



SETTING THE AGENDA

A Mayor's Guide to Water Affordability

CITY HALL

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ABOUT US

The Mayors Innovation Project is a learning network among American mayors committed to “high road” policy and governance: shared prosperity, environmental sustainability, and efficient democratic government. We are a project of COWS based at the University of Wisconsin.

This is one report in a series of water briefs. To read more about financing opportunities, managing water systems, and actionable solutions, take a look at the following resources:

- [Integrated Water Management: A Guide for City Leaders](#)
- [Basic Water Utility Management](#)
- [Paying for Water Systems](#)
- [Actionable Solutions for Public Water Systems](#)

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INTRODUCTION

In the context of aging water infrastructure systems and the general rising cost of urban living, access to clean and affordable water is becoming a greater challenge for households. This issue is further exacerbated by the threat that our changing climate poses to water systems--how are utilities and cities to face climate-induced challenges such as harmful algal blooms, increased precipitation or extended periods of drought as they become far more frequent? Cities and water utilities are thus increasingly faced with a dilemma: water service rates must either increase to accommodate the need for infrastructure repair, replacement, and expansion, or water rates remain static so as not to price out ratepayers, but at the expense of operating an increasingly aging and failing infrastructure. At the fulcrum of this choice sits those most vulnerable to increases in rates: low-to-moderate income households, which are disproportionately made up of women and/or people of color.

The need for updates to our nation's water infrastructure is critical and widespread. The last robust national update to water infrastructure occurred following the Clean Water Act during the 1970s. Many pipelines are still made from lead, a relic from the construction practices of the 1920s. Furthermore, the updates that occurred in the 1970s largely impacted wastewater systems, leaving water infrastructure-- especially drinking water infrastructure--in rapidly deteriorating states. Cities that face drinking water consent decrees with the EPA must use any money left over on wastewater, ensuring it doesn't discharge into urban streams or rivers. This leaves even less money to support drinking water infrastructure.

Up to 15 percent of households in America now pay water bills that exceed the amount defined as affordable by the EPA. Given the increases in overall costs of living in cities, water affordability is a critical issue that threatens the economic stability of our nation's most economically-vulnerable households. Water affordability is not just an issue of financial management, it is a deeply complex socio-economic issue that is layered with issues of access and equity. City leaders and policymakers should consider this a priority, and subsequently a part of discussions about housing affordability, equitable transit access, and economic development. There are longer-term economic and health impacts based in access to water; students miss school because of dirty clothes¹, lead exposure is linked to violent crime², and lack of access to clean water creates larger health disparities³ - this impacts the long-term economic wellbeing and general health of cities. As a mayor providing services to a city, it is important to think of water access as a human right. Access to clean water is necessary to live, so making it accessible and affordable should be a priority for all mayoral administrations.

SETTING THE CONTEXT OF AFFORDABILITY

There is some debate⁴ among stakeholders in this field about how best to measure water affordability. The Environmental Protection Agency (EPA) states that no more than 4.5 percent of household income should be spent on combined water and wastewater bills⁵. This measurement is not universally accepted; even using household income to measure affordability is being debated by the AWWA and others. As this national dialogue evolves, we will continue to update our materials to reflect the most widely-used measure of affordability.

The recent report by **The American Water Works Association, National Association of Clean Water Agencies, and the Water Environment Federation**, developed for the EPA, provides a deeper discussion of the definition of what is affordable.

One framing of water affordability is putting it in the context of “One Water,” also known as Integrated Water Management (IWM). “One Water” promotes a set of principles that recognize all water as a connected resource and considers practical approaches that integrate and optimize urban water systems within the larger context of the city. This concept was developed by the US Water Alliance⁶ and the Water Environment Research Foundation, which define One Water as an approach that “considers the urban water cycle as a single integrated system, in which all urban water flows are recognized as potential resources, and the interconnectedness of water supply, groundwater, stormwater, and wastewater is optimized, and their combined impact on flooding, water quality, wetlands, watercourses, estuaries, and coastal waters are recognized.”⁷ It helps to create a unified view of water resources and how they financially impact households.

This brief provides a roadmap to consider water affordability programs as a means to address aging and failing water infrastructure and diminishing access to clean and affordable water⁸. We describe best practices and innovative solutions so that utilities can address the aging state of water infrastructure systems, while also ensuring residents have equitable access to clean water and wastewater services.

It is also imperative for mayors to focus on the context of their specific city when building an affordability program. For example, cities in regions prone to water scarcity should have a different affordability program compared to cities in water surplus areas, which may be more prone to water quality issues related to flooding. Bottom line, there should be a thorough assessment of the state of the water system and city demographics before affordability programs are implemented.

ASSISTANCE VS AFFORDABILITY

Many articles, programs and cities, use “assistance” and “affordability” interchangeably, but we intentionally make a distinction between the two. Assistance is generally short-term, emergency based, or reflective in discounts on a bill. It is more of a reaction to affordability issues for ratepayers, not an approach that addresses how affordable the base water rates/bills are. In contrast, affordability programs address rates directly while also incorporating customer assistance programs, thus creating a comprehensive affordability program.



South Bend, IN

South Bend water bills are presented to ratepayers under one bill; ratepayers see wastewater, stormwater, and drinking water on one bill, but broken up within the bill. Therefore, when applying a scoping plan for affordability, in the lens of the ratepayer it can be seen as “One Water”- incentivizing one source of water management for the utility. This transparency helps people understand how water is impacting their needs.

TYPES OF RATE STRUCTURES: HOW TO

Rates structures have a direct impact on ratepayers. This is what they see come out of their pockets and is the starting point for affordability. First, design rate structures as equitably as possible, then build assistance programs.

There are four different types of rate structures that take affordability into account: lifeline rates, increasing block rates, fixed rates based on consumption, and income-based rates. It should also be noted, more often than not wastewater charges are based on the amount of drinking water used. While different organizations, cities, and utilities might use different labels for the following types of rate structures, their structures are more or less the same. Use these as a guide in engaging with city staff and communities around rate structures. This list of rate structures will help guide you through decision making, questions to ask, demographic data and utility data. In order to address the affordability of drinking water in your city, it is important to understand how rate structures affect ratepayers, especially low-income households.

TYPE

DEFINITION

EXAMPLE

LIFELINE RATE

This is where households are charged a set or discounted rate for a fixed amount of water. This amount is expected to cover sanitary needs of a household (there isn't a unified standard with different utilities setting different amounts, but monthly sanitary needs should be met). If a household's water use exceeds the initial block, the rates increase.

Los Angeles Department of Water and Power has a Senior Citizen/ Disability Lifeline Rate Program⁹. Eligible low-income households receive a 31 percent reduction in water and sewer rates for the first 1,800 cubic feet of water used in every 2-month billing cycle. After that amount (i.e., the lifeline amount), the standard rate applies. To meet eligibility the customer must be at least 62 years old or disabled, and their income cannot exceed \$41,800 from the previous year (LADWP adjust the income maximum year to year).

INCREASING BLOCK RATES

Block rates are based on the amount of water used by ratepayers. They have also been called conservation rates. Water usage is set in "blocks" and your rate is based upon what block you fall into.

This is what the Las Vegas Valley Water District uses.¹⁰ Here, based upon meter size, they have a set charge for the first 5,000 gallons, per 1,000 gallons. Then the next 5,000 gallons increase in price, with following increases after that.

FIXED RATE BASED ON CONSUMPTION

Like block rates, this structure incentivizes reduced consumption by having blocks based upon the amount of water used. Here utilities offer a fixed rate for all ratepayers, with the fixed rate increasing based upon use and a tiered volume charge based upon consumption. The goal is to reduce water consumption as higher consumption households often see ballooning rates, both in their fixed rate and volume charge.

Austin Water is an example of a fixed rate based upon consumption¹¹. The utility has a monthly fixed rate that every customer pays, but also charges an additional fixed rate based on consumption. They also have consumption rates for every 1,000 gallons used in a household; this rate is also in blocks, so once use exceeds one block the volume rate per 1,000 gallons increases. With enough use, both the fixed rate and the volume rate balloons.

INCOME- BASED RATES

Income-based rates are based upon a household's income. This supports lower-income families who might have higher-than-average consumption because of larger household size or water inefficiencies stemming from leaks or plumbing problems from landlord disinvestment in rental property. It is essentially a progressive water rate, where rates are tiered to make sure rates are affordable for your lowest income households.

Philadelphia Income-Based Water Rate Assistance Program¹²: With their "Tiered Assistance Program"¹³ Their income-based water-rate¹⁴ program, is a water rate structure indexed to income in order to ensure that all households in the city have access to affordable water services. The program defines a low-income consumer as someone earning 150% of the federal poverty level and creates rate tiers based on monthly household income. The utility can devise custom rates for households that have "special hardship," a new dependent, or a person with a serious illness, or if payment would threaten the household's ability to secure "the necessities of life."

OTHER TYPES OF RATE STRUCTURES

These rate structures are more traditional structures that tend to not consider any aspects of affordability:

- Flat fee: Regardless of the amount of water used, all customers are charged the same fee.
- Uniform rate: A constant per unit price is applied to all metered units of water consumed, with a consistent price throughout the year.
- Increasing block rates: The unit price of each succeeding block of usage is charged at a higher unit rate than the previous block(s). This acts as a disincentive to use excessive amounts of water. Many urban locations and locations facing limited water supplies use this rate structure.
- Declining block rates: In contrast to the above, the unit price of each succeeding block of usage is charged at a lower unit rate than the previous block(s). Many rural areas use this structure, as well as areas trying to attract and retain large industrial users and areas with plentiful water supplies.
- Seasonal rates: Rates vary according to the time of year. This is commonly found in locations with seasonal demand such as vacation communities.
- Water budget-based rates: Based on anticipated needs of a household taking into consideration household or property size, a water budget is allocated to the property.

Rate structures can include affordability elements in order to better serve constituents across income levels. For example, there might be an increasing block rate that includes elements of lifeline rates to address the costs of basic water use. Philadelphia is one example of a city that combines its rate structures with an affordability element.



Philadelphia, PA

MORE NOTES ON PHILADELPHIA

It's worth noting that these programs are for anyone who is eligible to participate in the TAP program. Households that aren't enrolled in TAP use a fixed rate based on consumption¹⁵. The program eliminates any debts that are outstanding for more than 15 years. Further, consumers can request the utility to meet with them and look at their specific circumstances to determine if they have a special hardship and, on that basis, devise a custom rate. Delinquencies prior to enrollment can be forgiven under a program to be adopted in the future, but in all cases payment plans must be affordable.

Because water rates are not based upon consumption, households are able to easily budget their monthly water bill. Even with a billing discount assistance program, fixed rates based on consumption can make it harder to budget month to month. Paired with delinquency and hardship assistance programs, income-based rates are a great way to fund a utility while keeping water bills affordable for low-income households- it is better to have more people paying what they can for their water bills than not pay at all.

NOTE ON INCOME-BASED RATES

Income-based rates take time to implement as the idea is still fairly new. Some municipalities are carefully exploring it to make sure they get it right. A lesson learned from Philadelphia is working with other agencies or community partners who already verify income. Through these partnerships, more low-income households will enroll faster, saving on outreach and administrative costs. Don't forget to develop a strong communication strategy so ratepayers know exactly what is going to happen. This can go a long way in reducing administrative costs.

Many municipalities can accomplish income-based rates, as many municipalities have enough middle- and higher-income households to offset lower rates for low income households. They might not make sense for a stormwater fee, where looking at impermeable surfaces can effectively function in a similar way, but for sewer and drinking water rates they can work for many cities.

This is where exploring data on the number of households at various income levels in a city becomes important, while balancing the needs of the utility(s). A key part of this is also designing a program to ensure as much recovery of delinquent payments as possible through payment programs and partial debt relief (it is better for utility(s) to get some money than none).

NOTES ON STORMWATER FEES

Stormwater fees are becoming an increasingly popular way for municipalities to generate earmarked revenues to manage stormwater and make necessary stormwater related investments. Stormwater fees are user fees, charged to each property owner within a municipal service area. They are also considered to be much more equitable than more common methods for investing in stormwater management, such as use of general funds or water bill revenues. This is because each property owner's fee is based on the proportion of stormwater runoff they generate based on the size of the property's impervious-area footprint. This means that properties such as car parks, which would have very small water use based bills and act as a small part of a utility's revenue base, would be expected to contribute in a much greater and more equitable way to the costs of managing stormwater. Stormwater fees promote the 'polluter pays' principle. Another major benefit from the perspective of more even sharing across a community, is that many 'not-for-profit' property owners that are currently exempt from paying taxes into a municipalities general fund are not exempt from a stormwater fee. They are now expected to pay their fair share, given the sometimes-large impervious footprints in the cases of institutions such as universities and hospitals.

WATER AFFORDABILITY IN SOUTH BEND

City officials want to encourage water conservation while keeping affordability in mind- this is especially true in areas in the country vulnerable to water scarcity. Thus, South Bend intends to address the development of rate structures that encourage water conservation and income, with the potential to consider a hybrid conservation/ income-rate structure.

The Executive Director of Public Works of South Bend is developing innovative means to offer discounts for low-income rate payers, focused on conservation. In doing so, he is coordinating with a community organization, Real Services, that verifies income to avoid duplicating income verification services. Currently Real Services manages a federal energy assistance program, with 10% of households in South Bend, Indiana using this service to pay their bills. Because of this, Real Services verifies income up to 200% of the federal poverty level.

Assistance + Intentional Rate Design = Affordability Program

CUSTOMER ASSISTANCE PROGRAMS (CAP)

Customer Assistance Programs, or CAPs, often get mixed up with affordability efforts. A helpful framing is to broaden that concept as an equation: assistance + intentional rate design = an affordability program. CAPs are a key part of building out a city's affordability initiative. CAPs are a key part of affordability, and cities should look at stacking various types of CAPs on top of their intentionally designed rate structure in order to meet constituent needs. The most effective city CAPs are those that derive from active and frequent communication between utility directors and public works directors. We suggest building out rate structure first and then building/stacking CAPs. In this section, we present a guide to different types of CAPs used in cities around the US. Use these as a guide in developing CAPs and think about ways to stack them in combination with setting rates, in doing so many gaps can be closed in ensuring water is affordable to households.

TYPE	DEFINITION	EXAMPLE
GUARANTEED MINIMUM WATER SUPPLY	No shut off policies for households with financial hardship, serious illness, seniors, etc. or on a seasonal basis. These types of programs tend to focus on a smaller set of life circumstances than other programs; however, they have a longer enrollment timeline due to verification of the crisis for as long as the crisis goes on.	Boston Water and Sewer Commission (BWSC) has a "right of service" policy ⁶ . This policy is set up to aid those faced with a medical or financial hardship, seniors, and tenants in situations where landlords are responsible for paying the water utility. Forms to apply for this policy can be filled out online; explore the accessibility of the application and verification process to make sure this program doesn't become another life hurdle during a difficult time
TEMPORARY/ EMERGENCY ASSISTANCE	A short-term or one-time assistance to ratepayers, designed for prevention of disconnection, as well as restoration of service. Like guaranteed minimum water supply, temporary/emergency assistance is offered to those experiencing unexpected hardship or crisis. The main difference is it's designed to be far shorter-term than guaranteed water supply. A benefit here is that the life events they cover tend to be more expansive than those covered by guaranteed minimum water supply, meaning they can aid in stabilizing difficult situations for more households. Where it can fall short is in the design: if a life crisis ends up becoming long-term, the rate payer will lose support as the crisis goes on.	The Portland Water Bureau has a temporary/ crisis assistance program ⁷ . Those eligible (facing a financial crisis) can receive a voucher for assistance of \$500 every 12 months. Portland has attached this program to its larger financial assistance program: to be eligible for temporary/ crisis assistance, one must be enrolled within their financial assistance program. Their financial assistance program is a bill discount program, which we cover below.

CUSTOMER ASSISTANCE PROGRAMS, CONT.

BILL DISCOUNT PROGRAMS/ FORGIVENESS

These tend to be more long-term focused assistance programs based upon income. Bill discount programs are valuable to municipalities that cannot implement income-based rates or want to incentivize water conservation while supporting low-income households. Discount programs don't change people's water rates; they are instead applied to water bills and often have tiers progressively scaled out on income and household size.

The Portland Water Bureau's discount program aids households below 60 percent of median family income (MFI). They include sewer and stormwater management charges within their assistance¹⁸. This is a great example of taking a "One Water" approach in thinking about water affordability past just drinking water rates.

FLEXIBLE TERMS

This is a type of assistance program that aids ratepayers in various ways. You might find flexible terms assistance programs that forgive old debt after a set amount of on time payments through a payment plan, which helps with past-due forgiveness. Programs may adjust bill timing from quarterly to monthly to help households' budgets. Also, programs may provide flat or leveled billing, where the bill is calculating the rate based upon the past 12 months of usage, creating a flat rate monthly bill, helping with monthly finances by charging a predictable water bill.

Tallahassee, Florida water utility has a flexible term assistance program they call "Budget Billing."¹⁹ This program looks at the past year's billing period usage, divides by 12, and charges that number as a rate payer's average monthly bill. From there 10 percent is added to the bill through the next year of billing. The idea here is to protect from underpaying a bill if water usage increases over the period. Once the yearly billing cycle is over, they will calculate the difference between usage and budgeted. The difference will be included in the calculations for the next 21-month billing cycle, with the amount of under or over-payment included in the new budget amount.

ASSISTANCE TO RENTERS

Some residents who are renting may not have an account with a water utility, as the amount is billed through or shows up in their rent, with the actual "customer" being the property owner. Some utilities might be able to offer vouchers or credits to people who don't have an account but are still paying for their water through rent.

Washington State law allows utilities²⁰ to make up for lost rate elsewhere, Seattle's water utility is one that has taken advantage of this. Renters who have an account with Seattle City Lights are provided with a water credit if they are verified as low-income. The real ingenuity here is that Seattle Public Utilities and Seattle City Lights share the same billing system, creating an ease in operations. With this, they now assist low-income rate payers without an account and offer them some economic relief from their utilities²¹.

HOW TO APPROACH AFFORDABILITY

Mayors set the agenda. They don't need to be involved in the operational aspects of rate setting or water infrastructure upgrades, but they should still care about rates and the technical details of updating water infrastructure. Engaged mayors can help guide their city towards water affordability by gaining a high-level understanding of their current water infrastructure, its necessary improvements, and the current water utility financial state and rate structure. This high-level, foundational understanding will prompt mayors to ask the right questions via engagement with city staff. In setting the agenda, it is key to set the framing around this as an issue paramount to a city's health and economic prosperity, impacting all sectors of life within a city. In order to present this information effectively to mayors, the first few steps are to direct staff to take an inventory of:

- Current and future status of water utilities and infrastructure.
- Exploring the current state of water affordability.
- Creation of a city demographic portfolio.
- Finding operational efficiencies.

Cities often have these components identified and documented in siloed locations within the water utility. An effective approach to affordability is connecting the various departments through meetings and information sharing, taking a holistic, integrated step forward.

The next steps to build out a water affordability initiative in a city are:

- Design an affordability program with intentionally designed water rates and CAPs
- Find financing opportunities to lessen rate increases and help fund infrastructure upgrades
- Design a community outreach strategy (note, this should be done throughout, community engagement is key in designing an affordability program and executing it).

This ultimately is all about setting an agenda as mayor and empowering staff to address issues of affordability. The goal here is to set the direction of utilities by asking the right questions and giving the right directives- this directly relates to governing around issues of sustainability and equity.

CURRENT AND FUTURE STATUS OF WATER UTILITIES AND INFRASTRUCTURE

As noted in previous sections, before a utility updates rate structures, or changes implementation of targeted assistance programs, it's important to assess the operational health of the water utility/utilities. Begin by engaging with Utility and/or Public Works directors to gain an understanding of the context and currently available data on the financial and infrastructural health of the utility. These questions are intended to help guide mayors and city staff through understanding what the current and future status and needs of the water utility are. They can also help guide thoughts in how to find operational efficiencies. These are meant to be guiding questions as every city is unique, engaging with these questions help guide a city down a path towards an affordability program.

WHAT IS THERE TO KNOW?

1. Operational and capital budget health of a utility and any projected rate increases: Engage with directors on the budget health, how are they able to manage operation and capital costs, infrastructure management, and projected future needs. Doing this helps gain a picture of the financial health of a utility and informs rate setting.
2. What is the health of the existing municipal water infrastructure? Continue to engage with staff by gaining an understanding of the state of water infrastructure. Having knowledge of current and future needs of the city's water infrastructure has a direct impact on current and future rates. Some questions to ask include:
 - Are there lead lines that need to be replaced? If this is the case it must be a priority, as it is a public health issue²² and it helps build for the future by protecting a city's younger generation.
 - How is the city managing stormwater and what is the state of stormwater infrastructure? Is there a stormwater utility and is it legally possible to establish one if not? A lot of stormwater infrastructure is old and inefficient, with impacts on the livability of a city, especially as large swaths of the Midwest and South are facing increasing flooding. Knowing the state of one's stormwater infrastructure, and what upgrades are needed directly relates to rates and better prepares a city to manage increased flooding in the Midwest, East Coast, and parts of the South due to climate change. It is also an opportunity to consider how to increase green infrastructure within a city, as green infrastructure is one of the most cost-effective ways of managing stormwater²³.
 - How efficient is the water infrastructure? There are a lot of ways to increase efficiency, from things as simple as replacing light bulbs and placing them on timers within utility buildings, to replacing leaky pipes. Use of smart technologies to detect water leaks is also becoming more feasible as costs for these kinds of technologies drop significantly. Creating a more efficient water utility can have a series of additional, co-benefits such as helping cities reduce CO₂ emissions, reducing water waste, and saving a utility and ratepayers money.
 - How up to date are meters? New meter technology can help track water usage and create efficiency in shutoffs, meter readings, and more.
 - Home water efficiency- such as a toilet replacement program. This directly helps ratepayers, drinking water utilities, possibly stormwater, and water conservation. Depending on the rate structure, rate payers could save money through more efficient household infrastructure. Additionally, utilities will use less energy as less water will need to be moved into homes.
3. Finding additional operational efficiencies: There are multiple ways to increase the efficiency of water utilities and infrastructure, including through governance and staffing. To learn more about finding operational efficiencies, read our "Paying for Water Systems: A Guide for Local Leaders Brief."
4. What is the utility's 5, 10, and 20-year maintenance and infrastructure update plan? The state of the city's water utility now impacts its future; understanding the utility's plan helps guide the path towards affordability. What infrastructure will need to be replaced and when? What will the budget need to look like in order to fund future maintenance and infrastructure updates? These plans will directly impact rates and the structure of assistance programs being designed.
5. What is the size of the industrial water user base in the city? This is important as these users are often high consumers of water resources and so can contribute significantly to a utility's water revenues, particularly if the rate structure is an increasing block rate design. That said, requiring industrial users to pay a disproportionate share of the utility's costs must be weighed up against the risk of industries moving elsewhere where cities are offering lower cost incentives.

ASSESSING OUTSIDE FACTORS

After getting an overview of the data, mayors should direct their staff to assess outside forces that impact how a city can address water affordability. These outside factors could limit what a city can do, such as impacting rate setting, or income targeted initiatives.

What are the outside factors impacting how a city can address affordability?

1. Utility commissions: Do one or more of the water utilities fall under the jurisdiction of utility commissions? What is the process for interacting with these commissions? Some commissions must approve rate structures, while others set regulations on what can or cannot be done around rates. Utility leaders know about these bodies; mayors should engage with them on understanding the impact they may have on an affordability agenda.
2. State law: Every state has different laws around how utilities can set rates, particularly regarding the legality of rate-funded customer assistance programs. Confirm that utility leaders and city attorneys understand these laws. This isn't always easy: sometimes states can set laws and regulations that may not make it clear to utilities the exact parameters of rate setting. If this is the case, create as clear an understanding as possible and move forward. Consider engaging with state lawmakers to pass legislation that clarifies what the state will allow.



South Bend, IN

Due to South Bend's work with EMnet (who help cities build smart water infrastructure, using technology and consulting to “enable comprehensive understanding, control, and dynamic optimization of water infrastructure, drastic reductions in water and wastewater overflow, and consistently improving system performance over time²⁴⁹”), they have confidence in engaging with the EPA to reduce the cost of the consent decree they are under due to a combined water sewage overflow problem (CSO). Through the collaboration between South Bend and EMnet, the city has seen a ~ 70% reduction of CSO with a very small capital investment of only \$10m in sensor and control, instead of investing hundreds of millions in (arguably relatively untargeted) green and/or gray infrastructure alone.

Overall the City of South Bend believes it can meet consent decree requirements, matching the overflow benefits, with a \$200m plan instead of a \$750m plan.

EXPLORING THE CURRENT STATE OF A CITY'S WATER AFFORDABILITY

Before designing or updating an affordability program, it makes sense to gain a clear understanding of the current rate structure and any programs that water utilities offer, including the following components:

1. Breakdown of water bill(s) details: Creates an understanding of what ratepayers are seeing and how to have the most impact on the water bill. How much are the fixed rates on a bill? This refers to non-rate billing, those aspects of the bill that are separate from water use, or stormwater fees. Subsequently, it is useful to know what percentage of people's water bill comes from drinking, waste, and stormwater. Even if these things exist on separate bills, knowing the total impact of all water related charges is part of seeing water as "One Water," and gaining a full picture of affordability.
2. Are there any non-water fees on the bill? Sometimes non-water fees are included on water bills. Do these have anything to do with the water utility(s)? Or are they something different.
3. Survey of current programs and their effectiveness: Is there already a customer assistance program? Emergency shutoff relief? What programs are already in place and how effective are they? One way to figure out their effectiveness is via shut-off rate and debt recovery rates comparisons - this is needed to understand the strain current rates are putting on residents, as well as the effectiveness of current assistance programs. Also, if a utility isn't recovering much from delinquent rate payers, exploring why and how to change that is important. Exploring delinquent assistance programs can be effective as it is better to get some money from ratepayers than no money.



South Bend is interested in researching and addressing its potential hidden revenue by having a better understanding of the city's water shut-offs. To date, the city has determined that 80% of late payments are from homeowners who are able to afford their water bills. This concept of "hidden revenue" invokes the need for a new, flexible billing system software.

CITY DEMOGRAPHIC DATA PORTFOLIO

Once there is an overview of the health of the utilities, the next step is beginning to pull together the municipality's demographic information. Demographics inform rates and what the burden of rates could look like upon a city's population.

1. **Employment status:** Put together a complete employment picture of those employed, those unemployed, and populations not in the labor force.
2. **Up to date income demographics:** Knowing the distribution of income within the municipality is a key factor in rate setting. Keeping in mind the number of households at the federal poverty level, at 150% the federal poverty level, and 200% federal poverty level helps understand the weight of rates on low-income households. Equally Understanding how many middle- and high-income households reside in a city will help guide how rates may be structured. Finally, an understanding of industrial water users should be factored in.
3. **Percent of owner-occupied households:** This information helps determine what types of assistance programs, especially around water efficiency upgrades, might be helpful for households in the city.
4. **Percent of owner-occupied households by income:** This set of data continues to create a picture of customer assistance programs, who might already have an account with the utility(s), and needs of residents.
5. **Percent of renters:** This is important in trying to target households who might not have an account with the utility(s), as well as how many property owners and managers a utility will need to work with on efficiency upgrades, stormwater, and green infrastructure. If possible, pull together how many renters pay for water, storm, drinking, and waste, in their rent.

Along with this demographic information, collect data that provides insight into the overall affordability of the city. This information can later be used to see where it would be useful to assist ratepayers through approaches other than via water bill(s).

1. **Affordability of housing:** Understanding the cost of living for low-income households. By understanding how much of a strain housing prices create, a clearer picture can be formed of the compounding challenges of rate increases and other bills for low-income households.
2. **Electricity prices and programs:** If a city is restricted from income-based programs or is having a hard time figuring out how to target renters who don't have accounts with their water utilities, exploring options on assistance and affordability programs within the electric utility is a good place to start. A first step is knowing how electricity prices are impacting low-income households and what type of programs there are. Seattle, WA²⁵ has a program that targets and provides assistance to households that are rent payers without a water utility account.
3. **Food Security:** While there might not be many levers available to impact food prices other than finding ways to make healthy food more accessible in food deserts, this is another data point for seeing and understanding the holistic affordability of living in a city.
4. **Transportation:** Exploring the financial impact of a city's transportation infrastructure on its residents, especially cost and accessibility of public transportation, is another useful data point. Exploring low-income fare²⁶ programs to lessen the impact transit has on low-income households is one such option to help with affordability.

Affordability of a city isn't limited to these options. The goal here is to gain as complete a picture as possible of the daily lives of those living in a city. Water affordability doesn't exist in a vacuum, but instead, is an element of how livable a city is. This information paints a more detailed picture of a city's cost of living landscape and will help inform decision makers to select the most appropriate rate structures and assistance programs.

HOW TO DESIGN A PROGRAM

Mayors don't have to design the rate structure or design a customer assistance program, but they can help guide the process, setting high level policy objectives and expectations. Mayors set the agenda by working with utility director(s), public works department, and city staff. Mayors have access to the data on the current state of the utility(s). But there are still things to consider moving forward.

Below are key considerations that mayors can instruct staff to prioritize when thinking about water affordability.

1

WHAT IS THE MOST EFFECTIVE WAY TO LESSEN THE IMPACT OF WATER RATES ON LOW-INCOME HOUSEHOLDS?

Central to water affordability is the impact of rates on households. Water affordability is about figuring out the best way for a utility to be able to operate yet reduce the weight of rates on low-income households. These questions can help guide a city down that path.

- Is it possible to design an income-based rate? If not, then what is another rate structure that minimizes the impact on low-income households?
- Is it legally possible to assist renters who don't have an account with the water utility(s)? Or is there a state law or utility board regulation blocking it.

2

SHOULD WE CONSIDER INCOME-BASED RATES, AND IF SO, HOW?

Think of storm, waste, and drinking water as "One water". Use these questions to investigate income-based rates, to find possible pitfalls, structures, and more.

- How many tiers do we want, balancing the risk of overcomplicating the structure of a program (and therefore compromising the ability to administer the program successfully) with effectiveness?
Philadelphia has four levels in their Tiered Assistance Program (TAP) 0-15% Federal Poverty Level (FPL), 51-100% FPL, 101-150% FPL, 151% or more and Special Hardship²⁷.
- What community and government partners can we collaborate with to help verify income?
This is important because community outreach and enrollment can take time and staff hours. Partnering with entities that already verify income, saves the city government money and expedites the process of saving eligible households money. These organizations can also help keep income verification data up to date.
- Where, when, and how do people interact with city government and how can we make sure they know about enrolling in income-based rates during those interactions? Develop an effective marketing platform - ensuring that the most vulnerable communities are informed of their options and resources.

3

IF NOT INCOME BASED RATES, WHAT COULD WORK FOR US?

Not all utilities can implement income-based rates for various reasons. If a utility cannot, then exploring alternate ways to lessen the impact of rates on households becomes instrumental to the development of a water affordability program.

- Where does a customer assistance program fit?
- Is there a goal to incentivize conservation?
- Is there a need to fund infrastructure?
- What is the balance of needs of the utility(s) and ratepayers?

4

WHAT TYPE OF CUSTOMER ASSISTANCE PROGRAM (CAP) IS RIGHT FOR US?

These aren't the only questions when it comes to developing CAPs, build off previous work of how to lessen the impact of rates, and in understanding the demographics of the city to meet the needs of households.

- Do meters need to be replaced?
- What are the needs of household efficiency upgrades?
- How best to structure a program to aid those who are delinquent?
- What are the right customer assistance programs to package under one program?

5

HOW DO WE ADDRESS STORMWATER SPECIFICALLY?

Even though it is best to include stormwater in thinking about affordability in a "One Water" approach, it is a little bit different.

- Should the fee be based on impervious surfaces? If so, how much? Should it be based upon percentage vs square footage?
- Can credits be created to incentivizes pervious surfaces?
- Does an auto enroll downspout fee, that is removed once an entity removes them make sense?
- How can barriers be removed for low impact development?
- How can on-site stormwater retention be incentivized?
- Using data informed stormwater management and updates through technology. For example, EmNet in South Bend, IN uses sensor technology and data collection. stormwater infrastructure can increase in efficiency with more data, and that data can be formulated into city decision making tools that assist utility officials in deciding what type of infrastructure (green or gray) is best where.

6

HOW CAN WE MAKE OUR CURRENT WATER INFRASTRUCTURE MORE EFFICIENT?

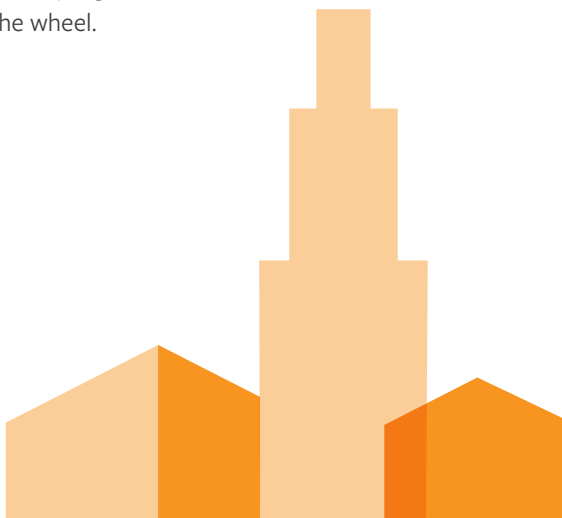
There are upfront costs to efficiency, but by investing in these upfront (often capital costs, cities and utilities) can reduce the operational costs of a utility, as well as reduce the amount of wasted water city wide- all of which can help keep rates lower. Options include software, sensors, more efficient pumps, or data collection and analysis.

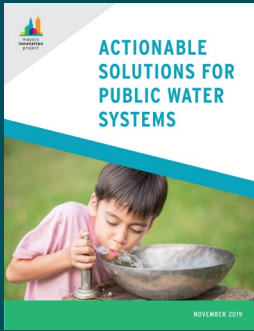
7

WHO ARE THE RIGHT PARTNERS?

Identifying partners can help with engaging communities on developing an affordability program, as well as not duplicating the work other city departments or community organizations have already done that could save the utility money in program planning and implementation.

- What partners can help with operational efficiency?
- What are the needs of the program, such as income verification, and who is already doing this? There is no need to reinvent the wheel.





FINANCING OPPORTUNITIES

Beyond rates, there are a multitude of opportunities to finance needed infrastructure updates. These opportunities can help offset potential rate increases.

“Paying for Water Systems: A Guide for Local Leaders” and “Actionable Solutions for Public Water Systems” go in depth about these opportunities.

They cover:

- Long-Term Planning Frameworks
- Alternative Sources of Revenue
- Green Revolving Funds
- State and Federal Sources of Subsidized Grants or Loans
- Resilience Bonds
- Public-Private Partnerships

COMMUNITY ENGAGEMENT

Community Engagement is what drives the cohesive relationship between water utilities and community constituents. This becomes even more important when engaging community members around water affordability. Here, mayors want to continue to set the agenda by developing a community engagement plan. There should be a plan for developing an analysis of community impact of rates and assistance programs, and what they (members of the community) are looking for. Doing this can not only create more affordable water, but also a water system that is reflective of community needs.

DATA TRANSPARENCY

Data transparency builds trust with the public. This is about offering reliable data on water quality and possible water contamination. When it comes to water affordability, this impacts communication around infrastructure upgrades, addressing issues of possible sources of water contamination through combined water sewage overflow, algal blooms, and lead.

There are other ways to use data around affordability. In Philadelphia, a mapping program called the Stormwater Credits Explorer allows property owners to calculate the potential savings of implementing different green infrastructure technologies. This can help homeowners invest in property improvements that are maximally effective and save money.

DEVELOP AUTHENTIC RELATIONSHIPS WITH KEY COMMUNITY STAKEHOLDERS

Part of setting the agenda is having city staff and utilities build authentic relationships with the community. The public tends to think of utilities as any other government entity; utilities can and should leverage this baked-in perception to build public trust and better anticipate and respond to resident needs. To do this, mayors should direct utility leaders to:

1. Identify all relevant stakeholders, including those that they may not have engaged with consistently in the past.
2. Pay special attention to marginalized groups, such as low-income residents and communities of color who have historically had far less clout in public input processes. These communities are also disproportionately more likely to live in areas with older and/or failing water infrastructure, often putting them on the front line of water quality breaches.
3. Try power mapping its customer base and concentrating outreach efforts to communities that have historically held less political power.

To help build capacity for utility staff, direct them to build and sustain relationships with:

1. Trusted community partners who already have a relationship with the city government.
2. Non-profit coalitions, who hold their own respective networks of communication with community residents and are generally more attuned to community needs.
3. Reach out and regularly speak at neighborhood groups.

This makes for a more efficient process of community engagement, and it legitimizes water utility outreach, as community coalitions are far more likely to be well-trusted by the communities that they represent. This style of partnership utilizes public input and stakeholder engagement in decision-making processes. Such engagement efforts can raise critical awareness of and support water management priorities.

South Bend's Office of Sustainability will pilot the "City of South Bend AmeriCorps" program on May 1st, 2019, in which members will provide a variety of services to working and middle class impoverished South Bend homeowners. The goals of the program are to improve in-home sustainability efforts and to empower homeowners to understand and manage their bills. Furthermore, the AmeriCorps members will address systemic barriers to access of services by assisting homeowners with paperwork and income verification requirements. The AmeriCorps members will also participate in code enforcement for energy services that will improve the safety of the home and lower energy costs - aiming to be beneficial for both the landlord and tenant.

In addition to direct homeowner assistance, members will host public workshops and education events and gain marketable customer service, home repair, and energy efficiency skills for future professional opportunities.

Another initiative includes The City of South Bend's \$60m investment into its parks system. This initiative is the largest investments in South Bend Parks in history and intends to have every South Bend resident within 10 minutes of a park and/or green space.

DEVELOP RELATIONSHIPS WITH ANCHOR INSTITUTIONS

Utilities should also seek to establish connections with anchor institutions, such as hospitals and universities. Such institutions can advocate on a utility's behalf, add academic credibility to initiatives, help fund and generate necessary research for innovative projects, and convene disparate stakeholders.

Community and service organizations could also serve as official partners. Think back to the South Bend case study where the city partnered with a community organization that serves low-income residents and already verifies income. This can save money by avoiding replicating processes. If done correctly, a city could auto-enroll low-income rate payers into income-based rates and/or income-based assistance programs.

OFFER UP CLEAR CHANNELS OF COMMUNICATION

To city residents, water is more than just a service that utilities provide; it is a necessity. Thus, utilities should do everything in their capacity to ensure that residents have a clear understanding of how to contact utilities with questions and concerns. This requires that utilities establish clear channels of communication between their community liaisons and the constituents that they serve. Work with city staff to establish these lines of communications. What are some ways they could do this?

- Create hotlines that are available to community residents 24 hours a day, 7 days a week. Such hotlines are not only crucial in times of crisis, but also foster a consistent dialogue between a utility and the community.
- Hire as many bilingual (or multilingual) staff as possible.
- Hiring staff with competencies in other culturally appropriate languages depending on the community that the utility serves.
- Explore ways to provide educational programming to constituents. This might include regular guided tours of utility facilities, brochures and pamphlets, and partnerships with local schools so that basic water utility knowledge is embedded in children's education from an early age. Some utilities with limited capacity and funding may also find success by partnering with local non-profits and community organizations to aid with outreach. By helping non-profits and community organizations "speak utility," they can then help the public "speak utility" too. This ultimately helps utilities to engage with customers on a personal level, which helps bridge the ever-present divide between residents and government.

AFFORDABILITY BEYOND WATER

If there are limited options to create water affordability and still invest in needed infrastructure updates, it becomes important to target other ways to impact city affordability. Therefore, it is important to understand the cities livability in a multitude of ways, and to place water affordability within that.

Do a deep dive into what other programs are available for low-income households that can help reduce water bill burden or other burdens to offset any rate increases, even if they don't directly target the water bill. Such programs may include income-based electric and gas rates or efforts to create non-rate revenues. Non-rate revenue initiatives are an interesting option, especially for municipalities with medium to large metro areas, which tend to have people putting a strain on the water infrastructure who work in the city but don't live there.

Atlanta has also thought about affordability within the economic opportunity within the city. Their water utility has launched a workforce development initiative to help bring more people into well-paying jobs. This is also an operational benefit as many water utilities are facing an aging workforce. By training people to come in and replace their retiring and aging workforce, they can not only secure the operational future of their utility but also help make living in Atlanta easier for their residents.

GETTING STARTED

1. Current and future status of water utilities and infrastructure

Engage with your water utility director(s) and/or Public Works director to gain an understanding of the needs of your water utility(s) and infrastructure is the first step a city can take to begin down the path of an affordability initiative or assessing affordability program improvements. It helps gives context to your data collection and helps you understand where the data of your city fits into the question of affordability.

2. Exploring current state of water affordability

Work to develop a clear understanding of the rates and any programs your water utilities offer that help provide a view of your utilities' current landscape. Is there additional revenue needed and how are rates currently impacting your residents? How many people are delinquent on bill payments and do you have an idea why? For example, are they not paying because they don't want to or because they are forgetting? Is it because they cannot afford to do so? And what is the recovery rate for delinquent rate payers?

3. Creation of your city demographic portfolio

Pull together your municipality's demographic information- the latest census is usually the most accurate source. This helps you understand the current impact of water rates on your residents and any future impact. Along with this, pull together information on what the standard of living is like for your city, if you haven't already. This is where your agenda on water affordability goes deepest; this is the chance for your utilities to explore different rate structures paired with affordability programs and figure out the impact they will have on your low-income rate payers. This is where the questions of equity and water access come into play, as creating a more equitable access to water creates a more affordable and healthier city.

4. Finding operational efficiencies

Your plan can start with finding infrastructure and operational efficiencies. Engage with your utility director(s) and/or Public Works director on how they are improving operational efficiencies within your water utilities and infrastructure. Here you can invest capital funds, creating a bit more financial wiggle room and help to keep rates lower for households and save your city water. There are multiple ways to increase the efficiency of your water utilities and infrastructure.

5. Design your program

While it is unlikely mayors will design the rate structure or design a customer assistance program, you can guide the process and set clear goals and targets. Work with your utility director(s), public works department, and your staff to set the goals and direction for the utility directors and public works department to accomplish. You have the data, you have the current state of your utility(s) and are already moving forward on efficiency.

6. Find financing opportunities

Utilities typically plan five to ten years in advance for capital projects, asset management, and more, and should include long-term conservation and other efficiency and sustainability goals in these plans. While rates will undoubtedly generate the bulk of revenue, utilities can pursue many creative and often environmentally sustainable tactics to supplement revenue.

7. Design a community outreach strategy

Community Engagement is key to any well-run city process. Pertaining to water it helps create community trust in the water utility. A water utility needs to actively address issues that often plague communities relating to equitable access and affordability of drinking water. A water utility is also responsible for understanding and addressing community complaints pertaining to taste and odor of tap water, water shut-offs, billing issues, low pressure, and boil notices. To learn more about engaging with the community around water, read ‘Actionable Solutions for Public Water Systems.’

RESOURCES

Basic water utility management: A Guide for Local Leaders (2019). A high level guide by the Mayors Innovation Project on managing your water utilities: https://www.mayorsinnovation.org/images/uploads/pdf/Basic_Water_Utility_Management.pdf

Paying for water systems- A Guide for Local Leaders (2019). This guide by the Mayors Innovation Project delves further into how to fund upgrades to your water systems: https://www.mayorsinnovation.org/images/uploads/pdf/Paying_for_Water_Systems.pdf.

The Stormwater Finance Landscape: Where We’ve Come from and Where We’ve Yet to Go (2019). A brief by the UNC Environmental Finance Center, this report helps provide insight on calculating finances for stormwater infrastructure: https://efc.sog.unc.edu/sites/default/files/2019/NC%20Stormwater%20Landscape_Final%20Draft_o.pdf.

Finance dashboard: A tool put together by the UNC Environmental Finance Center. It can help you gain design different rate sets: <https://efc.sog.unc.edu/utility-financial-sustainability-and-rates-dashboards>.

CAPPed: Five Examples of Customer Assistance Programs for Water Utilities. A short write-up by the UNC Environmental Finance Center on specific CAP examples: <http://efc.web.unc.edu/2015/10/28/customer-assistance-programs/>.

Navigating legal pathways to rate-funded customer assistance programs (2017). A Guide for Water and Wastewater utilities: A guide by the UNC Environmental Finance Center to help design customer assistance programs. Here is a good place to start to understand the regulations and legalities your water utility may fall under: <https://efc.sog.unc.edu/sites/default/files/Pathways%20to%20Rate-Funded%20CAPs.pdf>

RESOURCES, CONT.

Water and wastewater residential rate affordability assessment tool. This tool by the UNC Environmental Finance Center helps provide demographic information for your municipality. The demographic information is pulled from the latest census: <https://efc.sog.unc.edu/resource/water-and-wastewater-residential-rates-affordability-assessment-tool>.

Local water policy innovation- A Road Map for Community Based Stormwater Solutions (2008). This guide by American Rivers can help empower you to develop stormwater projects along with your community. Community engagement and outreach is key in all of these projects, this is a good resource for further ways to build with your community: https://www.mayorsinnovation.org/images/uploads/pdf/6_-_Local_Water_Policy_Innovation.pdf.

Accelerating cost-effective green stormwater infrastructure: Learning from Local Implementation (2015). A report by Berkeley Law Center for Law, Energy & the Environment to help guide municipalities in funding green stormwater infrastructure projects https://www.mayorsinnovation.org/images/uploads/pdf/GSI_Report_Full_2015-02-25.pdf.

Drinking water and waste water utility customer assistance programs (2016). A guide from the EPA on customer assistance programs: https://www.epa.gov/sites/production/files/2016-04/documents/dw-ww_utilities_cap_combined_508.pdf.

Energy Efficiency in Water and Wastewater Facilities: A Guide to Developing and Implementing Greenhouse Gas Reduction Programs. https://s3.amazonaws.com/proggov21-uploads/uploads/asset/asset_file/Energy_Efficiency_in_Water_and_Wastewater_Facilities.pdf

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ACEEE: Local Technical Assistance Toolkit: Energy Efficiency in Water and WasteWater Facilities. https://s3.amazonaws.com/proggov21-uploads/uploads/asset/asset_file/Local_Toolkit_Water.pdf

ORGANIZATIONS

These partner organizations, below, provide rate and infrastructure technical assistance:

1. The Water Center at Penn
2. Roger Colton of Fisher, Sheehan & Colton
3. IB Environmental
4. The Center for Neighborhood Technology (CNT)
5. UNC Environmental Finance Center

ENDNOTES

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