July| 2024

Prichard Water Works and Sewer Board

Affordability Assessment and Customer Assistance Program Design Report

Galardi Rothstein Group

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List of Acronyms

AMWA	Association of Metropolitan Water Agencies
APSC	Alabama Public Service Commission
AWWA	American Water Works Association
CACP	Citizens' Advisory Council of Prichard
CAP	Customer Assistance Program
CWA	Clean Water Act or Citizens Water Authority (Indianapolis)
EPA	Environmental Protection Agency
FCA	Financial Capability Assessment
FPL	Federal Poverty Level
HBI	Household Burden Indicator
IURC	Indiana Utility Regulatory Commission
LIHEAP	Low Income Home Energy Assistance Program
LQI	Lowest Quintile Income
MHI	Median Household Income
NACWA	National Association of Clean Water Agencies
NAWC	National Association of Water Companies
PWWSB	Prichard Water Works and Sewer Board
O&M	Operations and Maintenance
SNAP	Supplemental Nutrition Assistance Program
TANF	Temporary Assistance for Needy Families
WEF	Water Environment Federation

Executive Summary

In November 2023, the Circuit Court of Mobile County, Alabama, issued an order[1] appointing a Receiver for the Prichard Water Works and Sewer Board (PWWSB). Among the Receiver's duties[2] was an Affordability Assessment / Study of the system. In late December 2023, Receiver John Young engaged Galardi Rothstein Group to conduct the water affordability assessment and address options for developing and implementing an income-qualified customer assistance program.[3] PWWSB does not currently have a bill assistance or customer water conservation program in place, and revenue requirements historically have not included funding for water affordability and customer assistance measures.

To manage water affordability, utilities must first focus on service quality, water system operational efficiency, and the integrity and reliability of water and sewer system infrastructure, because these factors affect the overall costs of service. Given the Receiver's responsibilities, this water affordability assessment for PWSSB focuses not on those aspects of affordability, but on household water cost burdens and options for customer assistance.

National and PWWSB Context

Water affordability has become a nationwide problem, with water and wastewater rates rising faster than income levels over the last few decades. While rate increases have been required to recover costs to deliver life-essential services, they have fostered a host of water affordability challenges, including burdensome bills for economically disadvantaged customers, customer account delinquencies, and service disconnections.

PWWSB's circumstances are especially difficult in almost every respect. The PWWSB system has a small customer base with an extremely high rate of poverty. After decades of underinvestment in the system, reinvestment needs now total more than $400 million (uninflated) over 20 years.[4] PWWSB's revenues at current rates, even after a 22 percent rate increase implemented in November 2023, are not sufficient to cover system operations and maintenance expenses. Yet PWWSB's water and sewer rates are already high. In fact, they are among the highest in the state.

[1] In the matter of Synovus Corporate Trust vs. Water Works and Sewer Board of the City of Prichard (Case No. CV-2023-901332.00).

[2] Order Section III. Duties of Receiver, paragraph 9 (c), p 18.

[3] Agreement to Furnish Services Between Rothstein Group, LLC, and Prichard Water Works and Sewer Board, dated December 20, 2023.

[4] PWWSB Asset Evaluation Technical Memorandum - Final, May 30, 2024, Executive Summary p. ix. https://fixprichardwater.com/wp-content/uploads/2024/06/PWWSB-Asset-Evaluation-TM_FINAL_2024May30.pdf

PWWSB Affordability Assessment

Water affordability challenges can be assessed through different industry-accepted measures and analysis tools. Many of these measures use readily available US Census data on incomes and PWWSB service rates.[5]

The measures show that PWWSB bills are a heavy burden for the low-income households that comprise a majority of the service population. As a result, there is limited capacity to bear additional burdens. Additional revenue generation potential through further rate increases (above and beyond the recent 22 percent increase imposed in November 2023) is severely limited for the foreseeable future. Any institutional restructuring alternative must take account of this limited potential for PWWSB customer-derived rate revenues.

Customer Assistance Program

One mechanism to help relieve these burdens could be a Customer Assistance Program (CAP), the design and funding of which could be tailored to PWWSB's evolving circumstances. However, the widespread poverty and lack of economies of scale across PWWSB's service area severely constrain options. Because of the exceptionally high percentage of PWWSB customers with limited means, a utility-funded CAP could effectively amount to asking many PWWSB households for money from one pocket to help fill the other – with associated administrative costs and hassle. PWWSB's small customer base simply does not have the economic diversity that has been leveraged in other (even distressed) communities in the country. Given PWWSB's customer base and current under-recovery of even basic operating expenses, external funding of any CAP program offering is likely required for the foreseeable future.

This Affordability Assessment Study outlines potential features of a CAP, however funded, to address low-income water affordability. Key CAP decisions that are discussed include determining eligibility criteria (and requirements to certify eligibility), forms of assistance, community organization partnering and outreach, and methods to establish sustainable funding. Given that CAP design must reflect the limited availability of funding), it is important to note that hiring a grant application writer, even on a limited term, could enable PWWSB to take advantage of the recent unprecedented allocations of federal funding to address environmental justice issues.

[5] Selected additional measures and mapping tools are presented in Appendices A and B.

Introduction

In November 2023, the Circuit Court of Mobile County, Alabama, issued an order[6] appointing a Receiver for the Prichard Water Works and Sewer Board (PWWSB). Among the Receiver's duties[7] was conducting an Affordability Assessment / Study of the system. In late December 2023, Receiver John Young engaged Galardi Rothstein Group to conduct the water affordability assessment and address options for developimg and implementing an income-qualified customer assistance program.[8]

Addressing water affordability requires, perhaps first and foremost, attention to service quality, efficiency of water system operations, and ensuring the integrity and reliability of water and sewer system infrastructure assets.[9] Affordability is compromised if, for example, customers choose (or are required) to purchase bottled water due to water quality concerns. Affordability cannot be sustained if a utility is inefficiently operated and infrastructure is neglected. Yet, given the Receiver's responsibilities and complementary initiatives[10] that speak to service quality, efficiencies, and asset management, this PWWSB water affordability assessment largely focuses on evaluating (absolute and relative) household water cost burdens, and on options for providing customer assistance. These evaluations complement the Receiver-commissioned studies that spotlight the need for major investment/re-investment in PWWSB assets, and that address institutional restructuring alternatives.

PWWSB's needs and affordability challenges mirror national trends, yet they are exceptional in terms of the severity of the challenges and the constraints imposed by the utility's size, location, and history.

National Context

Water affordability has become a nationwide problem. As noted in a recent study addressing potential approaches to create a federally-funded Low-Income Water Customer Assistance Program[11]:

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[6] In the matter of Synovus Corporate Trust vs. Water Works and Sewer Board of the City of Prichard (Case No. CV-2023-901332.00).

[7] Order Section III. Duties of Receiver, paragraph 9 (c), p 18.

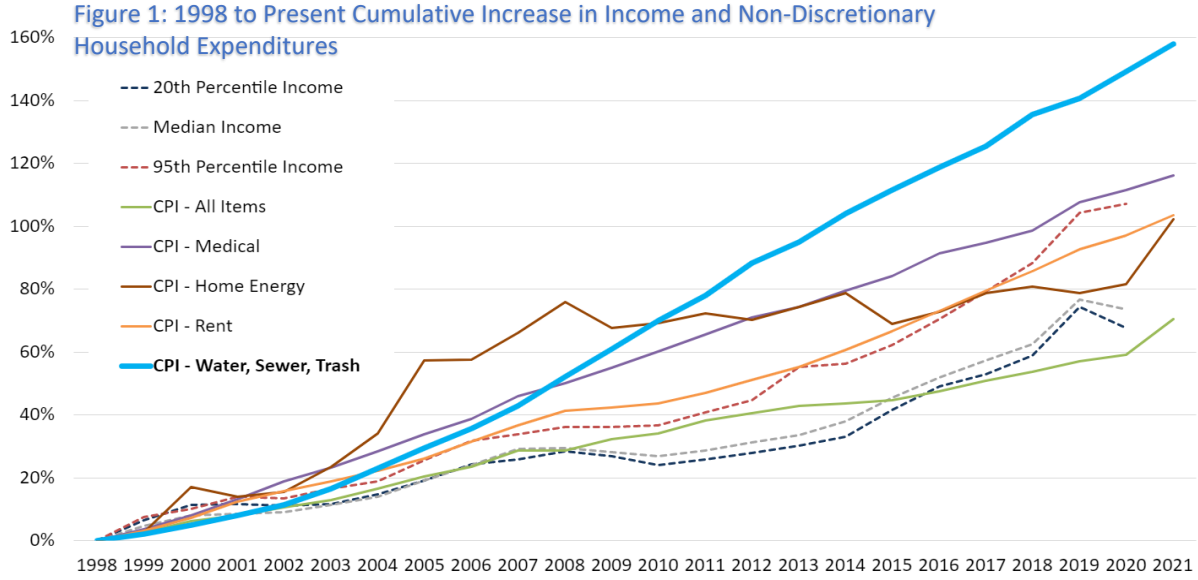
[8] Agreement to Furnish Services Between Rothstein Group, LLC, and Prichard Water Works and Sewer Board, dated December 20, 2023.

[9] For a discussion, see Manny Teodoro, May 31, 2023 blog post: "Pillars of Affordability: Strategic guidance for water sector leaders," https://mannyteodoro.com/?p=3988.

[10] Including the Asset Evaluation Study, Source of Water Supply Study , and PWWSB Alternatives Analysis Study.

[11] *Low-Income Water Customer Assistance Program Assessment: Final Report*, prepared for American Water Works Association (AWWA), Association of Metropolitan Water Agencies (AMWA), National Association of Clean Water Agencies (NACWA), National Association of Water Companies (NAWC), and Water Environment Federation (WEF), April 20, 2023.

Figure 1: 1998 to Present Cumulative Increase in Income and Non-Discretionary Household Expenditures



> *…[S]ince at least the late 1990s, water and wastewater bills have increased at a greater pace relative to other essential needs and incomes (see Figure 1). Since 1998, the US Census' essential cost index reported water, wastewater, and trash costs increased nearly 160% while the 20th percentile of income has increased by less than 70%. A similar disparity is observed at the national median household income level. This disparity between water and wastewater cost increases and income growth has exacerbated household water affordability issues.*

This study also noted that

> *Water and sanitation services are critically important for human health and development. The cost of providing these services is significant and utilities must raise sufficient revenue to provide these vital services. The array of related issues is daunting and includes but is not limited to:*
>
> - *The alarming extent to which households are not connected to safe, reliable water and wastewater services, particularly in rural and tribal communities.*[12]
> - *The incidence of households that are disconnected from water services for non-payment of outstanding water service account balances and/or that carry untenable water service-related debts.*[13]
> - *The extent to which poor and leaking plumbing leads to water service billings for lost water.*
> - *The compounding of water debts due to fees and charges related to late and unpaid bills, service disconnections, and other customer account management measures.*
> - *The reluctance of some water utilities to implement necessary rate increases over fear of unaffordability of the higher rates to their low-income customers.*
>
> *As with other poverty-related challenges, these issues are amplified by an array of legal,*

[12] See, for example, *Closing the Water Access Gap in the United States: A National Action Plan*, Dig Deep and United States Water Alliance, (2019), that offered a rough estimate of over 1.4 million in the United States, another 250,000 in Puerto Rico, and 553,000 homeless people who may lack equitable access. http://uswateralliance.org/sites/uswateralliance.org/files/publications/Closing%20the%20Water%20Access%20Gap%20in%20the%20United%20States_DIGITAL.pdf

[13] Currently, service disconnection and arrearage data are not required to be reported through water system permitting or financial reporting requirements. In 2018, Food and Water Watch published limited survey data in its *America's Secret Water Crisis: National Shutoff Survey Reveals Water Affordability Emergency Affecting Millions*.

institutional, and practical barriers and constraints that often differ substantially from state to state, or utility system to utility system.

These national trends have led to a variety of responses by the water sector, including advocacy for a permanent federal low-income water assistance program,[14] and development of policy statements that speak to the need to address water access and affordability. The American Water Works Association's *Policy Statement on Affordability*, for example, acknowledges that utility revenue funding of customer assistance measures is an appropriate component of revenue requirements.[15] Such programs have become an increasingly common and accepted aspect of utility system service delivery, particularly among larger systems with adequate administrative capacities.

PWWSB Context

Unfortunately, in terms of water affordability, the circumstances for PWWSB are peculiarly difficult in almost every respect. The PWWSB system and customer base are relatively small and burdened with exceptional rates of poverty. While larger utilities with "pockets of poverty" may have some opportunity to achieve economies of scale, and perhaps to distribute cost responsibilities to mitigate burdens on the economically disadvantaged, PWWSB has no such opportunities. At the same time, as spotlighted in an Asset Evaluation Study, the system is plagued by decades of underinvestment such that reinvestment requirements exceed a staggering $400 million (uninflated) over 20 years.[16] PWWSB's revenues at current rates, even after a 22 percent rate increase placed into effect in November 2023, are insufficient to cover system operations and maintenance expenses, much less to enable long-term capital financing of infrastructure spending needs. And, with PWWSB's default on its 2018 revenue bond issue, its access to public capital markets will be limited and costly, if available at all, for the foreseeable future.

PWWSB's challenges have prompted a series of extraordinary measures reflected in the system being placed into Receivership and the State of Alabama's provision of grant funding for selected high-priority projects.[17] An Alternatives Analysis will "evaluate the various ownership, governance, operating, and water supply options available to Prichard and Chickasaw (combined or individually) and recommend a structure to promote the utility's long-term sustainability."[18] These measures are

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[14] See, for example, "Associations urge Congress to prioritize affordability, build on LIHWAP program," *Water Finance and Management*, April 24, 2023: https://waterfm.com/associations-urge-congress-to-prioritize-affordability-build-on-lihwap-program/ - accessed on July 17, 2024.

[15] *American Water Works Association Policy Statement on Affordability*, adopted by the Executive Committee October 24, 2018.

[16] PWWSB Asset Evaluation Technical Memorandum - Final, May 30, 2024, Executive Summary, p. ix. https://fixprichardwater.com/wp-content/uploads/2024/06/PWWSB-Asset-Evaluation-TM_FINAL_2024May30.pdf

[17] As reported to the Citizens Advisory Council of Prichard (CACP): "The capital investment project list submitted to ADEM for possible grant funding… includes over $20M of projects needed to comply with Consent Orders, reduce water leakage, address sanitary sewer overflows, provide proper water storage and properly monitor and control system operations" (CACP Meeting Summary, February 15, 2024). "On March 18, ADEM provided $5.8M of 2024 funding to initiate all of the projects," CACP Meeting Summary, March 21, 2024.

[18] CACP Meeting Summary, June 20, 2024.

being conducted within a framework characterized by acute water affordability challenges under existing PWWSB rates. Household burdens, based on measures described in the following section, suggest severely limited (if any) potential for PWWSB revenue enhancement to fund remedies for system deficiencies.

Assessment Methods and Uses:

PWWSB's difficult circumstances can be readily documented through different water affordability measures. In general, a household water affordability assessment looks at different measures of the costs that households incur for water service, and it also considers the number of low-income households within a utility service area or community. For PWWSB households, relevant rates following the 22 percent increase effective in November 2023[19] are as follows:

- Water Billing Per Month:
  - Minimum: 3/4" meter / 2,000-gallon quantity allowance $31.24 + tax
  - Volumetric Rate: $6.60 / kgal above quantity allowance
- Sewer Billing Per Month
  - Minimum: 3/4" meter / 2,000-gallon quantity allowance $31.24 + tax
  - Volumetric Rate: $8.23 / kgal above quantity allowance

Though cost-based rates are the industry standard, these rates are not based on the costs of PWWSB water and sewer service—in fact, they are not sufficient to cover the utility's operating expenses or to fund capital investments. Currently, a minimum monthly water and sewer bill is $62.48 or $749.76 annually for households using 2,000 gallons or less of water per month. Assuming that PWWSB households average 3 persons per household using 50 gallons per day per person, a household's water and sewer bills for basic levels of service would be $99.56[20] or $1,194.72 annually. Though these calculations do not account for non-essential water use (like car washing), or for higher metered water billings due to inefficient and leaking plumbing, they nevertheless speak to acute water cost burdens under existing rates.

Accessible[21] Measures of Household Cost Burden

Cost as a Percentage of Median Household Income (MHI)

Perhaps the most commonly used measure of water service burdens is a calculation of typical household costs as a percentage of median household income across the utility's service area. Household costs can be reasonably estimated by applying residential rates to a typical or average

[19] PWWSB rate schedule: https://prichardwater.com/rates-and-policies.

[20] = $61.48 minimum bill + $37.08 volumetric charges. Volumetric charges = (3 persons per household x 50 gallons per person per day x 30 days = 4,500 gallons per month – 2000 gallon per month quantity allowance = 2.5 kgal x ($6.60+$8.23) = $37.08.

[21] This section describes measures of water affordability that were selected because they are commonly used and particularly accessible, intuitive, and calculable from data readily available for PWWSB. Selected additional measures are outlined in Appendix A.

amount of monthly household water usage.[22] Median household income data is readily available from the US Census, and the percentage determination is a straightforward calculation.

Cost as a Percentage of Lowest Quintile Income (LQI)

Cost as a Percentage of MHI has been consistently criticized as a water affordability metric[23] largely because it refers to median income, while affordability concerns typically focus on the economically disadvantaged. The Cost as a Percentage of LQI measure[24] takes typical or average water costs[25] as a percent of the upper limit of the lowest income quintile (that is, the lowest 20 percent) for the service area. The required data is also readily available from US Census information, yet this measure focuses on low-income households.

Household Burden Indicator[26] (HBI) - Basic Water Cost as a Percent of LQI

A further refinement of the water cost burden metric focuses on the amount of water usage needed to meet basic requirements for human health and sanitation, and on burdens on the economically disadvantaged. This measure takes a measure of basic annual water costs[27] as a percent of the upper limit of the lowest income quintile (the lowest 20 percent) of households in the service area. Like measures referenced in EPA's *Financial Capability Assessment Guidance*, the required data is readily available from utility rates and US Census information, yet this measure focuses on essential, basic water service costs, rather than average costs.

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[22] A variation of this household affordability metric has been used by the EPA since (at least) 1995 with their Interim Economic Guidance for Water Quality Standards. Their measure, called the Residential Indicator (RI) in the 1997 Financial Capability Assessment (FCA) Guidance for the Combined Sewer Overflow (CSO) Control Policy, calculates a cost per household based on projected Clean Water Act compliance costs rather than referencing actual service rates. The measure takes the residential share of current costs, plus projected costs for compliance (including all wastewater and CSO costs), divided by the number of households in the permittee's wastewater service area. In practice, an RI of 2% for wastewater and stormwater costs, and informally 2.5% for water costs, have been interpreted as the thresholds above which a community is considered to have a high affordability burden.

[23] And the Residential Indicator was, in fact, developed to address community-wide financial capabilities rather than individual household water cost burdens. These critiques of the Residential Indicator have been well documented in a number of different reports and white papers published by NACWA, AWWA, and the National Academy of Public Administration (NAPA) between 2005 and 2020. *Low-Income Water Customer Assistance Program Assessment: Final Report,* Section 1.2.5, summarizes the disadvantages and shortcomings of EPA's use of its Residential Indicator calculation

[24] Termed the Lowest Quintile Residential Indicator by EPA in a draft (but ultimately withdrawn) revision of its Financial Capability Assessment methodology issued in 2021.

[25] Adjusted based on low-income household size relative to median income household size, as described in the pre-publication version of EPA's 2021 *Financial Capability Assessment Guidance*, January 2021, Exhibit 1: p. 11

[26] *Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector*, AWWA/NACWA/WEF, April 17, 2019, pp. 3-12 – 3-14.

[27] Including essential wastewater, water, and stormwater billed to residential customers using 50 gallons per person per day and assuming an average household size.

Hours at Minimum Wage[28]

The Hours at Minimum Wage measure is defined as the number of hours of work required at the local minimum wage to pay for basic water and sewer service costs for one month. Costs for this metric are based on a four-person household using 50 gallons of water per person per day.

Measures of Prevalence of Low-Income Households within a Community

Percentage of Households Below the Federal Poverty Level

The Federal Poverty Level (FPL) is a measure of household income that corresponds to a minimum standard of living for households of various sizes, based on a historical survey that is updated annually for inflation. The FPL is published annually by the US Census and is updated based on the CPI index for 48 possible thresholds based on age and family size. The FPL does not vary by geography. The percentage of the population below a multiple (such as 150% or 200%) of the FPL is often used as a conservative measure of the prevalence of low-income and potentially vulnerable populations in various federal, state, and local contexts.

Percentage of Households Receiving Public Assistance

This metric measures the percentage of households in the utility service area receiving public assistance in various forms, such as the Low-Income Home Energy Assistance Program (LIHEAP) or Supplemental Nutrition Assistance Program (SNAP), and it is an indicator of the prevalence of economic hardship within a community. The US Census reports the percentage of households receiving public assistance income and/or SNAP benefits at the tract level. This measure is easy to understand, indicates the size of the economically vulnerable customer base in a community, and is readily available.

These measures do not provide bright line thresholds such that unaffordability of water services is indicated or documented if a particular measure exceeds a certain value. However, both EPA guidance and water sector experience offer important insights.

- Under EPA guidance (for different contexts), indications of High Burdens may occur when Cost per Household as a Percentage of Income is more than 2.5 percent for water or 2.0 percent for sewer service (or 4.5 percent for water and sewer combined).[29]
- Using the Household Burden Indicator,[30] a High Burden is indicated if the HBI is between 7 and 10 percent, and a Very High Burden is indicated if the HBI is above 10 percent.

[28] See a fuller discussion of this measure, as well as the Affordability Ratio at the 20th Income Percentile (AR_{20}), outlined in Appendix A at: Teodoro, Manuel P. 2018. "Measuring Household Affordability for Water and Sewer Utilities," Journal AWWA 110(1): 13-22.

[29] Nationally, circumstances where either water or sewer service costs currently exceed 2 percent of MHI are relatively unusual; situations where combined water and sewer costs exceed 4 – 4.5 percent are exceptional.

[30] For communities with even substantially lower poverty prevalence as indicated by the percentage of households at or below 200 percent of the Federal Poverty Level.

- Research on the Hours at Minimum Wage metric suggests[31] a threshold of 8 hours at minimum wage per month, where more than this indicates an affordability burden.

The water affordability assessment for the PWWSB system involves evaluating these various metrics, individually and in combination, for Chickasaw and Prichard, AL. To the extent practicable, measures are presented in maps that indicate the distribution of burdens geographically. However, there are limited differences in circumstances across PWWSB's relatively small service area.

[31] Based on distributional analyses.

PWWSB Water Affordability Assessment[32]

PWWSB Household Water Cost Burdens

The PWWSB service area comprises primarily the cities of Prichard and Chickasaw, Alabama, located in Mobile County, Alabama. These communities are characterized by a variety of factors that contribute to water affordability and environmental justice challenges.[33] Tables 1 and 2 below provide data gleaned from the US Census, and PWWSB's rate schedule effective November 1, 2023, regarding income levels, water bills at alternative usage levels, and key water affordability measures.

Table 1: Population and Income Data – US, Chickasaw, AL and Prichard, AL*

		United States	Chickasaw, AL	Prichard, AL
Population Estimates		333 M	6,310	18,870
	% Black or African American	13.6%	49.2%	90.1%
	% White	75.5%	44.6%	8.8%
Housing				
	Owner Occupied Housing Unit Rate	64.8%	47.7%	56.1%
	Median Value	$281,900	$89,300	$76,200
Income and Poverty				
	Median Household Income	$75,149	$39,985	$36,110
	Lowest Quintile Income	$30,785	$14,235	$15,703
	% Persons in Poverty	11.5%	31.5%	31.6%

* US Census Bureau. Quickfacts and "Household Income Quintile Upper Limits." American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B19080, 2022.

[32] This affordability assessment is limited since bill calculations are based on assumed metered water use levels without benefit of a detailed interrogation of historical billing records to determine key statistics of PWWSB billings (mean and median metered usage, incidence of high water billings, etc.).

[33] See Appendix B for a sampling of maps generated by EPA's Environmental Justice (EJ) screener that offers further documentation of the PWWSB service area challenges. These challenges have resulted in Prichard and Chickasaw being designated as disadvantaged based on Justice 40 initiative criteria (generally designated as such in across 5 – 7 categories) and EPA Inflation Reduction Act (IRA) Disadvantaged Communities criteria. See the EPA EJ Screener tool at: https://ejscreen.epa.gov/mapper/

Table 2: PWWSB Water and Sewer Bills and Related Water Affordability Measures				
Water and Sewer Bills		Bill as a % of Median Household Income	Bill as a % of Lowest Quintile Income	Bill as Hours at Minimum Wage*
Water & Sewer Bill for ¾" Meter, 2kgal minimum ($62.48/mo = $749.76/year)				
	Chickasaw, AL	1.9%	5.3%	8.6
	Prichard, AL	2.1%	4.8%	
Water & Sewer Bill for ¾" Meter, 2kgal minimum, 4.5kgal/month ($99.56/mo = $1,194.72/year) – Basic Usage				
	Chickasaw, AL	3.0%	8.4%	14.8
	Prichard, AL	3.3%	7.6%	
Water & Sewer Bill for ¾" Meter, 3.5 kgal minimum, 3.5kgal/month ($140.56/mo = $1,686.72/year)				
	Chickasaw, AL	4.2%	11.9%	19.4
	Prichard, AL	4.7%	10.7%	
* PWWSB rate schedule effective November 1, 2023 and income data as presented in Table 1. The federal and Alabama minimum wage (since 2009) equals $7.25/hour.				

These results are disconcerting. They indicate that current bills for basic levels of water usage present a High Burden based on the water sector's Household Burden Indicator metric[34] (that references Lowest Quintile Income) and exceed 8 hours at minimum wage. They demonstrate that while PWWSB bills under existing rates do not necessarily impose an unsustainable burden for households with incomes in the range of, or above, the service area median, there is limited capacity to bear additional burdens. Perhaps more importantly, the tables indicate that a substantial proportion of low-income customers are already heavily burdened, where just minimum bill values exceed the thresholds for High Burden used in EPA guidance. Using current service rates and basic water usage levels of 50 gallons per customer per day (gpcpd), Prichard's Cost as a Percentage of MHI is 3.3% while Chickasaw's is 3.0%.[35,] By way of comparison, the Mobile, AL measure is about 1.8%; Atlanta's is 1.7%.[36]

US Census data is also available about the distribution of income in a geographic unit (such as cities), and it offers further information about the number of households facing water affordability challenges and the magnitude of burdens. Figure 2 below highlights that approximately 35 percent

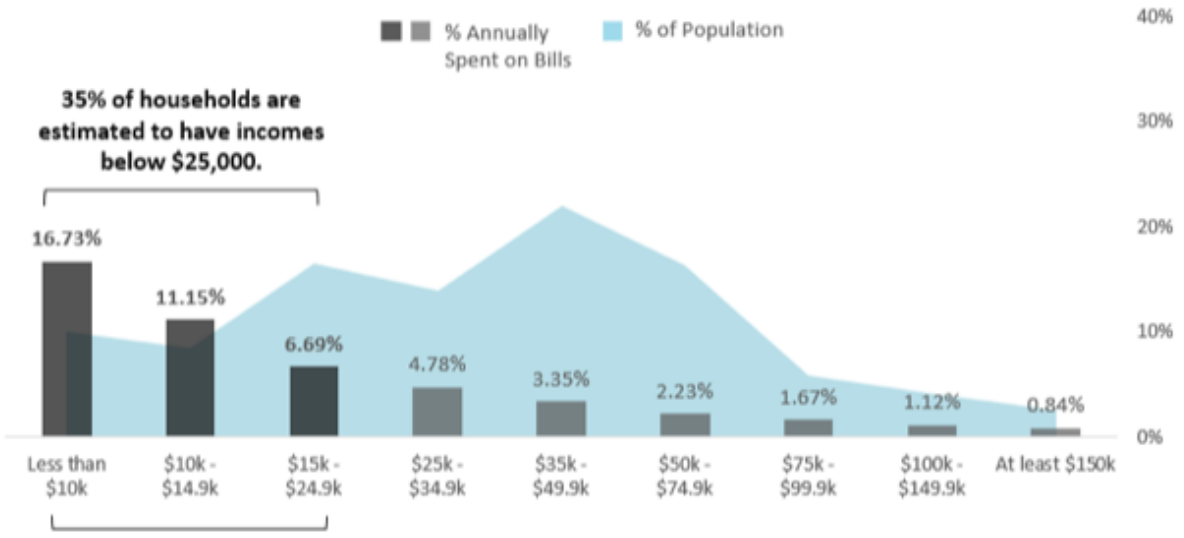
[34] *Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector,* AWWA/NACWA/WEF, April 17, 2019, pp. 3-12 – 3-14.

[35] Prichard = $1,194.72/$36,110, Chickasaw = $1,194.72/$39,985.

[36] An outlier is Birmingham / Jefferson County, AL's RI at about 4.1% reflecting, in part, implementation of rate increases prescribed in the Jefferson County bankruptcy Plan of Adjustment confirmed in December 2013. Jefferson County differs notably from PWWSB insofar as it has sufficient size to address water affordability, in part, through a revenue-funded Customer Assistance Program (as delineated in the official statement for its Series 2024 Refunding Revenue Bonds).

of Prichard, AL households have incomes below $25,000 and currently face very burdensome water service bills.

Figure 2. Prichard: All Households – Income Distribution and Water/Sewer Bills at Current Rates (for 4,500 gallons/month) as a Percent of Income



Reinforcing measures of the prevalence of poverty in the PWWSB service area are shown graphically in the figures below. Figure 3 shows the percentage of households at the Federal Poverty Level in Prichard and Chickasaw; Figure 4 shows the percentage of households receiving assistance through the federal Supplemental Nutrition Assistance Program (SNAP). For the poverty prevalence measure of 200 percent of the Federal Poverty Level used in EPA guidance, US Census data[37] indicates that in 2022, 53.5 percent of Chickasaw households and 68.7 percent of Prichard households had incomes at or below this measure.

[37] US Census Bureau, "Poverty Status in the Past 12 Months," American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1701, 2022.

Figure 3: Percentage of Households in Poverty

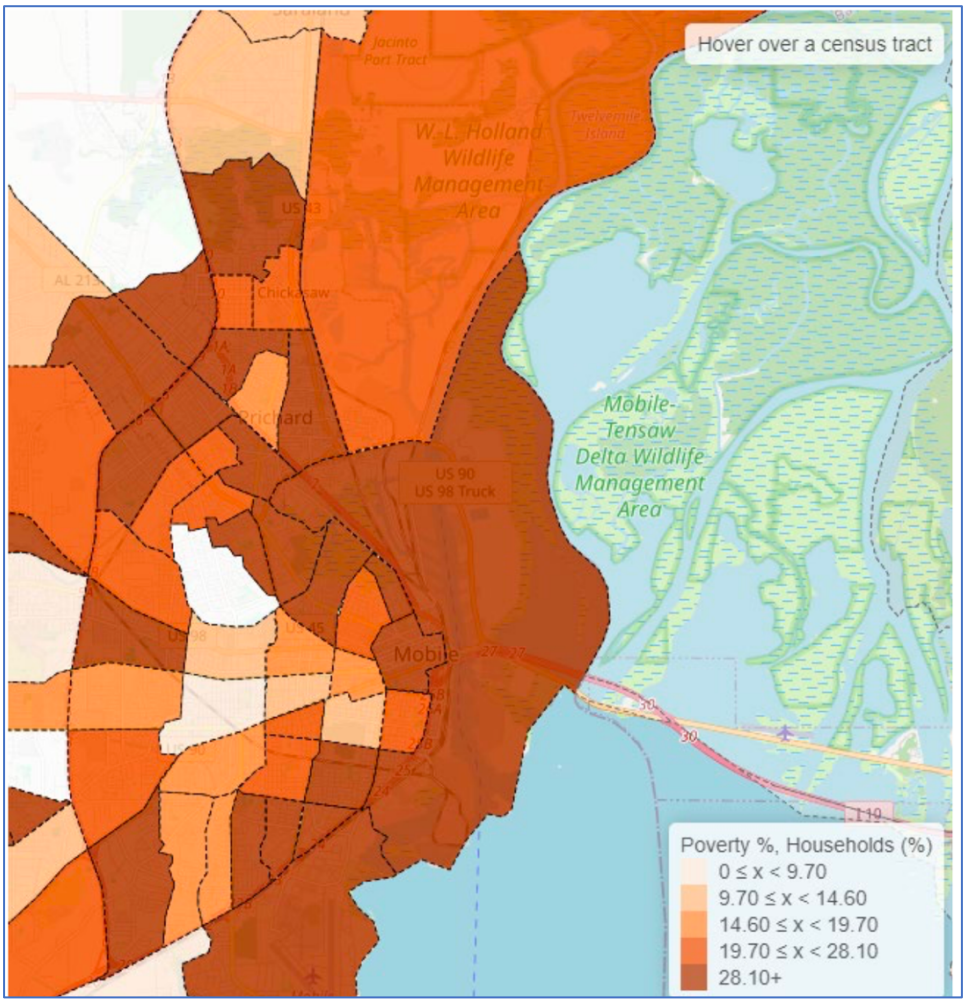
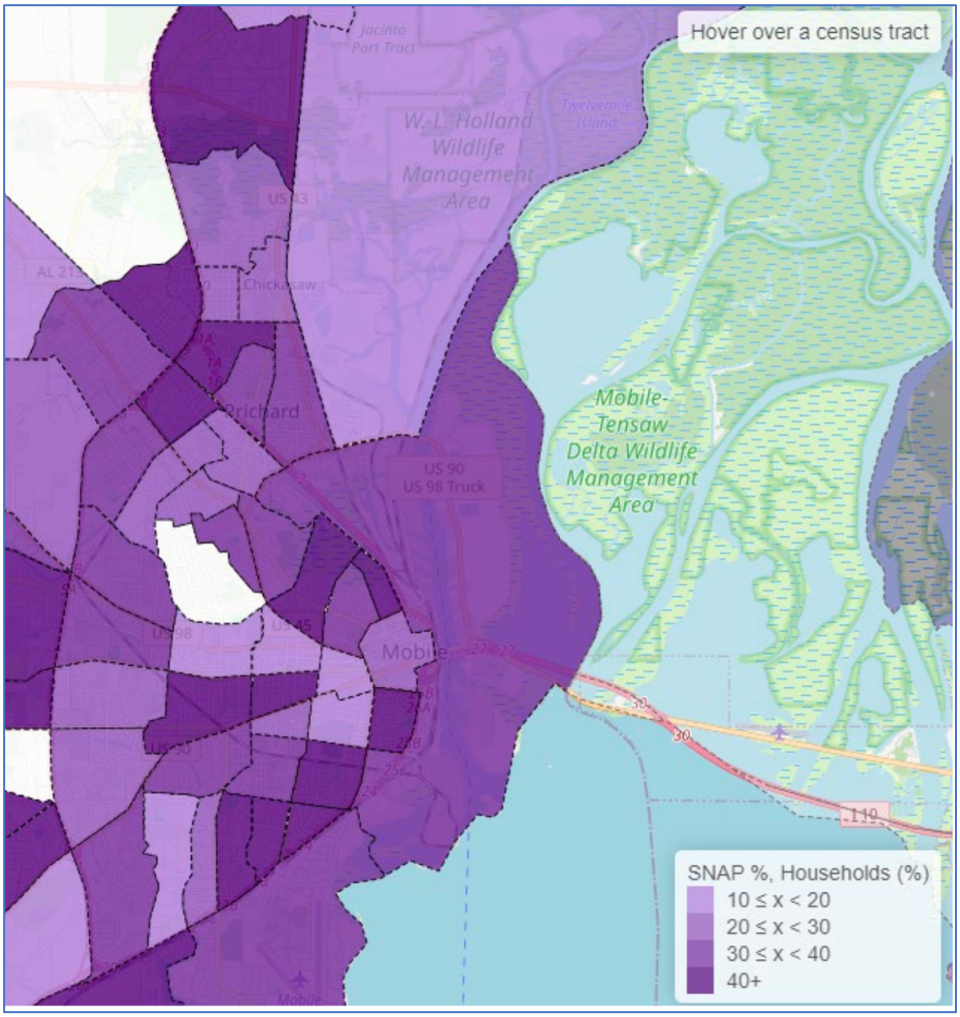
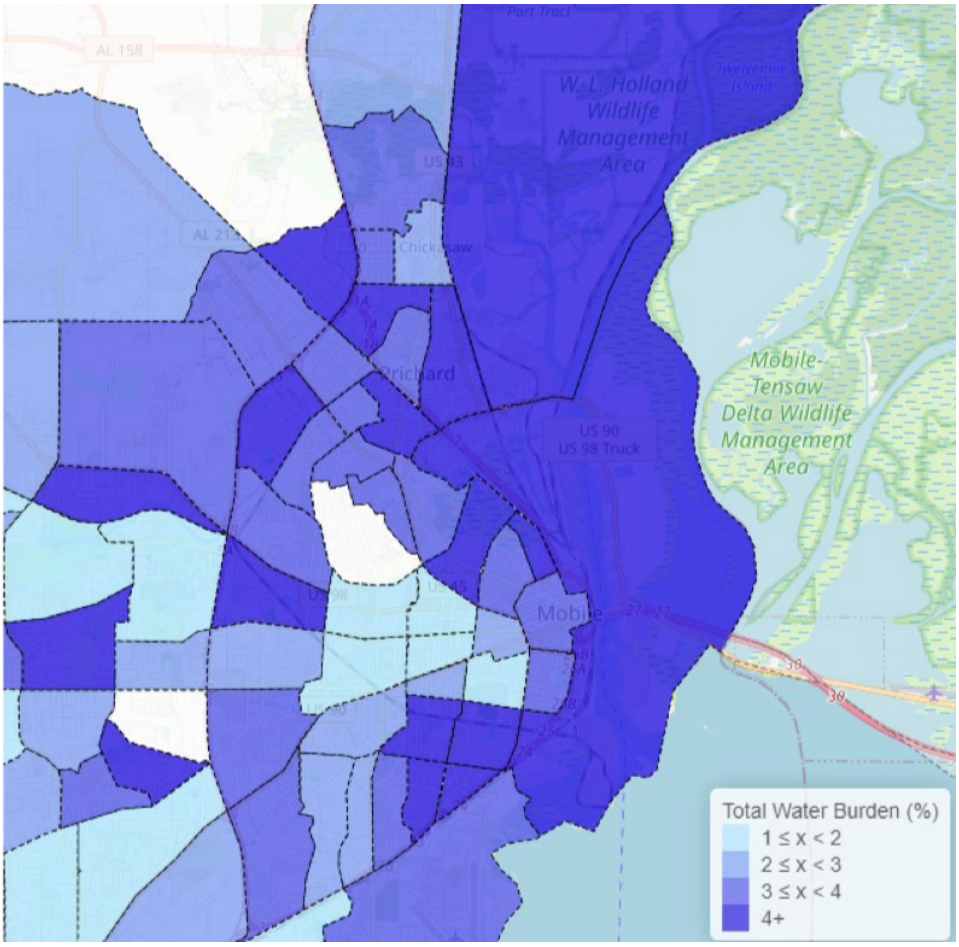


Figure 4: Percentage of Households Receiving SNAP Assistance



The combined effect of these factors – high current water bill burdens and the prevalence of poverty – is shown graphically for Chickasaw and Prichard in Figure 5, which presents water bill burdens, expressed as current bills (for 4,500 gallons usage), as a percentage of median household income.

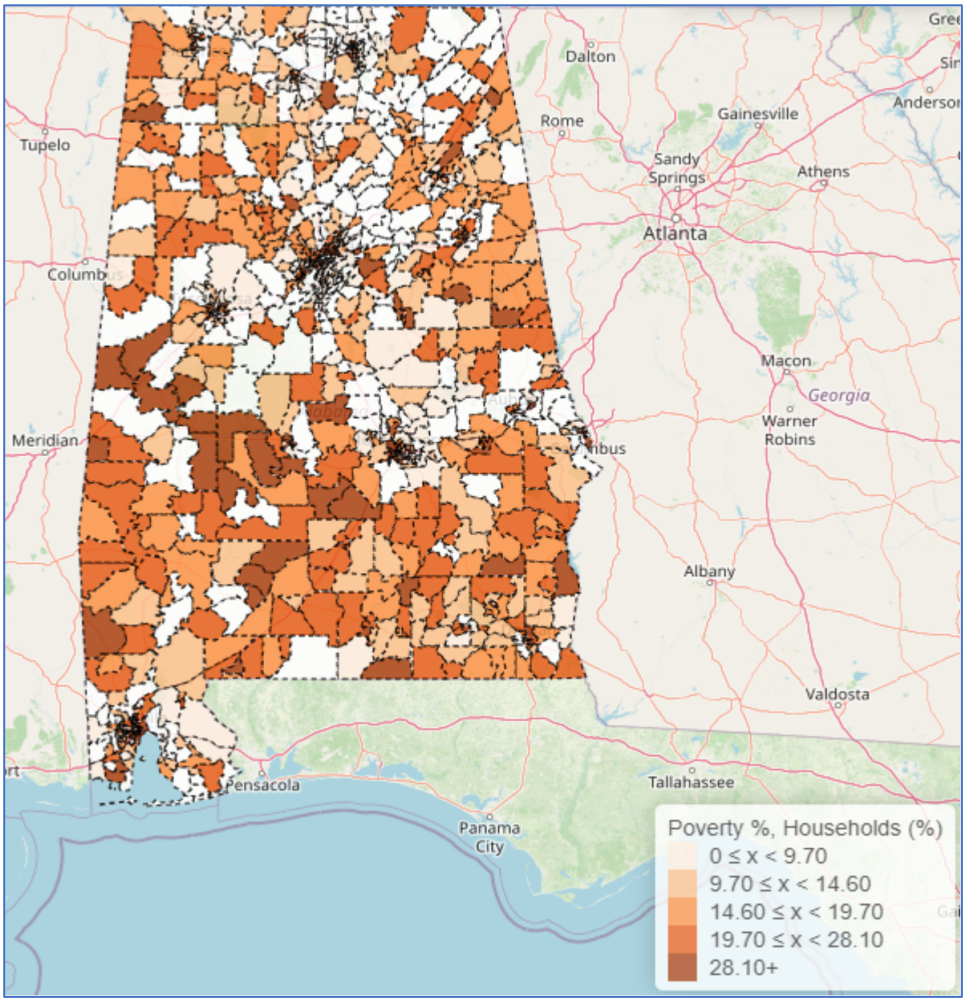
Figure 5: Water Burden – Current Total Bill ($99.56)



PWWSB Burdens Relative to Other Communities

Water affordability for PWWSB customers is particularly dire in absolute terms, as highlighted above, but also relative to other communities in Alabama and nationally. This is a consequence of the relative prevalence of poverty in the PWWSB service area and PWWSB's relatively high water and sewer rates. Figure 6 is a map of the state of Alabama's poverty rates by geographic area that illustrates the difficult statistics. Poverty rates in Chickasaw (31.5%) and Prichard (31.6%) are almost twice as high as that for the State of Alabama (16.2%) and almost 3 times the national poverty rate (11.5%).

Figure 6: Percentage of Alabama Households in Poverty

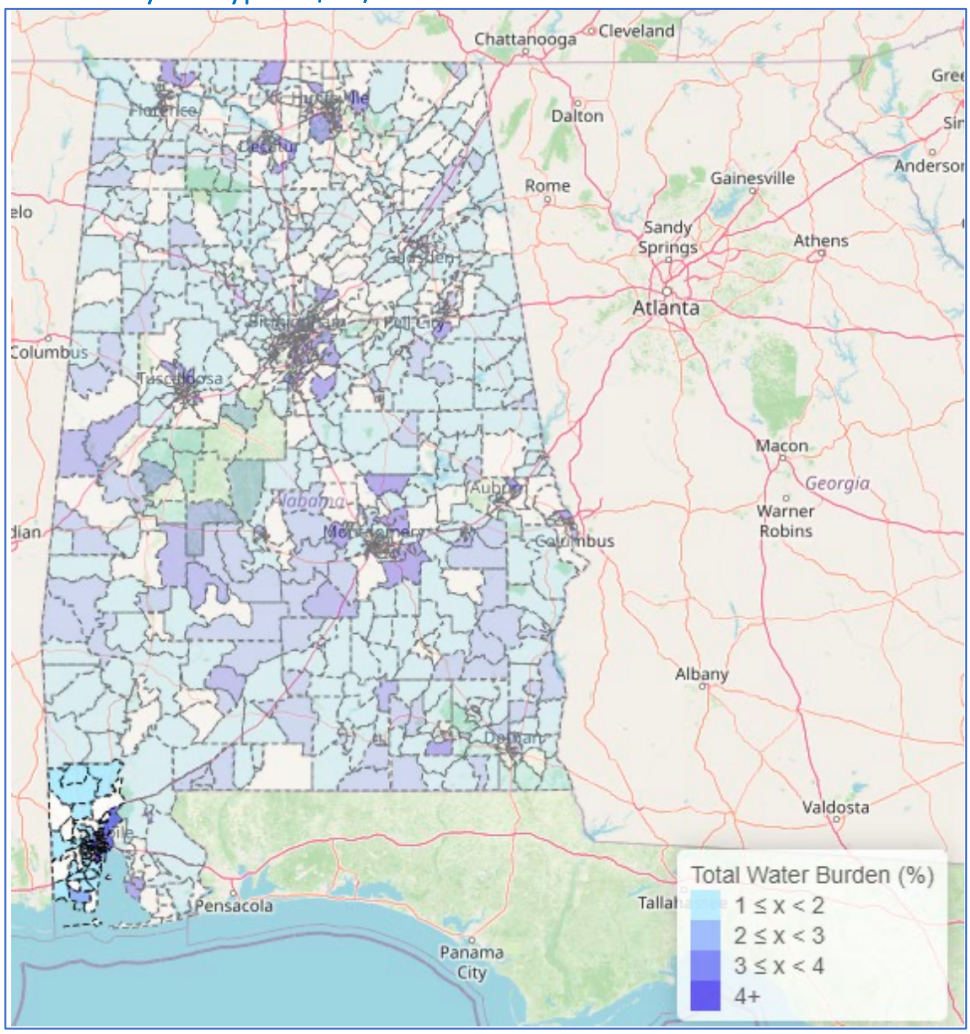


At the same time, PWWSB service rates are among the highest in the State of Alabama. Even before the 22 percent rate increase effective in November 2023, PWWSB bills for 4,500 gallons of billable volumes were 36 percent higher than the median bill across 178 Alabama utility rate structures.[38]

Reflecting the implications of poverty prevalence on water affordability measures, Figure 7 maps the water bill burdens that would be imposed with $70/month water and sewer bills that approximate statewide averages. This mapping illustrates the exceptional burdens in the Chickasaw and Prichard areas (shown in deep purple/black shading) that would be imposed just by charging average state bills, yet PWWSB bills are already nearly 40 percent higher than the statewide average.

[38] See the Environmental Finance Center at the University of North Carolina water and sewer rate survey for the State of Alabama at: https://dashboards.efc.sog.unc.edu/al - accessed July 15, 2024.

Figure 7: Percent of Median Household Income Burdens by Alabama Community for Typical $70/Month Water and Sewer Bills



Implications of PWWSB Household Water Burdens

As demonstrated above, the combined impacts of endemic poverty and high water and sewer bills impose exceptionally high burdens on PWWSB households at current rates. Additional revenue generation potential through further rate increases (above and beyond the recent 22 percent increase imposed in November 2023) is severely limited for the foreseeable future. Accordingly, any institutional restructuring alternative must take account of the limited potential for PWWSB customer-derived rate revenues. This is a limitation that is particularly challenging given the staggering long-term reinvestment required for the PWWSB system.[39]

While PWWSB's circumstances are symptomatic of (or arguably evidence of) a system on the brink of failure, even recent examples of failed water system recoveries offer limited comfort. The bankruptcies in Jefferson County, AL, and Detroit, MI affected large, economically diverse systems whose Plans of Adjustment leveraged more adequate historical system investment and greater

[39] A system which has, by itself, effectively no access to public capital markets due to its 2019 debt issuance default.

economic diversity. The water service crises in Flint, MI and Jackson, MS also involved more sizeable systems, and even so, these systems are recovering only through major infusions of federal and state funding (directed, in part, to aid large low-income populations).

Customer Assistance Program

The extent of PWWSB household burdens and system reinvestment needs demand consideration of institutional restructuring, which is the subject of the PWWSB Alternatives Analysis. These efforts speak to longer-term reforms related to utility ownership, governance, and operations. Yet as documented in the prior section, many PWWSB households already face untenable water burdens today. One mechanism to alleviate these burdens could be a Customer Assistance Program, the design and funding of which could be tailored to PWWSB's evolving circumstances.

Again, the lack of economies of scale across PWWSB's small service area severely constrains options. While the following discussion notes national trends toward utility funding of assistance programs, the prospect of these remedies for PWWSB is dimmed by the fact that at least half the households would be eligible for income-qualified assistance (one half to two thirds of resident households fall below 200 percent of the Federal Poverty Line, a measure often used to define eligibility). Therefore, a utility-funded CAP could effectively amount to asking many PWWSB households for money from one pocket to help fill their other – with associated administrative costs and hassle. PWWSB's small customer base simply does not have the economic diversity that has been leveraged in other (even distressed) communities around the country.

Industry Context

Nationally, as water, wastewater and stormwater rates have increased at roughly double the rate of inflation over the last two decades,[40] water affordability challenges have become an increasing cause for concern. Numerous analyses and reports have highlighted these trends and have documented distressing impacts.[41] This concern has prompted reconsideration of the scheduling framework for enforcing water and wastewater systems' regulatory compliance requirements,[42] as well as implementation of alternative forms of utility rates and low-income assistance programs.

Across different utility systems, Customer Assistance Program (CAP) offerings reflect significant (and evolving) differences in the legal landscape[43] that utilities must navigate, as well as differences in individual community preferences. Yet, an important trend has been toward general recognition of

[40] See, for example, 2021 AWWA *Water and Wastewater Rate Survey* (prepared by Raftelis), *2019 NACWA Cost of Clean Financial Index*, and *2021 Stormwater Utility Survey Report* (prepared by Black & Veatch).
[41] See, for example, *Closing the Water Access Gap in the United States, A National Action Plan*, US Water Alliance, 2019; "Water Affordability is Not Just a Local Challenge, but a Federal One Too," Brookings, Joseph Kane, January 25, 2018; and *Water and Sewer Affordability in the United States*, Manuel P. Teodoro, Water Science, 2019.
[42] See *Developing a New Framework for Community Affordability of Clean Water Services*, National Academy Of Public Administration, October 2017; *Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector,* AWWA/NACWA/WEF, April 17, 2019; *2023 Financial Capability Assessment Guidance,* US EPA, February 2023.
[43] This legal patchwork is highlighted in *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs: A Guide for Water and Wastewater Utilities*, University of North Carolina Environmental Finance Center, 2017.

the need to ensure access and affordability of service to meet basic human health and sanitary needs, and increasingly toward (partial or full) utility funding of program offerings.

These imperatives are fundamental to water utilities' roles as major economic players in the communities they serve. This recognition is reflected in part in the American Water Works Association's (AWWA's) Affordability policy statement issued in October 2018, which noted that CAP funding may be considered an appropriate component of utility revenue requirements.[44] In a regulated context, for example, in July 2019, the Indiana Utility Regulatory Commission (IURC) approved Indianapolis-located CWA Authority, Inc.'s (a.k.a. "Citizens Water") request for approval of a utility-funded, income-qualified assistance program.[45] In so doing, the IURC recognized the program as being in the public interest.

Recently, individual communities – and the water industry at large – have been reconsidering long-standing barriers to utility-funded CAPs, which were historically criticized as inconsistent with established legal and regulatory principles for rate-setting (as discussed further in Appendix C).

In summary, there is a clear nationwide trend toward using CAPs to address water affordability concerns and, in many cases, to fund these programs as a component of utility revenue requirements. Accordingly, a CAP implemented in collaboration with other Mobile-area income-qualified assistance programs would align with water utilities' evolving service role. Given PWWSB's customer base and current under-recovery of even basic operating expenses, however, external funding of any CAP program offering is likely required for the foreseeable future.

Alabama Legal Framework[46]

Under Alabama Code § 11-50-1, § 11-50-5, municipalities, including cities and towns, have the right to operate and maintain rates for water utilities. They are not subject to Alabama Public Service Commission (APSC) regulation and thus can set their own water and wastewater rates. For wastewater rates, under Ala. Code § 11-50-121, "all such charges shall be uniform for the same type, class, and amount of use or service by or from the sewer system." This code also lists factors that can be used to set rates, but it does not mention socioeconomic factors.

With caution, one can reasonably conclude – subject to authoritative legal opinions – that nothing in the Alabama Code Annotated would preclude or present insurmountable barriers to CAP

[44] See AWWA's *Policy Statement on Affordability* adopted by the Executive Committee on October 24, 2018 at: https://www.awwa.org/Policy-Advocacy/AWWA-Policy-Statements/Affordability, accessed Nov. 18, 2020.

[45] Before the Indiana Utility Regulatory Commission Petition of CWA Authority, Inc. for (1) Authority to Increase its Rates and Charges for Wastewater Utility Service in Three Phases and Approval of New Schedules of Rates and Charges Applicable Thereto; (2) Approval of a Low-Income Customer Assistance Program; and (3) Approval of Certain Changes to Its General Terms and Conditions for Wastewater Service. Cause No. 45151, July 29, 2019 Order.

[46] This section specifically is **not** a legal opinion, and legal review would be required for design and implementation of a PWWSB CAP. This is based on information reported in *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs: A Guide for Water and Wastewater Utilities,* prepared by the Environmental Finance Center of the University of North Carolina (2017).

implementation. On this basis, preliminary parameters for design and implementation of a PWWSB Customer Assistance Program (CAP) are outlined in the following sections.

Preliminary Customer Assistance Program Summary

A PWWSB CAP could be initiated together with implementation of the Receiver's PWWSB Master Plan to provide assistance to qualifying low-income residential service customers. Even a limited CAP could mitigate the acute water burdens of PWWSB's most distressed customers, and it could ease impacts of (necessarily limited) future rate adjustments. A CAP would reflect recognition of the fact that helping economically disadvantaged customers gain and maintain access to services is aligned with PWWSB's role in protecting public health through delivery of potable water and sanitary services.

Preliminary PWWSB CAP Program Goals

CAP effectiveness can be measured by the extent to which it is successful in accomplishing the following main goals:

1. Assist income-qualified individuals and families with their bills and thereby improve water affordability measures for some economically disadvantaged households
2. Avoid water utility disconnections and reduce account arrearages
3. Assist clients in increasing self-sufficiency, in part by providing water conservation measures to reduce water use and thereby lower bills
4. Collaborate with community-based organizations in program outreach to consumers and the public
5. Partner to leverage funding opportunities for delivering assistance

Program monitoring and evaluation may be structured to assess program performance with respect to these individual goals.

CAP Program Design Decisions

By initiating program design and implementation, PWWSB could mirror developments throughout the water and wastewater industry that have recognized utilities' roles in addressing water affordability issues. Program design and implementation require a number of key decisions and approvals, as summarized in Table 3 below.

Table 3: CAP Program Design Decisions

Issue/Decision	Options/Considerations

Funding Sources	• Utility revenues
	  ○ Customer/base charges
	  ○ Volumetric rates
	• Alabama taxes – general fund revenues
	• Other
	  ○ Federal/state grants
	  ○ Philanthropic organizations, NGOs
	  ○ Voluntary contributions

Funding Level **(Dollar Amount or Percentage of Revenues)**	• Service area needs • Complementary programs • Potential for concerns/legal challenges of non-participating ratepayers • Industry practices

Eligibility	• PWWSB customer/account status
	  ○ Documentation requirements
	  ○ Service interruptions
	  ○ Application vs. auto-enrolled
	• Percentage of federal poverty level
	• Senior citizens, people with disabilities, veterans
	• Water usage levels/leaks

Forms of Assistance	• Bill assistance (frequency, amounts/limits) • Water conservation • Plumbing repairs (dollar amount) • Payment plans • Financial counseling
Customer Outreach	• Forms of outreach • Required coordination with other Alabama programs/services
Program Administration	• Partnering arrangement/selection criteria • Program performance measures/reporting

The preliminary PWWSB CAP design discussed below includes program features that draw from successful programs implemented in other communities, yet they are tailored to address unique circumstances in Prichard and Chickasaw as outlined in the preceding Affordability Assessment section.

Preliminary PWWSB CAP Program Design Summary

PWWSB's Customer Assistance Program (CAP) could be structured to assist a broad spectrum of qualifying low-income residential service customers. To help reach customers and get them

enrolled, residential customers enrolled in other Alabama assistance programs[47] could be administratively qualified to receive PWWSB CAP assistance.

For a new program, forms of assistance could focus on bill relief, by addressing delinquencies and/or by providing regular monthly support. Water conservation/leak repair assistance could be included to provide relatively long-lasting benefits for program participants, and this measure may have limited net (realizable) revenue impact since leak-related billings are often ultimately uncollectible. With regard to measures to enhance water use efficiency, key provisions could include offering customers with water usage at or above a designated threshold a water audit and installation of low-cost water conservation measures. If plumbing leaks are evidenced, customers could be deemed eligible for one-time minor plumbing repairs. Notably, the related expenses could be treated as an operating expense such that all customers are subject to the same tariff (such that rates are non-discriminatory).

These related expenses could be tailored to available funding levels through a simple budgeting template, as illustrated in Table 4 on the following page (where yellow shaded areas indicate assumptions). For purposes of roughly estimating potential CAP program expenses, PWWSB's bill assistance benefit could be determined by applying a fixed amount or average reduction to residential customers' bills. Different program participation and average bill assistance levels, water conservation/leakage assistance cost estimates, and administrative cost estimate assumptions could be tested to match program attributes with available funding.

[47] For example, households eligible for Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), National School Lunch Program (NSLP), and Low Income Home Energy Assistance Program (LIHEAP).

Table 4: Sample Annual CAP Budget Development Template

Prichard Water Works and Sewer Board					
Customer Assistance Program					
Budget Template					
Bill Assistance *					
Program Participants	Average Number of Months Participating	Average Monthly Benefit	Annual Benefit Expense	Annual Administrative Expense	Total Bill Assistance AnnualExpense
200	12	$ 15.00	$ 36,000	$9,500	$ 45,500
250	12	$ 15.00	$ 45,000	$10,000	$ 55,000
300	12	$ 15.00	$ 54,000	$10,500	$ 64,500
350	12	$ 15.00	$ 63,000	$11,000	$ 74,000
400	12	$ 15.00	$ 72,000	$11,500	$ 83,500
* May be included in annual Operating Expense -- targeted at roughly 0.75% of rate revenues.					
Water Conservation / Leak Assistance **					
Program Participants	Avg Water Conservation Cost Per Participant	Avg Leak Repair Cost Per Participant	Annual Benefit Expense	Annual Administrative Expense	Total WC/Leak Progam Annual Expense
200	$ 100.00	$ 250.00	$ 70,000	$20,000	$ 90,000
200	$ 200.00	$ 250.00	$ 90,000	$20,000	$ 110,000
300	$ 100.00	$ 250.00	$ 105,000	$25,000	$ 130,000
** Potential to be structured as a capital expense (subject to grant funding(?) with annual costs incurred over 3 - 5 year period such that total number of participants is equal to annual participation x program duration.					
1. Administrative Expenses:					
			Bill Assistance		Conservation/Leak
	Fixed Program Admin		$7,500		$10,000
	Monthly Cost per Participant		$10		$50

In general, key program design elements include: a) program goals, b) partnering relationships (including, in particular, for program outreach), c) administrative processes for matching income-qualified assistance program participants with PWWSB account information, d) delivering water efficiency assistance measures, and e) performance measures to monitor and evaluate program performance.

Preliminary PWWSB CAP Program Partnering

The PWWSB Receiver's team has discussed CAP options with the PWWSB Advisory Council and selected social service providers engaged in delivering assistance to the Mobile region's economically disadvantaged communities. The existing infrastructure to address water affordability specifically is limited. Social service agencies and philanthropic organizations are generally focused on housing and food assistance, with limited bandwidth to address utility billings. Nevertheless, with

supplemental funding, these community-based organizations (CBOs) may be able to help PWWSB customers demonstrate eligibility for CAP assistance (by virtue of their clients' participation in various other income-qualified assistance programs including SNAP, TANF, and NSLP) and could expand their assistance program offerings to include delivery of selected water affordability measures.

Preliminary PWWSB CAP Program Outreach

Community outreach for the PWWSB CAP could be accomplished with the collaboration of PWWSB staff and CAP partners (with advice from the PWWSB Advisory Council). The parties may employ an array of mechanisms to communicate with potentially eligible customers. These currently include bill inserts, website postings, and advertisements at customer service centers and bill payment locations. Designated CAP staff[48] could also leverage relationships with local print and broadcast media and work in partnership with community organizations to deliver messaging. PWWSB Advisory Council members could be called on to identify and advance other measures to promote CAP participation. Outreach measures could include:

- Postings on PWWSB CAP program partners' websites and social media
- Signage/videos for display at the PWWSB customer service center and CAP program partner locations
- Informational tables at local fairs and events
- Educational Public Service Announcements (PSA) for broadcast media
- Partnering with local community organizations and businesses to post information within their establishments and meeting sites
- Overview video to be shown in customer service centers, online, and on social media

Preliminary CAP Administrative Procedures

CAP administration requires defining business processes for CAP implementation as well as performance monitoring, reporting, and evaluation. This includes defining procedures for applying for and delivering bill assistance to administratively qualified households, as well as delivering any ancillary assistance measures (for example, water conservation measures). This will largely involve making arrangements for data sharing and for ensuring appropriate accounting and management controls. For assistance beyond that rendered through administratively applied billing credits, PWWSB will need to develop specific procedures aligned to the steps listed below (and presented graphically in the CAP Process Flow Chart on the following page):

[48] The term "CAP staff" is used herein to denote personnel assigned or volunteering to perform CAP program related duties, whether associated with partnering Community-Based Organizations (CBO), PWWSB staff, Receiver contracted parties, or PWWSB Advisory Council members.

Intake

- Individuals who need supplemental water and wastewater bill assistance can contact the utility through various points of access (as highlighted through program outreach efforts).
- At the time their appointment is scheduled, the applicant is advised of their role in the process and assessed for eligibility for supplemental CAP benefits (and other available poverty assistance services), and documents are collected.

Bill Assistance

- If a customer is eligible and funds are available, PWWSB CAP staff arrange for a payment to be made to a customer's account and place a hold on the account, if applicable, to ensure the water will not be shut off.
- Total payments do not exceed a fixed amount[49] and are made to conform to PWWSB's billing and collection practices.

Water Conservation

- During the intake appointment, the applicant may be given information (brochures, handouts, etc.) on water use management and water conservation.
- If PWWSB determines the applicant's water usage is high after reviewing the water bill, the applicant may be provided a water audit performed by a PWWSB CAP designated contractor.
- If a water audit is performed and a problem is found that is causing high water usage, minor plumbing repairs may be completed, if applicable, for owner-occupied properties.[50] Customers may receive repairs averaging up to a fixed value[51] provided by PWWSB one time.

The utility may implement a prioritization process for rendering assistance that ensures equitable and consistent distribution of limited assistance to eligible customers. Priorities may include delivery of assistance to first-time applicants and addressing customer service issues with respect to service terminations and enforcement of illegal connections. Appendix D offers a sample program workflow description and CAP process flow chart.

[49] To be determined by PWWSB CAP staff based on available funding limitations.
[50] And potentially rental properties where the renter is responsible for the water bills under (to be defined) conditions designed to ensure assistance is rendered to eligible low-income customers.
[51] To be determined by PWWSB CAP staff based on available funding limitations.

Preliminary CAP Program Performance Measures

Program performance relative to the five program goals could be assessed through a combination of activity monitoring and measurement of program outcomes. PWWSB CAP staff and partners could be expected to report regularly (no less than semi-annually) on the following program performance measures as well as financial performance:

Goal #1: Assist low-income individuals and families with their water and wastewater bills.

The fundamental program goal of rendering assistance could be measured by a number of specific program impact measures that speak to the program's reach, including:

- Number of accounts assisted
- Total amount and average per household amount of assistance provided
- Total number and average per household number of supplemental assistance payments

In addition, because customer outreach and intake efforts are to provide supplemental assistance to customers in dire circumstances, measures of client satisfaction with program administration and delivery are seen as important. Satisfaction may be assessed by conducting client satisfaction surveys or post-assistance client interviews.

Goal #2: Avoid water utility disconnection and reduce account arrearages.

For customers facing service disconnections, the timeliness of supplemental bill assistance, and in particular arranging for holds on shut-offs, is of particular concern. Accordingly, a program efficiency objective is to *process* applications in an average of 5 to 7 days from the date of intake and, as noted, to provide credits within an average of 30 days. Reporting relative to these performance standards will supplement program impact reporting on the following:

- Number of shutoffs avoided
- Amount of arrearages eliminated
- Amount of arrearages paid (total and average)

Goal #3: Assist customers in increasing self-sufficiency, in part by providing water conservation measures.

The CAP could be designed to provide supplemental assistance participants with improved opportunities to manage their water use, control their account status (by limiting arrearages), and support general self-sufficiency goals. In this context, CAP supplemental assistance could be measured by reporting on:

- The number of high water users vs. average water users who were assisted
- The number of households that turned down vs. attended conservation classes

- The number of repairs performed (including the average cost of repairs per household) and impact on bill size and timeliness of payments
- Location of households with high water usage
- Number/percentage of households receiving both forms of assistance

Goal #4: Collaborate with community-based organizations in program outreach to consumers and the public

Since PWWSB's CAP will be one of a number of programs that support low-income populations, collaborating on outreach may be fundamental to long-term program success. PWWSB CAP staff could be expected to work collaboratively with other State of Alabama / Mobile area agencies and community organizations to distribute information about the CAP and direct potential clients to submit applications. Specific performance measures could include:

- Number of agencies and community organizations engaged
- Number of client referrals from Alabama government agencies and community organizations

More generally, PWWSB CAP effectiveness in public and consumer outreach/education could be measured by surveying agencies and community organizations to assess the effectiveness of communication strategies and the extent of participation/impact.

Goal #5: Partner to leverage funding opportunities to deliver assistance.

CAP assistance may provide a limited contribution to the overall regional need. Supplemental forms of assistance (beyond that provided by PWWSB) and funding could help leverage PWWSB's CAP assistance, expand the reach of regional poverty assistance programs, and accelerate pathways to self-sufficiency. The PWWSB CAP could benefit from increased capacity through partnerships and identification of (non-PWWSB) funding for bill assistance and water conservation measures. Performance measures could include:

- Number of partner agencies providing supplemental funding / assistance
- Supplemental funding made available
- Program participants served through supplemental funding

Given the nature of the PWWSB CAP, tight monitoring of budgeting and reporting on financial performance is required. PWWSB will be expected to provide detailed information on program expenditures by cost category, program applications, assistance provided by category, and customer bill impacts.

Preliminary CAP Program Monitoring and Evaluation

Protocols should be established to enable regular (not time-intensive) program evaluations and assessment of accomplishments relative to the established program goals. PWWSB CAP staff would

be responsible for developing and managing program controls that ensure the collection of information on attributes of program implementation. This information, along with ratepayer billing records (as available), should enable PWWSB to also:

- Monitor projected vs. actual participation levels and spending by program component
- Review conservation audit findings to identify characteristics of low-income ratepayer water uses not available through census or billing data
- Develop additional demographic information on PWWSB's low-income ratepayer population
- Delineate the geographic distribution of low-income populations and program recipients
- Evaluate changes in low-income participants' water use patterns
- Evaluate changes in the incidences of account delinquencies, non-payments, and shut-offs

These analyses will be critical for documenting the assistance rendered by PWWSB as it proceeds, and for tailoring PWWSB's programs to be efficient and effective. Appendix E offers a sample of a simple Program Reporting Format.

CAP Program Evolution

The preliminary PWWSB CAP design is intentionally simple and limited in scope, recognizing the limited funding and administrative capacity likely available. Securing meaningful and sustainable funding, building awareness of the availability of the program, refining program administrative processes, and gauging the effectiveness of individual forms of assistance would require time and implementation experience. Program features could be refined using the performance measures discussed above.

In this context, additional focus (and, if available, funding) may be best directed toward water conservation components. While delivering water conservation assistance is more complex and administratively challenging, program impacts are more sustaining because they help program participants control future water and wastewater billings. Funding of water conservation efforts (for example, fixing toilet leaks, replacing toilets and/or showerheads) could reduce water usage for eligible households with a 12- to 24-month return on investment (ROI) as established by available industry data (which could be verified by sampling program participants).

External CAP Funding

PWWSB CAP staff may engage with local community and philanthropic organizations to address partnering and develop sustainable funding sources. Strategies could include:

- Researching and applying for federal, state, and foundation grants
- Corporate gift and matching programs

- Individual fundraising programs/events
    - Targeted events with pre-identified benefactors
    - Use of direct marketing, media, digital, and online tools to raise funds through telethons, radiothons, crowdfunding, social media challenges
    - Annual giving campaigns in partnership with other island service providers

The time may be particularly opportune for the first of these strategies – a grant application writing effort – given the recent unprecedented allocations of federal and private funding to address environmental justice issues. Given PWWSB's limited administrative capacities, including funding in future O&M expense budgets for a dedicated grant writer – focused not only on capital investments but also on household relief – could yield positive and important returns.

Finally, while external funding may provide additional resources, Alabama government units hold fundamental responsibilities to acknowledge and address the challenges presented by endemic poverty in the PWWSB service area.

Appendix A: Additional Water Affordability Measures

Additional Measures of Household Cost Burden

Affordability Ratio at the 20th Income Percentile[52]

The Affordability Ratio at the 20th Income Percentile (AR_{20}) was developed as an improved measure of water and sewer service affordability. AR_{20} calculates the basic monthly cost for water and sewer service as a percentage of the monthly 20th income percentile less essential costs. Basic service costs are defined as indoor household water usage for drinking, cooking, health, and sanitation for a four-person household that uses 50 gallons per person per day. Income is defined as 20th percentile less other essential costs. Essential costs are defined to include monthly costs for housing, food, healthcare, home energy, and taxes. An Affordability $Ratio_{20}$ (AR_{20}) threshold of 10% is contemplated in the research that introduced the metric based on a preliminary distributional review of available data.

The relative advantages and disadvantages of the AR_{20} measure are that it calculates non-discretionary basic water service costs using actual utility rates and focuses on local low-income populations. However, it can be complicated to calculate because the measurement requires the estimation of non-discretionary expenditures within a community for which available localized data may be limited.

Weighted Average Residential Index

The Weighted Average Residential Index (or WARi®) as an enhancement to EPA's RI to address differences in the distribution of income within a given geographic area and to account for bills paid for water services across the service area. Bills for water services are based on actual average bills from billing data or minimum bills calculated for non-discretionary basic water services by census tract. WARi® first calculates a RI based on tract-specific typical bills (inclusive of any water service costs relevant to the analysis) and the midpoint income for each income bin. A weighted average RI is then calculated for each tract, using the number of households in each income bin as the weight. Finally, the service area WARI® value is the average of the tract-level results weighted by the total number of households in each census tract.

Percent of Households Delinquent in Paying Bills

The percentage of households that are delinquent in paying utility bills is an indirect measure or symptom of household affordability issues. The utility may include water, sewer, or stormwater services as applicable. While a relatively straightforward measure (Delinquent Households / Total Households), the measure does not directly consider the household water cost burden and may be

[52] See a fuller discussion of this measure as well as the Affordability Ratio at the 20th Income Percentile (AR_{20}) outlined in Appendix A at: Teodoro, Manuel P. 2018. "Measuring Household Affordability for Water and Sewer Utilities," *Journal AWWA* 110(1): 13-22.

more indicative of a utility's collection practices (for example, disconnection policies, placements of liens) than household water cost burdens.[53]

Additional Measures of Poverty Prevalence

Percentage of Households Below the Supplemental Poverty Measure

The Supplemental Poverty Measure (SPM) developed by the US Census defines poverty as the 33rd percentile of the distribution of household expenditures on food, shelter, clothing, and utilities (FSCU) and multiplies the value times 1.2 to allow for some extra expenditure. The SPM incorporates a variety of data from US Census, Bureau of Labor Statistics, and other federal data sources and measures the size of the economically vulnerable customer base in a community. It is arguably a more robust and valid measure than the Federal Poverty Level measure as it is based on current survey data and includes consideration of non-cash benefits, such as food stamps, as part of household income. However, the SPM is not readily available for utilities in all locations, and survey data inputs are mostly national figures (based on relatively small samples) that may not reflect local realities attributable to variations in the cost of living.

Percentage of Households Below the Living Wage

The Living Wage is a measure of the amount of income that a household needs to pay for essential living expenses. The Living Wage measure calculates the percent of service area households with income below or within a certain percentage of the "Living Wage". The Living Wage was developed by the Massachusetts Institute of Technology (MIT) and is available for a limited number of cities and communities.[54] The MIT Living Wage calculator (available online at http://livingwage.mit.edu) calculates the minimum wage needed to pay for essential expenditures in several categories, including food, housing (including utility costs), transportation, medical care, child care, and taxes, for different household sizes and arrangements.

Percentage of Household Income Spent on Shelter Cost

Shelter Cost metrics measure the cost of housing in a given area relative to household incomes. The Shelter Cost % may be calculated as the percentage of service area households that spend more than x% of their income on shelter costs. A typical measure of shelter costs is HUD's FMR metric, which includes utility costs and is typically either the 40th or 50th percentile of housing costs in the community. Under the existing HUD methodology, low-income households in public housing should not spend more than 30% of their income on shelter costs plus utilities. While the measure considers the household burden of paying for water services together with some (but not all) other non-discretionary household expenditures, utility cost data included in this measure is typically unreliable and lacks validity as it is based on national surveys with small sample sizes and not differentiated locally.

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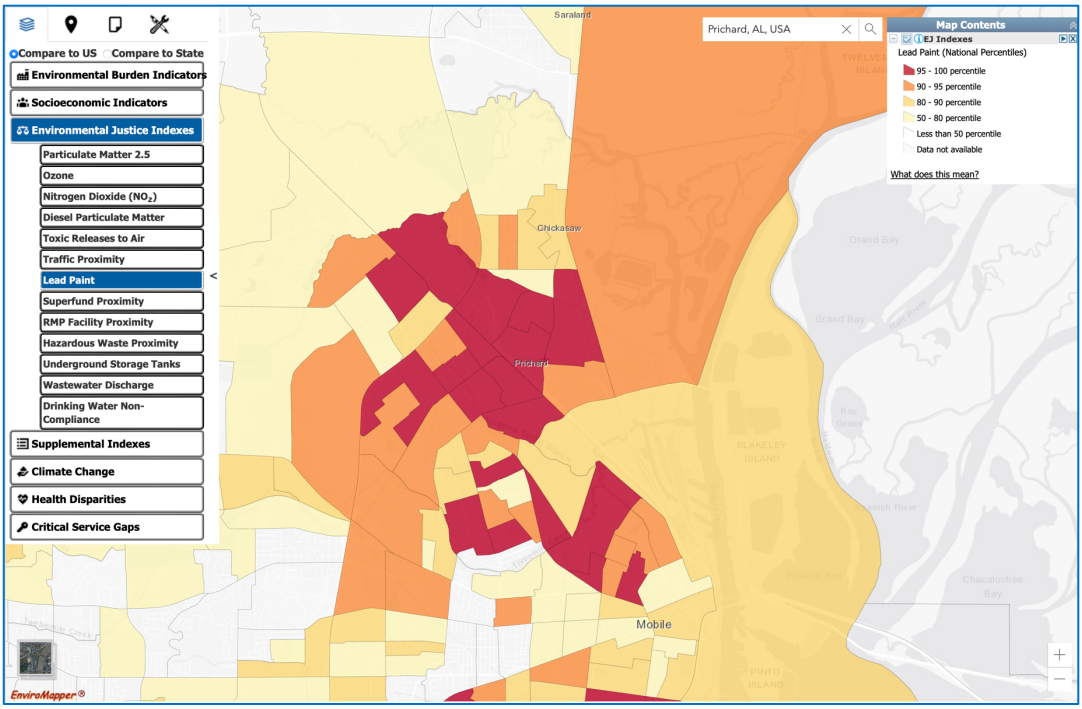
[53] Reviews of data have not shown a clear correlation between delinquencies and known affordability challenges. The measure relies exclusively on utility self-reported information that is often not publicly available.

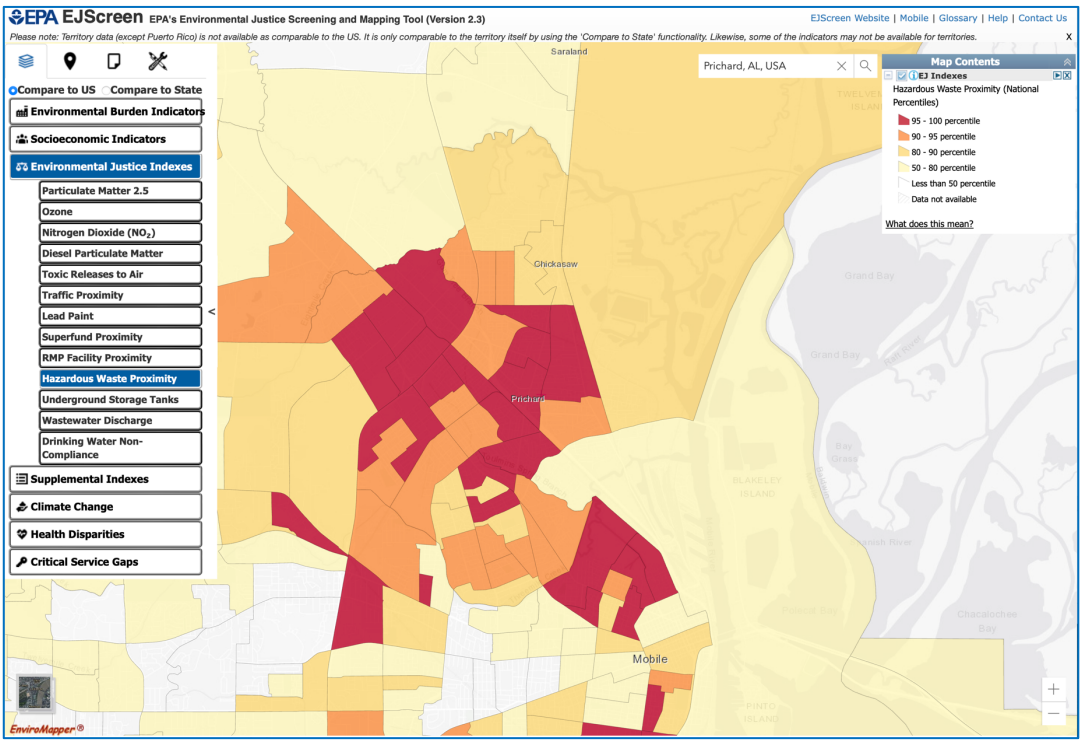
[54] For example, the Living Wage for Mobile, AL is available but not for Prichard or Chickasaw, specifically.

Appendix B: Sample EPA EJ Screen Maps for Prichard – Chickasaw, AL

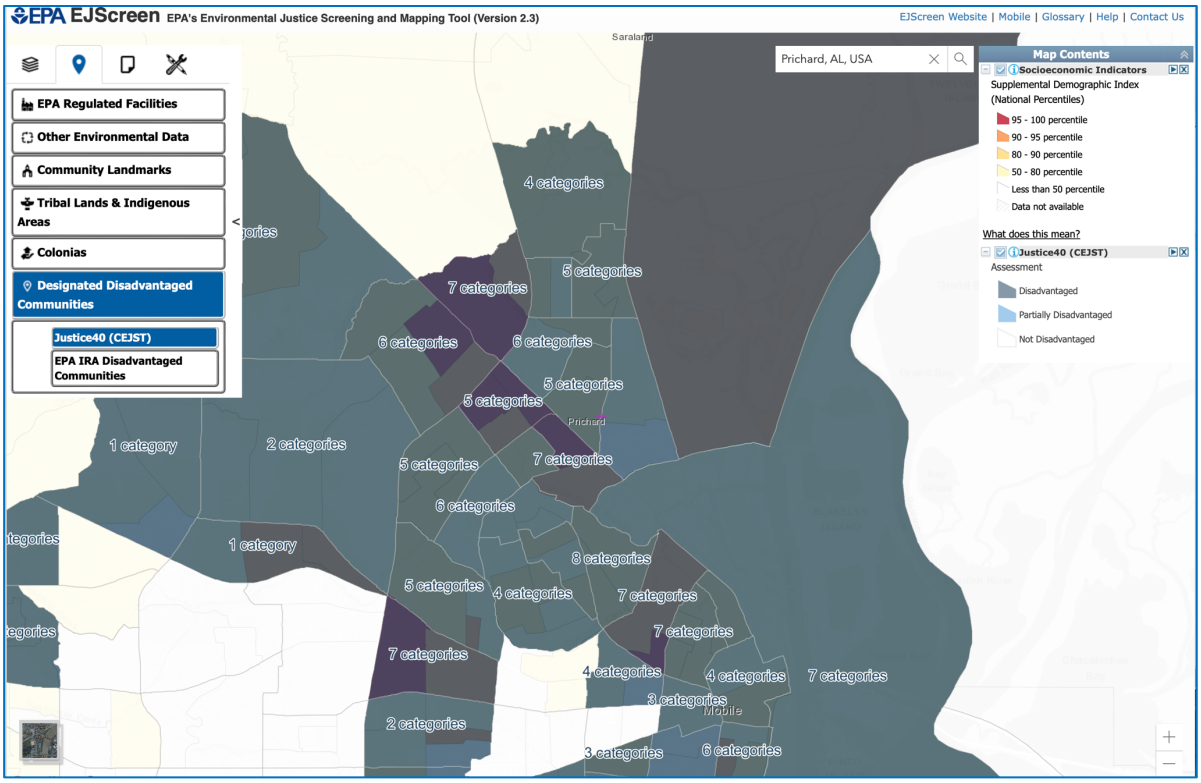
Environment Justice Index: Lead Paint



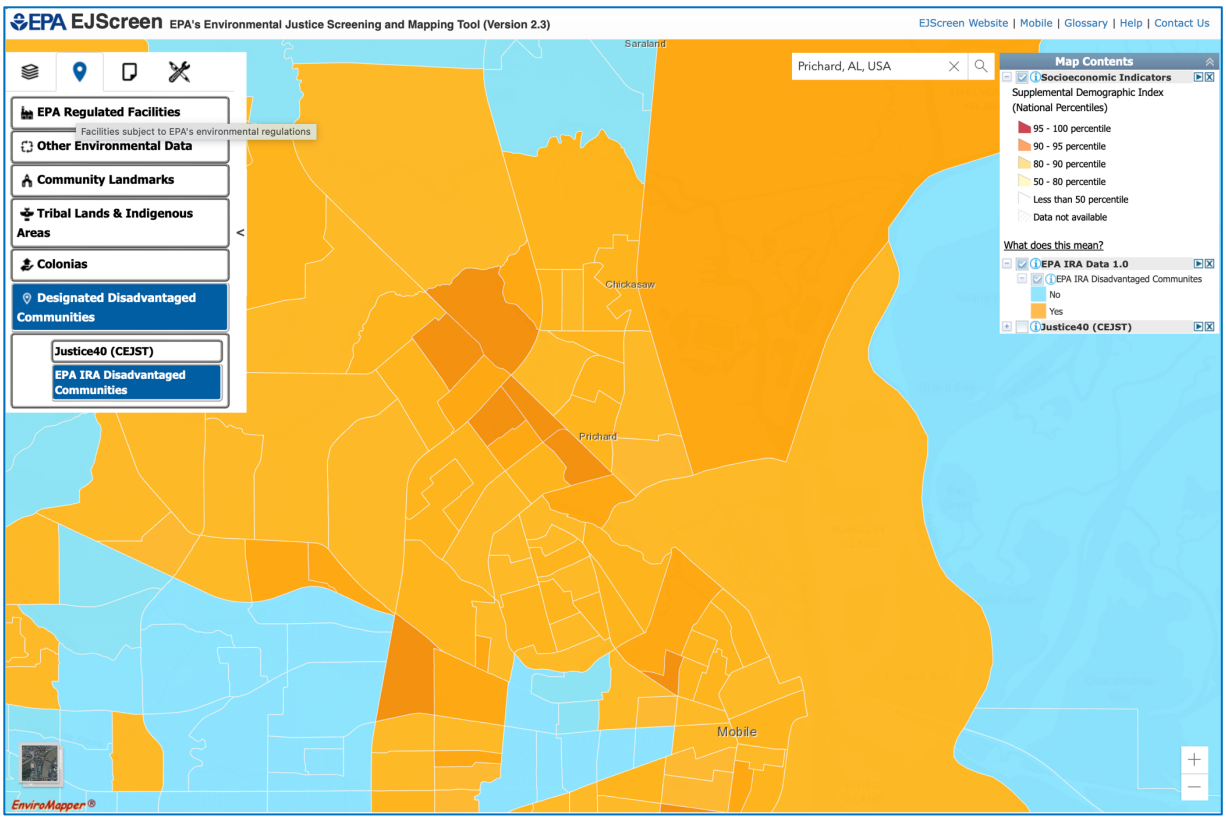
Environment Justice Index: Hazardous Waste Proximity



EJ Screen – Designated Disadvantaged Communities, Justice 40 Categories



EJ Screen – Designated Disadvantaged Communities, EPA IRA Communities



Appendix C: Legal Constraints on CAP Revenue Funding

Oft-cited legal constraints on assistance program funding and design features may be grouped into (at least) three general categories with noteworthy differences in how each may be raised in individual states. For each category, basic arguments along with potential defenses needed to insulate communities from legal challenges[55] are outlined briefly below:

Discriminatory Rate Setting

Argument: In the United States, water, wastewater, and stormwater[56] rates are required to be "just", "reasonable", and "non-discriminatory". Though specific language outlining the meaning of these terms varies across individual states, the basic principles require that utility rates be designed to recover system costs without undue returns accruing to the utility provider and that individual customers or classes of customers are assigned cost responsibilities based on their access to, and use of, the services provided. Cost-of-service rate-setting practices delineated in industry-standard practice manuals are designed to ensure that calculations of rates and charges meet these requirements by offering guidance on determinations of rate revenue requirements, allocation of cost responsibilities based on cost-causation, and distribution of cost responsibilities based on user classes' service characteristics.

In this context, income-qualified utility-sponsored customer assistance programs – particularly those that involve payment or waiver of utility customers' bills for services rendered – could be adversely viewed as a form of discriminatory rate setting practice. The argument is simply that program participants are, in effect, subject to a lower rate for the same level of service by virtue of their receipt of offsetting funds through the utility's CAP. Though water utilities typically impose different rates and charges across customer types (residential, commercial, industrial), these rate differentials are based on differences in these customers' access to and use of the utility systems, not their economic standing per se.

Defense: The discriminatory rate claim is founded in part on the common view that water, wastewater, and stormwater services are effectively commodity services where service characteristics are measured by, for example, metered water or impervious area for stormwater services.[57] This view discounts or subsumes the notion that these services manage billable volumes as an attribute of service delivery oriented toward protection of public health and welfare (arguably first and foremost). The discriminatory rate claim also discounts the typical practice whereby CAP

[55] This discussion is not offered by legal counsel and it does not constitute a legal opinion. GRG disavows any and all representations of this as legal advice. Communities interested in design and implementation of a Customer Assistance Program are advised to obtain legal counsel to guide program development in compliance with relevant state and local law.

[56] Water, wastewater and stormwater services may be referred to herein as "water resource services."

[57] Other system usage measures may include factors like plumbing fixture units for wastewater services or runoff coefficients to estimate water quality parameters for stormwater flows.

participants remain subject to the exact same service rates and charges as program non-participants and are provided a means to effect payment only following their accrual of untenable balances. Finally, the discriminatory rate claim typically does not recognize potential utility system benefits that may derive from utility systems' CAP sponsorship – such that the assistance rendered may be characterized as an exchange of consideration affected outside the commodity-measured transaction rather than as a discriminatory rate discount.

Utility funding of CAPs may thereby be insulated (though not necessarily immunized) from legal challenges by having program-authorizing and administrative documents speak to potential challenges. Utilities may cite, for example, AWWA's recent policy statement that identifies CAP funding as an appropriate component of revenue requirements or ongoing work to more fully recognize the public health protection aspect of service delivery. Procedures may make clear that rates apply to program participants in equal measure and that financial assistance involves an exchange of consideration between the utility and participant.[58] Utilities may be well served to monitor, document, and amplify benefits accruing from CAP sponsorship, including avoidance of costs associated with delinquent accounts, enhancement of utilities' public image, and implementation of water use efficiency measures that may help utilities meet their regulatory obligations.

Arbitrary and Capricious Rates

Argument: Water, wastewater, and stormwater rates are properly derived from determinations of revenue requirements that reflect the costs of providing utility services. These costs typically include personnel, contractual services, other utilities, and capital project financing – and are associated with various utility functions like treatment, transmission, distribution, and customer service. If and when such requirements are artificially inflated to fund CAPs, the rates that are derived therefrom may be construed to be arbitrary and capricious insofar as they do not reflect the costs to provide service. Since many communities have conducted utility operations for generations without CAPS, their funding is clearly not required for water system service delivery. Therefore, revenue funding of CAPs amounts to inclusion of costs not associated with service delivery, making resultant rates arbitrary and capricious.

Defense: As suggested by the recent AWWA policy statement, the inclusion of CAP funding has been recognized as an appropriate (though not required) component of revenue requirements. The fact that such programs may not have been funded in prior years when rates were arguably artificially suppressed[59] does nothing to foreclose their proper inclusion in revenue requirements today (as revenue requirements evolve to reflect current operating realities). Program funding makes utility revenue requirements no more arbitrary and capricious than rates, which include funding for water efficiency education programs or administrative functions where costs are not specifically driven by

[58] Program participants' consideration may be in any number of different forms including participation in community outreach and education activities, participation in water resource management audits, etc.

[59] Due to the fact that water resource systems benefitted more substantially from federal and state subsidy through grants and low-interest loan programs and have deferred needed system renewal and rehabilitation.

billable volumes. As long as the determination of the CAP budget is not subject to mere fiat, but rather is determined through a deliberate analysis and balancing of program needs, delivery capacities, and resultant service rate implications, rates are arguably less arbitrary or capricious than that which would be established if utilities acted blind to water affordability challenges.

Rate Revenue Funding of CAPs as Disguised Taxes

Argument: Water and wastewater rates and charges are user fees where the charges reflect some measure of the services provided. Impervious area-based charges for stormwater services likewise are sustained as user fees or rates, rather than taxes, because the impervious area measures are indicative of parcel owners' use of the stormwater system. A rate is distinguished from a tax in part by virtue of a rational nexus between the amounts charged and the services provided. Rates and charges in some jurisdictions must even distribute cost recovery responsibilities to customer classes in a manner strictly and demonstrably proportional to the services provided.[60]

Utility-funded CAP programs serve the purpose of general government or philanthropy that holds responsibility for rendering assistance to economically disadvantaged members of the community. Water resource utilities are not social service agencies. Their services are not a social good like police service or street maintenance. Residents have no inherent right to receive water resource services from utility service providers and no established responsibility to pay for others' receipt of those services. Utility funding of CAPs, by mathematical necessity, imposes higher costs on program non-participants to the benefit of those who fail to honor their contractual obligations as customers. Including this transfer payment in utility revenue requirements is nothing more than disguising a tax of program non-participants in the form of utility rates.

In some states, rates are also characterized as recovering costs that serve a regulatory purpose and are for services accessed voluntarily by rate-paying customers. In contrast, taxes raise revenues for general government purposes and are imposed universally without regard to whether the taxpayer actively accesses the governmental services rendered. Customer assistance programs serve no regulatory purpose. Most utilities in the United States do not have such programs; there are no regulatory requirements that mandate them. Utilities that fund CAPs through revenues have effectively elected to embed a progressive tax within their rate structure, requiring those that happen to demand water services in greater volumes to subsidize the water using demands of economically disadvantaged program applicants.

Defenses: Water resource services are not measured fully or solely by the counting of water drops through a service meter. The services rendered are fundamentally grounded in the protection of public health and are multi-faceted. Community water systems, for example, may be described as delivering as many as five inter-related services including, potable water for consumptive uses, personal hygiene, household hygiene, fire protection, and discretionary uses like irrigation and car

[60] Proportional cost recovery is one of a number of different tests that may be applied. In Michigan, for example, the Bolt vs. Lansing decision [459 Mich. 152 (1998)], prescribes a 3-prong test also requiring rates to serve a regulatory purpose and for the services to be voluntary whereby those charge could elect not to avail themselves of the services provided.

washing.[61] At least one of these sub-services, fire protection, is a standby function not measured by meter readings. Distinctions between hygienic uses protective of public health and discretionary uses are likewise a function of a number of unmetered factors including household size, health care needs, and the like that refute the notion that service delivery is fully measured by meter readings.

When we recognize that the fundamental services being delivered by water resource utilities is grounded in protection of public health, it becomes axiomatic to cast programs and services designed to advance universal service delivery not as an adjunct to utilities' service mix, but a core responsibility. In this regard, CAPs may be considered an appropriate component of utility revenue requirements and clearly recoverable through service rates.

The fact that water service utilities are not designated as social service agencies does not diminish their social responsibilities as major economic actors in the communities they serve. Water utility infrastructure is typically among the most substantial financial resource investments in a community.[62] Water resource services provide social goods which call for universal access and affordability. Water service helps ensure fire protection capability and enables households to cook and bathe to meet basic human needs and prevent spread of infectious disease.[63] The practical decision to recover costs through rates and charges on billing determinants (for example, accounts, usage volumes) in no way commoditizes the nature of the services delivered, or the imperative to assure universal access.

The notion that CAP funding serves no regulatory purpose also seems divorced from the fact that utilities, as natural monopolies, have exclusive rights to serve, which in turn creates some regulatory obligation to extend service even to the economically disenfranchised. Regulatory enforcement practices that rely on assessments of communities' financial capabilities may consider whether or not permittees seek to mitigate burdens on the economically disadvantaged through CAPs – further demonstrating their regulatory purpose.

The contention that CAP funding may be challenged because utility customers are not granted the discretion to pay for these costs but rather, they are imposed on them involuntarily is equally specious. As is generally the case with water resource services, residents are not required to connect and have a number of options, including the most common forms of on-site systems. The inclusion of CAP funding in a water resource utility's rate revenue requirements does nothing to change the character of the charges from a utility rate for service to a form of taxation. CAPs serve an important utility function even if not required to physically deliver services in the same way that well-accepted administrative costs and public education expenses are routinely and indisputably recognized as components of revenue requirements.

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[61] Janice A. Beecher, Ph.D., presentation titled: "Water Utility Pricing and Affordability," Institute of Public Utilities, Michigan State University, July 22, 2019.

[62] See, for example, *Improving Water Utility Capital Efficiency*, Water Research Foundation, 2009

[63] Arguably, all utilities services convey social goods notwithstanding the fact that costs are recovered through different combinations of rates and charges applied against accounts and billable volumes (as opposed to income or property taxes). Electric energy and gas providers protect public health by helping ensure residents have access to heating services in winter; telecommunications providers help ensure access to emergency service providers, and so on.

Rate Revenue Funding of CAPs Diverts Public Resources and Dilutes Pledged Revenues

Argument: Water and wastewater rate revenues are pledged under utility bond indentures to make payments on bonds issued to fund capital improvements. These rate revenues, deemed to serve the public interest, may not be diverted to fund improvements to private property – an impermissible public lending of credit. Moreover, the strength of that pledge of revenues may not be diluted by a claim to fund CAP expenses that could be deemed to be a higher priority claim on net revenues of the System (relative to bondholders) in the flow of funds. To the extent that CAP expenses are treated as a new operations and maintenance expense (rather than a "below-the-line" use of System funds), bondholders may be improperly disadvantaged by a CAP-related claim on net revenues.

Defenses: Recognition of CAP expenses as an appropriate component of water and wastewater system revenues requirements – consistent with recent AWWA policy statement – effectively means that CAP expenses are no different than other, well -accepted, components of utility O&M expenses. In the same manner that utility bondholders do not question or intervene regarding a utility's other O&M expenses that may not be directly tied to water production and distribution functions (such as public information or watershed education programs), CAP expenses may not be deemed to dilute the utility's revenue pledges any differently.

As to the matter that pledged revenues may be used to render benefits to private parties, there is again no fundamental difference between CAP expenses and other (unquestioned) utility expenses that happen to yield benefits to private parties (for example, right-of-way purchases) but are required to deliver.

Appendix D: Sample CAP Workflow[64]

Step 1: Connect Call Center

1) Clients seeking CAP assistance call or make inquiries online
   a) Customer service staff conducts pre-eligibility screening
   b) If eligible, client is informed of the required documentation, and an appointment is made at appropriate service area location accessible to client

Step 2: Appointment Confirmation

1) Staff confirms the client appointment within 24-48 hours
2) Staff reviews necessary documentation client needs to bring to appointment
   - Script will be provided

Step 3: Appointment Day

1) Staff reviews CAP program guidelines with client
2) Staff verifies required documentation and assesses eligibility
3) Water usage assessed; clients at or above 120% of average water usage are referred for home water audit based on prioritization
4) CAP agreement is completed by client

If Applicable:

5) Voluntary water conservation workshop is scheduled (IT Scheduler/Google Drive)
6) Client receives water conservation education and materials
7) Client application is processed

Step 4: Water Conservation Audit Referral

1) Home audit scheduled within 2-3 days
2) Home audit conducted within 30 days of intake
3) Water audit assistance measures determined
4) Conservation education conducted in home
5) Audit recommendation(s) performed
6) If minor plumbing repair needed, licensed contractors are engaged
7) Audit assistance processed payment to approved providers
8) Post-audit client follow up and bill analysis

Step 5: Award Made

1) Four (4) types of CAP Awards are made – entered into CAP document log: Cap is $____
   a) $__ one-time bill credit

[64] Drawn from procedures developed for the Water Residential Assistance Program implemented by the Great Lakes Water Authority serving Southeast Michigan including the City of Detroit.

b) Arrearage credit (up to $___)/Issued at the first month of enrollment
c) 2nd arrearage (up to $___)/Issued at month 12 of the first enrollment

Step 6: Staff completes file by preparing:

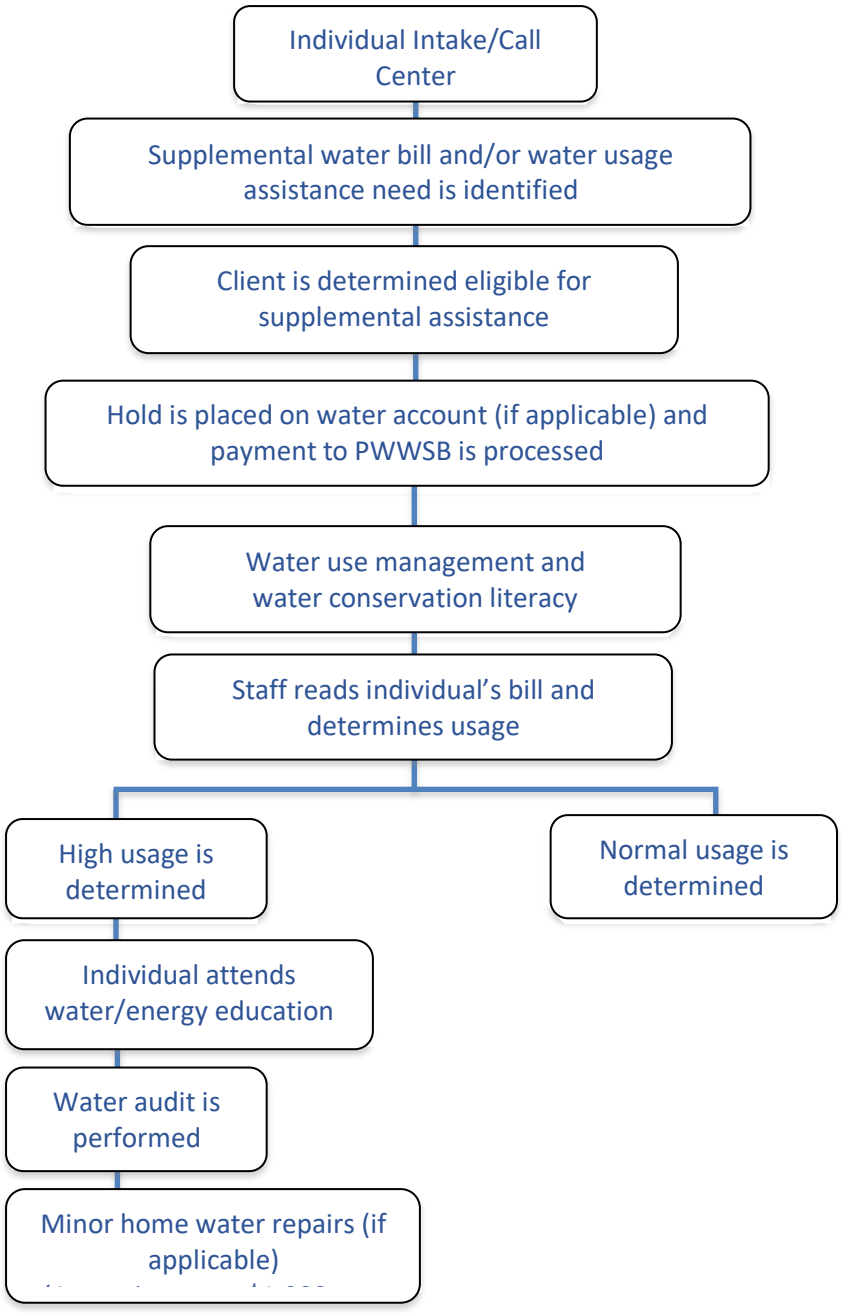
1) First voucher ($__) and/or arrearage credit(up to $___)
2) File document checklist
3) Support documentation (in order of checklist for auditing purposes)

Step 7: Completed file is submitted to Manager for audit review and signature:

1) Client file is approved or returned to staff for corrections
2) Manager submits signed voucher and arrearage credit to accounting for payment
3) Once client file is approved, it is returned to the original intake worker
4) Staff uploads file into CAP document log (in order of document checklist) - hard copy of the file is kept securely onsite

New program intake completed

Sample CAP Process Flow Chart



Appendix E: Sample CAP Reporting Format[65]

Activity	Budget	Actual	Variance
Total Scheduled Appointments			
Completed Pre-Applications			
Unenrolled Applicants (incl. supplemental funds)			
Households Enrolled			
Households with Arrearages			
Shutoffs Avoided			
Initial Funding Allocation			
Recaptured Funds			
Unrecaptured Funds			
Remaining Allocation			
Total **Bill Payment & Arrearage Assistance** Committed			
Balance Remaining			
Total **Bill Payment & Arrearage Assistance** Paid Out			
Average Assistance per HH			
Total **Arrearage Assistance** Committed			
Total **Arrearage Assistance** Paid Out (est.)			
Average Total Arrearage on HH Bill			
Average Arrearage Assistance per HH			
Difference			
HHs with Arrearages **less than/equal to** $___			
HHs with Arrearages **greater than** $___			
Other Agencies and Community Organizations Engaged			

[65] Drawn from procedures developed for the Water Residential Assistance Program implemented by the Great Lakes Water Authority serving Southeast Michigan including the City of Detroit.

Supplemental Funding Made Available to CAP Participants			
CAP Participants Served Through Supplemental Funds			
Activity	Budget	Actual	Variance
Assisted Renters with Average Water Usage			
Assisted Renters with High Water Usage			
Assisted Homeowners with Average Water Usage			
Assisted Homeowners with High Water Usage			
High Usage HHs Referred for Water Conservation			
HHs Receiving Tier 1 Services (Home Usage Audit)			
HHs Receiving Tier 2 Services (Minor Repairs)			
Initial Funding Allocation			
Recaptured Funds			
Unrecaptured Funds			
Remaining Allocation			
Total Cost of Home Usage Audits			
Total Cost of Minor Repairs			
Remaining Balance*			
Average Cost of Repairs (per HH)			

Appendix F: Advisory Council Presentations

Water Affordability

Affordability Study and System Assessment
Eric Rothstein, Galardi Rothstein Group
January 18, 2024

1

Presentation Outline

1. Introduction / Scope
2. Water Affordability: Issues & Industry Trends
3. Preliminary Research
4. Next Steps

2

Water Affordability
1. Introduction / Scope

3

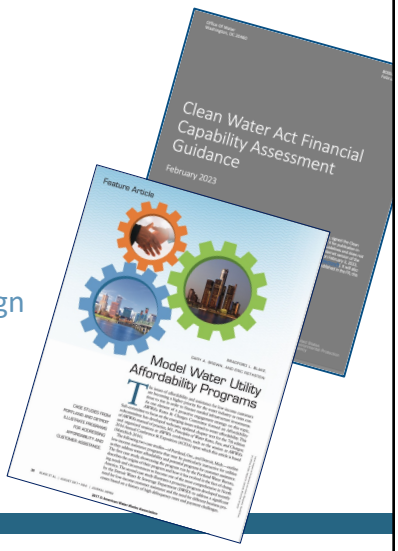
Introduction: Eric Rothstein, MA, CPA

- Education / Expertise
  - Ripon College (BA – Economics, History)
  - University of California, Davis (MA – Economics)
  - AWWA / WEF Ratemaking Manuals of Practice
  - Financial Capability Assessments – Consent Decree negotiation
  - Water system capital financing – bond feasibility studies
  - Water affordability assessment / Customer Assistance Program design
- Notable Projects / Clients
  - Jefferson County, AL
  - Detroit, MI
  - State of Michigan: Flint Water Advisory Task Force
  - City of Atlanta
  - Industry associations: AWWA-NACWA-WEF

4

Affordability Study and System Assessment: **Scope**

- Project Orientation / Stakeholder Engagement
- Water Affordability / Financial Capability Assessment
- Customer Assistance Program Design



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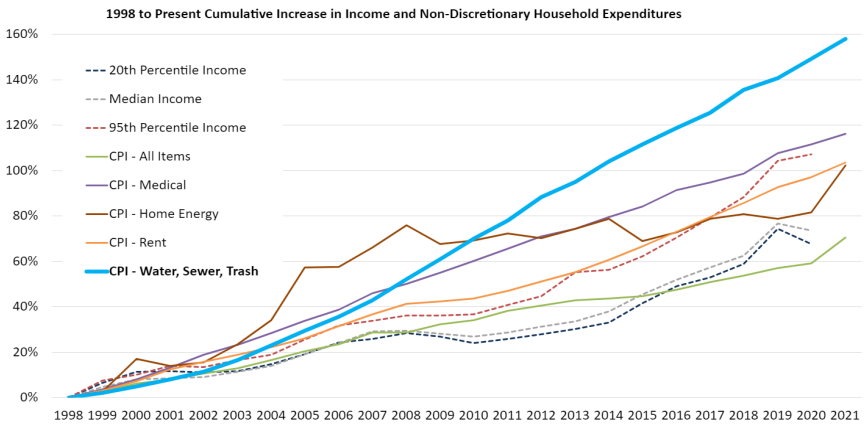
Water Affordability
2. Issues and Trends

6

Issues and Trends

Water Service Cost Trends



2023 Low Income Water Customer Assistance Program Assessment Study, February 2023, p. 3-2
Source data: Federal Reserve Economic Data and U.S. Census

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Issues and Trends

Five Pillars of Affordability*

1. Quality
2. Efficiency
3. Rate Design
4. Income-Qualified Assistance
5. Delinquency Management

- See Manny Teodoro, Pillars of Affordability, May 31, 2023
- https://mannyteodoro.com/?p=3988#

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Issues and Trends

Water Bill Affordability Measurement

- Residential Indicator
  - Bill (or calculated Cost Per Household) as % of Median Household Income
- Lowest Quintile Residential Indicator
  - Bill (or calculated CPH) as % of Lowest Quintile Income
- Affordability Ratio at the 20th income percentile (AR_{20})
  - Basic water and sewer costs* as a share of disposable income
- Hours at Minimum Wage
  - Basic water and sewer costs converted to hours at min. wage
- No. or Percent of Accounts Disconnected for Non-Payment

* Basic water usage frequently set at 50 gallons per capita per day (gpcd)

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Issues and Trends

Customer Assistance Program Design

- Eligibility criteria
  - Income screening vs categorical
- Forms of Assistance
  - Bill assistance
    - Regular or one-time (for emergency / hardship)
  - Delinquency management
    - see next slide
  - Plumbing assistance
  - Education

CITY OF ATLANTA DEPARTMENT OF watershed management

CHN Housing Partners

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

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Water Affordability
3. Preliminary Research

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Preliminary Research

U.S. Census Data: Quickfacts
Prichard & Chickasaw AL

	U.S.	Chickasaw, AL	Prichard, AL
Population Estimates	333 M	6,310	18,870
% Black or African American	13.6%	49.2%	90.1%
% White	75.5%	44.6%	8.8%
Housing			
Owner Occupied Housing Unit Rate	64.8%	47.7%	56.1%
Median Value	$281,900	$89,300	$76,200
Income and Poverty			
Median Household Income	$75,149	$39,985	$36,110
% Persons in Poverty	11.5%	31.5%	31.6%

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Preliminary Research

Water and Sewer Bill Burdens

Water and Sewer Bills		Bill as % of MHI	Bill as a % of LQI	Bill as Hours at Minimum Wage
W & S Bill for ¾" Meter, 2kgal minimum ($62.48/mo = $749.76/year)				
	Chickasaw, AL	1.88%	5.27%	8.62
	Prichard, AL	2.07%	4.77%	
W & S Bill for ¾" Meter, 2kgal minimum, 5kgal/month ($106.97/mo = $1,283.64/year)				
	Chickasaw, AL	3.21%	9.02%	14.75
	Prichard, AL	3.54%	8.17%	
W & S Bill for ¾" Meter, 3.5 kgal minimum,3.5kgal/month ($140.56/mo = $1,686.72/year)				
	Chickasaw, AL	4.22%	11.85%	19.39
	Prichard, AL	4.66%	10.74%	

Lowest Quintile Income: Chickasaw, AL $14, 235 | Prichard, AL $15,703

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Water Affordability

4. Next Steps

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Next Steps

Analysis and Assessment

- Data Collection / Analysis
  - EPA Financial Capability Assessment methods
  - Low-income customer bill burden
    - Alternative measures
    - Geographical / spatial distribution
  - Customer assistance program design option review
    - Eligibility / outreach / participation rates
    - Options for coordination with other poverty relief programs
- Policy – Regulatory Issues
  - Utility revenue funding of affordability measures
  - Customer service policies / practices
    - Collection-related fees, disconnections

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Next Steps

Stakeholder Engagement

- Advisory Council
- Community Organizations
  - Potential CAP implementation partners
- PWWSB Staff
  - Executive team
  - Customer service personnel
- PWWSB Board

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Receiver Report
PWWSB
Advisory Council Meeting
April 18, 2024

Water Service Rates, Bill Burdens, and Financial Sustainability

Affordability Study and System Assessment
Eric Rothstein, Galardi Rothstein Group
April 18, 2024

Presentation Outline:

1. Water Service Rates
2. Water Bill Burdens
3. Financial Sustainability
4. Next Steps

Key Messages:

- Rates must recover costs of service
- PWWSB's rates are burdensome yet inadequate
- PWWSB's crisis and rates demand immediate and long-term actions
- Crisis resolution and sustainability will require fundamental change over the next generation

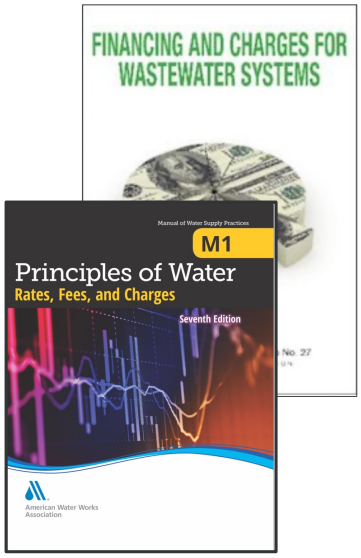
Water Service Rates, Bill Burdens, and Financial Sustainability

Water Service Rates

Water Service Rates

Principles and Practices

- Ratemaking objectives
  - Full cost recovery
  - Revenue / rate stability
  - Promote efficiencies
  - Simplicity / understandability
  - Legal defensibility
    - Just, reasonable, non-discriminatory



Water Service Rates

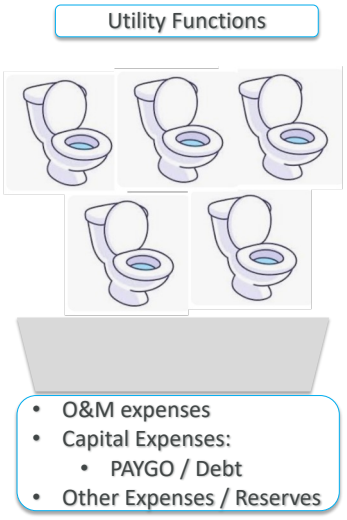
Water Costs

- Source of supply
- Pumping
- Treatment
- Transmission
- Distribution
- Metering
- Billing / Customer Service
- Administration / General

Water Service Rates

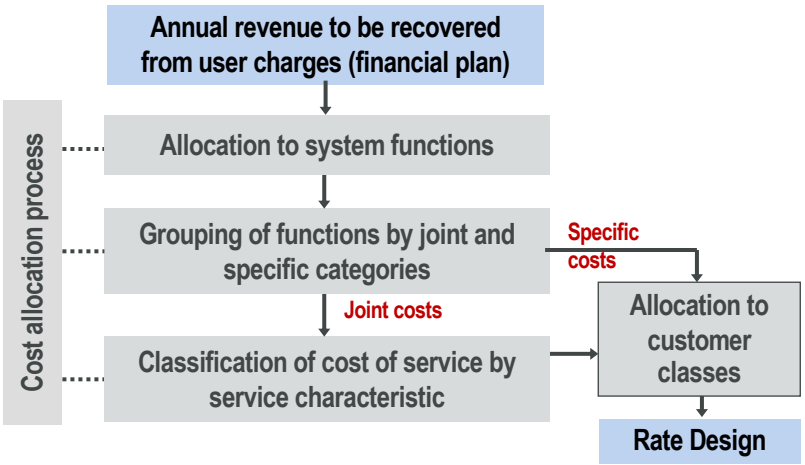
Wastewater Costs

- Collection
  - Lift stations
- Transmission
- Treatment
- Biosolids Management
- Billing / Customer Service
- Administration / General



Water Service Rates

Cost of Service Analysis



Water Service Rates

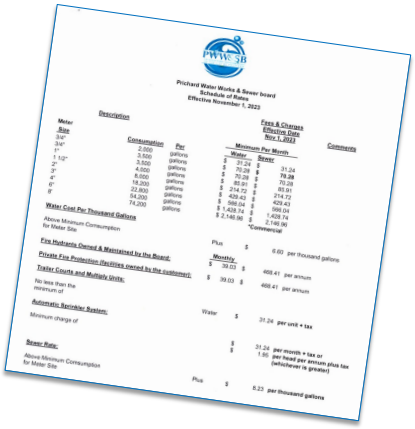
PWWSB Financial Plan Challenges

Financial Plan Attributes	PWWSB Challenges
Full cost recovery	• Acute overall rate revenue inadequacy • Collections issues • Federal / state grants intermittent – not sustained
Operating inefficiencies	• Water losses • Absence of scale economies
Capital financing	• External – no sustained investment / reinvestment funds • No access to capital markets
Legal defensibility	• Default / Receivership

Water Service Rates

PWWSB Rate Design Options

- Water and Wastewater Service Rate Design
  - Base / customer charges
  - Quantity allowance
  - Volumetric rates
- Customer Assistance Program
  - Limited potential for utility revenue funding
  - Limited internal PWWSB administrative capacity
  - Philanthropic initiatives
    - Example: The Human Utility



Water Service Rates, Bill Burdens, and Financial Sustainability

Bill Burdens

Bill Burdens

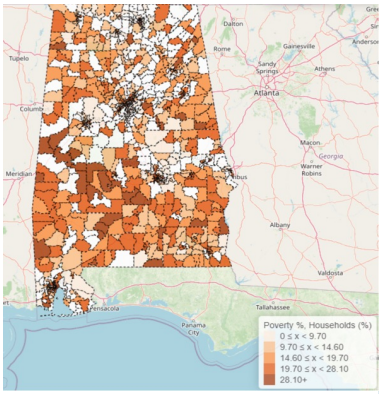
Context: Water Bill Affordability Measurement

- Residential Indicator
  - Bill (or calculated Cost Per Household) as % of Median Household Income
- Lowest Quintile Residential Indicator
  - Bill (or calculated CPH) as % of Lowest Quintile Income
- Hours at Minimum Wage
  - Basic water and sewer costs converted to hours at min. wage
- Comparisons to Other Communities

* Basic water usage frequently set at 50 gallons per capita per day (gpcd)

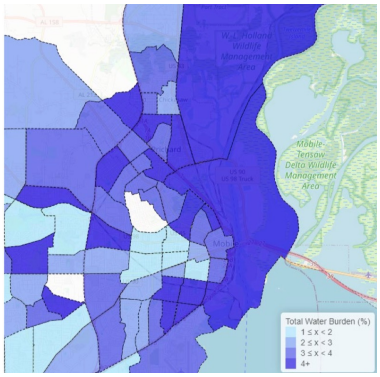
Bill Burdens

PWWSB Context: A Pocket of Poverty



16.2 % of Households in Poverty in AL (2022)

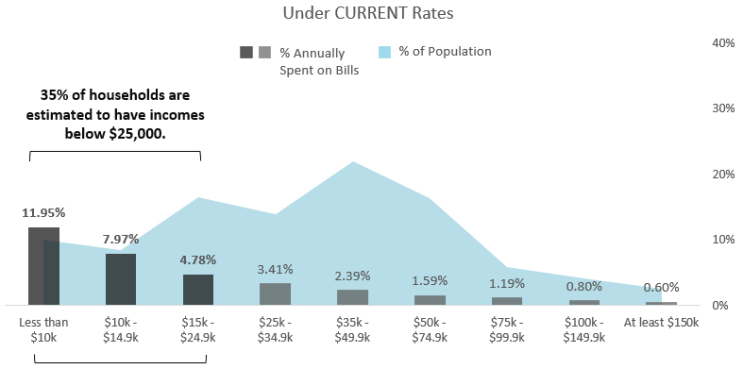
Water Burden, Prichard & Chickasaw AL - Current Total Bill ($99.56)



Bill Burdens

PWWSB Water Bill Burden Distributions

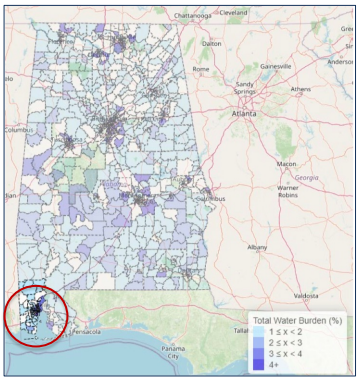
Prichard: All Households - Affordability of Water & Wastewater Rates Assessed at 4,500 Gallons/Month & the 2022 Income Levels – **at CURRENT Rates**



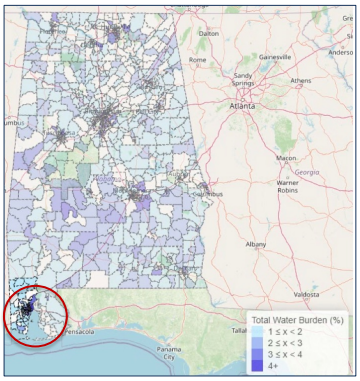
Bill Burdens

PWWSB's Relative Water Bill Burden

Water Burden, Typical Water Bill - Alabama - Current Total Bill (**$70.00**)



Water Burden, Typical Water Bill - AL - Total Bill Increased by 20% (**$84.00**)



PWWSB rates/ bills substantially higher than "typical" AL system, burden is pronounced due to income levels

Bill Burdens

Estimates and Comparisons

UNC EFC -- AL Water and Wastewater Rates Dashboard indicates median combined water and sewer bill for 4,500 gallons was $64.07 across Alabama as of July 2023.

Annual Bill Comparison Summary

Volume of water for typical residential bill (per month) 4,500 gallons

3/4 Inch Meter, Rate Increases applied uniformly to all billing determinants

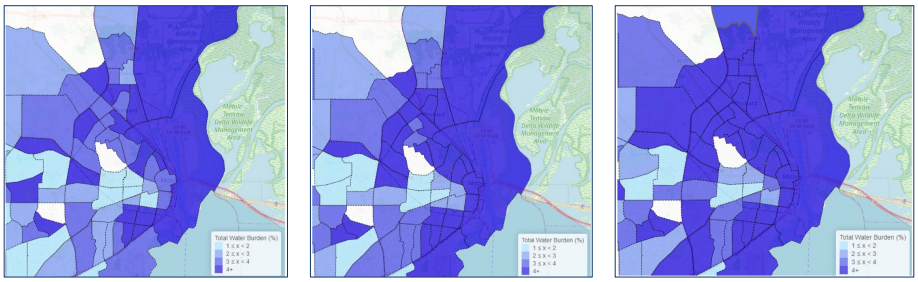
	PWWSB				MAWSS			BWWB-JEFFCO	Atlanta
	Current Bill	Rate/ Bill Increases			Current Bill	Rate/ Bill Increases		Current Bills	
		10%	20%	40%		10%	20%		
Water	$572.88	$630.17	$687.46	$802.03	$264.54	$290.99	$317.45	$705.84	$363.84
Wastewater	$621.78	$683.96	$746.14	$870.49	$597.24	$656.96	$716.69	$1,021.20	$920.40
Total	$1,194.66	$1,314.13	$1,433.60	$1,672.52	$861.78	$947.95	$1,034.14	$1,727.04	$1,284.24

- Yet, state and regional examples of similarly high rates in large systems (with pockets of poverty within service areas)

Bill Burdens

PWWSB Bill Burdens with Rate Increases

Water & Sewer Bill Increased by 10% ($109.52)	Water & Sewer Bill Increased by 20% ($119.47)	Water & Sewer Bill Increased by 40% ($139.8)



- Potential rate increases have marginal impact on already difficult bill burden levels, and not unprecedented in state, regional and national context

Bill Burdens

Customer Assistance Program Funding

- External Sources
  - Utility customers (e.g., Bill Round-up)
  - Philanthropic organizations
    - Community organizations
    - Technology applications
- Utility Revenues
  - AWWA Policy Statement (Oct. 24, 2018)
    - "Low-income customer assistance can take many different forms that should be designed and implemented to meet the unique challenges of individual communities **and may be considered as an appropriate component of system revenue requirements. "**

Bill Burdens

Customer Assistance Program Design

- Eligibility criteria
  - Income screening vs categorical
- Forms of Assistance
  - Bill assistance
    - Regular or one-time (for emergency / hardship)
  - Delinquency management
    - see next slide
  - Plumbing assistance
  - Education

Water Service Rates, Bill Burdens, and Financial Sustainability

Financial Sustainability

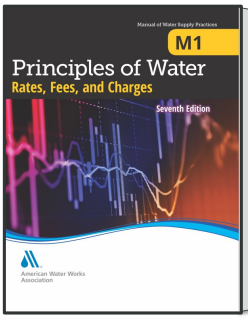
Financial Sustainability

Industry Guidance

- AWWA / WEF
  - Ratemaking Manuals of Practice, Affordability Policy
- AWWA/APWA/AMWA/NACWA/NAWC/WEF
  - Effective Utility Management Primer
- EPA's Environmental Finance Advisory Board
  - Financing Strategies to Promote System Regionalization

Financial Sustainability

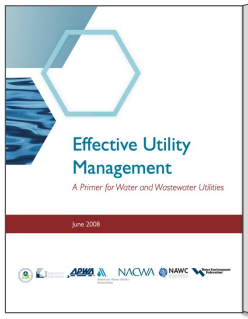
AWWA / WEF Manuals of Practice



Section II: Revenue Requirements
The determination and establishment of a utility's revenue requirements is the basis for setting the overall level of the utility's rates, while providing the utility with adequate and sustainable funding levels for both operating and capital costs.

Financial Sustainability

Effective Utility Management

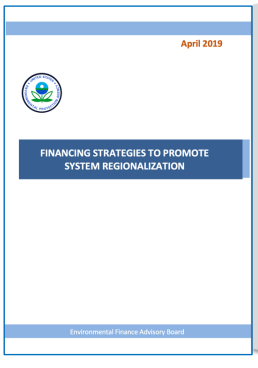


Financial Viability

Understands the full life-cycle cost of the utility and establishes and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. Establishes predictable rates—consistent with community expectations and acceptability—adequate to recover costs, provide for reserves, maintain support from bond rating agencies, and plan and invest for future needs

Financial Sustainability

Regionalization - Consolidation



Industry structure – The sector is characterized by many smaller utilities with too few customers to safely and cost-effectively deliver services in compliance with applicable regulations.

Utility resistance – Voluntary acceptance and pursuit of structural options that may advance sector restructuring is limited, often despite evidence of potential cost savings, service improvements, improved capacity utilization and other benefits. **This resistance may derive from vested interests, use of utility enterprise funds to subsidize other governmental services or simply a predilection for local control.**

Financial Sustainability

Industry Examples: Crisis Resolution

- Detroit (and Flint), MI
- Jefferson County, AL
- Jackson, MS
- New Orleans, LA

Financial Sustainability

City of Detroit

- Population decline: 1.8 M in 1950 to 0.7 M in 2013
  - 38% below poverty
- Largest municipal bankruptcy in U.S. history – superseding Jefferson County
  - $5.2B of DWSD debt impaired in conjunction with impairment of City of Detroit G.O. debt
- Mediation in April 2014 for creation of new regional authority (GLWA)
- Flint Water Crisis occurred after Flint exited regional system at least in part to wrest control of system.

Financial Sustainability

Jefferson County, AL

- Cumulative rate increase of 76.4 percent over the 10-year reporting period, FY 2013 to FY 2022.
  - The County plans to continue to impose 3.49 percent annual increases over the forecast period.
- Operational and capital project delivery improvements have been implemented.
  - Constrained operating expenses to align with projections included in the 2013 Sewer Warrants offering documents.
- Implemented a capital improvement program that reflects sound engineering and asset management principles.
- The County has established a ten-year track record of sound System management following entry of the bankruptcy Plan of Adjustment.

Financial Sustainability

Options / Constraints for PWWSB

- Revenue growth – enhancement
  - Limited potential for meaningful customer expansion
  - Rate increases will further strain affordability
- Operating expense reduction
  - Investment required to address inefficiencies
  - Effectively no economies of scale available
- Capital improvement project funding
  - Limits of available grants / external resources
  - No access to capital markets (default)
- Regionalization / consolidation
  - Utility / stakeholder resistance
  - Substantial system reinvestment requirements

Draft Master Plan Considerations

Water Service Rates, Bill Burdens, and Financial Sustainability

Next Steps

Addressing Constraints

Key Messages

- Rates must recover costs of service
- PWWSB's rates are burdensome yet inadequate
- PWWSB's crisis and rates demand immediate and long-term actions
- Crisis resolution and sustainability will require fundamental change over the next generation

- Water affordability
  - Investigate rate design options
  - Customer Assistance Program
    - External funding sources, options
- Support application for federal and state grant funding
  - Capital project investment / reinvestment
- Support institutional structuring evaluation
  - Further water bill burden analyses under different options

Next Steps

Stakeholder Engagement

- Advisory Council
- Community Organizations
  - Potential CAP implementation partners
- PWWSB Staff
  - Executive team
  - Customer service personnel
- PWWSB Board
- Alabama Dept of Environmental Management
- Circuit Court