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# Ten Tenets of Water Equity:

## Considerations for Community Water Systems

### Foreword

This report explores the tensions between the aspiration of ensuring that all members of a community have access to reliable safe water supplies and the realities of financing and operating a community water system. This is an important and emerging topic, but, as noted in the report, it is only one of many significant issues related to water equity that have been highlighted by the COVID-19 pandemic.

Of these issues, by far the most serious is that millions of people in the United States – living on Indian reservations, in colonias, in rural landscapes, on the streets and elsewhere – lack ready access to clean running water. This report addresses equity issues within a community water system, but does not address how to develop a community water system where none exists. The first tenet was carefully crafted to acknowledge this stark reality: Without a functioning community water system there is no water equity.

### Introduction

Water is the foundation of public health, economic opportunity, unique natural areas and quality of life in any community. Much attention has been paid to the sustainable management of water supplies, as well as the responsible investment in the infrastructure that supports the delivery of safe, clean water. In more recent years, issues regarding broad and fair access to safe, clean water in a community—water equity—have come into sharper focus, particularly after stunning failures such as in Flint, Michigan. According to a recent study by the US Water Alliance, more than two million people in the U.S. live without access to safe drinking water and basic sanitation, and water access issues disproportionately impact lower-income people, people of color, undocumented immigrants and people who do not speak English.<sup>1</sup> Structural inequalities in access to education, income, public safety, employment, housing, transportation and other social services undermine water equity. In the desert Southwest, water equity issues are tied in with climate because water use imparts relief from extreme heat and urban heat-island effects.<sup>2</sup>

<sup>1</sup> DigDeep & US Water Alliance, *Closing the Water Gap in the United States* 8 & 22 (2019).

<sup>2</sup> Ariane Midel, Nalini Chhetri & Raymond Quay, *Urban forestry and cool roofs: Assessment of heat mitigation strategies in Phoenix residential neighborhoods*, 14 *URB. FORESTRY & URB. GREENING* 178, 183 (2015).

“Access to safe water is a fundamental human need and, therefore, a basic human right.”

— Kofi Annan

## Ten Tenets of Water Equity

The COVID-19 pandemic has highlighted the need for safe, clean, reliable drinking water in support of public health as well as the controversy of water utility disconnects. Water equity seems to be something everybody wants and values—it is hard to imagine a group of people who believe that people in their community should not have access to safe, clean water. But there are complicated trade-offs between sustainable management of water supplies, conservation, affordability, infrastructure investment and access. Is there a human right to water? Sure. Is there a human right to have safe, clean water pumped through pipelines into your home to be available on tap 24/7/365 at perfect quality and pressure parameters free of charge? Well, that gets tricky. Water utilities must maintain sufficient and stable revenue to fund the reliable operations and infrastructure that allow for the provision of safe, clean, reliable water to the community in the first place. This complicated trade-off is at the heart of the conversation on water equity.

In 2015, Pat Mulroy, the renowned former general manager of the Southern Nevada Water Authority, summed up the problem facing community water systems this way:

“In your capacity as a human being, if you believe it’s a basic human right, take your bucket, go to Lake Mead, knock yourself out, take as much as you want.” She further argued that “if you want it treated and delivered at your house on a guaranteed 24/7 basis, then you have an obligation to help defray those

infrastructure and operating costs.”<sup>3</sup>

Given these complex trade-offs, how can communities go about ensuring broad access to safe, clean drinking water? We present ten tenets. Each comes with its own unique set of trade-offs with other socially desirable outcomes. These ideas and trade-offs are explored.

Water equity occurs when all communities have access to safe, clean, affordable drinking water.

### Tenet #1: Water equity cannot occur without an adequately-functioning community water system

Broad access to safe, clean drinking water only occurs when the community water system functions adequately. An adequately functioning community water system meets all regulatory requirements regarding the provision of safe drinking water, invests responsibly in the rehabilitation and replacement of aging infrastructure, maintains reliable operations, has capacity to endure financial and operational shocks and stewards resources wisely. Each of these aspects of a functioning utility entails significant expense. Water equity depends on an adequately functioning community water system, which in turn depends on adequate funding.

There are enormous complexities associated with adequate funding for community water systems.

- Community water system infrastructure is extremely expensive, and there are large economies of scale in the water industry. Small community water systems, most commonly found in rural areas, may not have the population base necessary to

<sup>3</sup> Shawn Dhar & Alexandria Icenhower, *Combating climate change and water scarcity in the U.S.* (BROOKINGS PLANET POLICY, Apr. 21, 2015 ), <https://www.brookings.edu/blog/planetpolicy/2015/04/21/combating-climate-change-and-water-scarcity-in-the-u-s/>.

support the cost of the water system at levels that are affordable.

- In municipally-owned systems, elected officials are often reluctant to raise water rates to pay for the rehabilitation and replacement of aging infrastructure for fear of customer backlash and tarnishing their voting record for re-election. While other municipal service centers such as parks, libraries and after-school centers often have a vocal community group willing to advocate for funding, water utilities generally do not enjoy an advocacy group.
- Customers do not have a choice in their provider when it comes to water and wastewater services, creating a monopoly situation that warrants careful considerations when it comes to equity. However, privately-owned systems can be hampered by well-meaning but misguided regulations that limit the manner in which the utilities can increase revenue to pay for operations and infrastructure investment. Regulations must be carefully crafted to avoid pernicious results. For example, the Arizona Corporation Commission, which regulates private water utilities in the state, allows a return on investment on capital spending for replacement of aging, leaky water mains to achieve what the Commission defines as an “acceptable water loss,” leaving little incentive to increase investment to achieve a lower water-loss rate—a questionable practice in a desert environment where that enhanced investment would conserve precious water.
- Bringing a case for a rate increase forward for regulatory consideration is expensive

and burdensome for private utilities, a disadvantage for small utilities that often serve rural populations. For example, a recent report through the Arizona Corporation Commission found that approximately 25% of the small, private utilities in Arizona have not come forward for a rate increase in 20 years. This raises concerns that the utility “may be underinvesting in their infrastructure and spending less than is needed to keep up with routine improvements and maintenance.” It was further noted that “when the system’s physical integrity is at risk, it puts the utility’s water supply and quality, and therefore the personal health and safety of its customers, at risk as well.”<sup>4</sup>

- Some advocate for increased outside-funding for community water systems. Subsidies from federal, state, tribal, non-governmental and local sources can solve acute funding problems in certain circumstances, but these models put the water system in a position of being dependent on the political will of decision-makers outside of the community and artificially hide the true cost of water service. Oftentimes, when the funding comes from the outside, asset management and other best-management practices do not occur to the same extent as if projects were self-funded. It is likely that no one cares about the community water system, or understands its needs, as much as the people dependent on it.

Community water systems in which a state or national entity pays for the system may not function adequately over the long run, perhaps because those who fund the system have different goals and priorities than those

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<sup>4</sup> *In the matter of the Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies*, (Docket No. W-00000C-16-0151) Arizona Corporation Commission Office of Chairwoman Lea Marquez Peterson, Mar. 11, 2021.

who live in the community. As an example, residential charges for water in Ireland were abolished in 1978 in favor of national, tax-based funding. Investment in water and wastewater infrastructure has been inadequate, and approximately 40% of the water treated is lost in the distribution system because of old, leaky pipes.<sup>5</sup> Ironic for such a rainy place, Dublin is experiencing water shortages, and the utility is seeking to develop new water supplies out of the River Shannon. Opposition is intense and often cites the need to address leakage before resorting to new supplies.<sup>6</sup>

“[T]his is about a water supply system that has been neglected so badly for so long that it is now barely fit for purpose. It is about a thriving first-world city having to rely on third-world water pipes.”

“Ireland’s pipes are in such disrepair that it has among the worst leakage in western Europe.”<sup>7</sup>

A study out of University College Dublin in 2018 found the following:

A key claim made by the anti-water charges campaigners was that water is a human right, and funding water services through general taxation is the only way to protect universal access to these services. While it may be logical to consider water as free, the treatment and transportation is not free. (Moss et al., 2003). Wastewater services incur real and significant costs, which a general taxation model may not be able to deliver over the longer term. This has certainly been the case in Ireland, where investment in water services has long stood in

the queue behind more politically sensitive areas such as health and education.<sup>8</sup>

## Tenet #2: Rate structure matters

The design of water rates is complex because water rates serve many different and often conflicting purposes. The main goal of rate design is revenue sufficiency. As noted, revenues must be sufficient to fund operations, investment in infrastructure, debt payments and a reserve fund that protects the utility against shocks. But depending on community goals and needs, rate design also serves to encourage water conservation, ensure that users of the system pay commensurately for their benefit in the system, promote economic development, ensure affordability, avoid capacity problems, maintain customer fairness, ensure that new development covers its own infrastructure costs, influence land-use decisions, meet environmental and safe water quality standards, ensure sustainable management of water resources, provide return on and of investment (in the case of private water utilities) and in some cases provide for a transfer of money from the water utility to other city departments (in the case of publicly owned utilities). Rates are also often designed to be transparent, understandable and fair (and in some cases intentionally not so). Rate design is further influenced by the myriad state and local laws and relevant court cases, which put boundaries on what is considered a fair and reasonable water rate and how utilities can deploy them.

It’s complicated.

<sup>5</sup> Shane Harrison, *Irish Water: How the Dublin Government are Struggling with Water Charges*, BBC (Oct. 30, 2014), <https://www.bbc.co.uk/news/world-europe-29798331>.

<sup>6</sup> Sean Kay, *Examining Rainy Ireland’s Water Crisis*, IRISH CENTRAL (Jan. 20, 2020), <https://www.irishcentral.com/opinion/others/examining-rainy-ireland-s-water-crisis>.

<sup>7</sup> Kevin O’Sullivan, *Shannon Pipeline Not Needed if Dublin Water Leaks Fixed*, Study Claims, IRISH TIMES (July 16, 2019) <https://www.irishtimes.com/news/environment/shannon-pipeline-not-needed-if-dublin-water-leaks-fixed-study-claims-1.3957356>.

<sup>8</sup> J. Peter Clinch and Anne Pender, “You don’t miss the water ‘til the well runs dry”: *An Inquiry into the Factors Influencing the Failure of Domestic Water Charges in Ireland*, 50 *ECON. & SOC. REV.* 369, 381 (Summer, 2019).

But when it comes to the goal of water equity and ensuring broad access to safe, clean water, two important rate factors are key. The first is the level of fixed charges, and the second is the provision of a small amount of water within the fixed charge, generally referred to as an “allowance.”

Most utilities have a rate composed of this fixed charge and a variable charge based on the volume of water consumed. A fixed charge component is nearly universally employed in the water utility industry.<sup>9</sup> It is a fixed amount of money charged to the customer, generally based on the size of the customer’s meter, which is usually set at an amount that covers the cost of utility billing and meter reading. In the last ten years or so, there has been a trend to include additional costs in the charge as a means to reflect the fact that many of a water utility’s costs are “fixed,” in that they do not vary with consumption, and to stabilize revenues.<sup>10</sup> The higher the fixed charges, the more stable a water utility’s revenues are.

However, higher fixed charges can also present a barrier to those who are struggling to get by. While a person who is struggling financially can do their best to conserve water and avoid variable charges, that person cannot avoid fixed charges. Thus, higher fixed charges make access to safe, clean water more problematic for those who are struggling to make ends meet.

In terms of affordability and water equity, high fixed charges are not ideal. However, it is important to weigh the level of fixed charges

and their implications for water equity with their implications for revenue sufficiency and stability, which are also important aspects of water equity (see Tenet #1, above). A water utility with extremely low fixed charges that cannot earn sufficient or stable revenue serves no one in the community in the long-term, and water equity is undermined for everyone.

“We are slightly increasing the monthly fixed charge on your bill to ensure we are recovering 20 percent of our revenue from fixed charges, which helps us even out our revenues over the year. This means less reliance on revenues from how much water customers use, which has become increasingly difficult to predict in recent years given the more frequent and extreme weather fluctuations.”  
— Denver Water<sup>11</sup>

Some water utilities also employ an “allowance.” Generally, these are designed to provide the customer a small amount of water, typically an amount adequate for basic indoor needs, without being assessed a variable charge for water consumption. These allowances typically fall within the fixed charge employed by the utility. That is, by paying the fixed charge, the customer also receives a small amount of water as an allowance for basic needs.<sup>12</sup>

The deployment of low fixed charges and an allowance enhance broad access to basic water services for single-family residential customers because water for basic needs becomes more affordable for the customer.

There are many measures of water affordability,

<sup>9</sup> See MARY TIGER, JEFF HUGHES, & SHADI ESKAF, *DESIGNING WATER RATE STRUCTURES FOR CONSERVATION & REVENUE STABILITY*, (Univ. N.C. Env’t. Fin. Ctr. 2014).

<sup>10</sup> Brett Walton, *Utilities Revise Household Water Rate Formulas*, CIRCLE OF BLUE (May 30, 2018), <https://www.circleofblue.org/2018/water-management/pricing/price-of-water-2018/>.

<sup>11</sup> DENVER WATER, <https://www.denverwater.org/residential/billing-and-rates/2019-rates> (last visited Mar. 9, 2021).

<sup>12</sup> Some critics say that this keeps this small volume of water priced artificially low for all customers, even the high-income ones.

<sup>13</sup> Manuel Teodoro, *Measuring Household Affordability for Water and Sewer Utilities*, 10 J. AM. WATER WORKS ASS’N. Jan. 2018, at 13.

but one proposed by Manuel Teodoro focuses on affordability for basic needs and is worthy of discussion.<sup>13</sup> Teodoro proposed a calculation called the AR<sub>20</sub>, which roughly stands for “the affordability ratio calculated at the bottom 20% of household income levels.” The calculation is the cost of basic water and sewer services as a percentage of the disposable income (total income less essential expenses) at the 20th income percentile of the community. The calculation measures the percentage of an economically-disadvantaged family’s disposable income that is spent on basic water and wastewater services. A higher AR<sub>20</sub> calculation means that more of a family’s disposable income must be spent on water and wastewater services. An assumption inherent in the AR<sub>20</sub> calculation is that the goal of affordability for water and wastewater utilities is to enhance access to these services at a basic level necessary for public health and not for discretionary uses, such as watering a lawn. This assumption is aligned with goals relating to the conservation of water.

Chart A shows the AR<sub>20</sub> ranking for several large cities based on 2017 rates. A smaller AR<sub>20</sub> calculation means that the water is more affordable (so, as in golf, a low score is good). Of the five cities with the lowest AR<sub>20</sub> calculation, all employ fixed charges that are less than \$10 per month, and three of the five employ an allowance of some kind.<sup>14</sup>

With careful rate design, the use of low fixed charges and an allowance for basic needs can be compatible with other community rate goals such as water conservation, revenue sufficiency and economic development. For example, a low fixed charge can be deployed, but the utility can charge more for water at higher levels of consumption to ensure a strong conservation signal.

Each community has its own goals and must weigh the trade-offs associated with water rate design carefully, but if equity is a primary goal, low fixed charges and an allowance are worth considering.

“To keep water affordable and to encourage efficiency, Denver Water’s rate structure includes three tiers based on how much water you use. Indoor water use—for bathing, cooking and flushing toilets—is essential for human life, and is charged at the lowest rate. Efficient outdoor water use is charged in the second tier (middle rate), followed by additional outdoor water use in the third tier (highest rate).”

— Denver Water<sup>15</sup>

### Tenet #3: Pipelines cannot be neglected

Water utilities actually can function with pipelines that are leaking constantly and falling apart from age. While by no means ideal, every time a pipe breaks from age, it can be dug up and repaired. Water utilities generally attempt to replace water mains at the point in time in which the cost to continually dig up and repair various segments of the pipe becomes greater than the cost to replace the pipe wholesale.

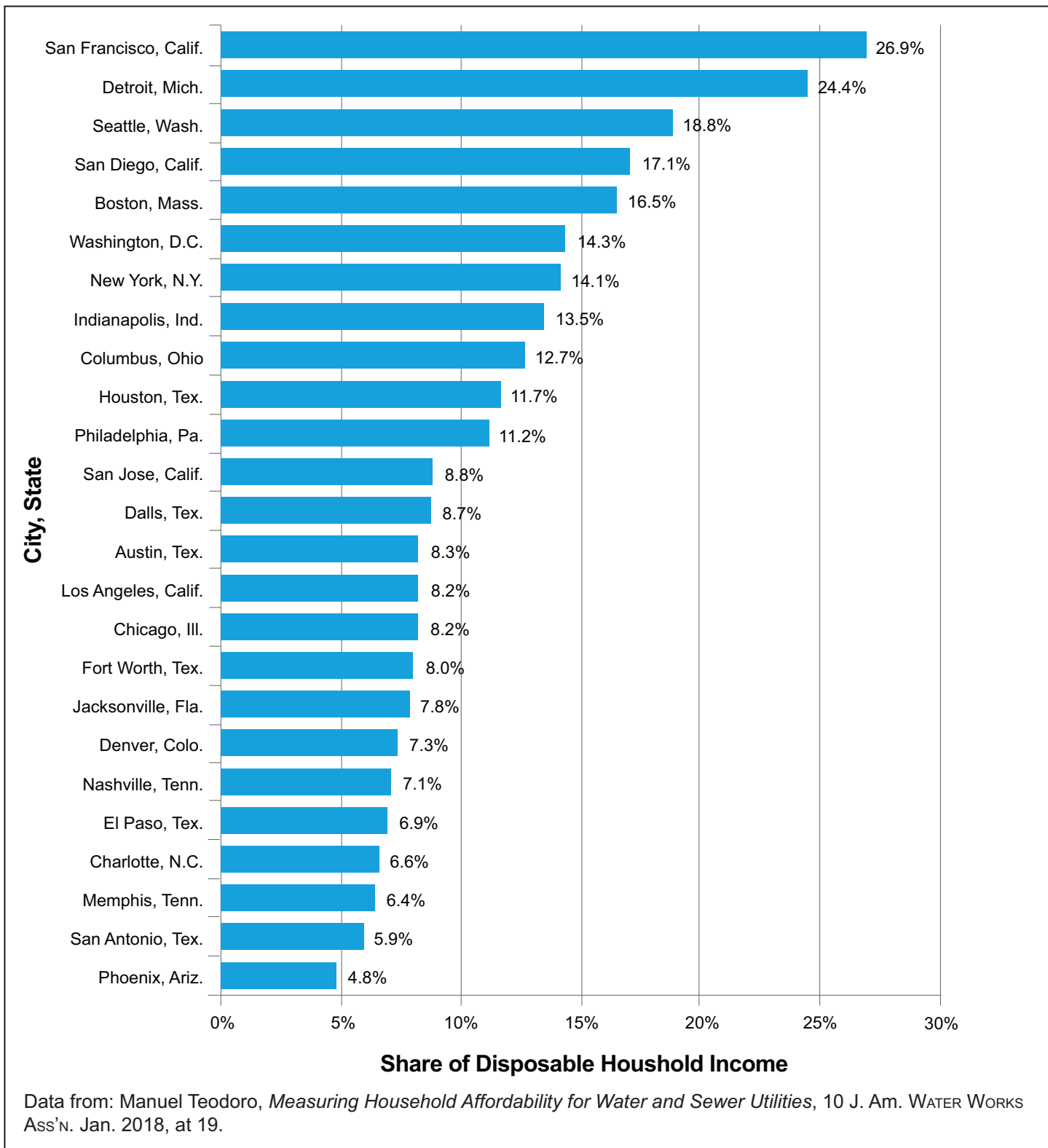
Utility managers who do not have access to reasonable levels of capital funding will often choose to prioritize investment in aging treatment plants, wells, reservoirs and pump stations to the neglect of pipelines. When capital dollars are scarce, this is a wise choice as investment in water treatment plants, wells, reservoirs and pump stations is most vital to protecting the health of the most people in the community. When a treatment plant or pump station fails, an entire community can be without water service or with water that is unsafe to drink. Generally, when pipelines fail, a relatively small number of customers in an isolated area

<sup>14</sup> *Id.* at 19-20.

<sup>15</sup> DENVER WATER, *supra* note 11.

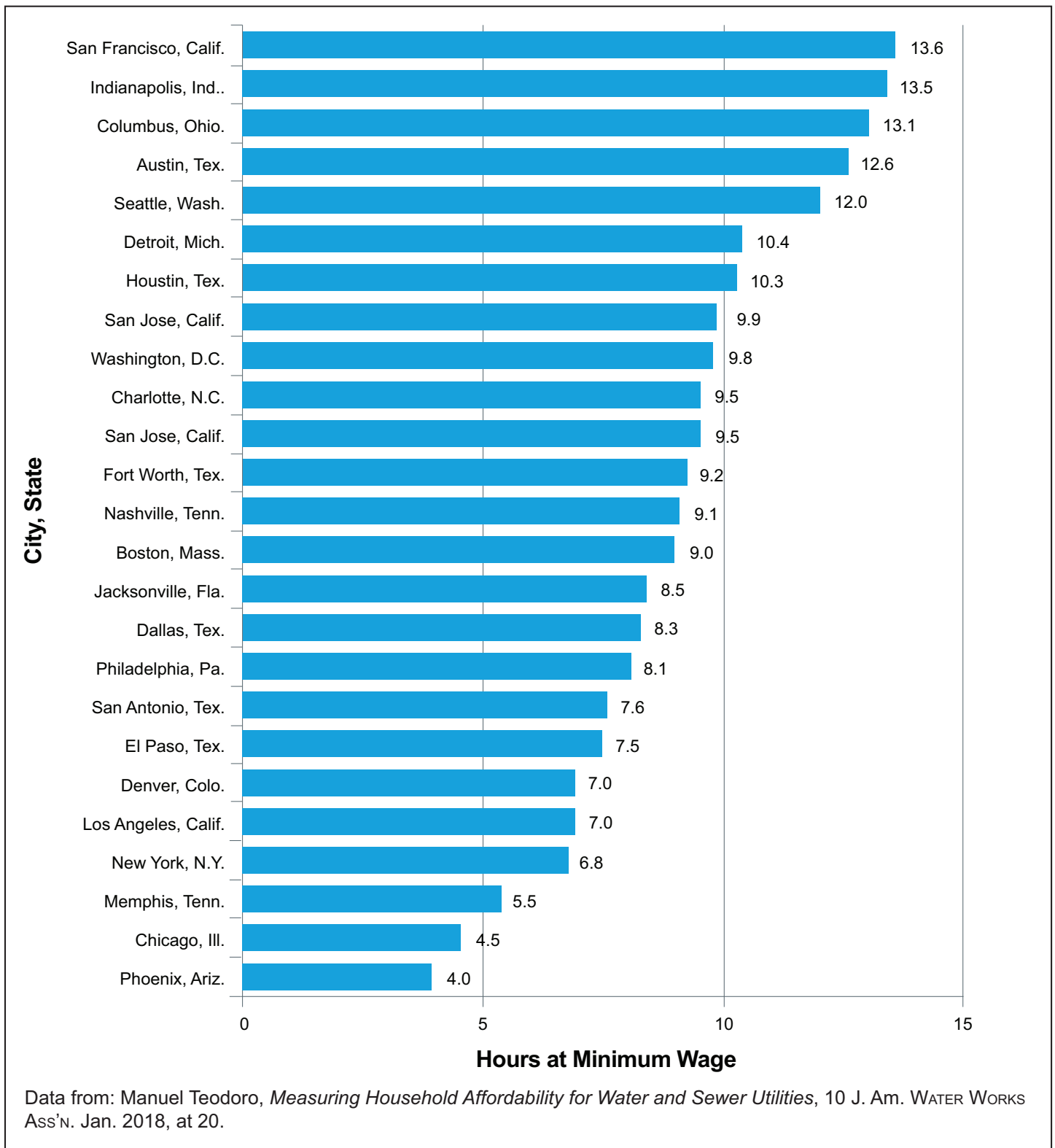
# Chart A: Affordability Ratio at the 20th Income Percentile (AR<sub>20</sub>)

2017 Basic water & sewer cost for family of four as share of disposable income



## Chart B: Basic Water & Sewer Cost as Hours at Minimum Wage

2017 rates, family of four at 50 gallons per capita per day





are inconvenienced. Depending on the degree to which pressure is lost during the pipeline break, contamination can also be a concern, but only for the relatively smaller number of customers impacted.

This becomes an equity issue in two ways. First, it is frequently the case that the most problematic pipelines exist in the oldest and often poorest parts of the community. When this is the case, the most disadvantaged in the community are more frequently inconvenienced by disruptions in water service and are put at risk of contamination more frequently than others in the community. Second, the cost of replacing pipelines can only be delayed for so long. Eventually, the pipe will lose structural integrity and require replacement. It is generally far more expensive to replace pipelines reactively—after they have burst—than to replace them proactively. Delaying pipeline replacement burdens future generations who will inherit the problem. This is an issue of intergenerational equity.

It is easy to delay pipeline replacement, and as noted above, elected-officials and private water company regulators often do not like to raise water rates to pay for it. The result is inadequate investment in pipeline replacement, a story that has played out time and time again in community water systems across the country.<sup>16</sup>

By way of example, consider Phoenix. Its water distribution system is one of the largest in the country, covering approximately 540 square miles with around 7,000 miles of pipeline. Recently, the city estimated the cost of water

main replacement over the next 50 years at approximately \$8 billion.<sup>17</sup> Assuming the number of customers available to pay into the cost of the system more than doubles (the population of the city roughly doubles), the cost of replacement per customer over that time frame is approximately \$15 per month. In December 2018, the Phoenix City Council voted down a proposed water rate increase of approximately \$1 per month.<sup>18</sup>

“They need emergency surgery, not maintenance. Yet in 2018 Irish Water was replacing just 25-30km of Dublin’s 9,000km of pipes, equating to 0.3%. At that rate, it will be 300 years before all of Dublin’s pipes are replaced.”<sup>19</sup>

When investment in aging infrastructure is inadequate in a community water system, it is often the most vulnerable who pay the highest price. Wealthier families can bear the cost of bottled water deliveries to avoid disruptions and quality concerns; poorer families cannot.

#### **Tenet #4: Billing for multiple services undermines water security**

In municipally-owned water utilities, water bills are commonly combined with bills for other city services, such as solid waste removal, recycling, stormwater fees, environmental fees, natural gas, electricity, and taxes for the city’s general fund. Combined billing is a matter of efficiency and cost savings (it is easier and less expensive to send one bill to a customer rather than many), ease of revenue collection (it is easier to collect general fund taxes that appear on a “water” bill)

<sup>16</sup> E.g., Dan Mihalopoulos, *City Inaugurates Costly Plan to Replace Aged Water Mains*, NY TIMES (Dec. 11, 2011), <https://www.nytimes.com/2011/12/18/us/chicago-inaugurates-costly-plan-to-replace-aged-water-mains.html>.

<sup>17</sup> Email from Phoenix Water Services to Kyl Center (Feb. 11, 2021) (on file).

<sup>18</sup> Elizabeth Whitman, *Despite Looming Shortages, Phoenix City Council Sinks Proposed Water Rate Hike*, PHOENIX NEW TIMES (Dec. 13, 2018), <https://www.phoenixnewtimes.com/news/phoenix-city-council-sinks-proposed-water-rate-increase-11069299>. More recently, the Phoenix City Council has approved four rate increases. Jen Fifield, *Phoenix water bills are going up again. Here’s how much*, AZCENTRAL (Mar. 18, 2021), <https://www.azcentral.com/story/news/local/phoenix/2021/03/18/phoenix-city-council-approves-two-water-rate-increases/4738415001/>.

<sup>19</sup> Kay, *supra* note 6.

and customer service (many customers would be annoyed by receiving more than one bill from the same entity). Efficiency, cost-savings, ease of revenue collection and customer service are all good things. However, there are important implications for water equity that must be acknowledged.

Very often, revenue collection for a customer's bill is enforced through water disconnection. This makes sense from the perspective that the water utility must ensure sufficient revenue to operate, and it is reasonable to insist that those who benefit from water service pay a portion of the cost to provide it in a community. When customers do not pay, disconnection is a means of enforcing revenue collection. Once the customer pays, their water service is restored.<sup>20</sup>

Water utility disconnections are a major source of water insecurity for customers who struggle to make ends meet and are the source of much contention in communities in which utility disconnections disproportionately impact people of color. The issue of affordability and water disconnection is compounded when the bill the customer receives includes costs not just for water and sewer service, which may in and of themselves be affordable, but also costs for solid waste, stormwater, city general fund taxes and other costs. Combined charges can exacerbate affordability and water insecurity problems because revenue collection for all of these costs is enforced through water disconnections.

For example, in Phoenix, the average residential customer pays approximately \$55 per month for water and sewer services<sup>21</sup> but is charged nearly

double that on the City Services Bill because solid waste and various other services and taxes are included in the bill. A disadvantaged customer who is intentionally trying to save money by conserving water and staying within the monthly allowance included in the fixed charges may pay around \$25 per month for water and sewer services but over \$60 per month on the City Services Bill. That customer can attempt to conserve water and pay less but cannot avoid solid waste charges, which are generally fixed.<sup>22</sup>

Cities often use water disconnections to enforce revenue collection for all of the services and taxes that appear on a city bill, not just for reasons of efficiency and customer service, but also because there are no straightforward ways to enforce revenue collection for, say, a stormwater or solid waste bill. For example, local public health laws generally prohibit the removal of the customer's waste bin because its absence creates a public health hazard. Likewise, stormwater runs downhill regardless of whether an individual customer has contributed to stormwater system costs. It is easiest to enforce revenue for all services on a city bill through water disconnections. Modern life is extremely inconvenient without clean, safe water on tap, and customers experience a powerful incentive to pay bills when water is disconnected.

In a recent study, the California Water Board estimated that approximately \$1 billion in "water debt" exists across the state. But not all of that debt is from non-payment of water-specific bills. The Water Board noted: "However, some systems collect charges for other services, such as wastewater, stormwater and energy on the

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<sup>20</sup> During the COVID-19 Pandemic, many water utilities have chosen not to disconnect customers in support of public health. See Herman K. Trabish, *Utility customers owe up to \$40B in COVID-19 debt, but who will pay it?*, UTILITY DIVE (Dec. 3, 2020), <https://www.utilitydive.com/news/customers-owe-billions-in-covid-debt-to-their-utilities-and-somebody-has-to/589525/> (noting that by March 2021, municipal customers could owe \$35 to \$40 billion to their water and wastewater utilities).

<sup>21</sup> This relates to approximately 9,000 gallons of water use per month.

<sup>22</sup> City of Phoenix Water Serv. Dep't, *Water Equity Initiative* (June 23, 2020), [https://www.phoenix.gov/waterservicesite/MediaAssets/WSD%20Home%20Page/EquityPaper\\_2020-06-23\\_Final.pdf](https://www.phoenix.gov/waterservicesite/MediaAssets/WSD%20Home%20Page/EquityPaper_2020-06-23_Final.pdf).

water bill. The Board’s estimate of drinking-water specific debt is between \$600 and \$700 million.” In other words, around 30-40% of “water debt” was not for water, but for services that were combined with the water bill. A “water debt” of \$600 to \$700 million in the state is not good for water security and equity; a \$1 billion debt due to combined billing for other services is worse.<sup>23</sup>

The reasons why cities choose to enforce revenue collection for all charges on a city services bill by disconnecting water service are understandable, but the practice can exacerbate problems with water affordability and water insecurity. If water equity is a primary goal, cities can consider trading off efficiency and collection ease for enhanced affordability by billing for water services separately from other city services. New, automated billing technologies, including e-bills and autopay, make the transaction costs associated with separating the billing less administratively burdensome and less expensive than in the past.

### **Tenet #5: Fees should be productive and not punitive**

Water utilities employ fees of various kinds. Fees are different from rates. Fees are direct charges to an individual customer’s account that recover the costs of providing a specific service to that customer. In general, fees are charged to ensure individual customers who have incurred specific costs for ancillary services pay for the costs incurred and encourage positive behaviors (and/or discourage problematic ones).

For example, late fees on past-due bills are charged to protect revenue sufficiency and stability and to enhance customer fairness. Likewise, water theft fees discourage creative customers from undertaking their own plumbing to bypass meters, which can create

a public health hazard through backflow and contamination. Water utilities often charge a service activation fee to cover the cost of setting up meters and accounts, and some charge fees when service is disconnected.

While fees are necessary to maintain customer fairness and revenue stability (to ensure the water utility operates adequately for everyone in the community; see Tenet #1), fees can inadvertently become extremely burdensome to those struggling to pay bills and therefore increase water insecurity. For instance, a customer may find themselves in a situation where the fees charged for late payments, a returned check and a disconnection end up costing more than the original bill for water service.

To enhance water equity, water utilities should review fees, often left in place unchanged many years after they were first adopted, to ensure they are necessary for customer fairness and revenue stability while not being unnecessarily punitive. Once water service is disconnected, customers have a very strong incentive to pay their bill in full to restore water service, and the continued imposition of late fee accruals after disconnection may serve only as a punitive barrier to service restoration. Another option is to waive certain fees for customers who qualify for customer assistance programs (Tenet #6 below).

### **Tenet #6: Customer assistance programs are essential**

Funding for customer assistance programs comes in various forms. Some customer assistance programs are funded by using a portion of the water utility’s revenues to pay for the bills of those in the community who are economically disadvantaged and meet eligibility criteria. This straightforward transfer of revenue from one group of customers to another can

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<sup>23</sup> California State Water Resources Control Board, *Covid-19 Drinking Water Survey*, (Jan. 19, 2021), [https://www.waterboards.ca.gov/drinking\\_water/programs/documents/ddwem/covid\\_financial\\_survey\\_board\\_ppt\\_20210119.pdf](https://www.waterboards.ca.gov/drinking_water/programs/documents/ddwem/covid_financial_survey_board_ppt_20210119.pdf).

significantly diminish water utility disconnects. In funding a customer assistance program through rates, a relatively large group of customers pays slightly more than they otherwise would for their water service to ensure that a small group of disadvantaged customers does not experience water insecurity. Many water utilities also ask customers to contribute voluntarily to customer assistance program funds.<sup>24</sup>

Some states and jurisdictions do not allow water utilities to use revenues from one group of rate-payers to pay for the bills of another set of rate-payers. In other places, assistance programs are allowed, but the community chooses not to implement them because of concerns that such programs would be perceived as unfair and undermine support for the community water system.

Where customer assistance programs are allowed, and where the community accepts a balance between customer fairness and subsidizing disadvantaged customers, such programs can be one of the most effective means of avoiding utility disconnects and minimizing water insecurity.

There are other forms of customer assistance programs, such as plumbing retrofit programs. Through these programs, old, inefficient water fixtures are replaced with new ones to conserve water. The water conservation that results can also lower the customer's bill. When targeted to parts of the community where plumbing is the oldest and customers are most disadvantaged, plumbing retrofit programs can improve water security while providing a benefit to the utility in the form of enhanced water stewardship. Similarly, programs that provide an incentive to remove lush landscaping in favor of climate-appropriate outdoor landscaping can lower water

bills for individual customers while conserving water for the entire community.

Disadvantaged customers and customers who struggle to make ends meet often have little time outside of work and family obligations to navigate the bureaucracy sometimes necessary to receive assistance directly from the utility or partner organizations. Customers in lower-paying jobs often work hours that make communication with 8 a.m. to 5 p.m. employees difficult. Language barriers and technology gaps can make the process even more painful and time-consuming. The cost of being on hold for an hour is different for a disadvantaged customer using a pre-paid cell phone than an affluent customer on an unlimited plan. Customers on the verge of water disconnection can be frightened, panicked and angry.

Ombudsmen, another form of customer assistance program, can connect customers seamlessly to internal and external help, often resolving the problem before disconnection becomes necessary. Customers in difficult situations often just need the reassurance of a calm human voice and the help of someone who can guide them through options. Customer ombudsmen trained to help customers avoid disconnects and access help from customer assistance and partner programs can be extremely effective in enhancing water security and building community trust.

## **Tenet #7: Community partnerships build water security**

Chronic poverty cannot be solved on the back of the community water system. Temporary or even permanent respite from paying water bills is unlikely to launch a family out of poverty. Per the AR20 index discussed previously, in

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<sup>24</sup> E.g., Stacey Isaac Berahzer, *How Can Water Utilities in Georgia Find the Money to Help Their Low-Income Customers?* RIPPLE EFFECTS (Aug. 5, 2020), <https://www.ibenvironmental.com/blog/2020/7/24/how-can-water-utilities-in-georgia-find-the-money-to-help-their-low-income-customers>.

Phoenix, water and sewer bills make up less than 5% of a low-income family's budget after subtracting out rent, food, medical, other utilities and other essentials. Even in San Francisco, highest on the AR20 index cited, water and sewer bills make up only around 30% of a low-income family's budget net of other necessary expenses. No doubt, a water bill, no matter how small, can be unaffordable for a disadvantaged customer, but there are broad and reinforcing benefits associated with addressing water equity alongside larger issues of societal equity through community partnerships.

Community water systems can seek to work with non-profits, religious groups and other stakeholders to address poverty in a systematic manner. The less poverty in a community, the less water insecurity. The utility benefits through more stable revenue and a reduction in lost revenue write-offs. Simply put, a rising tide lifts all boats.

Workforce programs are an example of utility-community partnerships that can help address systematic poverty and increase water security. In these programs, utilities concentrate hiring efforts in disadvantaged areas for the purpose of employing community members. By working with local non-profit and religious organizations to target recruitment efforts, utilities can strengthen community ties, offer quality jobs to those in need and improve water security through poverty reduction.

### **Tenet #8: Disconnection is sometimes necessary**

Disconnections are controversial but necessary in various situations and support water equity when exercised judiciously and appropriately. For example, where the customer has tampered with the utility's service line or main for the purposes of bypassing the meter and stealing water, the utility has a public health obligation to disconnect the customer to avoid backflow and contamination. The utility also has an obligation,

for the purpose of maintaining customer fairness and revenue sufficiency (see Tenet #1) to disconnect customers who have the ability to pay but choose not to.

**No water utility wants to disconnect customers. Water utilities are in the business of selling water, and they cannot sell water to a customer who is disconnected. Water utilities are overseen by elected officials and regulators who are, for the most part, kind, decent people, and they are operated by employees who are, for the most part, kind, decent people, none of whom wants to leave any customer without water.**

Things obviously get trickier and more controversial when it comes to disconnections for customers who do not have the ability to pay. There are several categories of customers—those who always pay, those who forget to pay sometimes, those who have trouble paying sometimes, those who can't pay and those who simply won't pay. It is essential to understand that most utilities do not have the information to determine whether a customer can't afford to pay, forgot to pay or just chooses not to pay. For utilities to determine who cannot afford to pay, the customer generally must reach out to the utility and voluntarily disclose the information. Not all customers want to do that.

To illustrate the importance of revenue enforcement, consider the extreme case. If a water utility never enforces revenue (never disconnects for lack of payment), many customers will continue to pay, and many customers will not. Both categories will include customers who have difficulty paying as well as customers that have the ability to pay all the time. To ensure revenue sufficiency, the utility will need to charge the customers who are willing to pay relatively more than they would otherwise pay if all customers contributed to the cost of the utility. The group of customers paying more than they would otherwise will include low-income people, who will in effect be paying more to cover a share of the costs incurred because of wealthier people who refuse to pay. Charging

only customers willing to pay undermines customer fairness and, eventually, customer support for the community water system.

In the interest of water equity and security, utilities should do everything in their power to avoid disconnections in the first place. This can include examining statistics on repeat delinquencies and disconnections to see if it is possible to proactively communicate with customers, nudging them with reminders to pay, and connecting them with customer assistance programs, non-profit, religious and other financial resources. It can also include offering flexible payment plans and the development of water rates that enhance affordability (see Tenet #2). Direct, frequent, advance notice of pending disconnection is also vital.

Where disconnection becomes necessary, it can be helpful to proceed with disconnection sooner rather than later. While this sounds paradoxical, it is generally easier for a customer who is struggling to get by to, for example, overcome a \$120 bill that represents two months of past-due charges than a \$500 bill that represents many months. These are trade-offs that must be carefully considered and weighed in each community, and often on a case-by-case basis.

Recently, a few utilities have experimented with deploying low-flow devices in lieu of outright disconnections. These devices restrict flows to households to minimal levels rather than shutting them off completely. This minimal flow allows customers to continue to use water for drinking, cooking and basic washing, although glasses and pots fill very slowly. However, the flow is too small to allow for outdoor and other discretionary uses. This allows customers in difficult circumstances to continue to receive tap water for basic purposes while still experiencing

a strong incentive to pay their bill and restore full service. Low-flow is certainly better than no-flow, and while not ideal, these devices may very well represent a reasonable compromise that protects public health, customer dignity and utility revenue sufficiency.

If disconnection is absolutely necessary and cannot be avoided, here are some ideas:

- give plenty of notice,
- go about it sooner rather than later so that the outstanding amount is smaller and more easily overcome,
- do not disconnect before holidays or weekends,
- do not disconnect on days of extreme heat (the definition of which will vary depending on climate zones),
- do not disconnect medically fragile customers,
- do not disconnect when the outstanding bill is less than a reasonable amount (as determined by policy-makers or regulators), and
- be sure to make it as quick and easy as possible to get re-connected.

Water is a different commodity than electricity or natural gas in that it can easily be purchased and stored. Customers should be encouraged to store three days of water per U.S. Department of Homeland Security preparedness guidelines. That water can come in handy in the case of a water main break that disrupts supplies, a natural disaster or a disconnection.

Due to COVID-19 conditions, many utilities have stopped revenue enforcement for single-family residential customers as of the writing of this paper.<sup>25</sup> When revenue enforcement might resume industry-wide is unknown, as are the

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<sup>25</sup> Food and Water Watch, *External-local-state water shut-offs moratoriums amidst coronavirus*, <https://docs.google.com/spreadsheets/d/153Ze6RRZ-ZZ9oVkaSErhVHGMv3Z4laQDs0GRO7UmYnQ/edit#gid=1796772260> (last visited Mar. 9, 2021); see also NEADA, *Summary of State Utility Shut-off Moratoriums due to COVID-19* (Oct. 19, 2020), <https://neada.org/utilityshutoffsuspensions/>.

financial implications. It was estimated in the recent California Water Board study noted earlier that nearly 25% of community water systems in California are vulnerable and will require financial assistance within a year. It was also estimated that 45% of California water systems have less than a year of cash on hand and that 51% are at medium, high or extreme financial risk.<sup>26</sup> To the extent that revenue sufficiency cannot be maintained because of a lack of revenue enforcement, the entire community's water security is threatened.

### **Tenet #9: Customer convenience enhances water equity**

Ensuring access to safe, clean, affordable drinking water and wastewater services includes making it as easy and convenient as possible for customers to sign up for service, pay bills, ask questions and find information. Not every customer can afford to take time from work or family obligations to go through the often lengthy and bureaucratic process of accessing services and information, and often customers do not speak English.

Although technology gaps remain and customer Web access is not universal, much can be achieved by automating service requests and ensuring 24/7 access to payment options and information requests. In terms of water equity, water utilities must ensure customers can make requests and payments via phone call, email, Web, mail, kiosk and in person. Some customers may not have access to standard banking services. For these customers in particular, it is crucial to provide cash payment options.

**In a recent study on water equity, Phoenix found that in the fiscal year 2018-19, nearly 40% of its service requests took place outside of standard business hours and that 4% of payments were in cash.<sup>27</sup>**

Offering information and services in languages other than English is essential to ensure broad access to water across a community. It is just as important to staff or automate these services appropriately so that wait times are equal across different linguistic groups. Bureaucratic inefficiency is often more burdensome for the poor.

### **Tenet #10: Community representation is a must**

A critical aspect of water equity is ensuring that residents have a role in decision-making related to water management in the community. Many utilities employ formal or informal committees that include a diverse set of community representatives. These committees can meet regularly in public to learn about, discuss, and make recommendations regarding water utility capital planning, operations, policy, finance and rates. The role of a citizens' committee is to represent the interests of residents across the community.

However, civic participation in committees is difficult or even impossible for some people, given work and family commitments. Utilities must avoid a "come to us" mentality and instead engage in proactive, interactive public education and outreach regarding rate development, water resource planning, infrastructure investment and other relevant topics through print material, over the Web, on social media, at seminars and conferences, in neighborhood meetings and through facility tours. Neighborhoods can be canvassed before infrastructure improvement projects begin so that concerns can be proactively addressed and trust can be built.

The enormous costs of providing safe, clean, reliable water are socialized and shared broadly across the customers of the community water

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<sup>26</sup> California State Water Resources Control Board, *Covid-19 Drinking Water Survey*, *supra* note 23.

<sup>27</sup> City of Phoenix Water Serv. Dep't., *Water Equity Initiative*, *supra* note 22.

system. Thus, customer trust in, and support for, the community water system is essential to its adequate funding and functioning.

## In Summary

Water equity is a wicked problem in that it most often involves complex trade-offs rather than win-win solutions. The extremes are easy to argue. On one side, water is a human right and should be free, no qualifications. On the other, there is no free-money tree, utilities must maintain sufficient revenue to operate, and those who benefit from the community water system should fund it commensurately with their benefit, no qualifications. Solutions that keep the water utility functioning adequately for everyone in the community while protecting

the most vulnerable are likely to be found in the middle. Each community water system has its own unique demographics and challenges, and each community must strike its own balance. Acknowledging the complicated trade-offs associated with water equity and discussing them openly in the community is a good place to start. The Ten Tenets of Water Equity are a foundation for that conversation.

This report was written by the staff of the Kyl Center for Water Policy at Morrison Institute, including Director of Research Kathryn Sorensen and Director Sarah Porter. The Kyl Center is grateful for the expertise and insights of Joe Gysel, Cynthia Zwick, Kathy Ferris, and Stacey Berahzer, who provided feedback on drafts.