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Assuring safe, adequate and affordable water service is essential to public health.

NOTE TO READERS

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SAFE, ADEQUATE AND AFFORDABLE WATER SERVICE IS NOT ONLY A "SOCIAL" ISSUE, IT IS A PUBLIC HEALTH NECESSITY.

Water service in today's world is an essential human need. Water is needed not only for drinking, but also for cooking and sewer needs.[1] A 2022 White Paper by the U.S. Water Alliance states that "for every community in our country, the availability of safe drinking water and wastewater services is a precondition for public health and prosperity."[2] The relationship between race and the loss of this essential service seems increasingly difficult to deny.[3]

The Relationship between Affordable Water and Public Health

A recent study published in the American Journal of Preventative Medicine concluded that "[w]ater shutoffs pose a real threat to human health because the lack of adequate sanitation

[1] See generally, Turning Off the Tap: Massachusetts' Looking Water Affordability Crisis; see also, Read et al. (2021). Water Service Affordability in Michigan: A Statewide Assessment, Water Center, University of Michigan.

[2] Hara, Willette and Simonson (2022). Making Water a Public Good: The Bigger Picture of Water Affordability, at 1, US Water Alliance.

[3] See generally, Massachusetts Advisory Committee to the U.S. Commission on Civil Rights (December 2020); see also, Foltz-Diaz et al. (2014). The Color of Water: A Report on the Human Right to Water in the City of Boston, Massachusetts Global Action: Boston (MA) (water shutoffs in Boston may have a disproportionate impact on communities of color, even when controlling for income and other variables).

can cause diseases to spread and allow people to become sick."[4] A 2010 report, which I co-authored for the Water Research Foundation (the research arm of the American Water Works Association), concluded that "[a] final consideration of importance to water utilities is the relationship of payment problems to health issues. . . Potential impacts relate to many of the same public health endpoints targeted by Safe Drinking Water Act standards such as effects on children and the unborn."[5]

There are identifiable groups of households that are particularly vulnerable to the loss of water service. Water is vital to maintaining hygiene and health. The lack of water has particularly negative impacts on children, the elderly, women, and persons suffering from an illness or chronic health concern. As one recent study noted:

> Dehydration can create threatening chemical imbalances for elderly people. Women who are menstruating need water to properly cleanse themselves, and mothers who are nursing need water to maintain their milk supply and their health. Some people with chronic illness need clean water in order to run and wash personal medical equipment.[6]

The Health Impacts Extend beyond Physical Health.

The loss of water not only presents physical health problems, but also threats to emotional well-being. Georgetown Law's "fact-finding" report documented that "people often experience a profound sense of shame surrounding the disconnection of their water and their inability to pay."[7]

The fundamental need for affordable water is recognized not only by laws relating to the protection of children, but also by laws relating to the habitability of homes. In twenty-one states, a parent's inability to provide running water in the home can be considered "child neglect."[8] The lack of running water and sanitation is generally considered by public health inspectors to make a home uninhabitable.[9]

Moreover, the unaffordability of water tends to be self-reinforcing. Unaffordable water bills, for example, tend to make it less likely that low-income customers will be able to afford plumbing repairs to fix leaks that might further increase usage (and consequently, bills).[10]

[4] Zhang et al (2021). Water Shutoff Moratoria Lowered COVID-19 Infection and Death Across U.S. States, 2021 American Journal of Preventative Medicine.

[5] Cromwell, et al. (2010). Best Practices in Customer Payment Assistance Programs, at xxii, Water Research Foundation: Washington D.C. (hereafter "Best Practices").

[6] Jones and Moulton (2016). The Invisible Crisis: Water Unaffordability in the United States, at 11, Unitarian Universalist Service Committee, Cambridge: MA; *see also*, Bipartisan Policy Center (September 2017). Safeguarding Water Affordability, at 7.

[7] Georgetown Law Human Rights Institute Fact-Finding Practicum (April 2013). "Tapped Out: Threats to the Human Right to Water in the United States, at 35, Georgetown Law School: Georgetown (VA).

[8] *Id.*, at 34.

[9] *Id.*, at 32 – 33.

[10] Levine (2019). Promoting Affordability of Public Water and Sewer Service for Low-Income Households in New Jersey: Policy Options, at 9, prepared for Jersey Water Works Asset Management and Finance Committee.

Parallels to Home Energy Insecurity.

While the water industry has not studied the issue, the relationship that exists between low-income status and bill payment difficulties has been established in numerous studies in the energy industry. When considering the impacts of unaffordability on payment problems, there is no distinction between the delivery of water and energy services.

The Energy Information Administration of the U.S. Department of Energy (EIA/DOE) convincingly established the relationship between income and "energy insecurity" in nationwide data from its 2015 Residential Energy Consumption Survey (RECS). The data is presented in the Table below. The data shows that as household income increases, home energy insecurity decreases.

Household Energy Insecurity
2015 EIA/DOE Residential Energy[11]
Consumption Survey (RECS)

2015 annual household income	Any household energy insecurity	Reducing or forgoing food or medicine to pay energy costs	Leaving home at unhealthy temperature	Unable to use heating equipment	Unable to use cooling equipment
<$20,000	49.8%	38.4%	20.1%	10.5%	10.0%
$20 - $39,999	40.3%	29.3%	13.9%	7.0%	8.1%
$40 - $59,999	34.2%	22.8%	10.3%	5.4%	5.4%
$60 - $79,999	25.7%	14.5%	7.2%	3.3%	5.3%
$80 - $99,999	18.6%	8.2%	4.1%	1.0%	2.1%
$100 - $119,999	12.3%	7.4%	3.7%	1.2%	1.2%
$120 - $139,999	13.0%	7.4%	5.6%	N/A	N/A
$140,000+	8.0%	2.7%	2.7%	0.9%	1.8%

[11] Data from the 2019 RECS has not yet been publicly released. The 2015 data is the most recent data available. eia.gov/consumption/residential/data/2015/index.php.

The 2015 results were not unique, nor surprising given similar examinations of earlier RECS data. In 2005, the federal agency administering LIHEAP funded a one-time special set of questions through the 2005 RECS. A resulting review of the 2005 data was undertaken for the federal LIHEAP office.[12] The LIHEAP study reported that households with income below the Federal Poverty Level ("Poverty" or "Poverty Level") had higher rates of energy insecurity than other households (*e.g.*, households with income at 100% to 150% of Poverty; households with income above 150% of Poverty). Poverty Level, rather than income, is associated with all types of energy insecurity, the study found (concluding that it is important to take into account household size).[13] The study found further that higher residential energy burdens, but not higher home energy burdens,[14] are associated with all types of energy insecurity, including both service interruptions and "financial energy insecurity."[15]

This DOE data is confirmed by more recent data from the National Energy Assistance Directors Association ("NEADA"). NEADA periodically conducts a Congressionally-funded survey of low-income households who receive benefits through LIHEAP. The most recent NEADA survey was published in December 2018.[16] NEADA provides three results that are important from the perspective of how inability-to-pay and low-income status fit together.

First, not only do a significant number of low-income households skip paying, or pay less than, their full home energy bill due to not having enough money for their energy bill, but the percentage reporting to take such actions increases as incomes decline.

[12] APPRISE, Inc. (Feb. 2010). LIHEAP Special Study of the 2005 Residential Energy Consumption Survey, Dimensions of Energy Insecurity for Low-Income Households, Final Report, prepared for U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance, http://www.appriseinc.org/resource-library/selected-reports/energy-survey-research-and-policy-analysis/ (accessed August 17, 2022).

[13] Poverty Level is income taking into account household size. In 2022, for example, 100% of Poverty for a 1-person household is $13,590, while 100% of Poverty for a 2-person household is $18,310, and for a 3-person household is $23,030. https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines (accessed August 17, 2022).

[14] Pursuant to the federal LIHEAP statute, "home energy" is a defined term. By statute, "home energy" is limited to home heating and cooling used in a residential dwelling. https://www.acf.hhs.gov/ocs/fact-sheet/liheap-fact-sheet (accessed August 17, 2022). *See also*, 42 U.S.C. 8621(6). In contrast, "residential energy" includes energy used for home heating and cooling, water heating, and appliances. *See*, Dimensions of Energy Insecurity, *supra*, at 32 (contrasting "home energy" and "residential energy").

[15] "[I]n 2005, households with high residential energy burden were much more likely to have a heat interruption than households with moderate or low burdens. However, it appears that there is very little relationship between home energy burden and heat interruptions. One reason that high residential energy burden is better associated with heat interruptions compared to home energy burden may be the fact that if the household cannot pay its whole energy bill, it will be without heat regardless of what portion of the energy bill was for space heating . . . [The data] focuses on the constraints households face on household necessities or whether they received shutoff notices or threats. The [data] shows that both types of financial Energy Insecurity appear to be related to residential energy burden, but not related to the level of home energy burden." (Dimensions of Energy Insecurity, *supra*, at 33, 34).

[16] NEADA (December 2018). 2018 National Energy Assistance Survey, Final Report, available at http://www.appriseinc.org/resource-library/selected-reports/energy-survey-research-and-policy-analysis/ (accessed August 17, 2022).

The NEADA data shows that one-in-nine LIHEAP recipients either skipped paying their home energy bills every month, or paid less than their full bill. Nearly three times as many LIHEAP recipients with income *less than* 50% of Poverty, and 1.5 times as many recipients with income between 51 and 100% of Poverty, did so than did LIHEAP recipients with income *greater than* 150% of Poverty.

Fewer than half of LIHEAP recipients said that they "never" skipped paying a bill, or paid less than their full bill. While roughly three-in-five (57%) recipients with income *greater than* 150% of Poverty reported never missing a payment, or paying less than their full payment, only two-in-five (40%) recipients with income below 50% of Poverty reported never skipping a payment.

Second, one impact of skipping payments, or making less than full payments, is that LIHEAP recipients also report having received shutoff notices. Fewer than half reported having "never" received a shutoff notice, while nearly one-third report having received a shutoff notice either "almost every month" (11%) or "some months" (21%).

Again, there is a noticeable difference between households at the lowest income levels and households at the highest income level. While more than one-quarter (27%) of LIHEAP recipients with income less than 50% of Poverty report having received a disconnect notice either "almost every month" (10%) or "some months" (17%), only 4% of households with income *greater than* 150% of Poverty reported receiving disconnect notices that frequently (0% almost every month; 4% some months). More than four-fifths (84%) of LIHEAP recipients with income greater than 150% of Poverty report never having received a shutoff notice, while only one-half (50%) of LIHEAP recipients with income less than 50% of Poverty did so.

Finally, the NEADA survey of LIHEAP recipients reports that nearly one-in-six (15%) recipients experienced either an electricity shutoff or a natural gas shutoff due to nonpayment during the past year. When utility fuels are examined individually, the NEADA data shows that 13% of all LIHEAP recipients had their electricity disconnected for nonpayment, and 7% of LIHEAP recipients had their natural gas service disconnected for nonpayment. The lowest income recipients had service disconnected far more frequently than did higher income recipients—five times more frequently for electricity (24% vs. 5%), and nearly six times more frequently for natural gas (12% vs. 2%).

Corresponding Data from Water Industry.

While the discussion above refers to data developed in the energy industry, those same results would appertain in the water industry as well. A recent statewide study of water affordability in the State of Michigan, for example, reported:

> During interviews, we heard stories of people juggling and often skipping or making risky trade-offs of key expenses such as medicines, electricity, water, and taxes in order to provide for their families when their income is limited. Associated late payment penalties with most of these expenses only make the problem worse. When individuals prioritize the water bill, it is often at the expense of necessary medication or healthy food choices. Over time, the mental health impact from the stress and shame of struggling to support a family accumulates and impacts capacity to work and support the household. The impact of making hard decisions every month becomes a severe mental health challenge that requires resolution beyond

merely examining the household budget.[17]

These are the same results that have been reported above with respect to home energy.

Summary

Water cannot be viewed as just another commodity sold by a public agency, with access denied when customers find the cost to be unaffordable. The water industry must acknowledge this "connection between affordability and public health as another compelling reason to go beyond normal commercial collections practices and help meet higher community goals in this area of service."[18] The WRF report found that "[w]ater utilities must remain mindful that public health is their core business and there is as much health impact at stake in the manner in which they obtain revenue from low-income households as there is in treating the water to high standards."[19]

For more information regarding the affordability of water, please write:

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Fisher, Sheehan and Colton, Public Finance and General Economics (FSC) provides economic, financial and regulatory consulting. The areas in which *FSC* has worked include energy law and economics, fair housing, affordable housing development, local planning and zoning, energy efficiency planning, community economic development, poverty and telecommunications policy, regulatory economics, and public welfare policy.

[17] Read et al. (2021). Water Service Affordability in Michigan: A Statewide Assessment, Water Center, University of Michigan.
[18] Best Practices, supra, at xxii.
[19] Id., at 29.