



# A Drop in the Bucket:

*Water Affordability Policies in Twelve  
Massachusetts Communities*

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## **About the Authors:**

This report is the product of a collaboration between the Program on Human Rights and the Global Economy (PHRGE) and the interdisciplinary research team for the “Public Health and the Right to Affordable Water” project, funded by a seed grant from Northeastern University. Martha F. Davis, Professor of Law, is the lead author of the report. Additional research contributions, comments, and feedback were provided by Sharon L. Harlan, Professor and Chair, Department of Health Sciences; Laura Senier, Associate Professor of Sociology and Health Sciences; Mariana Sarango, Ph.D. Candidate in Population Health and Graduate Research Assistant; Elizabeth Ennen, PHRGE Director; and Henry Sturm, PHRGE Water Rights Research Assistant and J.D. Class of 2020.

The Program on Human Rights and the Global Economy (PHRGE) at Northeastern University School of Law was founded in 2005 to engage in study, promotion, implementation and constructive critique of rights-based approaches to economic development and social transformation. PHRGE supports cutting edge human rights scholarship and movement-building, with particular focus on economic, social and cultural rights, and works with students to ensure that human rights perspectives will continue to be vital to future generations of scholars and advocates.

This is PHRGE’s fourth publication in a series on the human right to water. The other publications are: (1) *The Human Right to Water: A Research Guide and Annotated Bibliography*; (2) *The Human Right to Water: Using Freedom of Information Laws to Understand Rising Water Rates*; and (3) *The Human Right to Water: A Primer for Lawyers and Community Leaders*. These publications are available at <https://www.northeastern.edu/law/academics/institutes/phrge/publications/index.html>.

Another Northeastern University report by research team members affiliated with the Social Science Environmental Health Research Institute is, *Environmental Justice and Sustainable Urban Water Systems*, available at [https://erams.com/UWIN/wp-content/uploads/2018/10/UWIN\\_SEEJ\\_Report\\_October-2018.pdf](https://erams.com/UWIN/wp-content/uploads/2018/10/UWIN_SEEJ_Report_October-2018.pdf).

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# A Drop in the Bucket:

## Water Affordability Policies in Twelve Massachusetts Communities

### Introduction:

All humans – rich and poor, young and old -- need water, and they need it in similar quantities. Water that is affordable, as well as accessible and safe, is a fundamental human right.<sup>i</sup>

However, the price that households must pay to maintain their water supply is increasing rapidly. The cost per unit of water for U.S. consumers has increased 50 percent since 2010, much faster than incomes.<sup>ii</sup> By 2022, water bills are projected to be unaffordable for 36 percent of U.S. households.<sup>iii</sup>

Some communities have already acted decisively to address the issue. In the vanguard is Philadelphia, which adopted a means-based water affordability plan in 2017.<sup>iv</sup> A handful of other communities, such as Portland, Oregon, have also been pro-active; in 2018, Portland expanded the scope and reach of its water bill discount programs, and began offering additional assistance to lower income families, including renters.<sup>v</sup> In contrast, when more and more households defaulted on high water bills, cities including Detroit, New Orleans, and Tulsa, expanded their use of water shutoffs as a collection tool.<sup>vi</sup> In 2016, utilities shut off water in an estimated 1.4 million American households.<sup>vii</sup> In some communities, residents also lost their homes to foreclosure when unpaid water bills were converted to tax liens.<sup>viii</sup>

It is no surprise that Massachusetts residents are also increasingly burdened by the cost of water. Although this issue has received little focused attention across the Commonwealth, there are indications that rising water prices in Massachusetts are exacerbating the impacts of economic and racial inequalities. For example, according to a 2014 report by Massachusetts Global Action, thousands of Boston residents are threatened with shutoffs to water service in Boston each year, and there is a “strong and persistent” relationship between race and shutoff notices, even after controlling for the average income of the neighborhood.<sup>ix</sup>

When historically-high economic inequality combines with rising water prices to undermine access to affordable water, the impacts are potentially tragic. Health consequences can include increased stress, higher blood pressure, and for those with fixed incomes, the dilemma of choosing between water and needed medicines.<sup>x</sup> Notably, because Massachusetts is among the most economically unequal states in the nation, these impacts are especially concentrated in already-vulnerable communities.<sup>xi</sup>

To determine what steps are being taken to address the current and potential impacts on low-income consumers of rising water prices in Massachusetts, we surveyed twelve communities in the state. For each community, we asked:

- (1) What water affordability, water assistance, or discount policies have been adopted by the community?;
- (2) How many individuals take advantage of these policies?;
- (3) What consequences do households face if they do not pay water bills in a timely manner?; and
- (4) Does the community maintain any demographic data on residents who seek discounts, receive discounts, seek payment plans, or experience shutoffs?

## Methodology

Our twelve target communities include the eight largest community water systems in the Commonwealth: Boston, Brockton, Cambridge, Lowell, New Bedford, Springfield, Quincy, and Worcester. We added to our sample Lawrence, which has faced special infrastructure challenges, and three inner-ring cities adjoining Boston -- Brookline, Chelsea, and Somerville -- which provide additional income and racial diversity to the study. Because of our concerns that the privatization of water services could become a barrier to affordable water, we also investigated private water systems in Massachusetts. We found that there are only 19 privatized suppliers in the Commonwealth, with only one serving more than 10,000 customers; that jurisdiction, Hingham, recently voted to return to public ownership.<sup>xii</sup> Brockton, which maintains a private contract to meet a portion of its water needs, is included in our sample as a large system, but is also an example of a partially privatized system.<sup>xiii</sup>

These communities reflect some geographic diversity, with Springfield and Worcester far from the eastern coast of Massachusetts, while New Bedford hosts a historic working harbor in Buzzard's Bay, off the Atlantic Ocean. The selected communities also draw their water from several different sources. For example, Lowell, Massachusetts draws its water supply from surface water of the Merrimack River, which has its source in the White Mountains of New Hampshire.<sup>xiv</sup> The primary water source for Springfield, Massachusetts is the Cobble Mountain Reservoir.<sup>xv</sup> Several communities, including Brookline, Somerville, and Boston, draw their water from the Quabbin and Wachusett Reservoirs.<sup>xvi</sup> Appendix I shows the location of each of our study communities within the Commonwealth, and lists their water sources.

Demographic information for these twelve communities is set out more fully in Appendix II. Briefly, our target communities reflect a mixture of higher-income (e.g., Brookline) and lower-income (e.g., Chelsea) households. Our target communities also reflect diverse racial composition within the Massachusetts context. According to the most recent U.S. census data, the overall population of Massachusetts is 71.4 percent white alone (not Hispanic or Latino); 8.9 percent Black

or African American; 7.1 percent Asian; and even smaller percentages of two or more races, Native Americans, or Native Hawaiians or Pacific Islanders. Only 12.3 percent of the population identify as Hispanic or Latino.<sup>xvii</sup> Among our target communities, however, almost 80 percent of Lawrence residents are Hispanic or Latino, while Springfield’s population is more than 20 percent African American. In contrast, Somerville, like Massachusetts as a whole, is overwhelmingly white (over 70 percent), with percentages of African Americans, Asians, and Latinos in the single digits.<sup>xviii</sup>

Finally, our twelve communities reflect the fact that homeownership – an important driver of racial wealth disparities, and a factor in the administration of local water policies -- is relatively low in Massachusetts. According to one study, Massachusetts ranks 44<sup>th</sup> in the nation, with a home ownership rate of just 60.5 percent.<sup>xix</sup> Our twelve communities fall even lower; of our target group, Brockton has the highest homeownership rate, at just 53.41 percent.<sup>xx</sup> Importantly, as low as they are, these aggregated figures mask a dramatic gap between blacks and whites. For example, the Urban Institute studied home ownership in Boston, Cambridge, and Newton, and found that white homeownership was at 68.4 percent, while only 36 percent of blacks owned their own homes, a 32.4 percent gap.<sup>xxi</sup> The racial gap in homeownership in Massachusetts overall is one of the highest in the U.S.<sup>xxii</sup> Further, homeownership rates are even lower for Hispanic residents of Massachusetts. According to one study, “[j]ust 26.0% of Hispanic heads of household own their homes.”<sup>xxiii</sup> As one local journalist put it, “in Massachusetts, if you're not white, chances are your family doesn't own a home.”<sup>xxiv</sup>

Our study consisted of four phases. In phase 1, initiated in 2018, we conducted on-line research using municipal websites and legal research to identify community-level regulations and policies on water affordability and water assistance. We expected to recover much more authoritative information from websites than was ultimately possible. Instead, while this approach yielded some information, we found that many of the target communities did not have detailed, up-to-date information on their websites.

In phase 2, we attempted to contact the relevant administrators in our target communities to ask our questions directly. While this phase yielded some additional information, we often received conflicting information concerning who might be able to provide us with the data that we sought.

In phase 3, initiated in early 2019, we followed up our initial calls with formal Massachusetts Public Records Act requests (known as “Freedom of Information” or “FOI” requests) directed to the appropriate officials in each community.<sup>xxv</sup> We spent several weeks developing our FOI requests in order to make them as comprehensive as possible. Once we transmitted the FOI requests, most communities responded quickly and thoroughly. This was a turning point in our inquiry, as we received significant amounts of information that we were able to synthesize to get a more complete picture of how Massachusetts communities approach the issue of water affordability. In some instances, these FOI requests triggered a production of the documents and information that we sought. In other instances, the requests initiated a dialogue about the scope of the request. In both instances, we were able to obtain additional relevant information.

Finally, phase 4 consisted of follow-up phone calls after we received the FOI responses in order to clarify any additional points and obtain additional responsive documents and information.

## **Background on Water Pricing and Billing Practices**

In order to understand local water affordability policies, we first had to gain a basic understanding of the steps that lead to the ultimate bill received by water customers. We did not analyze the complicated process of water price-setting, but sought to gain a general overview of the steps involved in order to better understand the components of water bills from the consumer side.

### **■ What is being billed?**

The bills that consumers informally call “water bills” generally include charges for both household water and sewer services. The unit rates for these services are set and calculated separately, though the charges are typically set out in a single bill.

The Massachusetts Water Resources Administration (MWRA), the wholesale provider of water to Boston and many surrounding communities, charges the communities that it serves more per unit for sewer usage than water usage. It is not surprising, then, that in many of these communities, a typical water bill reflects a higher charge for sewer than water. In our study, Brookline and Somerville exemplify this. In Brookline, in 2018, typical annual sewer charges for a household were about 50 percent greater than the annual water charges; the same year, sewer charges in Somerville were almost twice typical water charges.<sup>xxvi</sup>

Sewer charges are not higher than water charges in every community, however. For example, of our target communities, Brockton’s typical household sewer charges in 2018 were less than the attendant water charges.<sup>xxvii</sup>

### **■ How often are bills distributed?**

Billing periods vary from community to community. In our sample, Chelsea, New Bedford, and Springfield bill monthly. Somerville sends triennial bills to consumers. The rest of our target municipalities send bills to water consumers on a quarterly basis.<sup>xxviii</sup>

### **■ What is the process for setting prices?**

The unit prices charged to consumers for both water and sewer are set at the water district level. Pricing takes into account a variety of factors, including fixed costs passed on from the water supplier or the water source, assessments of consumer affordability, estimated long-term costs of maintaining infrastructure, and equitable distribution among ratepayers.<sup>xxix</sup>

The processes for rate approval vary from community to community. While formal rate hearings are public, smaller communities may not hold formal administrative hearings on water and sewer rates and may instead simply use the municipality’s budgeting process to dictate rate structures. In fact, one study of rate-setting in Massachusetts found little evidence of public

engagement in the process.<sup>xxx</sup> Once generated, water and sewer rates are typically finalized by a local water board, a town council, or in some instances, a mayor. The approval of elected officials may or may not be part of the process. For example, in Boston, the staff of the city’s Water and Sewer Commission propose rates, which receive final approval from the Commissioners --three individuals who are appointed to four-year terms by the mayor and approved by the city council.<sup>xxxii</sup>

## ■ How is customer water usage measured?

Water for a residential property arrives through a primary meter, which measures all the water delivered to the property. In Massachusetts, submetering is permitted, but not required. In a multi-family dwelling, each unit may have a water submeter and the units’ water and sewer charges may be calculated separately. In that instance, the landlord is responsible for having the submeters read and for billing tenants for their water use; billing is not separated by meter in a multi-family unit, even when submetering is present. Because the Commonwealth historically disallowed submetering (the law changed in 2005), it is generally newer units that feature this arrangement. Significantly, the law bars landlords from shutting off water if residents fail to pay their water bills.<sup>xxxiii</sup>

In the absence of submetering, a landlord simply pays the overall bill for the property based on the usage registered on the primary meter. Massachusetts law prohibits the landlord from allocating water costs among residents when there is no submetering. However, a landlord may still take rising water costs into account in other ways. Our interviews with landlords in Chelsea suggest that, as one might expect, rising water and sewer costs have an impact on overall rent. One landlord interviewee stated quite plainly: “The problem is, they [Chelsea] don't charge you just for the water. They charge you for sewer water. Twice as much ..... Of course, you raise your rent.”<sup>xxxiii</sup> In other words, renters and homeowners alike experience the financial burden of rising water and sanitation costs, with or without submetering.

## Findings

### A. Narrow Discount and Payment Plan Policies

Three communities in our sample – Brockton, Lawrence, and New Bedford – offer no residential customer discounts at all on water and sewer bills. Further, none of the communities we surveyed provide any discounts to assist customers on the basis of income alone. Nine communities offer discounts for senior owner-occupants, with five of these senior discounts requiring income as well as age eligibility. Two communities, Springfield and Boston, offer discounts for low income disabled individuals, and in the case of Springfield, individuals who are legally blind. Formal payment plans for delinquent accounts are offered only by Boston, New Bedford, and Springfield, though discussions with several community representatives indicated that they had an informal

*Three Communities in our sample – Brockton, Lawrence, and New Bedford – offer no residential customer discounts at all on water and sewer bills. Further, none of the communities we surveyed provided any discount to assist customers on the basis of income alone.*

practice of “working with” residents who fell behind with payments. The range of policies are summarized below, and set out in detail in Appendix III.

### ■ Senior Owner-Occupant Discount

As noted above, nine of our target communities offer some form of senior discount, five of which have income as well as age criteria. The magnitude of these discounts vary from one community to the next, but in every case, the discounts are available only to those who both own and occupy the property for which the discount is sought.

Communities that offer senior discounts with income criteria often directly link the discounts to the property tax exemptions for which senior owner-occupants may qualify.<sup>xxxiv</sup> The Massachusetts state tax code provides two such exemptions: Clause 41C and Clause 17D.<sup>xxxv</sup> Clause 41C provides tax exemptions to senior citizens age 70 or older who meet strict ownership, residency, income, and asset requirements.<sup>xxxvi</sup> Alternatively, seniors who are 70 years or older may qualify for an exemption under Clause 17D which provides a less generous property tax exemption, but has less strict eligibility requirements. For example, 17D requires that the applicant have owned and occupied the property for five years, while 41C requires five years of occupancy preceded by five years of Massachusetts residency. Likewise, the income and asset requirements for 41C are much stricter. In our sample, one or both of these property tax clauses are often used to determine income eligibility for a water (and in some instances, sewer) discount.

The table in Appendix III sets out the variations between communities that offer senior discounts. To draw just a few contrasts:

- Boston offers a discount of up to 30 percent on water-only charges for owner-occupant customers age 65 and older who live in residential buildings of one to four units;
- Brookline offers water and sewer bill discounts of 20 percent to individuals who meet the 17D and 41C property tax exemption criteria;
- Cambridge offers a 15 percent discount on water and sewer charges to residents 65 years old and over who own and occupy their own one-, two- or three-family home, regardless of the individual’s income, not to exceed \$90.00 per year; low income seniors who receive a 41C exemption automatically receive a 30 percent discount, not to exceed \$180.00 per year;
- For residents age 65 and older, Lowell offers owner-occupants of single family dwellings a 50 percent discount off of the residential water-only rate for the first 50 units used;
- Somerville provides an automatic discount of 25 percent for water and sewer charges, without the need to reapply annually, to residents who are awarded a 17D or 41C exemption;
- Springfield offers discounts on water-only charges of \$2.75/month to seniors 68 and older who own and occupy a single family home;

- Worcester offers 41C-eligible-seniors a discount on water and sewer charges of \$42.50 per quarter for a maximum of \$170.00 per year.

In sum, communities vary in (1) the depth of the discount, from 10 percent in Chelsea to 50 percent in Lowell; (2) the extent of the discount, i.e., in Boston, the discount applies only to the water portion of the bill, while Quincy applies the discount to both water and sewer charges; and (3) the eligibility criteria for the discount, e.g., age 68 and older in Springfield, but age 65 and older in Boston; consideration of income in Brookline but not in Cambridge. Significantly, every one of the senior discounts available in our twelve communities are limited to owner-occupants, with some (e.g., Boston) permitting seniors to live in multi-unit dwellings, while others (e.g., Springfield) extending the discount only to those residing in single family homes.

### ■ Disability Discount

The communities in our sample were far less likely to offer assistance to disabled persons than to senior citizens. Springfield offers water discount programs for disabled persons and the legally blind. Boston likewise provides discounts to individuals who are fully disabled. No other communities in our sample offered such discounts.

Springfield's disabled persons and legally blind discounts reduce the household water rate from \$3.22 per 100 cubic feet to \$2.75 for FY 2019. This is a 14.6 percent reduction, but it is applied only to the water portion of the bill, not the sewer charge. Typical combined water and sewer bills in Springfield in 2018 were over \$1000.00 per year; assuming that water costs make up about forty percent of the bill, the annual disability discount would be about \$58.00<sup>xxxvii</sup> In Springfield, qualified disabled persons are customers who are owners of a single family house which is the owner's primary residence, with a disability that keeps the person from work all 12 months of the year. Legally blind customers must also be owners of a single family house which is the owner's primary residence.

In Boston, disability discounts of 30 percent per month are available to owner-occupants who are fully disabled and reside in dwellings housing one to four families. Like Springfield, these discounts are limited to the water portion of the bill.

### ■ Payment Plans

Of our target communities, only three told us that they explicitly offer payment plans for individuals who fall behind in paying water bills.

Boston's FOI response indicated that it permits residents who are able to make a down payment of 25 percent of their outstanding bill to pay the remaining balance in twelve monthly installments. Individuals who qualify for a special Hardship Payment Plan based on their receipt of government assistance or serious illness must pay a minimum of \$100.00 initially, then pay the remaining balance in twenty-four monthly installments.<sup>xxxviii</sup> In a follow-up to our FOI request, a Boston representative indicated that the city gives some flexibility to individuals who are participating in

these plans. Boston’s website provides a phone number to call, labeled “Collections,” if residents are having difficulty making timely payments.

New Bedford also offers a limited payment plan. Residential customers who do not have prior outstanding payment plans and have not defaulted on a payment plan within the prior three years may qualify for a payment extension of up to three months. As with other jurisdictions, the department exercises some discretion, and New Bedford’s FOI response stated that local officials will “work with customers to ensure they’re set up with something manageable.” New Bedford reported 68 open payment plans in effect at the time of our FOI request.

Springfield’s website indicates that special payment arrangements may be available up until the time that an account is posted for shut-off due to non-payment. In 2018, Springfield reported 650 open payment plans with customers who were unable to keep up with their water bills.

## **B. Shut-off and Lien Policies**

### **■ Shut-off Policies and Practices**

Shutting off household water is an extreme response to the failure to pay one’s water bill. Because of the serious consequences of being without household water, it is a step that is generally taken only after the local government sends a prescribed sequence of notices and warnings to the household. Still, it is a step that several of our communities regularly take as part of their effort to collect overdue water payments.

Seven of our target communities – Brockton, Brookline, Chelsea, Lawrence, Quincy, Somerville, and Worcester – responded to our FOI requests by claiming a formal policy of not shutting off water. In addition, Cambridge retains the legal authority to shut off water to delinquent accounts, but officials responding to our FOI requests asserted that shut-offs do not occur as a matter of practice.

Four of our target communities – Boston, Lowell, New Bedford, and Springfield – use household water shutoffs as a response to non-payment. Despite its stated policy of utilizing shutoffs, Lowell reported none in FY 2018. However, in FY 2018, Boston and Springfield combined for almost 1500 residential shutoffs.<sup>xxxix</sup> New Bedford reported more than 1500 shutoffs, but their figures aggregate residential and commercial shut-offs. Still, based on these FOI responses, a conservative projection is that there were upwards of 2000 residential shutoffs in these four communities in FY2018.

## ■ Tax Liens

Five of the communities that we surveyed indicated they may convert an outstanding water bill to a tax lien which is added to the customer's real estate tax bill. If the bill remains unpaid, the liens are auctioned off to private third parties that may be less likely to negotiate a manageable payment plan. Because the third party can charge additional fees, legal costs, and compounding interest, a relatively small water bill can balloon quickly. If the growing tax lien remains unpaid for six months,

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the third-party lienholder can seek a tax lien foreclosure before the Massachusetts Land Court. If the property owner is unable to redeem their title by paying the compounded fees owed, the property will be foreclosed. Through this process, a homeowner may be evicted and lose the entire equity in their home.<sup>xi</sup>

In Lowell, the real estate lien process is used frequently. Lowell reported more than 2800 real estate liens arising from water bills in FY 2018. Likewise, Quincy does not shut off water, but refers delinquent accounts to be added to real estate taxes and converted to tax liens. In FY 2018, Quincy reported 2255 tax liens based on unpaid water bills. Somerville, Brookline, and Chelsea also reported using tax liens as collection devices in FY 2018. In total, these five communities reported 6567 tax liens arising from unpaid water and sanitation bills in FY 2018.

The two largest communities in our group, Boston and Springfield, reported that they do not use tax liens as a mechanism for collecting on outstanding water bills. Rather, as noted above, these two communities use shutoffs as their primary means of addressing delinquent accounts – an approach that leaves the home's equity untouched, but that can leave residents without access to water, a basic human right, possibly jeopardizing their health and well-being.

As indicated in Appendix III, we were unable to obtain reliable data on liens from the remaining five communities in our sample.

## Analysis and Interpretation

Our study indicates that our twelve target communities have not adopted water affordability policies that adequately mitigate burdens on consumers caused by rising water costs. These failures fall into three categories: (1) inadequate information for consumers; (2) lack of transparency and accountability in administering discount programs; and (3) failure to implement "good practices," including those that would moderate income and racial disparities in access to water discounts and other affordability programs.

## A. Inadequate Information for Consumers, Broad Discretion, and Potential for Bias

As set out above, the discount programs offered by the twelve study communities are very narrow, and are available only to owner-occupants. For the many consumers who fall outside of these narrow programs yet cannot pay their bills, municipalities provide little concrete information about how to proceed.

Some of our target cities include generic phrases on their websites and in other communications with consumers indicating that water customers should call a contact number if they are unable to pay their bills. For instance, as noted above, the New Bedford FOI response stated that the water authority will “work with” customers.<sup>xli</sup>

While this flexibility may seem consumer-friendly at first glance, studies suggest that these sorts of open-ended invitations can put the consumer at a disadvantage. In this scenario, a household struggling to pay their bills is invited to negotiate with the water authority, but is given no advance information on the parameters of what might be negotiated. The inequality in information and power puts the consumer at a distinct disadvantage in any negotiation.<sup>xlii</sup> Consumers who already feel disempowered and marginalized may not even initiate contact with the municipality.<sup>xliii</sup> One wonders, for example, whether low-income consumers would feel encouraged to contact Boston’s ominously-named “Collections” number in hopes of negotiating a payment plan. Because of these dynamics, we believe the number of households receiving assistance in these data is a lower-bound estimate of the number that could potentially benefit.

Further, the absence of formal guidelines for payment plans opens space for a bureaucrat’s unconscious bias to operate. Multiple studies of “street-level” bureaucrats have found that the characteristics of the benefit-seeker play an important, albeit unconscious, role in bureaucratic decisionmaking.<sup>xliiv</sup> Factors that may contribute to stereotyping include both race and class, particularly race and class differences between the bureaucratic decisionmaker and the consumer seeking assistance. Given the existing evidence suggesting rising water costs in Massachusetts communities fall hardest on low-income people of color, these factors will often be present when water consumers contact their local water authority seeking discretionary assistance.<sup>xliv</sup>

At the very least, the potential for these biases to influence bureaucratic decisionmaking about payment plans and shut-offs should be recognized and monitored. However, responses to our FOI requests indicate that none of our target communities collect demographic data concerning which households initiate negotiations, and which are successful or unsuccessful in securing negotiated payment plans, despite the potential for unconscious biases or power differentials to influence the administration of those plans. Further, our target communities professed to collect no demographic data concerning shut-offs. Without this basic level of information, communities simply cannot know whether their street-level decision making in this area of critical human need is fair and unbiased.

## B. Lack of Transparency and Accountability

As discussed above, our FOI requests revealed that the records maintained by most of our target communities are inadequate to allow assessment of basic fairness in either policy implementation or the exercise of bureaucratic discretion. In the absence of such information, unconscious bias may be both undetected and unchecked. This danger is compounded by the lack of transparency and accountability in these communities' water administration policies.

We do not argue that bureaucratic flexibility should be eliminated; there is certainly merit to maintaining some flexibility given the complexity of the system. But if administrator discretion is retained, it is important that local governments develop mechanisms to ensure that residents can hold the administration accountable for administering the system fairly. One such mechanism is "sunshine," i.e., regular public reporting regarding decision-making and open access to criteria employed by the water authority in making decisions about discounts, shutoffs, and payment plans. Systematic, organized data collection concerning critical water affordability decisions would also allow municipalities to scrutinize and improve their own systems.

The difficulties we faced in obtaining information regarding water affordability in our target communities indicates that there is more to do to increase transparency and access to information. As researchers, we had the time and sophistication to draft and file FOI requests when information was not readily available and when our follow-up calls were inconclusive. Water consumers facing shutoffs or other dire consequences will not often be in a position to file such requests. There is no one-size-fits-all solution, but communities should seriously consider a more transparent approach, routinely collecting data, sharing more information on their websites, and ensuring that there is a central location where water consumers can get important information concerning local water policies that affect them.

## C. Failure to Implement "Good Practices"

As concerns about water affordability grow nationwide, many local water authorities are implementing new, expanded programs to ensure that water remains accessible to low income customers regardless of whether they are owner-occupants of the property. In some communities, successful energy assistance programs have provided a model for assistance offered to water consumers.

Unfortunately, the communities that we studied are lagging behind. In 2019, the norms have gone beyond the senior discounts and disability programs for homeowners that remain current in most of our Massachusetts target communities. Even the payment plans of Boston and Springfield compare poorly to the more expansive programs that are now being adopted around the country. Our survey results indicate that our sample cities, rather than helping residents buffer the rising costs of water, are failing to adjust their practices and are instead falling behind industry standards

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**Philadelphia** currently has the most comprehensive approach to water affordability of any major U.S. city.<sup>xlvi</sup> Before 2017, Philadelphia’s approach to water affordability was similar to the approaches currently in place in our target Massachusetts municipalities. The Philadelphia Water Department offered some modest discounts and payment plans to a narrow category of consumers; the city of Philadelphia filed tax liens for overdue water bills, and sent outstanding liens to commercial collection agencies to initiate foreclosure proceedings. This approach was clearly ineffective, both as a means to collect payments and as way to maintain consumer access to critical household water. One in five Philadelphia consumers, disproportionately people of color, had their water disconnected in the five years between 2012 and 2017.<sup>xlvii</sup> Not only were consumers threatened with losing their homes, but by the end of 2014, liens for water, sewer, and stormwater bills in Philadelphia were \$255 million and rising.<sup>xlviii</sup>

In an effort to increase bill collections while also preventing low-income residents from losing their homes to foreclosures because of unpaid water bills, the Philadelphia City Council passed a new ordinance which went into effect in July 2017.<sup>xlix</sup> The ordinance increases protections for low-income residents by creating the Tiered Assistance Program (TAP), offering payment plans to households with incomes below 150 percent of the poverty line. Payment plans are also available to households having trouble paying water bills because of a “special hardship” such as a new child, job loss, serious illness, family loss, or domestic violence. Households facing other circumstances are evaluated on a case-by-case basis.<sup>i</sup> The TAP ordinance requires that monthly bills under the program “shall be affordable for low-income households, based on a percentage of the household’s income” and establishes three low-income tiers to receive reduced bills.<sup>ii</sup> Discounts are not limited to owner-occupants but are also available to renters who hold a water account. Importantly, once enrolled, TAP participants do not have to make payments on outstanding balances while in the program, and participants are eligible for forgiveness of penalties after two years of punctual payments, and completed balance forgiveness after fifteen years.<sup>iii</sup>

While Philadelphia leads the nation, many other municipalities have also taken steps in recent years to expand their affordability programs, in recognition of the hardship imposed by rising water prices. For example, **Buffalo** experienced rising water rates in recent years, though at a much less rapid rate than other Great Lakes cities.<sup>iiii</sup> Even so, according to Oluwole A. McFoy, the General Manager for the Buffalo Sewer Authority (BSA), the BSA found that water was being shut off to an average of about 200 occupied homes every month, only to be turned back on again within a few days. Said McFoy, “we really want to break that cycle of all the individuals going through that.”<sup>liv</sup>

In February 2019, the BSA launched a new initiative focused on water affordability, called the Residential Affordable Water Program (RAWP). The RAWP is designed to assist residential customers who have low incomes, taking into account income and family size. Customers who qualify as low income receive a \$60.00 credit per year, and customers who qualify as very low income qualify for a \$90.00 credit per year.<sup>lv</sup> While this program is modest in financial terms, it does go beyond the categorical discount approach by recognizing that unaffordability affects a wide range of low-income households beyond homeowners and seniors.

In 2016, Washington, D.C., adopted its Lifeline Rate program. Designed to promote conservation while also allowing consumers to reduce their monthly bills, the program steeply discounts the first 4 Ccfs of water consumption (approximately 3,000 gallons), while charging a higher rate for additional water consumption. In addition to the Lifeline Rate program, Washington, D.C. offers three types of Customer Assistance Plans, all based on income. The most generous of these offer discounts of both water and sewer service, amounting to savings of more than \$500 per year for eligible households.<sup>lvi</sup>

*Under a program launched in July 2018, the Portland Water Bureau now partners with Home Forward, Portland's federal housing authority, to provide assistance to renters.*

Finally, some communities are developing innovative programs to aid renters burdened by growing water bills – a challenge that has stumped water districts for decades. Portland, Oregon, for example, found that renters were significantly more likely to have incomes below the poverty level than those living in single family homes. Landlords typically passed on increased water prices to their tenants by raising rents, but tenants were seldom eligible for any of the city's water discounts; the Portland Water Bureau's discounts were limited to households with separate metering and

billing. Under a program launched in July 2018, the Portland Water Bureau now partners with Home Forward, Portland's federal housing authority, to provide assistance to renters. Home Forward provides funding assistance to help low income tenants avoid eviction when they fall behind in their rent. The Portland Water Bureau simply added money to the existing fund to provide up to \$500.00 in additional dollars in support when tenants are on the verge of eviction. The amount is about 85 percent of the average annual water bill in Portland.<sup>lvii</sup>

## **Conclusions**

Water affordability is a local issue. Federal water affordability legislation has been proposed, but has yet to garner sufficient support to be enacted.<sup>lviii</sup> In the absence of a federal affordability program, local jurisdictions must be sensitive to the needs of their customers, understand the community demographics, seek opinions about fair water pricing from constituents, and craft programs that balance the costs of water administration with the importance of water access to low income individuals and families. There is much more that our twelve target communities could do to address, and anticipate, the impacts of rising water costs on low income residents, and particularly to reduce the disparate racial impacts of local water policies. Our inquiries and the responses we received from our target communities lead us to reach five significant conclusions.

First, we found that information about water pricing and discounts was often not readily available. For many of our target communities, formal Freedom of Information requests were required to obtain information that should have been readily available to the public.

Second, as described above, we found that there are significant policy variations between water jurisdictions. None of these twelve jurisdictions has adopted an affordability plan, none offer formal discounts based on low income alone, and only three offer formal payment plans. The most

common plans, low income senior discounts for owner-occupants, vary from one community to the next. Privileging older homeowners over other low-income consumers, these discounts very likely have disparate racial impacts.

Third, of the communities that we studied, none have adopted tiered water rates or programs targeting renters, even though interest in those approaches is growing nationwide.

Fourth, many of the decisions about eligibility for discounts or other affordability mechanisms are made on a discretionary basis by front-line administrators. This process may inure to the benefit of a consumer if the administrator is sympathetic, but without access to basic information about local policies, consumers are not in a position to challenge administrators' discretion or to detect the role of bias in the outcome.

Finally, it is important to note that many of these issues raise human rights concerns. Water is a human right. In Massachusetts, water is also constitutionally recognized as a public good.<sup>lix</sup> Clearly, the most extreme responses to payment delinquency, water shutoffs and tax liens, raise human rights concerns. For example, water shutoffs are associated with a range of adverse health outcomes, including waterborne illnesses, hypertension, and stress, and tax liens can result in loss of housing. However, the potential for bias in administration and the lack of policy transparency also implicate important human rights considerations. Given the critical nature of water, and the likelihood of increased hardship associated with high water prices as costs go up nationwide, the Massachusetts communities that we surveyed should take the initiative to protect Massachusetts residents and ensure that their municipal policies meet the highest standards in the field.

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- <sup>i</sup> Resolution A/RES/64/292, U.N. General Assembly, July 2010. See also Inga Winkler, *The Human Right to Sanitation*, 37 U. PA. J. INT'L L. 1331 (2016). For an analysis of the right to water under domestic law, see Sharmila Murthy, *A New Constitutive Commitment to Water*, 36 BOSTON C. J. OF LAW & SOC. JUST. 151 (2016).
- <sup>ii</sup> Joseph Kane, *The Avenue: Water Affordability is not just a Local Challenge, But a Federal One Too* (Brookings Inst., Jan. 25, 2018).
- <sup>iii</sup> Elizabeth Mack & Sarah Wrase, *A Burgeoning Crisis? A Nationwide Assessment of the Geography of Water Affordability in the United States*, 12 PLoS ONE e0169488 (2017).
- <sup>iv</sup> City of Philadelphia, Philadelphia Launches New, Income-Based, Tiered Assistance Program (June 20, 2017), <https://www.phila.gov/press-releases/mayor/philadelphia-launches-new-income-based-tiered-assistance-program/>.
- <sup>v</sup> Amelia Templeton, *Portland Utility Bureaus will Help Renters at Risk of Eviction*, OREGON PUBLIC BROADCASTING, May 22, 2018, <https://www.opb.org/news/article/portland-utility-bureaus-help-renters-at-risk-eviction/>.
- <sup>vi</sup> Food & Water Watch, *AMERICA'S SECRET WATER CRISIS* (2018), [https://www.foodandwaterwatch.org/sites/default/files/rpt\\_1810\\_watershutoffs-web2.pdf](https://www.foodandwaterwatch.org/sites/default/files/rpt_1810_watershutoffs-web2.pdf).
- <sup>vii</sup> *Id.* at 2.
- <sup>viii</sup> Elaine Povich, *Where Unpaid Water Bills Can Mean Losing a Home*, STATELINE (Pew Trusts March 4, 2019), <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2019/03/04/where-unpaid-water-bills-can-mean-losing-a-home>.
- <sup>ix</sup> Kimberly Foltz-Diaz, et al., *REPORT ON THE HUMAN RIGHT TO WATER IN THE CITY OF BOSTON* (Massachusetts Global Action 2014), available at <http://www.colorofwater.net/materials.html>.
- <sup>x</sup> Jennifer Chambers, *Experts: Water Shutoffs Causing Public Health Emergency*, DETROIT NEWS, July 26, 2017.
- <sup>xi</sup> Center for Budget and Policy Priorities, *Pulling Apart: Income Inequality has Grown in Massachusetts*, <https://www.cbpp.org/sites/default/files/atoms/files/Massachusetts.pdf>
- <sup>xii</sup> The Hingham water district, with 12,700 customers, recently voted re-purchase its privatized water system from Aquarion, a subsidiary of Eversource. As of this writing, the transition back to public ownership is in process. See *Water Company Acquisition Update*, [https://hinghamanchor.com/water-company-acquisition-update/?fbclid=IwAR3OajPNx19cTF7zhhNivVgBYVl6hej\\_Hi7y6xng7Py873rY95naZyiuBUA](https://hinghamanchor.com/water-company-acquisition-update/?fbclid=IwAR3OajPNx19cTF7zhhNivVgBYVl6hej_Hi7y6xng7Py873rY95naZyiuBUA)
- <sup>xiii</sup> Brockton's primary water source is Silver Lake in Kingston, MA. When the state mandated that Brockton secure a second drinking water source as a precaution, the city entered into a 20-year contract with Aquaria, a Korean-owned company, for processing of additional water drawn from the Taunton River. See Marc Laroque, *Brockton City Council Rejects Aquaria Contract Amendment*, THE ENTERPRISE, May 9, 2018, <https://www.enterpriseneews.com/news/20180509/brockton-city-council-rejects-aquaria-contract-amendment>.
- <sup>xiv</sup> U.S. Environmental Protection Agency, *About the Merrimack*, <https://www.epa.gov/merrimackriver/about-merrimack>.
- <sup>xv</sup> Paul Tuthill, *Exploring a Water System from Mountain Reservoir to Bathroom Tap*, WAMC, Dec. 14, 2017, <https://www.wamc.org/post/exploring-water-system-mountain-reservoir-bathroom-tap>.
- <sup>xvi</sup> Massachusetts Water Resources Authority, *How the MWRA Water System Works*, <http://www.mwra.com/04water/html/watsys.htm>; MWRA, *Update on Water Supply Status*, July 1, 2019, <http://www.mwra.state.ma.us/monthly/watersupplystatus.htm>
- <sup>xvii</sup> U.S. Census: QuickFacts: Massachusetts, <https://www.census.gov/quickfacts/fact/table/MA/AGE295218>.
- <sup>xviii</sup> U.S. Census: QuickFacts: Lawrence, Springfield, Somerville, <https://www.census.gov/quickfacts/fact/table/somervillecitymassachusetts,lawrencecitymassachusetts,springfieldcitymassachusetts,MA/AGE295218>.
- <sup>xix</sup> *States with the Highest (and Lowest) Homeownership Rates* (Lattice Publishing, June 19, 2018), <https://www.latticepublishing.com/blog/states-with-the-highest-homeownership-rates>.

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<sup>xx</sup> Civic Dashboard, Homeownership Rate for Boston, MA, [http://www.cividdashboards.com/city/boston-ma-16000US2507000/homeownership\\_rate](http://www.cividdashboards.com/city/boston-ma-16000US2507000/homeownership_rate) (including chart showing homeownership rates for Massachusetts communities with populations over 65,000).

<sup>xxi</sup> Alanna McCargo & Sarah Stochak, *Urban Wire: Mapping the Black Homeownership Gap* (Urban Institute, Feb. 26, 2018), <https://www.urban.org/urban-wire/mapping-black-homeownership-gap>.

<sup>xxii</sup> Prosperity Now Scorecard, *Homeownership by Race, 2014*, <http://scorecard.prosperitynow.org/2016/measure/homeownership-by-race>.

<sup>xxiii</sup> Samuel Stebbins & Evan Comen, *The Worst States for Hispanics and Latinos*, 24/7 WALL STREET, Jan. 12, 2018, <https://247wallst.com/special-report/2018/01/12/the-worst-states-for-hispanics-2/11/>.

<sup>xxiv</sup> Anthony Brooks, *How Homeownership Affects Greater Boston's 'Immense' Racial Wealth Gap*, WBUR, Sept. 22, 2016, <https://www.wbur.org/bostonmix/2016/09/22/boston-wealth-homeownership-gap>.

<sup>xxv</sup> M.G.L. c. 66 §10.

<sup>xxvi</sup> MWRA Advisory Board, Annual Water and Sewer Retail Rate Survey 2018, <http://mwraadvisoryboard.com/wp-content/uploads/2019/01/2018-Water-and-Retail-Rate-Survey.pdf> (hereinafter, "Rate Survey 2018").

<sup>xxvii</sup> *Id.* An interactive table that can be used to compare water and sewer rates across Massachusetts communities as of 2017 is available at <https://dashboards.efc.sog.unc.edu/ma>.

<sup>xxviii</sup> Rate Survey 2018, at 4 (most communities served by the MWRA bill quarterly).

<sup>xxix</sup> Raftelis, et al., THE RATE-SETTING PROCESS: LESSONS LEARNED FROM MASSACHUSETTS WATER SUPPLIERS' EXPERIENCES, FINAL REPORT 5 (June 30, 2018), <https://www.mass.gov/service-details/water-rates>.

<sup>xxx</sup> *Id.* at 6.

<sup>xxxi</sup> Boston Water and Sewer Commission, *Our Organization*, <https://www.bwsc.org/about/our-organization>.

<sup>xxxii</sup> Mass. Law Reform Inst., *When Can a Tenant be Billed Directly for Water?*, (March 14, 2005), <https://www.masslegalhelp.org/housing/water-law-booklet.pdf>.

<sup>xxxiii</sup> Interview with Chelsea water customer, in Chelsea, MA (Feb. 19, 2019).

<sup>xxxiv</sup> Not all communities in Massachusetts use the senior property tax exemptions as the gateway to a water discount. For example, in February 2019, Revere, Massachusetts adopted a senior discount program based solely on age and ownership. City of Revere, *Water and Sewer Discounts for Seniors Expands for 2019* (Feb. 20, 2019), <https://www.revere.org/news/post/water-and-sewer-discount-for-seniors-expands-for-2019>. Intended to promote conservation, the program's discount levels vary depending on water consumption. Participants in the program may be owners of one-, two-, or three-family dwellings. Likewise, Boston does not tie its senior discount to eligibility for 41C or 17D.

<sup>xxxv</sup> These provisions are found in M.G.L. c. 59, § 5.

<sup>xxxvi</sup> A municipality may vote to lower the age threshold to 65. See Div'n of Local Services, *Taxpayer's Guide to Local Property Tax Exemptions* (Mass. Dep't of Revenue, Nov. 2016), <https://www.mass.gov/files/documents/2018/01/02/dor-proptax-guide-seniors.pdf>.

<sup>xxxvii</sup> Peter Goonan, *Springfield Residents: Here's How Much Your Water and Sewer Bills are Going Up*, MASSLIVE, June 18, 2018, <https://www.masslive.com/news/2018/06/springfield-water-and-sewer-co-52.html>.

<sup>xxxviii</sup> The application to establish Medical or Financial Hardship is available here: [https://www.bwsc.org/sites/default/files/2019-02/Financial\\_Hardship\\_Certificate\\_0.pdf](https://www.bwsc.org/sites/default/files/2019-02/Financial_Hardship_Certificate_0.pdf).

<sup>xxxix</sup> Fewer than 1500 households may be affected, however, since some households may be shut off multiple times in the course of a year. We were not able to obtain information about whether these were unique accounts.

<sup>xl</sup> Povich, *supra* n. viii. See also Coty Montag, WATER/COLOR: A STUDY OF RACE AND THE WATER AFFORDABILITY CRISIS IN AMERICA'S CITIES (NAACP LDF 2019), at 28.

<sup>xli</sup> The FOI request and New Bedford's response are on file with the authors.

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- <sup>xiii</sup> On the impacts of unequal bargaining power, see generally Robert Adler, et al., *When Davis Meets Goliath: Dealing with Power Differentials in Negotiations*, 5 HARV. NEGOTIATION L. REV. 1 (2000). See also Craig Horowitz, *Reviving the Law of Substantive Unconscionability: Applying the Implied Covenant of Good Faith and Fair Dealing to Excessively Priced Consumer Credit Contracts*, 33 UCLA L. REV. 940 (1986).
- <sup>xiii</sup> On lack of trust and income inequality, see Christian Bjørnskov, *Determinants of Generalized Trust: A Cross-Country Comparison*, 130 Public Choice 1 (2007). An illuminating study of this phenomenon in a different – though in some respects parallel -- context is Adam Saltsman, *Beyond the Law: Power, Discretion, and Bureaucracy in the Management of Asylum Space in Thailand*, 27 J. REFUGEE STUDIES 457 (2014).
- <sup>xiv</sup> Patrick Scott, *Assessing Determinants of Bureaucratic Discretion: An Experiment in Street-level Decision Making*, 7 J. PUB. ADMIN. RESEARCH AND THEORY 35 (1997); Joe Soss, Richard C. Fording, & Sanford F. Schram, *DISCIPLINING THE POOR: NEOLIBERAL PATERNALISM AND THE PERSISTENT POWER OF RACE* (2011); Gitte Sommer Harrits, *Stereotypes in Context: How and When Do Street-Level Bureaucrats Use Class Stereotypes?*, 79 PUB. ADMIN. REV. 93 (2019). On the impacts of stereotypes in the context of voting bureaucracy, see Ariel R. White, Noah L. Nathan & Julie K. Faller, *What Do I Need to Vote? Bureaucratic Discretion and Discrimination by Local Election Officials*, 109 AM. POLITICAL SCI. REV. 129 (2014).
- <sup>xiv</sup> See generally Montag, *supra* n. xi.
- <sup>xvi</sup> Robert W. Ballenger & Thu B. Tran, *Unchartered Waters: The Emergence of Low-Income Water Affordability in Philadelphia* (Sargent Shriver Nat'l Ctr. on Poverty Law Clearinghouse Cmty. Feb. 2016), <http://povertylaw.org/clearinghouse/stories/ballenger>.
- <sup>xvii</sup> Devon Kearns, *Release: What Cities can Learn from Philadelphia's Water Affordability Program* (Center for American Progress, Nov. 8, 2017), <https://www.americanprogress.org/press/release/2017/11/08/442445/release-cities-can-learn-philadelphias-water-affordability-program/>.
- <sup>xviii</sup> Cassie Owens, *Philly City Council Helps with Water Shutoffs, Blight Prevention*, NEXT CITY, June 25, 2015, <http://nextcity.org/daily/entry/philadelphia-water-bills-low-income-payment-plans>.
- <sup>xix</sup> Philadelphia, Pa., Code §19-1605 (1979); Philadelphia Water, Sewer & Stormwater Rate Board, Report of the Board on PWD Proposed Rate Changes, FY17, FY18, 30 (June, 7, 2016), <http://www.phila.gov/water/PDF/BoardReportFY17FY18-Records-20170607.pdf>.
- <sup>l</sup> María Quiñones-Sánchez, PRESS RELEASE: QUINONES-SANCHEZ LEGISLATION TO IMPROVE WATER BILL COLLECTIONS, PROTECT LOW-INCOME WATER CUSTOMERS PASSES CITY COUNCIL (We The People of Detroit, June 22, 2015), <https://wethepeopleofdetroit.com/2015/06/22/philadelphia-passes-income-based-water-affordability-plan/>.
- <sup>li</sup> Philadelphia, Pa., Code §19-1605(a)(3)(a) (1979); Ballenger & Tran, *supra* n. xvi.
- <sup>lii</sup> Ballenger & Tran, *supra* at n. xlvii.
- <sup>liii</sup> Will Craft, *How We Did It: Inside Our Investigation of Water Rates in Six Cities Around the Great Lakes*, APM REPORTS, Feb. 7, 2019, <https://www.apmreports.org/story/2019/02/07/how-we-did-it-water-rates-great-lakes>.
- <sup>liv</sup> Angelica Morrison, *Water Affordability Concerns Addressed in the City of Buffalo*, GREAT LAKES TODAY, Feb.13, 2019, <https://www.greatlakestoday.org/post/water-affordability-concerns-addressed-city-buffalo>.
- <sup>lv</sup> Press Release, *The Buffalo Water Board Announces a New Rate Structure and Affordable Water Program, Beginning January 1, 2019* (Buffalo Water, Dec. 4, 2018), <http://www.buffalowater.org/Customerservice/RatesandFees/BuffaloWaterPressRelease12142018-.pdf>.
- <sup>lvi</sup> DC Water, Customer Assistance Programs, <https://www.dewater.com/customer-assistance>.
- <sup>lvii</sup> Molly Harbarger, *Water Bureau Proposes Fix for Decades-Old Bill Assistance Program*, THE OREGONIAN/OREGON LIVE, Feb. 2018, [https://www.oregonlive.com/politics/2018/02/water\\_bureau\\_proposes\\_fix\\_for.html](https://www.oregonlive.com/politics/2018/02/water_bureau_proposes_fix_for.html). Likewise, New York City's Multifamily Water Assistance Program, launched in 2016, provides assistance to renters in affordable housing. See New York City, Customer Assistance Programs: Multifamily Water Assistance Program, <https://www1.nyc.gov/site/dep/pay-my-bills/multi-family-water-assistance-program.page>.

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<sup>lviii</sup> *Press Release: Reps. Lawrence and Khanna Introduce the WATER Act to Address Water Justice in America*, Feb. 28, 2019, <https://lawrence.house.gov/media-center/press-releases/reps-lawrence-and-khanna-introduce-water-act-address-water-justice>.

<sup>lix</sup> Art. XCVII, Constitution of the Commonwealth of Massachusetts.

## Appendix I:

### Primary Water Sources for Study Communities



**Boston:** Quabbin and Wachusett Reservoirs

**Brookline:** Quabbin and Wachusett Reservoirs

**Brockton:** Silver Lake, Kingston

**Chelsea:** Quabbin and Wachusett Reservoirs

**Lawrence:** Merrimack River

**Lowell:** Merrimack River

**New Bedford:** Assawampsett Pond, Great Quittacas Pond, Long Pond, Pocksha Pond and Little Quittacas Pond

**Quincy:** Quabbin and Wachusett Reservoirs

**Somerville:** Quabbin and Wachusett Reservoirs

**Springfield:** Cobble Mountain Reservoir

**Worcester:** Lynde Brook and Holden Reservoirs

## Appendix II:

Demographic Data for Twelve Study Communities												
City	Boston	Brockton	Brookline	Cambridge	Chelsea	Lawrence	Lowell	New Bedford	Quincy	Somerville	Springfield	Worcester
Population	669,158	95,161	59,246	110,893	39,272	79,497	110,964	95,125	93,824	79,983	154,613	184,743
Median Age	32	35.5	34.1	30.4	33.2	31.4	33.3	37.5	39.3	31.5	32.9	34.2
Persons 65 and over	11%	12.70%	15.60%	11.30%	9.20%	9.80%	10.50%	15.10%	15.30%	9.50%	12%	12.90%
White	52.80%	42.20%	75.30%	66.90%	49.60%	54.70%	60.80%	67.20%	62.40%	77.20%	60.30%	69.40%
Black	25.30%	41.00%	3.30%	10.80%	7.10%	6.20%	7.30%	6.10%	5.30%	6.60%	21.10%	13.20%
Hispanic/Latino	19.40%	10.60%	5.90%	8.80%	65.90%	79.10%	20.30%	20%	3.10%	9.90%	43.80%	20.90%
Native American	0.40%	0.40%	0.10%	0.20%	0.20%	0.40%	0.50%	0.30%	0.10%	0.20%	0.50%	0.50%
Asian	9.50%	2.00%	15.70%	15.70%	3.60%	2.30%	21%	1.60%	29%	9.60%	2.20%	7.30%
Pacific Islander	0%	0%	0%	0.10%	0%	0%	0.10%	0%	0.10%	0.00%	0.00%	0.00%
Persons with disabilities, under 65	8.70%	10.80%	3.80%	4.40%	9.80%	9.70%	8.70%	11.80%	7.70%	5.10%	16.20%	11.50%
Occupied housing units	263,229	32,200	24,716	44,234	12,723	25,807	38,965	39,491	40,167	32,453	56,331	70,792
Owner-Occupied	35.30%	54%	50.90%	36.20%	25.70%	28.40%	42.20%	41%	47.60%	34.40%	46.70%	42.10%
Renter-Occupied	64.70%	46%	49.10%	63.80%	74.30%	71.60%	57.80%	59%	52.40%	65.60%	53.30%	57.90%
Median gross rent	\$1,445	\$1,054	\$2,127	\$1,880	\$1,285	\$1,067	\$1,089	\$802	\$1,370	\$1,699	\$858	\$1,015
Median household income	\$62,021	\$52,393	\$111,289	\$89,145	\$51,839	\$39,627	\$48,581	\$40,626	\$71,808	\$84,722	\$37,118	\$45,869
Persons in Poverty	20.50%	16.80%	11.40%	13.50%	19.50%	24.20%	22.40%	23.10%	10.50%	12.40%	28.70%	21.80%

\*All data in this table is from the U.S. Census, American Community Survey 2017

**Appendix III:**

**Summary of Water and Sewer Discount, Shut-Off, and Collection Policies for Twelve Massachusetts Communities**

<b>City</b>	<b>Shut-Off Policy</b>	<b>Number of Residential Shut-offs in 2018</b>	<b>Lien Policy</b>	<b>Number of Liens in 2018</b>	<b>Discount Policy</b>	<b>Eligibility</b>	<b>Number of Customers Currently Using Programs</b>
Boston	Yes	724 Accounts	No	N/A	Yes, 30%: Water	65 years or older or fully disabled; Owner-occupied, 1-4 family residential dwelling	8881 Elderly discounts and 950 disability discounts
Brockton	No	0	Yes	TBD*	No	N/A	N/A
Brookline	No	0	Yes	234	Yes: 20%: Water and Sewer	65 Years or older; Residential dwelling owned and occupied for 5 years; Variable income limits (between \$21,957 and \$56,889)	7 Elderly Discounts
Cambridge	Yes	0	Yes	TBD*	Yes; 15%-30% Water and Sewer	65 Years or older, Owner occupied 2-3 family home; no income limit (income limit to receive 30% discount)	2,731 home owners qualify

Chelsea	No	0	Yes	418	Yes: 10% Water and Sewer	65 years or older: owner-occupied residential dwelling; name must appear on water bill	470 Elderly discounts
Lawrence	Yes	Potentially 2,500 in 2019	Yes	TBD*	No	N/A	N/A
Lowell	Yes	0	Yes	2829	Yes; 50% off first 50 units of water used	65 years or older; homeowners of single family homes/townhouses	1685
New Bedford	Yes	1556 (Residential and Commercial)	Yes	TBD*	No	N/A	N/A
Quincy	No	0	Yes	2,555	Yes; 25%; Water and Sewer	65 Years or older; variable income limits; residential dwelling owned and occupied for 5 years; Massachusetts a primary residency for 10 years	173 Elderly discounts
Somerville	No	0	Yes	831 Accounts	Yes; 25%; Water and Sewer	65 Years or older; variable income limits; residential dwelling owned and occupied for 5 years; Massachusetts as primary residency for 10 years	314 Elderly Discounts
Springfield	Yes	767 Shut offs	No	N/A	Yes; Reduce rate from	Legally blind, owner-occupied	77 Legally blind

					\$3.22 per 100 cubic feet to \$2.75; Water only	single family house; OR Disability that keeps an individual from working all 12 months of the year, owner-occupied single family house; OR 68 years or older, owner occupied single family house	discounts, 6,439 elderly discounts, 86 disability discounts
Worcester**	No	0	Yes	TBD*	Yes; \$42.50 per quarterly billing cycle, \$170 maximum per year; Water and Sewer	65 years or older; variable income limits; residential dwelling owned and occupied for 5 years; Massachusetts as primary residency for 10 years	TBD*

\* This chart reflects the information that was provided to us in response to our FOI requests, augmented by our own research. "TBD" indicates that we did not yet receive the requested information.

\*\* Worcester has not formally responded to our FOI request.