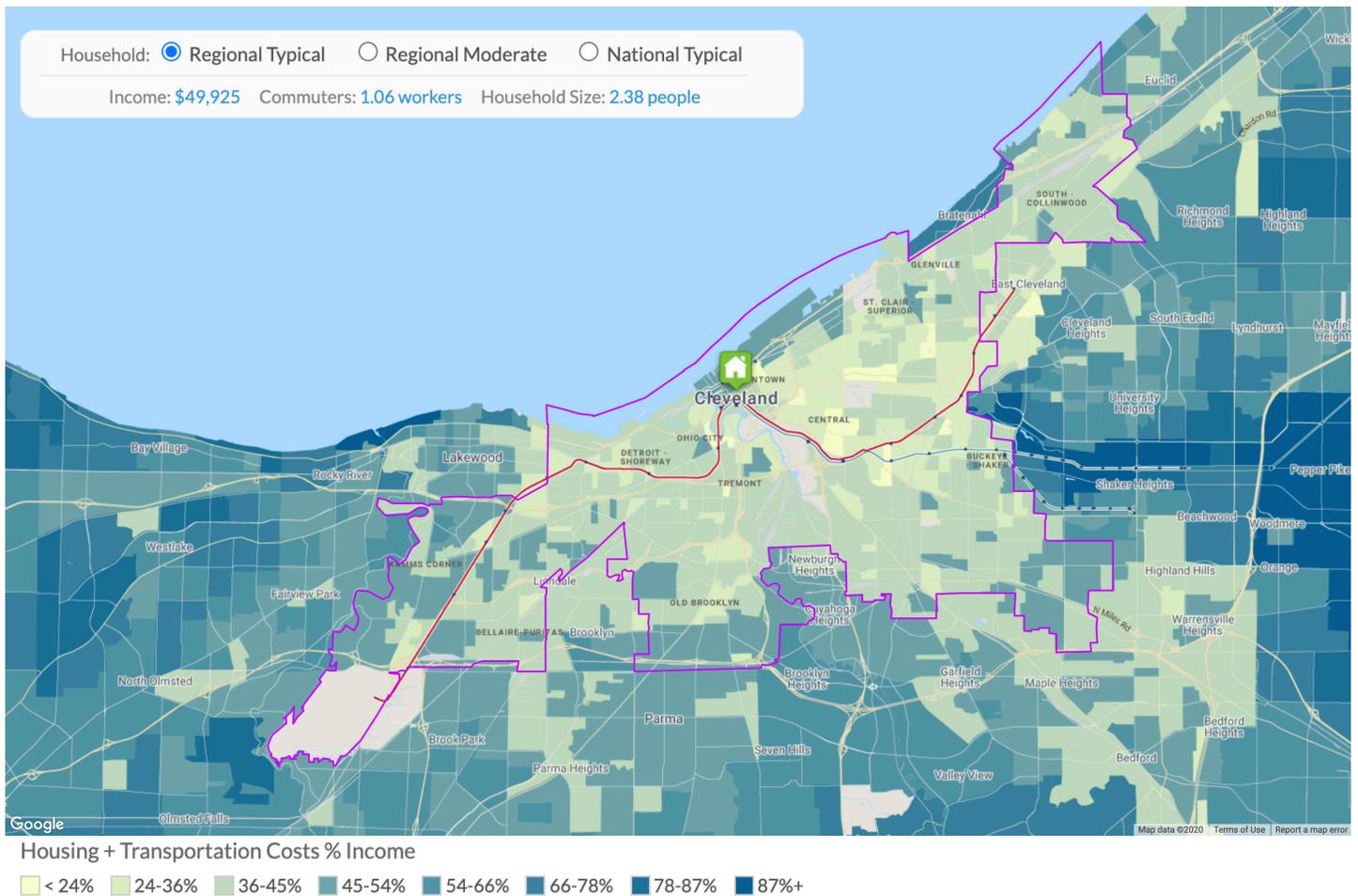
Residual Income

One way to understand broader community affordability is to look at residual income. Residual income, in this context, is the amount of money a household has left each month after all critical expenses and utilities (housing, transportation, health care, childcare, energy, water, sewer, and stormwater) are accounted for. Knowing that water infrastructure needs investment and the cost of service may likely go up, are there savings elsewhere that can be created for households to balance the impacts of water infrastructure investment? For instance, communities could develop energy efficiency programs, improve public transit options, or expand affordable housing programs.

Considering Housing + Transportation Burdens

CNT's Housing + Transportation Affordability Index is a national tool that can help put affordability in context. In the Cleveland area, a typical family earning a regional moderate income of \$39,940 would spend 24% of their income on housing—an affordable level by most measures, but that household would face transportation expenses of 22% on average, which is high (see Image 2). Low-income households tend to spend even more on transportation as a share of their income; which could mean that some households in Cleveland might spend upwards of a quarter or more of their income on transportation.^{12,13} The unaffordability of the water bill to households in the lowest income quintile becomes even greater if we consider the water, sewer, and stormwater bill alongside transportation and housing costs. The same is true when considering energy bills; low income households often pay a greater share of income for electricity and natural gas than other households.¹⁴

Image 2. Housing + Transportation Costs in Cleveland



¹² Institute for Transportation & Development Policy (ITDP). (May 2019). "The High Cost of Transportation in the United States." Transport Matters. <https://www.itdp.org/2019/05/23/high-cost-transportation-united-states/>

¹³ CNT. (2020). H+T Affordability Index. <https://htaindex.cnt.org/map/>

¹⁴ American Council for an Energy Efficient Economy. (2019). "Understanding Energy Affordability." <https://www.aceee.org/sites/default/files/energy-affordability.pdf>

THE WATER UTILITY PERSPECTIVE: BALANCING REVENUE AND AFFORDABILITY GOALS

Current Water Charges		
Water Usage	12 CCF @ \$2.376	\$28.51
Water Service Charge	\$7.02 @ 1 month	\$7.02
Water Subtotal		\$35.53
Current Sewer Charges		
Sewerage Disposal	12 CCF @ \$5.273	\$63.28
Sewerage Service Charge	\$6.04 @ 1 month	\$6.04
Drainage Charge	\$20.63 @ 1 month	\$20.63
Sewer Subtotal		\$89.95
Total Water & Sewer Charges		\$125.48
Other Charges		\$0.50
Assistance Donation		\$0.50

Photo by WWJ/Sandra McNeill

This section outlines how water utilities collect revenue to maintain and operate their water systems, and employ customer assistance strategies to improve affordability.

Overview

Water utilities influence affordability of their services in several ways. Fixed fees, the type of rate structure, and the cost per unit of water largely dictate the burden that water bills will place on low-income customers. The list of capital improvement projects and how the utility chooses to prioritize those projects is also a major driving force of the rate setting process.

A well-run and efficient water utility can indirectly lower the bill for all customers, including low-income ones. However, even methodically prioritized capital projects and well-designed rates at efficient utilities can produce bills that are too high for the lowest income customers. Water utilities should assess their bills within the context of the income of their service area. If such an assessment shows affordability concerns, utilities should consider implementing a percent-of-income-based water affordability program or work with community partners to design customer assistance programs (CAP).

Affordability Action Planning Guide

See our [Affordability Action Planning Guide](#) for [worksheets and tables](#) that help advocates make the case for water and community affordability programs to utility managers and municipal decision-makers.

Utility Bills and Rate Design

Fixed Fees

The fixed fee is a line item on the water bill not influenced by water usage. This fee contributes to revenue stability for the utility, often covering operations and maintenance of the water supply system. It is tempting for a utility to make this fee a high portion of the overall bill since it is “guaranteed” revenue for the utility, unchanged by household water usage. However, a high fixed fee gives customers less control over their water bill: it dilutes conservation price signals, and impacts affordability. [See Figure 2 on page 6 for a sample bill.](#)

Rate Designs

On top of the fixed fee, a water utility sets its volumetric rate or charge. There are several types of volumetric rates that utilities can apply; the rate type and any affordability considerations are determined during the rate-making process. Water utilities across the country have years of infrastructure backlogs to address. However, setting rates to the level needed to address this backlog would prove unaffordable to customers. Therefore, rate setting becomes a balancing act between utility infrastructure investment needs and customers' ability to pay.

With a uniform rate structure each unit of water costs the same. An increasing block structure is often used to encourage conservation by charging more for the units of water at higher usage levels. Decreasing block structures, no longer common, are the reverse: units of water become cheaper as the customer uses a higher volume. "Lifeline rates" are rates specifically designed in response to affordability concerns. The term is somewhat ambiguous, but American Water Works Association's (AWWA) definition from its M1 Manual¹⁵ is widely accepted:

The term lifeline rates "is sometimes used for rate structures designed to provide an essential amount of water at a reduced cost to all customers, independent of income level or ability to pay. This minimal amount of water is typically defined as the essential needs of a residential customer (i.e., for drinking, cooking, and washing)

- American Water Works Association's M1 Manual, page 214

A lifeline rate is artificially low; since it is "at a reduced cost," it does not reflect the full cost of providing the service. While this type of rate structure does help low-income customers, it is generally offered to all customers "independent of income level or ability to pay." This means that a high-income customer who happens to use less water, for example because of a small household size, will pay this same artificially low rate. Ideally, a utility would design affordable rates and programs that target low-income customers. Some research has also shown that customers are more likely to pay a bill that they can afford. By setting rates accordingly, a utility might improve its revenue collection.¹⁶

Lifeline Rates

In some cases, this lifeline rate is simply a fixed fee that includes a relatively small volume of water. For instance, as of 2017, 25% of water utilities in Arizona offered some volume of water as a consumption allowance with the base fee; 63% of Georgia utilities offered the same.^{17,18}

Other factors of rate design that affect affordability include billing frequency and the creation of customer classes. More frequent billing, such as monthly as opposed to quarterly, facilitates low-income customers' budgeting needs. Customer classes are created by utilities to allow for different types of residential rate structures, e.g., single-family vs. multi-family. The per unit of cost of providing water service for a multi-family household is usually less than for a single-family one. There has also been recent interest in having a customer class for low-income customers specifically, such as Philadelphia, PA's Tiered Assistance Program, in which income-qualified households are billed a percentage of their pre-tax monthly income – water usage is not factored into the bill.

Competing Priorities in Rate Designs

Typically, a water utility's goals and objectives center on fiscal and water resource efficiency. During the rate setting process, utilities might prioritize full cost of service recovery, water conservation, and economic development. These objectives tend to run counter to customer affordability. For example, a utility trying to improve water conservation might charge more for water to encourage less use, putting a strain on affordability. Likewise, a utility encouraging economic development may choose to keep its commercial/industrial rates low and make up for lost revenue by charging residential customers more per gallon used.

¹⁵ AWWA. (2017). "Principles of Water Rates, Fees, and Charges." M1 Manual

¹⁶ Grant, Mary. (December 2017). "Baltimore's Water Billing Conundrum." Food & Water Watch. <https://www.foodandwaterwatch.org/news/baltimore-water-billing-conundrum>

¹⁷ University of North Carolina at Chapel Hill (UNC) - Environmental Finance Center; WIFA. (2017). "2017 Arizona Water & Wastewater Rates Report." <https://efc.sog.unc.edu/sites/default/files/2018/2017%20Arizona%20Water%20%26%20Wastewater%20Rates%20Report%20-%20final.pdf>

¹⁸ UNC - Environmental Finance Center; GEFA. (2017). "2017 Georgia Water & Wastewater Rates Report." <https://efc.sog.unc.edu/sites/default/files/2018/GA2017WaterSewerRatesReport.pdf>

Customer Assistance Programs (CAPs)

Where affordability concerns persist, a utility should do an assessment of the level of income and other socio-economic characteristics of its service population, compared to customer bills. The results of this analysis will indicate whether there is need for a customer assistance program (CAP).

Assessing the Need & Identifying the Right Type of CAP

There are several ways to measure affordability criteria from a customer perspective, as described above. For the utility, it is important to also look at the service area as a whole to inform how utility resources could be allocated to an assistance or affordability program. The water utility's customer service department is also a good source for assessing customer affordability issues. If the customer service department tracks calls from customers reporting problems or asking for help, the utility should consider how many calls the department receives from customers asking for help, and what types of types of assistance is requested – leaks; efficiency upgrades, unaffordable bills, etc. This information can be used to design a program to be most helpful to a utility's customer base. Table 3 shows results from a 2010 survey by the Water Research Foundation asking utilities which types of assistance the utilities provide.

Table 3. Types of Customer Assistance Programs¹⁹

Customer service options facing payment-troubled customers	Percent Surveyed Utilities Offering Programs ¹
Payment plan to allow customer to pay amount over time	76%
Customer referral to private, nonutility agency	54%
Customer referral to local gov. agency for assistance	49%
Education	35%
In-home conservation assistance	25%
Special billing arrangements	21%
Change in the rate customer is charged	8%
Other ²	8%
One-time bill credit from utility funds	3%

Notes:

- Percentages do not add up to 100 because utilities were permitted to select more than one option.
- "Other" options included accepting postdated checks, payment by credit card, offering a tiered rate corresponding to water use, and elderly assistance programs

The US EPA's 2016 report, *Drinking Water and Wastewater Utility Customer Assistance Programs*, provides case study examples of the different types of assistance offered by utilities across the country.²⁰ The types of CAPs outlined in the report include Bill Discounts, Flexible Payment Terms, Lifeline Rate, Temporary Payment Assistance, and Water Efficiency Upgrades.

CAPs and Community Partnerships

Utilities can ensure success of its CAPs by partnering with charitable and social service organizations that interact regularly with utility customers, especially those who might benefit most from a CAP. Community partners can provide outreach and ongoing program support in a number of ways.

Throughout the development phase of a CAP, community partners can help ensure that the program is being developed in a way that is responsive to community needs.

During the initial outreach phase, partners can help the utility advertise the program, ensuring that residents know about and take advantage of it. Community partners can translate bill stuffers, and table at public events and community fairs, providing supplemental materials and information on program eligibility. This support is particularly important in getting the word out to renters, many of whom are low-income, who might not receive a water bill directly, but may still benefit from the program.

During the intake process, community partners might be able to do the eligibility screening for the CAP, especially if they already support applicant screening for other income qualifying programs like LIHEAP (Low-income Home Energy Assistance Program), AFDC (Aid to Families with Dependent Children), SSI (Supplemental Social Security Income), Medicaid, SNAP (Supplemental Nutrition Assistance Program, and others.

In general, utilities can engage community partners as a trusted messenger, to ensure that customers know about and take advantage of the CAPs that the utility offers. Partners can also play a longer-term role, providing critical information about their water supply (for instance, water quality updates; informing customers how to flush their water lines after a disconnected service line has been reconnected; etc.) and being a resource that households can turn to with questions and concerns.

¹⁹ WEF. (2010). "Best Practices in Customer Payment Assistance Programs." Project #4404. <https://www.waterrf.org/research/projects/best-practices-customer-payment-assistance-programs>

²⁰ USEPA. (n.d.) "Drinking Water and Wastewater Customer Assistance Programs." <https://www.epa.gov/waterfinancecenter/compendium-drinking-water-and-wastewater-customer-assistance-programs>

Funding a CAP

Though CAPs tend not to be very expensive to run the source of funding for CAPs can be controversial, depending particularly on the state where the utility is located. In 2017, the Environmental Finance Center at the University of North Carolina, Chapel Hill, released a report, *Navigating Legal Pathways to Rate-Funded-Customer Assistance Programs*, looking at the main legal barriers and opportunities to establishing an assistance program for low-income water customers in each of the 50 states, as well as Puerto Rico and the District of Columbia.²² Specifically, the report looks at whether rate revenues can be used to fund CAPs, since this is the most reliable, and perhaps most adequate, funding source for CAPs. The results show that in many states, utility rate revenue is not a clear option for funding CAPs.

Some studies suggest that low-income bill discount programs only represent 1-2% of a utility's total user charge revenues.²¹

Case Studies



Atlanta, GA

Business Case for a CAP

Atlanta, GA made a business case for the implementation of a CAP. The utility analyzed its finances and proved that it would be better off financially by providing a CAP to its low-income customers. By providing some level of assistance, the utility can retain customers, ensure some level of affordable payment from customers (rather than months of nonpayment), reduce its levels of water loss, and minimize bad debt.



Raleigh, NC

Utility of the Future Today Initiative

Progressive utilities, such as those pursuing “Utility of the Future Today” recognition, are called to develop “proactive relationships with stakeholders.” Such relationships may include developing CAPs with funding outside of bill revenues (where this is not allowed) and even beyond what the above list of funding sources can produce. Raleigh, NC instituted a Utility Customer Assistance Program (UCAP) in 2016 that is funded largely by local government general funds. Though fund transfers are not seen as good municipal operations and asset management, Raleigh had limited options since North Carolina discourages rate revenue funding of CAPs. As a forward-thinking utility, Raleigh recognized that assisting utility customers would protect public health, and reduce staff costs and lost revenues associated with water service disconnections.

²¹ AWWA. (2017). “Principles of Water Rates, Fees, and Charges.” M1 Manual.

²² UNC - Environmental Finance Center. (2018). “Navigating Legal Pathways to Rate-Funded Customer Assistance Programs.” <https://efc.sog.unc.edu/project/navigating-legal-pathways-rate-funded-customer-assistance-programs>

LIHEAP as a Model

The federal government's Low-Income Home Energy Assistance Program (LIHEAP) provides block grants to states, tribes and territories to help address the energy bill burden on low-income households. The program varies by place, but typically households are provided a credit on winter energy bills. Households are often also enrolled in the Weatherization Assistance Program, which helps cut bills at their source by assessing home energy use and providing upgrades, such as additional insulation or more efficient appliances.²³

In 2018 and 2019, a similar program was proposed in congress for water, wastewater, and stormwater bills, known as the Low-Income Water Customer Assistance Programs Act.²⁴ The program has not yet been enacted, but has support from many water industry stakeholders and consumer advocates.²⁵

When state law is ambiguous, there are some ways that advocates can help utilities to implement CAPs successfully:

- At the state level, work with utilities and other stakeholders to introduce statutory language that addresses affordability programs in clear, unambiguous terms.
- Support the utility in developing an argument for why a CAP conforms to existing statutes and is not affected by perceived limitations (see Atlanta, GA Case Study).
- Develop an alternative program that does not rely on direct customer rate revenue to fund the assistance to low-income individuals (see Raleigh, NC Case Study).

In states where rate revenues are not an option, or the utility wants to supplement its CAP funding, the following are some additional funding sources:

- Voluntary contributions (e.g., bill round-up) – ask water utility employees to donate via their own paychecks; solicit corporate donations, or give regular water utility customers the option of rounding up their bill to a higher number, with the amount rounded going toward funding a CAP.
- Rental income from cell phone and internet providers that lease space on the water utility's towers/tanks – though not applicable in all communities, where possible, leasing revenue can be earmarked to support CAPs. Notably, Madison, WI used revenue from a cellphone company's lease to support its lead service line replacement effort.²⁶
- Service line protection programs - many utilities that allow a third-party insurance company to operate a service line insurance program receive royalties from the third-party company. These royalty funds can be reserved for a CAP.
- Royalties from other utility organizations – Some water utilities partner with other service providers such as gas or electricity utilities to advertise their services. The water utility will receive a "referral" fee that can be applied to the CAP.

²³ U.S. Department of Health and Human Services, "LIHEAP Q & As for Consumers," January 19, 2016 <https://www.aclfhhs.gov/ocs/resource/consumer-frequently-asked-questions>

²⁴ Low-Income Water Customer Assistance Programs Act of 2019. H.R. 4832, 116th Cong. § 1459E <https://www.congress.gov/116/bills/hr4832/BILLS-116hr4832ih.pdf>

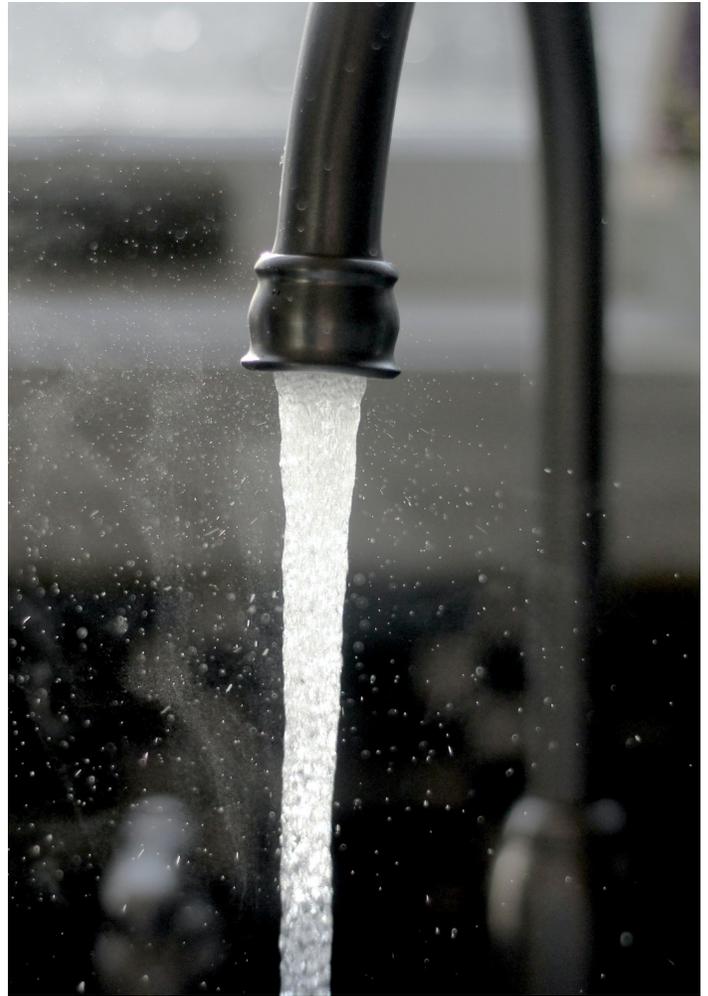
²⁵ Natural Resources Defense Council, et al, "Support Letter for Low Income Water Customer Assistance Programs Act of 2018," October 2018 https://www.nrdc.org/sites/default/files/support-letter-for-low-income-water-customer-assistance-programs-act-of-2018_2018-10-17.pdf and National Association of Clean Water Agencies (NACWA), "Bipartisan Legislation Introduced to Establish a Low Income Water Assistance Program," 2018 <https://www.nacwa.org/news-publications/news-detail/2018/10/23/bipartisan-legislation-introduced-to-establish-a-low-income-water-assistance-program>

²⁶ CNT. (2018). "Madison Lead Pipe Replacement Program." Integrated Water Resource Management Case Study. https://www.cnt.org/sites/default/files/pdf/CaseStudy_Madison.pdf

Operational Efficiency

Good operations and maintenance can lower the cost of running a utility. Since many utilities are public (not for profit) entities, the “savings” from running the utility efficiently are passed on to customers through lower bills. For example, proactive asset management of water infrastructure reduces the risk of high cost infrastructure failure (like leaks and water main breaks) thereby saving the utility money over the long run.

A fiscally prudent public water utility should operate as a self-sufficient enterprise fund within the local government setting, meaning the utility should generate the revenue it needs for operations and maintenance, without relying on transfers from the municipal general fund. In economically-stressed communities, it is sometimes the case that utility revenue is used to fill the holes in the municipality’s general fund. When this occurs, water customers end up paying artificially higher water bills that cover services entirely unrelated to water supply and quality; affordability suffers and trust in local government is eroded. Fund transfers may have a place under extenuating circumstances, of which COVID-19 may provide a tangible example. However, the ongoing financial pressures of funding pension plans, and other general fund items should be handled outside of fund transfers, to ensure that water utilities are able to maintain good asset management and consumer affordability.



¹⁹ WEF. (2010). "Best Practices in Customer Payment Assistance Programs." *Project #4404*.
<https://www.waterrf.org/research/projects/best-practices-customer-payment-assistance-programs>

²⁰ USEPA. (n.d.) "Drinking Water and Wastewater Customer Assistance Programs."
<https://www.epa.gov/waterfinancecenter/compendium-drinking-water-and-wastewater-customer-assistance-programs>

APPLYING WATER AND COMMUNITY AFFORDABILITY CONCEPTS: AFFORDABILITY ACTION PLANNING GUIDE

The following section lays out steps to take in developing an action plan to address affordability in your community. Our Action Plan has three main components, each of which has guidance questions and worksheets to help you build out your plan:

Quick Start Planning Guide

1 Develop a Community Affordability Existing Conditions Baseline

- ✓ Assess existing water affordability conditions
- ✓ Assess water affordability using our Affordability Assessment Calculator
- ✓ Assess Existing Community Affordability Conditions
- ✓ Review other key existing conditions

2 Improve Affordability Across Household Needs

3 Develop Top Priorities for Action and Identify Key Steps Needed for Implementation

Visit our [Affordability Assessment Calculator](#) here.

1 Develop an Existing Conditions Baseline

Creating a common understanding of existing conditions can help get everyone on the same page and identify priorities for action.

✓ Assess existing water affordability conditions by collecting data about water bills and household costs

Unfortunately, data on water bills and other household costs are not always easily accessible. Talk with your water utility about typical water use and typical bills in your area.

The following questions can help guide the information gathering process:



What is the share of a typical water and sewer bill in your community that is made up of fixed fees?

Tip: Fixed fees can penalize low income households who conserve water, but they can also be a way to provide a small amount of “basic water service” to customers, like the “lifeline rate” described in an earlier section. Are the fixed fees in your community contributing to unaffordability for the lowest income bill payers?



What share of the bill can be affected by conservation or efficiency (i.e., what share of the bill is made up of water usages charges)?

Tip: Ideally, a household that uses little water should save money. If residents are living in older homes with outdated fixtures water usage can be high. A targeted conservation and efficiency program can reduce bills, but only if the water rates are structured to benefit water saving.



Does your utility have an income-based rate? What are the income requirements? Does the rate benefit everyone that might need support?



How frequently are you billed? Monthly? Quarterly? Do you have a sense of whether this billing schedule is burdensome on the low-income population in your community?



Does your utility offer commercial/industrial users rate discounts to incentivize economic development? If so, how does this impact residential customer affordability?



Are there other non-water charges on the bill (e.g. trash service)?

Tip: Are those non-water charges affecting households’ ability to pay for water and risking service interruption?



How much water use is typical for households in your area? Is that value different for lower income households?

✓ **Assess water affordability using our Affordability Assessment Tool**

The following tables (Action Plan Tables 1, 2, and 3) show the basic information needed to assess the burden of water bills on low-income households in your community. Visit our interactive tool to auto-calculate the share of the water bill on monthly household income for your community’s lowest income populations.

Water Bill Calculator

	Fixed Fees ¹	Volumetric Charge ¹	Typical Amount of Water Used (gallons per month)	Total Bill
Water Bill typical monthly costs	\$ 2.75	\$.0125	2985 gallons	\$40.06
Sewer Bill typical monthly costs	\$ 1.55	\$ 0.003	2985 gallons	\$10.51
Stormwater Bill typical monthly costs ²	\$ 1.89			\$1.89
Other Costs Any other fixed costs on a typical monthly bill e.g. trash service, irrigation fee, etc.	\$ 5.75			\$5.75
Total				\$58.21

Location

Enter your city, address or zip code for local water bill assessment³

Chatham, Chicago, IL, U:

Community Water Bill Assessment:

Moderate-High Burden

According to [new benchmarks for recommended household affordability metrics](#) the financial burden of water and sewer bills on low-income households in this community is considered a moderate-high burden.

Take Action: Download the free strategy guide, "Beyond the Water Bill" and get started developing a water and community affordability action plan.





View the interactive affordability assessment calculator at:
www.cnt.org/tools/water-bill-calculator

✓ Assess Existing Community Affordability Conditions

The other affordability conditions in your community are important for rounding out the understanding of the financial pressures households face and learning where cost savings in areas other than water could improve financial stability. Action Plan Table 4 shows the national average monthly expenditures for a house at the lowest income quintile and an average income household. Notably, the lowest income households typically pay 9% of their income on utilities, while average households pay a lower share at 7%. These national average figures may not represent conditions in your city—utility costs in many cities are much higher than this national average. The table also provides sources for where to find this information for your local community.

Action Plan Table 4 National Average Monthly Expenditures for Low-Income Households

	U.S. Typical Monthly Cost for Lowest Income Bracket ²⁸		U.S. Typical Monthly Cost for Average Household ²⁹		Sources for data on Costs in Your Community
	Cost	Share of Income	Cost	Share of Income	
Food	\$343	16%	\$660	13%	<u>Consumer Expenditure Survey</u> ³⁰
Shelter ³¹	\$530	24%	\$979	19%	<u>CNT's Housing + Transportation Affordability Index and U.S. Census Bureau</u> ³²
Utilities ³³	\$201	9%	\$337	7%	<u>ACEEE and Consumer Expenditure Survey</u>
Transportation	\$310	14%	\$813	16%	<u>CNT's Housing + Transportation Affordability Index</u>
Healthcare	\$206	9%	\$414	8%	<u>Consumer Expenditure Survey</u>
Other	\$611	28%	\$1,898	37%	<u>Consumer Expenditure Survey</u>

²⁸ Based on the average of the two lowest deciles in Consumer Expenditure Survey, Table 1110. Deciles of income before taxes: Annual expenditure means, shares, standard errors, and coefficients of variation, (2018). <https://www.bls.gov/cex/2018/combined/decile.pdf>

²⁹ All Consumer Units, Consumer Expenditure Survey, Table 1110

³⁰ Expenses vary by place, so a national figure is not always relevant. The Consumer Expenditure Survey also publishes data for U.S. regions (See "Region of residence by income before taxes" tables at <https://www.bls.gov/cex/tables.htm>) and also offers tables for select metropolitan areas, but those metro data are not differentiated by income, so may not be representative of the most income-constrained households. If you are interested in conducting a more detailed analyses of these data see the "Public use microdata" at <https://www.bls.gov/cex/pumd.htm>

³¹ Shelter includes mortgage, property taxes, rent, maintenance, repairs, and insurance. Excludes utilities, furnishings, housekeeping, and household operations.

³² Some housing cost data includes utilities, so beware of double counting.

³³ Utilities include natural gas, electricity, fuel oil and other fuels, telephone, water, and other public services.

✓ Review other key existing conditions



Water-related Hazards and Stressors.

Tip: When discussing water rates, cost and usage are not the only factors. If the water is unsafe to drink or if many households do not have access to water, that needs to be part of the conversation as well. An action plan should list major hazards and stressors related to water. These could include lead or other known contaminants, shutoffs, legal requirements, like federal consent decrees, to address water quality impairments, urban flooding impacts)



Water-Related Opportunities.

Tip: There may be planned water investments, upcoming rate-setting hearings, or legislative efforts that can be opportune moments to promote a water affordability effort. Your affordability action plan should include possible water infrastructure related opportunities, such as state legislative change, planned infrastructure investments, etc.



Non-Water Hazards and Stressors.

Tip: In addition to water risks, households in your community are likely facing other hazards and stressors that may affect their ability to work towards a more equitable water rate, pay their water bills or improve their homes to use water more efficiently. Identifying other major community hazards and stressors that may impact an action plan can show areas that may need additional action for a water initiative to be successful: (e.g. high poverty rate, un(der)employment, deteriorating housing conditions, housing insecurity, high rentership rate that might impact accessibility to services, public health issues, etc.)



Non-Water Community Opportunities.

Tip: Making planned new development or major employers and institutions (hospitals, higher educational entities) part of your water plan can open up new opportunities for funding, investment and catalyzing change.

2 Improve Affordability Across Household Needs

Catalogue existing and potential programs to improve affordability across household needs

Lower-income households face higher burdens for many necessities beyond water. Are there savings that can be tapped in your community in one of these categories to help the financial stability of lower-income households? And/or offset rate increases for higher-income households?

Use Action Plan Table 5 to identify new programs that could help improve community affordability.

Action Plan Table 5 Improve Affordability Across Household Needs

Household Need	Example Savings Programs	Program(s) Your Community Already Has	Program(s) to Explore for Your Community	Potential Partner Organization
Water	Income-based rates, water efficiency retrofits, low-water landscaping			
Telephone	Life-line rates, pre-paid phone cards			
Energy	Energy efficiency retrofits, low income energy assistance, community solar			
Healthcare	Telemedicine, mail-order prescriptions, wellness programs			
Food	Bulk purchasing, direct from producers, food waste diversion			
Transportation	Transit passes, carsharing, bicycle and pedestrian amenities, local fresh groceries			
Shelter	Preservation of affordable housing, roommate matching programs, accessory dwelling units			

Catalogue existing and potential programs to improve affordability across household needs

You have established that your community should take action on improving water and community affordability. You have evaluated existing programs and identified some new programs that are key to addressing community affordability concerns. Use the Action Priorities Worksheet and Action Plan Table 6 to identify what your community's priorities might be and build out your next steps.

✓ Action Priorities Worksheet

Page 1

Priorities could include everything from implementing an income-based rate or scaling up a water and energy efficiency program, to improving affordable transit opportunities).

Some water-related priorities might be:

- Developing a water and community affordability assessment and making those findings available to residents and decisionmakers to frame a discussion for change
- Advocating for an income-based rate to lower the bills for the most vulnerable households
- Advocating for a customer assistance program to help households in need with high bills

Priority 1: _____

Priority 2: _____

Priority 3: _____

For each property, consider the following:

Briefly describe the priority:

Identify the ideal impact that results from the priority.

Tip: Impacts could be "x-community's population now understands the water affordability burden" or "low-income households have access to targeted water and energy efficiency programs"

Who benefits? How?

Are there co-benefits to implementing this program/action?

Tip: If the primary benefit is an economic one, or are there other benefits to public health outcomes or the environment that should be tracked?

Who has the power to implement this program/action?

Tip: Is it your local or regional water or energy utility, municipal decision-makers, or another entity?

Are there any policy changes needed to fully implement this program/action?

Tip: Does the municipal code need to be changed? Is there a state policy needed for authorization or incentivization of the program?

Who will administer this program/action?

Tip: Would the administrator need to be a municipal department or the water or energy utility? Or could a non-profit entity house and administer the effort?

Who are the potential partners to make this happen?

Tip: For instance, if your priority involves the water utility, who are the specific community organizations/leaders that should play the role of utility liaison? Do these groups already play that role? If so, what do they do? If not, what would be needed to establish the partnership?

Are there existing programs that this priority can connect to?

What are the levers/motivators needed to drive implementation?

Tip: It could be policy, utility buy-in, municipal buy-in, a benefit-cost analysis, among others.

Is there a cost to this program/action? If so, what is it? What entity/which individuals will bear the brunt of that cost?

Action Plan Table 6 Identify the steps needed to move from ideas to action for each priority

Step	Who does it	When	Any Barriers?	Result

IDEAS TO ACTION

Communities can start developing a Water and Community Affordability Action Plan today. We encourage advocates to use the above Action Planning Guide to start brainstorming ways to address water and community affordability concerns from a holistic and inclusive perspective.

Here are some additional factors to consider when moving this conversation forward with community residents and decision-makers.



Think Differently – Consider how your community’s investments in infrastructure and economic development can cut household expenses, increase sustainability, and create jobs for people currently living in poverty.

Change the Conversation – Are water and community affordability concerns mentioned in your community’s and/or utility’s sustainability goals and programs? Is affordable and clean water supply part of your utility’s mission?

Find Partners: Usual and Otherwise – Which organizations in your community could scale up their impact? What programs could be adjusted to better address affordability and sustainability directly? Who hasn’t yet been invited to the table to help ensure investments create the most impact?

Go after Quick Wins – Look for low hanging fruit to build momentum toward your water and community affordability goal. Is there a project in the next year that could better address the needs of low-income community members?

Measure Progress and Tell Stories of Success – Track and share the impact of your actions as well as the benefits for all residents and businesses.

Study Setbacks – Understanding a program that did not meet expectations may inform and inspire the next successful approach.

Ask for Help – Neither advocacy groups nor local governments and institutions can tackle the affordability challenge alone. State and federal changes to realign investments and create enabling policies are essential. For instance, some states prohibit the use of rate revenue for affordability/assistance - advocates could focus efforts to the state level to lobby for changes that would enable more flexible use of revenues for customer affordability programs (see [recent examples around lead service line replacement](#)³⁴).

Clean and affordable drinking water is a human right.³⁵

As utilities across the country work to balance needed investments in aging infrastructure and community affordability, we hope advocates and municipal leaders use this Affordability Strategy Guide to highlight both water and community affordability solutions that can bring down household expenses and improve resource and economic efficiency. We look forward to hearing how you are addressing affordability in your community.

Please reach out to Anna Wolf (awolf@cnt.org), Jen McGraw (jen@cnt.org), or Stacey Isaac Berahzer (stacey@ibenvironmental.com) with feedback, questions, comments, or to learn more about what we are working on.

³⁴ Emmett Environmental Law & Policy Clinic, Harvard Law School; Environmental Defense Fund. (April 2019). "rates could fund lead pipe replacement in critical states: Laws in states with the most lead services support the practice." http://clinics.law.harvard.edu/environment/files/2019/04/Rates-Fund-LSL-Replacement-States_Harvard_EDF_2019.pdf

³⁵ Gaber, Nadia. (June 2019). "Mobilizing Health Metrics for Human Right to Water in Flint and Detroit, Michigan." Health and Human Rights Journal. <https://www.hhrjournal.org/2019/06/mobilizing-health-metrics-for-the-human-right-to-water-in-flint-and-detroit-michigan/>