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Customer Assistance Programs for Multi-Family Residential and Other Hard-to-Reach Customers

Project #4557

Customer Assistance Programs for Multi-Family Residential and Other Hard-to-Reach Customers

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Customer Assistance Programs for Multi-Family Residential and Other Hard-to-Reach Customers

Prepared by:
Janet Clements, Robert Raucher, Karen Raucher
Corona Environmental Consulting, Louisville, CO 80027

Lorine Giangola, Michael Duckworth
Abt Associates, Boulder, CO 80302

Stacey Isaac Berahzer, Jeff Hughes
University of North Carolina Environmental Finance Center, Chapel Hill, NC 27514

Scott Rubin
Independent Attorney and Consultant. Norristown, PA 19401

and

Roger Colton
Fisher, Sheehan, and Colton, Belmont, MA 02478

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The following presentation is available on the #4557 project page of the WRF Website, under Presentations.

CUSTOMER ASISTANCE PROGRAMS FOR LOW-INCOME, HARD-TO-REACH CUSTOMERS

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FOREWORD

The Water Research Foundation (WRF) is a nonprofit corporation dedicated to the development and implementation of scientifically sound research designed to help water utilities respond to regulatory requirements and address high-priority concerns. WRF's research agenda is developed through a process of consultation with WRF subscribers and other water professionals. WRF's Board of Directors and other professional volunteers help prioritize and select research projects for funding based upon current and future industry needs, applicability, and past work. WRF sponsors research projects through the Focus Area, Emerging Opportunities, Tailored Collaboration, and Facilitated Research programs, as well as various joint research efforts with organizations such as the U.S. Environmental Protection Agency and the U.S. Bureau of Reclamation.

This publication is a result of a research project fully funded or funded in part by WRF subscribers. WRF's subscription program provides a cost-effective and collaborative method for funding research in the public interest. The research investment that underpins this report will intrinsically increase in value as the findings are applied in communities throughout the world. WRF research projects are managed closely from their inception to the final report by the staff and a large cadre of volunteers who willingly contribute their time and expertise. WRF provides planning, management, and technical oversight and awards contracts to other institutions such as water utilities, universities, and engineering firms to conduct the research.

A broad spectrum of water issues is addressed by WRF's research agenda, including infrastructure and asset management, rates and utility finance, risk communication, green infrastructure, food waste co-digestion, reuse, alternative water supplies, water loss control, and more. The ultimate purpose of the coordinated effort is to help water suppliers provide a reliable supply of safe and affordable water to consumers. The true benefits of WRF's research are realized when the results are implemented at the utility level. WRF's staff and Board of Directors are pleased to offer this publication as a contribution toward that end.

Charles M. Murray
Chair, Board of Directors
Water Research Foundation

Robert C. Renner, P.E.
Chief Executive Officer
Water Research Foundation

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Thank you all very much.

Janet Clements and Robert Raucher, PhD
Co-Principal Investigators
Corona Environmental Consulting
Louisville, CO

EXECUTIVE SUMMARY

KEY FINDINGS

- Hard to Reach (H2R) households constitute a significant percentage of the population served by water utilities.
- H2R households generally have lower incomes than the average household and often face a greater degree of economic and other life challenges.
- Utilities typically do not have channels in place to effectively communicate and engage with the H2R.
- The most effective and efficient ways for utilities to provide support to the H2R involve partnering with existing and well-trusted community-based organizations (CBOs), and piggybacking onto existing programs that have track records of successfully engaging and providing support to the H2R.

OVERVIEW

The affordability of water-related services is becoming an increasing concern in many communities as drinking water, wastewater, and stormwater rates continue to escalate at rates significantly higher than inflation. Many drinking water and wastewater utilities are responding to this by providing bill-paying customers with financial support using a wide range of customer assistance approaches. However, most customer assistance programs (CAPs) do not meet the needs of households in multi-family buildings, single-family renters, and others who do not receive bills directly from their water or wastewater service providers. This research provides drinking water and wastewater utility professionals with insights into the magnitude of the financial assistance needs of households that do not receive drinking water or wastewater bills, and describes assistance strategies and programs that can be used to decrease the financial impact of raising rates on these "hard-to-reach" (H2R) customers. This report also provides utilities with tools they can use to develop a better understanding of the H2R households in their communities, evaluate their options for assisting these households, and effectively implement selected program options.

BACKGROUND

In every community, there are customers who have difficulty paying their water bills (EPA 2016). Per the U.S. Census Bureau American Community Survey (ACS), nearly 50 million people in the United States (15.5% of the U.S. population) lived below the federal poverty level in 2014 (ACS 2014). In addition, research shows that many households earning well above poverty-level income also have trouble paying for basic expenses (Gould et al. 2015). Unexpected crises such as job losses, illnesses, or other domestic situations can also affect a household's ability to pay for water and wastewater services.

To address affordability concerns, many utilities have developed CAPs that use bill discounts, special rate structures, payment plans, and other means as approaches to help financially constrained customers maintain access to drinking water and wastewater services (EPA 2016). These programs provide much needed assistance to households in need. However, they generally focus on customers who receive bills directly from the utilities. Nationally, this covers only about

60% of the low-income population of utility customers. The remaining 40% live in single-family rental units, multi-family buildings, or public housing, and pay for their water as part of their rent or home maintenance fee (PUMS 2014). In general, these residents fall between the cracks of traditional utility assistance, communication, and outreach activities.

Many water utilities wish to find effective ways to assist these H2R customers, who—even if they do not directly receive a water bill—nonetheless indirectly face fiscal hardships because of the rapidly escalating costs of essential water-related services. Water rate hikes necessitated by numerous factors—including infrastructure renewal, new supply development, revenue gaps arising from declining water sales, regulatory requirements, or stormwater-related consent decrees—are typically embodied in higher rents charged by landlords and higher fees charged by homeowner associations (HOAs).

In addition to affordability concerns, utilities may need to reach these households for other reasons. For example, utilities may want to provide price signals to incentivize conservation, but may find a large proportion of their service area never sees a water bill. Likewise, public health and safety considerations necessitate effective means of communicating boil water notices in the event of the possible presence of microbial or chemical contaminants in the water system. H2R community members may also need to receive notice of planned water main repairs and associated service interruptions, parking restrictions, and business disruptions. For these reasons, utilities want and need to identify their H2R customers and find effective avenues for communicating with, and assisting, them.

RESEARCH OBJECTIVES

Providing assistance to, and communicating with, those who do not have a direct financial relationship with the utility typically requires a different set of strategies and practices from those currently described in water sector best management practices for CAPs. However, there has been very little research that directly addresses this specific subset of customers. Accordingly, the Water Research Foundation (WRF) initiated this research project to provide water utilities with pragmatic options, evaluation criteria, lessons learned, and guidance for CAPs that target H2R customers. The objective is to help water providers identify and assess their options for assisting and communicating with these customers, and effectively implement H2R assistance strategies.

RESULTS/CONCLUSIONS

Based on the material reviewed and developed in this research effort, there are three main findings related to providing water utility-sponsored assistance to the H2R:

1. H2R households often constitute a significant percentage of the population served by drinking water and wastewater utilities. Nationally, 22% of all households, and 40% of low income households, served by water sector utilities do not directly pay a water bill or have a direct business relationship with their water service providers. These H2R households largely consist of renters and those residing in multi-family dwellings, and they typically pay for water services indirectly through their rental payments. Close to 80% of H2R customers live in multi-family buildings, and 13% are single-family renters. In some service areas, such as large cities with a large proportion of the

population residing in multi-family dwellings, the percentage of H2R households may be significantly greater than the national average.

2. H2R households generally have lower incomes than the average household, and often face a greater degree of economic and other life challenges. The median income of H2R households amounted to $33,339 in 2014, compared to $53,794 for all United States households. Approximately 23% of H2R households were living in poverty in 2014 (i.e., below the federal poverty guidelines for their household composition), compared to 13% nationally. A significant portion of H2R households is strained by escalating drinking water and wastewater bills, which are typically passed through in elevated rents and escalate the cost of affordable housing. In addition, although many H2R households pay less than other households for water-related services, housing, and other non-discretionary expenditures, they spend the same, if not more, on these items as a percentage of their income. The economic hardship imposed by escalating water sector charges provides a rationale for why some utilities may wish to consider ways of assisting the H2R.
3. It is challenging to provide assistance to the H2R, though some viable options exist. The H2R do not benefit from the CAPs many utilities make available to support bill-paying customers, and utilities typically do not have any channels in place to effectively communicate and engage with the H2R. In most cases, the most effective and efficient ways for water utilities to provide support to the H2R involve partnering with existing and well-trusted community-based organizations (CBOs), and piggybacking onto existing programs that have track records of successfully engaging and providing support to the H2R (and other challenged) households in the service area. In Table ES.1, an abbreviated overview and evaluation is provided of the comparative advantages and disadvantages of some of the key strategies that may be considered for a H2R-targeted CAP.

STRATEGIES FOR SUCCESSFUL H2R CAP IMPLEMENTATION

A vital aspect of assisting the H2R entails implementing the selected strategy so that it successfully reaches and provides meaningful assistance to the target H2R recipients. There are several important effective implementation lessons learned from assistance programs fielded by water utilities, as well as by organizations in the energy, health care, and other sectors. Key lessons learned from the water sector include:

1. There are multiple benefits of partnering with organizations that already understand, and already have strategies in place for reaching, low income H2R customers. These benefits include more effective outreach to the H2R households and cost savings for the utility, among others. The nature of utilities' partnerships with CBOs varies widely. Some community groups work closely with utilities and manage utilities' assistance program enrollment and administration. Others play a more indirect role in utilities' programs and simply refer eligible customers to utility customer service for program information and enrollment.
2. Although some utilities offer assistance to renters in single-family homes, few have worked closely or consistently with landlords to help reach and extend assistance to residents in multi-family units. A common obstacle that utilities cite in working with

landlords to extend assistance to renters is an inability to track whether the landlord passes discounts on to renters. However, several utilities have worked with local trade organizations and housing agencies to develop successful programs and/or reach their H2R tenants.

3. It is critical to build trust through ongoing, frequent, culturally appropriate connections. For example, reaching non-English speakers requires providing services in their languages and understanding their cultural communication styles, needs, and expectations.
4. It is important to be creative and persistent. Providing the short-term financial assistance or debt management service that keeps water services turned on can make a huge difference in people's lives.

Key lessons learned from the energy, health care, education, and other sectors reinforce what has been learned from the water sector experience. These lessons include:

1. Identify and aim to understand the specific groups that constitute your H2R populations (e.g., the aged, disabled, language challenged, economically challenged). This is essential so that you can better understand their challenges and identify trusted community organizations to support your efforts.
2. Build trust. This is best accomplished by collaborating and drawing upon long-standing, effective, and well-trusted CBOs and local thought leaders to help identify and engage the H2R. Building trust is also achieved through consistent contact, including in-person interactions with trusted messengers.
3. Go to the H2R groups in your community (rather than having them come to you), and provide them with actionable steps that they can readily accomplish. For example, partnering with public schools that have large numbers of families who are eligible for school lunch assistance programs is an effective way to distribute information about community assistance services. It is often very helpful to provide hands-on enrollment/application assistance.
4. Commit adequate and stable resources to sustain long-term support. Reliable and lasting funding, staffing, and other program resources are essential for developing trust, building enrollments, and providing meaningful assistance over the long haul.

Table ES.1
Overview and evaluation of H2R CAP strategies

H2R CAP strategy	Key advantages	Key disadvantages	Comments
Indirect Assistance: Promoting use of existing state and federal low income assistance programs (e.g., promoting use of the federal Earned Income Tax Credit [EITC], Low-Income Heating and Energy Assistance Program [LIHEAP])	• Utility-borne costs limited to promoting enrollments (actual assistance dollars come from federal or state program) • Easy to administer for the utility, especially if partnering with a CBO to promote enrollments	• Amount of assistance ultimately limited, and does not provide additional assistance to those H2R who are already enrolled • May not gain a lot of recognition and appreciation for the utility	• Functions most effectively when partnering with a trusted and established entity, such as a CBO • Used effectively by some utilities to bring significant dollars into their service area's H2R households
Indirect Assistance: Partnering with CBOs (e.g., supporting a local non-profit charity providing emergency fiscal assistance, or offering budget and debt management training)	• Easy to administer for the utility (typically includes outreach to help steer H2R to the CBO, and may include providing financial support to bolster the local CBO's effective programs) • Taps into effective, trusted organizations established in the community, who build on sustained relationships with the low income and other life-challenged H2R households in the service area	• May not gain a lot of recognition and appreciation for the utility (i.e., the utility's role in providing fiscal or other support may not be broadly recognized in the community, unless the utility effectively promotes its involvement and support) • Utility does not have control over how the program operates	• Functions most effectively when partnering with a trusted and established local entity, such as a CBO • Used effectively by some utilities to cost-effectively funnel various forms of support to their service area's H2R households
Direct Assistance to H2R Households or Their Landlords (e.g., providing vouchers or discounts for tenants and/or discounts to landlords)	• Funnels support directly to H2R households (or their landlords) • Assistance directly linked to escalating water service cost • May include leak detection/repair and conservation elements	• Can be more difficult and expensive for utility to set up and administer (e.g., verifying eligibility, updating enrollments, distributing funds) • Landlords may not pass through all discounts to renters.	• Can be challenging and costly for utility to establish and administer its own assistance programs that target low income renters and other H2R households. However, partnering with CBOs or piggybacking onto other utility programs can significantly reduce this burden.

A BUSINESS PROCESS FRAMEWORK FOR H2R CAPS

In 2010, WRF and the U.S. Environmental Protection Agency (EPA) published *Best Practices in Customer Assistance Programs* (Cromwell et al. 2010), a comprehensive guidance manual describing options and best practices for developing and implementing assistance programs for low-income customers. The guidance also includes detailed strategies for developing assistance programs within a business process framework. Following a "Plan-Do-Check-Act" cycle, the business process framework provides a structured means of designing, implementing, and continually improving utility programs for payment-troubled customers.

Cromwell et al.'s research focused exclusively on programs that provide assistance to single-family residential customers who receive water bills. However, the business process framework also provides a strong foundation for developing CAPs for the H2R. Based on this general model, Figure ES.1 illustrates a business process framework specific to H2R assistance programs, designed by the research team to better meet the needs of this subset of customers. This business process framework serves as the foundation for the guidance and strategies included in Part 2 of this report.

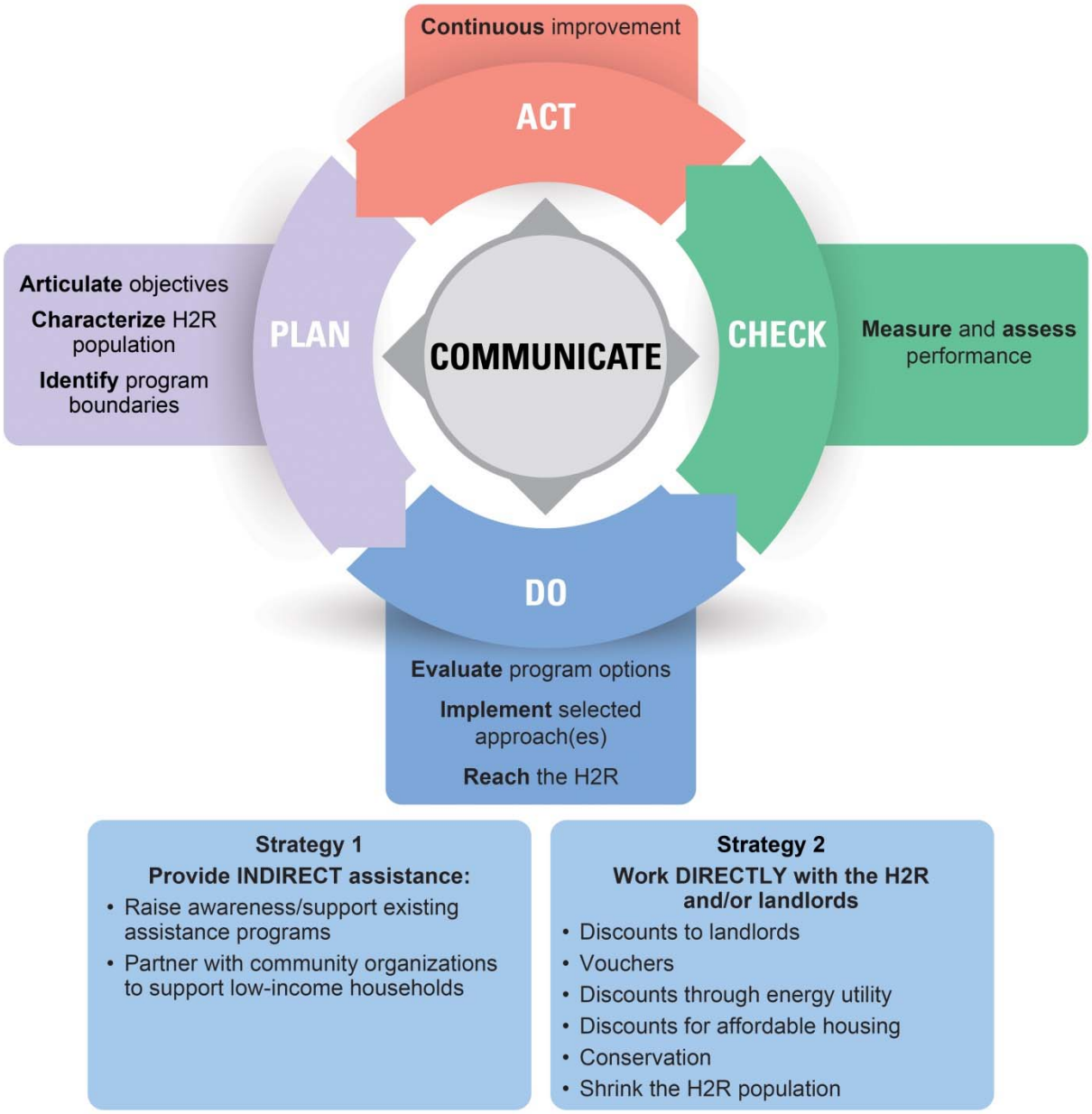


Figure ES.1 CAP business process framework, modified for the H2R

REPORT ORGANIZATION AND READER'S GUIDE

There is a considerable amount of technical information, data, case studies, and implementation guidance compiled within this report. To help readers locate and apply the information of greatest relevance to them, the report is divided into three main components.

Part 1: Background and Characterization of the Hard-to-Reach Challenge

Part 1 (Chapters 1 through 3) provides a research-based national assessment, revealing that hard-to-reach (H2R) customers constitute a significant percentage of households served by many water utilities, and the H2R are an even higher percentage of households in economic need. This

empirical examination of the data offers the basis for why utilities may wish to consider providing assistance to these households. Part 1 concludes with a summary of available literature and guidance related to affordability and low-income customer assistance programs (CAPs), highlighting experiences and research directly related to H2R customers. This part of the report is of most relevance to readers interested in a research- and data-based assessment of the extent of the H2R challenge at a national level and a review of what has previously been written on the nature of the problem and its potential solutions.

Part 2: The Hard-to-Reach Business Process Framework

The thirteen chapters in Part 2 (Chapters 4 through 16) follow the Plan-Do-Check-Act steps of a business process framework for H2R assistance programs. The first chapter contains an overview of the framework, providing water utilities with a broad understanding of how to engage in the business process. The remaining chapters offer detailed guidance associated with each step in the framework, including (as appropriate) background information, insights into why this portion of the business process is important, descriptions of CAP strategies that may be considered to assist the H2R, and examples of programs currently being run by water utilities and entities in other sectors. This part of the report is of greatest relevance to readers interested in establishing a systematic business process for addressing the H2R challenge in their communities, learning about the range of options available, and gleaning insights and lessons learned from case study illustrations from the water and other sectors. Figure ES.2 presents the various aspects of the business process framework covered in Part 2, by report chapter.

Part 3: The Hard-to-Reach Business Process Framework: Implementation Strategies and Tools

The materials provided in Part 3 (Chapters 17 through 22) provide utility practitioners with practical guidance, and a set of worksheet tools and techniques, to help them work through a screening process to assess the need, and appropriate approach, for reaching the H2R in their communities. Figure ES.3 presents the H2R Toolkit Dashboard and provides quick links to descriptions of the tools. This part of the report is of greatest relevance to utility practitioners responsible for examining the local H2R issue, guiding their utility's efforts to understand the extent of the challenge, and communicating the options their agency may consider for addressing it.

MULTIMEDIA

A PowerPoint presentation that utility practitioners can use as a quick tutorial, and can adapt and customize to help brief utility colleagues and managers, public officials, community thought leaders, and others on the nature of the H2R challenge and the options available to address it, is provided on the #4557 project page of the WRF Website, under Presentations.

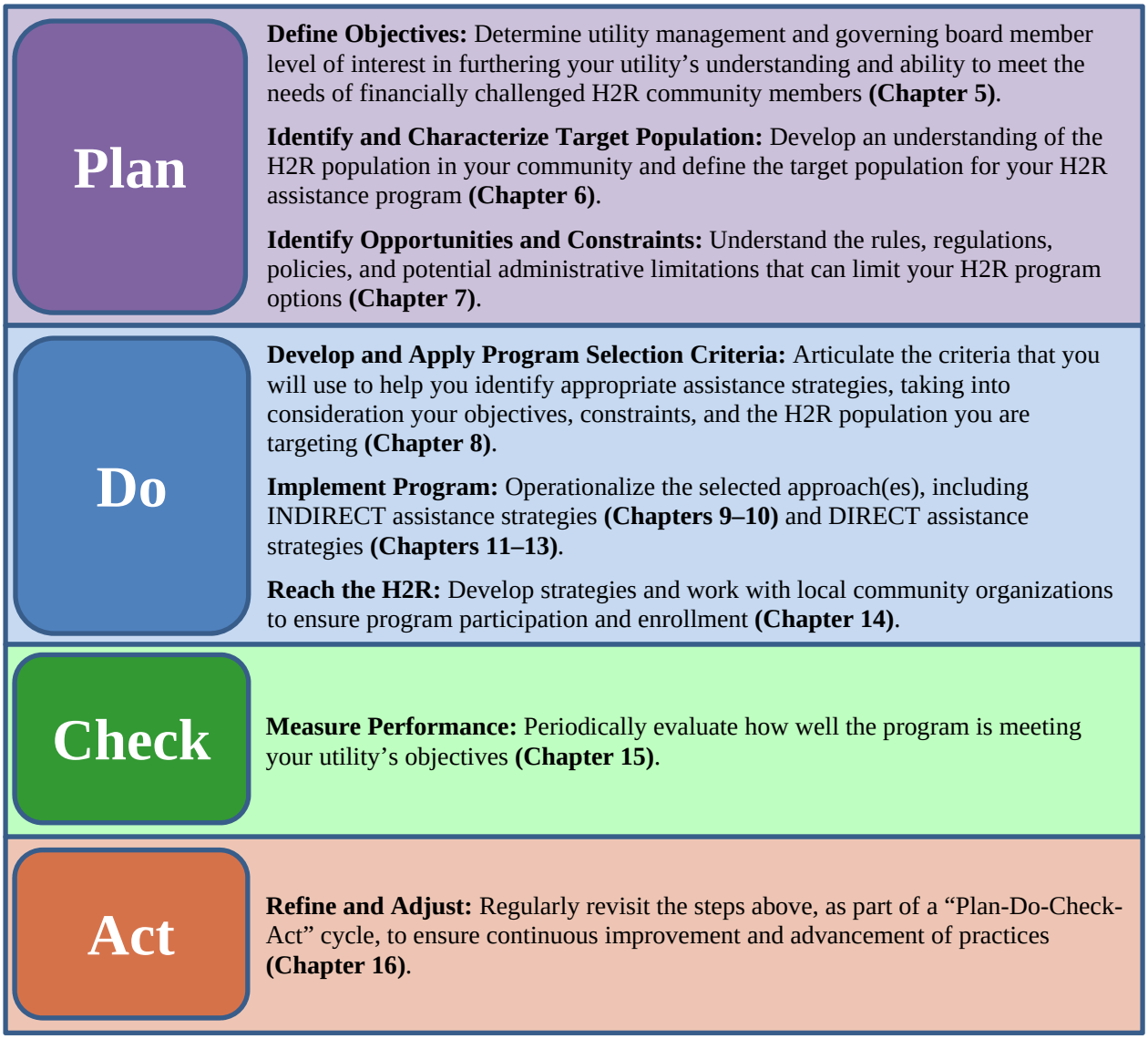


Figure ES.2 Steps for applying the business process flow model, and guide to Part 2

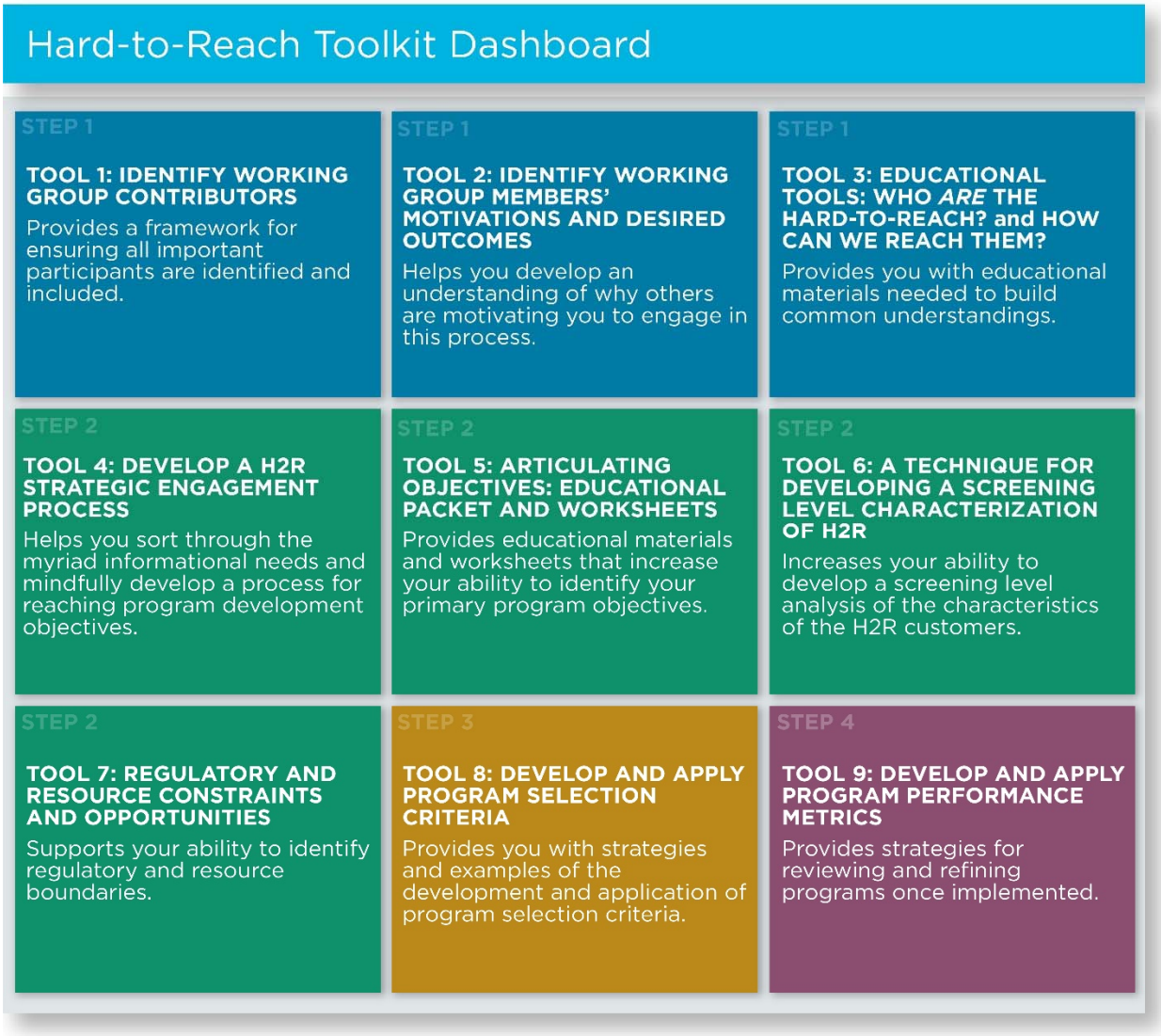


Figure ES.3 H2R Toolkit Dashboard

RELATED WRF RESEARCH

- Best Practices in Customer Payment Assistance Programs, Project # 4004
- Defining a Resilient Business Model for Water Utilities, Project # 4366
- Navigating Legal Pathways to Rate-Funded Customer Assistance Programs: A Guide for Water and Wastewater Utilities, Project #4671

PART 1
BACKGROUND AND CHARACTERIZATION OF THE HARD-TO-REACH CHALLENGE

CHAPTER 1
CHARACTERISTICS OF HARD-TO-REACH HOUSEHOLDS

This chapter provides an overview of the population of hard-to-reach (H2R) water and wastewater customers in the United States – i.e., households that do not receive a bill or otherwise have a direct financial relationship with the water and/or wastewater utility serving them. Based on an analysis of data from the 2014 U.S. Census Public Use Microdata Sample (PUMS 2014), key findings from this analysis are as follows:

- Approximately 98.5 million households in the United States receive water and wastewater services from a utility. Of these, 21.6 million (22%) pay for water and wastewater through their rent or home maintenance fee (i.e., they are H2R customers).
- Close to 80% of H2R customers live in multi-family buildings; 13% are single-family renters.
- In 2014, the median income of H2R households amounted to $33,339. This compares to $53,749 for all households in the United States.
- H2R households account for a relatively large percentage of customers in need of assistance. Of the 26.7 million utility customer households earning less than $30,000 per year, 36% do not pay their bill directly.
- Approximately 23% of H2R households were living in poverty in 2014, compared to 13% of all households nationally.
- H2R households are more likely to have a disability, speak English as a second language, and have lower education levels than the general population of U.S. households. This group is also more transient.

Overall, these key observations reveal two critical realities: (1) a large proportion of the households served by water and wastewater utilities (22% nationally) are H2R; and (2) H2R households generally face significant economic and other life challenges compared to the general population. The balance of this chapter provides additional detail on the characteristics of households that make up the H2R population of water and wastewater utility customers.

THE H2R POPULATION

Based on data from the U.S. Census PUMS, in 2014, approximately 98.5 million households (84% of total U.S. households) received water and wastewater services from a utility-operated system.[1] Of these, approximately 77.0 million (78% of utility-supplied households) received a bill and paid directly for water and wastewater services. The remaining 21.6 million (22% of utility-supplied households) paid for water and wastewater services indirectly, as part of their rent or home maintenance fee. For the purposes of this report, these 21.6 million households make up the H2R population of water and wastewater utility customers. The following sections provide an overview of the characteristics of this group.

1. Approximately 18.6 million of households (16% of total households) did not pay for water, presumably because they self-supplied their water through a domestic well or other source.

HOUSEHOLD TYPE AND TENURE

Table 1.1 shows the percentage of households that are H2R, by household type. As the table indicates, there are approximately 80.4 million single-family households in the United States (including single-family detached and attached units), accounting for 69% of the total housing stock. Of these, approximately 65.2 million (81%) pay their water/wastewater bill directly to a utility, while 11.6 million (14%) self-supply. Approximately 3.6 million single-family households (4.4%) pay for water and wastewater as a part of their rent or home maintenance fee, and are therefore considered H2R. In contrast, multi-family households make up 26% of total households in the United States, with approximately 30 million units. Close to 16.9 million (56%) of all multi-family households pay for water and wastewater as part of their rent or home maintenance fee; while 8.2 million (27%) pay their bill directly, and 6.9 million (17%) self-supply.

Table 1.1
H2R households by household type

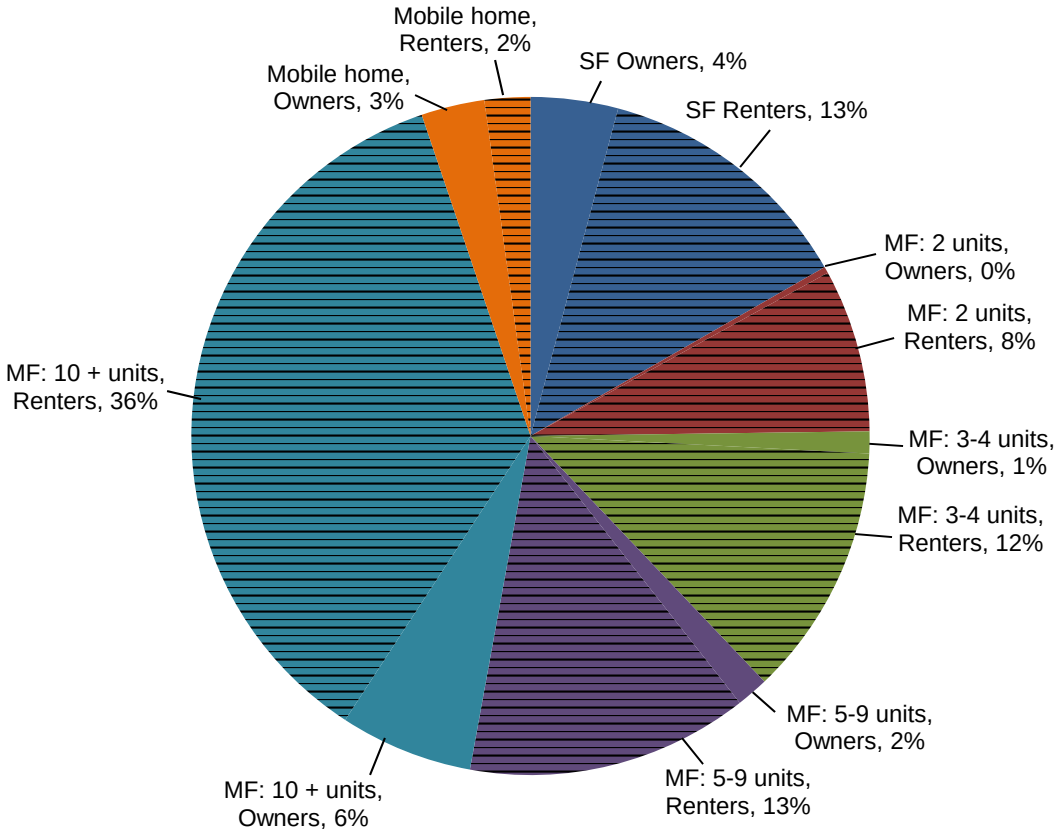
Household type	Households (Millions)	Pay bill directly to utility[1,2]	Pay bill through rent or fee (%)	Do not pay for water (self-supply)
Single-family homes (attached and detached)	80.4	81%	4%	14%
Multi-family, 2-unit building	4.3	42%	41%	18%
Multi-family, 3–9 units	10.7	28%	57%	16%
Multi-family, 10–19 units	5.1	30%	57%	13%
Multi-family, 20 or more units	9.9	19%	62%	19%
Mobile home or trailer	6.7	55%	17%	29%
Total households (Millions)	**117.1**	**77.0**	**21.6**	**18.6**

Source: Data from PUMS 2014

[1] Households that pay bill directly or through rent or maintenance fee reflects percentage of all U.S. households, not only households that receive water/wastewater services from a utility.

[2] Columns shaded in gray represent households that receive their water/wastewater services from a utility.

Of the 21.6 million households in the United States that are H2R, the majority are renters; approximately 13% of H2R households are single-family renters, while 69% rent homes in multi-family buildings that have two or more units. A small percentage of other types of households are also H2R, including single-family homeowners who pay their bills through a homeowner association or similar maintenance fees, and customers that own or rent mobile homes. Figure 1.1 shows the different types of households that make up the population of H2R customers within the United States.

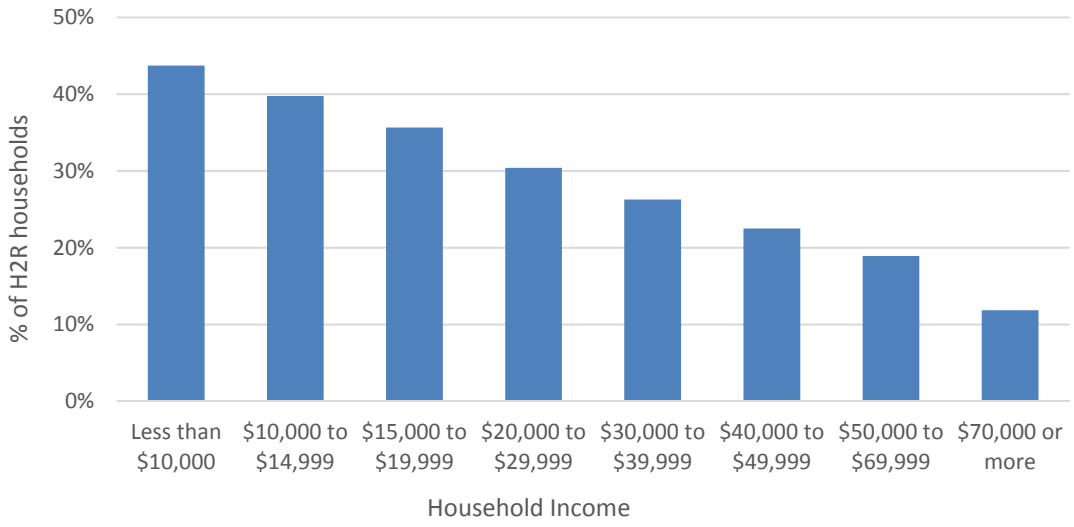


Source: Data from PUMS 2014.
SF= single family residence; MF= multi-family residence

Figure 1.1 H2R households by household type and tenure

HOUSEHOLD INCOME LEVELS

Our analysis indicates that H2R households account for a relatively large percentage of customers in need of assistance. As shown in Figure 1.2, approximately 44% of utility household customers earning less than $10,000 per year are H2R. Across the four lowest income categories (including households earning up to $30,000 per year), 36% of utility household customers do not pay their bill directly, and therefore do not benefit from customer assistance programs (CAPs) that target direct ratepayers.



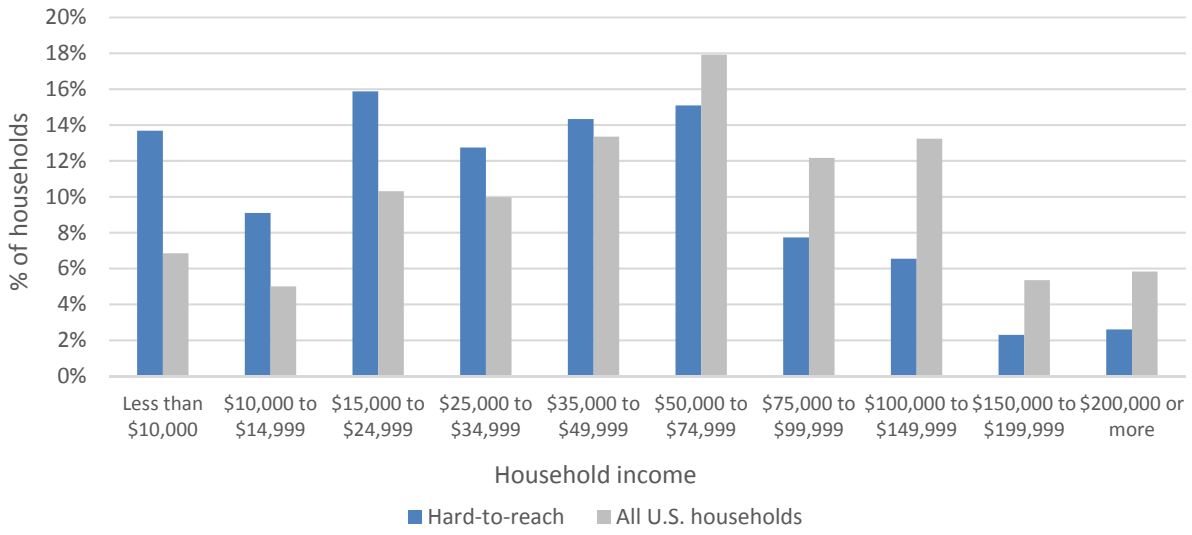
Source: Data from PUMS 2014.

Figure 1.2 Percentage of utility household customers who pay for water and wastewater services through rent or similar fee, by household income

In 2014, the median income of H2R households was $33,339. This compares to $53,749 for all U.S. households. In addition, approximately 23% of H2R households were living in poverty in 2014, and 37% qualified for assistance under the federal Low-Income Heating and Energy Assistance Program (LIHEAP), meaning they earned 150% or less of the federal poverty level income.

Figure 1.3 shows the income distribution of H2R households compared to all households within the United States. As shown, there is a much higher percentage of H2R households in lower-income categories: approximately 51% of H2R households earn less than $35,000 per year, while only 32% of all U.S. households earn less than this amount.

Further, Table 1.2 shows that household incomes for H2R households vary by household type, with multi-family renters having the lowest median household income (MHI) and the highest percentage of households living below the federal poverty line.



Source: Data from PUMS 2014.

Figure 1.3 Income distribution, H2R households compared to all U.S. households

Table 1.2
MHI and poverty rates for H2R households

Household type	% of H2R population	MHI (2014 USD)	Poverty rate[1]
Multi-family renters	69%	$29,244	26%
Multi-family owners	9%	$63,329	8%
Single-family renters	13%	$39,772	23%
Single-family owners	4%	$60,506	7%
Mobile home dwellers	5%	$28,236	25%
All U.S. households	N/A	$53,749	13%

Source: Data from PUMS 2014.

[1]Poverty rate reflects percentage of population earning less than the federal poverty level income, as defined by the U.S. Department of Health and Human Services by household size.

ADDITIONAL H2R CHARACTERISTICS

In addition to having no direct relationship with the utility, households that do not pay for water and wastewater services directly are also more likely to have other characteristics that make them H2R, including learning disabilities, low literacy, language barriers, and poor access to information. In addition, H2R households tend to be more transient. This can compound the H2R challenge for utilities by creating additional communication barriers.

As shown in Table 1.3, compared to all U.S. households, a higher percentage of H2R households are disabled or do not speak English as their first language. They are also more likely to have moved within the past year, and have lower education levels. At the national level, however, the H2R population has a slightly lower percentage of elderly households. Elderly households are often considered "H2R" by government agencies and social service organizations for other reasons.

Table 1.3
Additional "hard-to-reach" characteristics

Household type	% of H2R population	% of all U.S. households
Elderly	20%	24%
Disabled	20%	17%
Non-native speakers	22%	15%
High school degree	85%	89%
Moved within the last year	28%	14%

Source: Data from PUMS 2014

GEOGRAPHIC REGION

Not surprisingly, H2R customers seem to be concentrated in areas that are more urbanized because these areas generally have more multi-family housing than rural areas. Table 1.4 shows the percentage of H2R customers within the service areas of several of the utilities supporting this research.[2] As shown, the percentage of customers that pay for water and wastewater through their rent is much higher for these utilities than the average of 18% for the United States, ranging from 23.5% in Columbus, Georgia (Columbus Water Works) to 38.0% in Seattle, Washington (Seattle Public Utilities, SPU).

In addition, the types of households that H2R customers live in vary by location. For example, as shown above, in the SPU service area, more than 93% of H2R households live in multi-family units or apartments, while 5% are single-family renters. In the Albuquerque Bernalillo County Water District service area, multi-family households make up close to 60% of the H2R population, while single-family renters account for 23%. Across all utility service areas, the MHI of H2R households is 35% lower, on average, than the MHI for the service area.

SUMMARY

Approximately 98.5 million households in the United States receive water and wastewater from a utility water supply system. Of these, 21.6 million (22%) pay for water and wastewater indirectly, through their rent or home maintenance fee. These households, which primarily include multi-family residents and single-family renters, make up the population of H2R water and wastewater utility customers.

The H2R population account for a relatively large percentage of households that are likely facing financial hardships. Of households earning 150% or less of the federal poverty level, 30% are H2R. In addition, as shown in Table 1.5, H2R households have lower incomes, a higher poverty rate, and are more likely to receive public assistance.

2. These are the utilities for which the research team was able to obtain GIS data for service area boundaries, and weight the PUMA data to reflect households that fall within those boundaries.

Table 1.4
H2R population by utility service area

Utility	Households in service area	MHI, households in service area	% H2R	H2R population[1] Multi-family households	H2R population[1] Single-family renters	H2R population[1] MHI
Philadelphia Water Department (PA)	576,475	$41,394	35.8%	73.8%	23.8%	$28,551
Denver Water (CO)	449,163	$62,078	37.3%	77.6%	13.3%	$41,869
Greater Cincinnati Water Works (OH)	341,268	$56,921	34.6%	82.2%	9.9%	$33,341
Seattle Public Utilities (WA)	304,510	$71,578	38.0%	93.2%	5.0%	$42,314
Albuquerque-Bernalillo County Water Authority (NM)	262,078	$46,795	30.8%	59.4%	23.0%	$28,783
Columbus Public Utilities (OH)	252,638	$50,132	29.8%	70.8%	19.0%	$30,868
City of Atlanta Water Department	186,169	$50,660	35.5%	85.5%	7.5%	$35,507
Columbus Water Works (GA)	35,907	$42,354	23.5%	76.0%	17.0%	$29,950

Source: Data from PUMS 2014 and geographic information system maps of utility service area boundaries

[1]Percentage of multi-family households and single-family renters do not add to 100% because there are additional households that are H2R, including single-family owners and mobile homes.

Table 1.5
Summary of the U.S. H2R population of water utility customers

	All U.S. households	H2R households
Number of households	117.1[1]	21.6
Multi-family renters	22%	69%
Multi-family owners	3%	9%
Single-family renters	13%	13%
Single-family home-owners	56%	4%
Mobile homes	6%	5%
MHI	$53,749	$33,339
Poverty rate	13%	23%
150% of poverty rate	22%	37%

Source: Data from PUMS 2014

[1] Total includes households that receive water from a utility and households that self-supply

CHAPTER 2
THE AFFORDABILITY CHALLENGES OF HARD-TO-REACH HOUSEHOLDS

This chapter explores the affordability challenges that low-income, hard-to-reach (H2R) households face, including the amount that they (indirectly) pay for water and wastewater services, and for other non-discretionary expenses. In addition, we provide an overview of public assistance benefits that many low-income H2R households receive.

The take away message from this chapter is that although many H2R households pay less than other households for water-related services, housing, and other non-discretionary expenditures, they spend the same, if not more, on these items as a percentage of their income. In addition, they have much less discretionary income to cover additional or unexpected expenses, including increased water and wastewater costs. The bottom line is that a large proportion of H2R households face affordability challenges.

COST OF WATER AND WASTEWATER SERVICES

There is little published literature or data on the amount that H2R customers pay, albeit indirectly, for water and wastewater services. Water utilities do not typically track the tenure of single-family homes (i.e., whether it is owner- or renter-occupied), and units in multi-family buildings are most often not individually metered. To estimate the average annual cost of water and wastewater services for typical H2R household types, we analyzed the Bureau of Labor Statistics (BLS) Consumer Expenditure Survey (CEX) microdata for households that *do* pay their bill directly, assuming these costs are relatively similar to the amount that H2R households pay indirectly.[3]

As shown in Table 2.1, the average bill for households that paid directly for water and wastewater services amounted to $800 in 2014 (CEX 2015).[4] Single-family homeowners paid the most for water and wastewater, spending a total of $834, on average. Single family-renters and multi-family households paid less than single-family homeowners, with average bills amounting to $787 and $688, respectively. However, these households also have significantly lower incomes, and a greater water/wastewater burden;[5] in 2014 single-family renters and multi-family households respectively spent 2.97% and 2.50% of their after-tax income on water and wastewater, on average, while single-family homeowners spent an average of 2.06%.

When looking across the income distribution, some different trends emerge. Specifically, as shown in Table 2.2, across all household types, households in lower-income categories have a greater water and wastewater burden, despite paying less for water and wastewater services. In addition, with the exception of households in the two lowest-income categories, the water and wastewater burden of multi-family households is similar to the water and wastewater burden of

3. It is expected that any differences in water use for H2R and non-H2R households of the same building type and tenure to be minimal because most H2R households primarily use water indoors, with little outdoor use.
4. This includes consumer units (or households) that paid for water; the CEX published summary data includes both households that paid and did not pay; thus, the summary data average cost is lower than reported here.
5. Water and wastewater burden represents the percentage of income that households spend on water and wastewater.

for other household types. Across the income distribution, bills for single-family renters and single-family owners do not differ significantly.

Table 2.1
Average annual water and wastewater costs and burden, by household type

	Average annual water/wastewater costs[1]	Water and wastewater costs as % of *after* tax income
All households	$800	2.28%
Single-family homeowners	$834	2.06%
Single-family renters	$788	2.97%
Multi-family households	$688	2.50%

Source: Data from CEX 2015

[1] Represents households that pay water/wastewater bill directly, assuming water use by household type is relatively similar for H2R customers.

Table 2.2
Household water and wastewater costs as percent of after tax income, by income group

	Multi-family households		Single-family renters		Single-family owners	
Annual household income	Average annual w/ww costs[1]	% of after tax income	Average annual w/ww costs	% of after tax income	Average annual w/ww costs	% of after tax income
Less than $10,000	$525	10.1%	$650	12.9%	$674	13.7%
$10,000 to $14,999	$571	4.5%	$636	4.8%	$638	5.1%
$15,000 to $19,999	$664	3.8%	$668	3.7%	$711	4.1%
$20,000 to $29,999	$668	2.6%	$722	2.7%	$719	2.8%
$30,000 to $39,999	$636	1.8%	$721	2.0%	$737	2.2%
$40,000 to $49,999	$717	1.6%	$748	1.7%	$769	1.8%
$50,000 to $69,999	$614	1.0%	$ 875	1.5%	$782	1.4%
$70,000 and over	$836	0.7%	$ 945	0.8%	$951	0.6%

Source: Data from CEX 2015

w/ww = water/wastewater.

[1] Represents households that pay water/wastewater bill directly, assuming water use by household type is relatively similar for H2R customers.

The CEX data for multi-family households that pay directly for water and wastewater services likely represent a higher percentage of units located in smaller multi-family buildings (e.g., two to nine units), which are more likely to be individually metered, and also have a higher per-unit water use. We therefore also used 2014 U.S. Census Public Use Microdata Sample (PUMS) data to examine average water bills for multi-family households, because it allows us assess water costs for units in different sizes of multi-family buildings.

As shown in Table 2.3, the PUMS data confirms that multi-family households living in larger buildings (i.e., with more units) tend to pay less for water-related services. Households living in duplexes pay the most, with average annual bills amounting to $658 (2014 USD), or approximately 1.6% of gross household income, on average. Households living in buildings with 20 or more units pay the least, with an average annual bill of approximately $366. These households also have a lower water burden; in 2014 they spent 0.8% of their gross income on water. These results are not directly comparable to the results reported in Table 2.1 above, because the U.S. Census does not specifically ask respondents to report water and wastewater costs; thus,

the PUMS data may only reflect the cost of water services. However, in areas where customers receive a combined bill, it is likely (although not certain) that some respondents included both costs. In addition, PUMS does not report after tax income; thus, the water burden reflects costs as a percentage of gross income (although households in the lowest income categories typically pay minimal, if any, taxes).

Table 2.3
Average annual water bill and percentage of gross income spent on water services, by multi-family household type

Multi-family household type	Average annual water bill ($2014)	% of gross household income
Multi-family, 2-unit building	658	1.6%
Multi-family, 3–4 units	518	1.3%
Multi-family, 5–9 units	412	1.0%
Multi-family, 10–19 units	387	0.9%
Multi-family, 20 or more units	366	0.8%
Average, all multi-family households	468	1.1%

Source: Data from PUMS 2014

Finally, in the overall affordability discussion, there is some question as to whether and how increases in water and wastewater rates translate into increased rents for H2R households. According to Saunders et al. (1998), "the general result of higher utility bills on rental property is an increase in rent. Unless restricted by local, state, or federal rule, most landlords will pass increases in water and sewer rates along to their tenants." The authors further state that "the impact of these raised rents due to an increase in water costs can be as harmful to low-income households as is the increase in water rates itself. The financial burden that these costs place on low-income families is the same whether the additional income must go toward the water bill or the landlord for rent" (Saunders et al. 1998).

Hynek et al. (2012) make a similar argument within the context of energy assistance and conservation programs for multi-family buildings, noting that in large market-rate apartment buildings, utility/operating costs are typically included in the tenants' rent. The authors state that "in buildings in heating-dominated climates, utility costs are typically the second largest operating expense, after debt service. Therefore, whether directly or indirectly, utility bill costs are paid by the tenants."

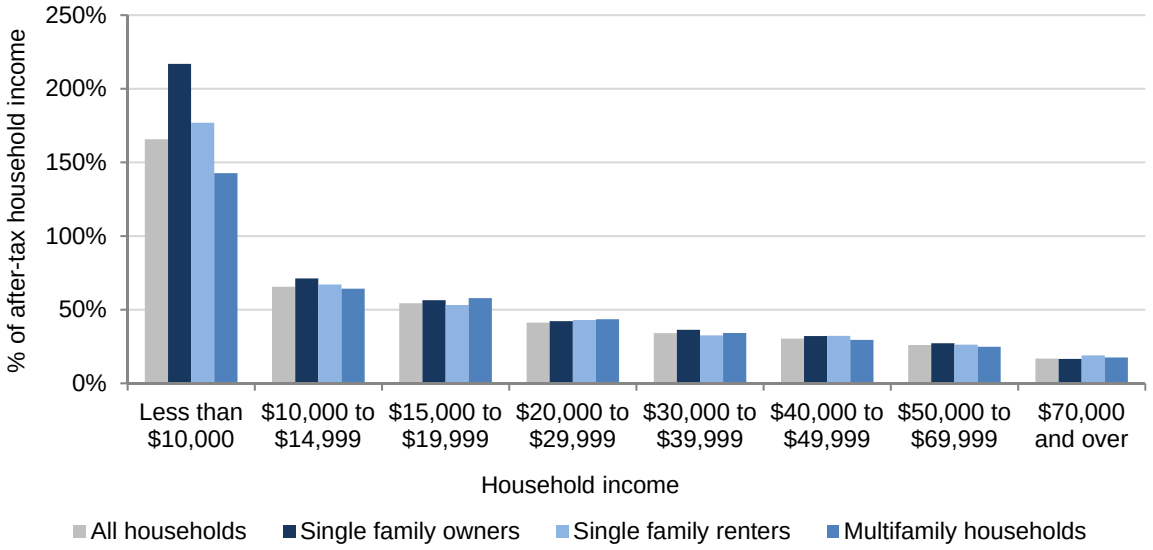
NON-DISCRETIONARY EXPENSES

Several studies have found that households with lower incomes, including incomes significantly higher than the poverty level, often have difficulties paying for necessary expenditures, including housing, utilities, food, and medical care (e.g., Boushey et al. 2001, Allegretto 2005, Schwartz 2014). For low-income households, including the H2R, housing and utilities typically account for the largest percentage of household expenditures. The National Low Income Housing Coalition (NLIHC) reports that in 2013, 88% of "extremely low income" renter households, 78% of "very low income" renter households, and 48% of "low income" renter households experienced housing cost burden, meaning that they spent more than 30% of their gross income on rent and utilities. In addition, approximately 11.2 million renters (26% of total renter

households, ACS 2014) were severely housing cost burdened in 2013, meaning that rent and utilities accounted for more than half of their income (NLIHC 2015).

A high housing cost burden and other high non-discretionary expenditure requirements can negatively affect a household in many ways. A recent survey found that three out of four housing cost-burdened renters made sacrifices, such as cutting back on health care, to afford rent (NLIHC 2015). Renters facing a housing burden may cut back on groceries, health care prescriptions, or vehicle maintenance to pay the rent (NLIHC 2015). Renters are also 57% more likely than homeowners to turn to pay-day lenders when finances get tight, often further complicating their financial situation. In addition, cost-burdened households can rarely afford to build up savings for education, retirement, or other long-term needs (NLIHC 2015).

To examine the housing cost burden of H2R households, we analyzed the CEX microdata for different household types. Figure 2.1 shows the percentage of income that single-family owners and renters, multi-family households, and all households spend on shelter (i.e., gross rent or mortgage costs, including taxes and insurance) and utilities (including energy, water, wastewater, and trash collection). As shown, across most income categories, housing burden does not vary significantly by household type. On average, households earning up to $20,000 per year spend more than 50% of their after-tax income on housing and utilities, and households earning up to $50,000 per year spend more than 30%, on average. Further, in some cases, multi-family households and single-family renters spend more on housing and utilities as a percentage of after-tax than the average household.

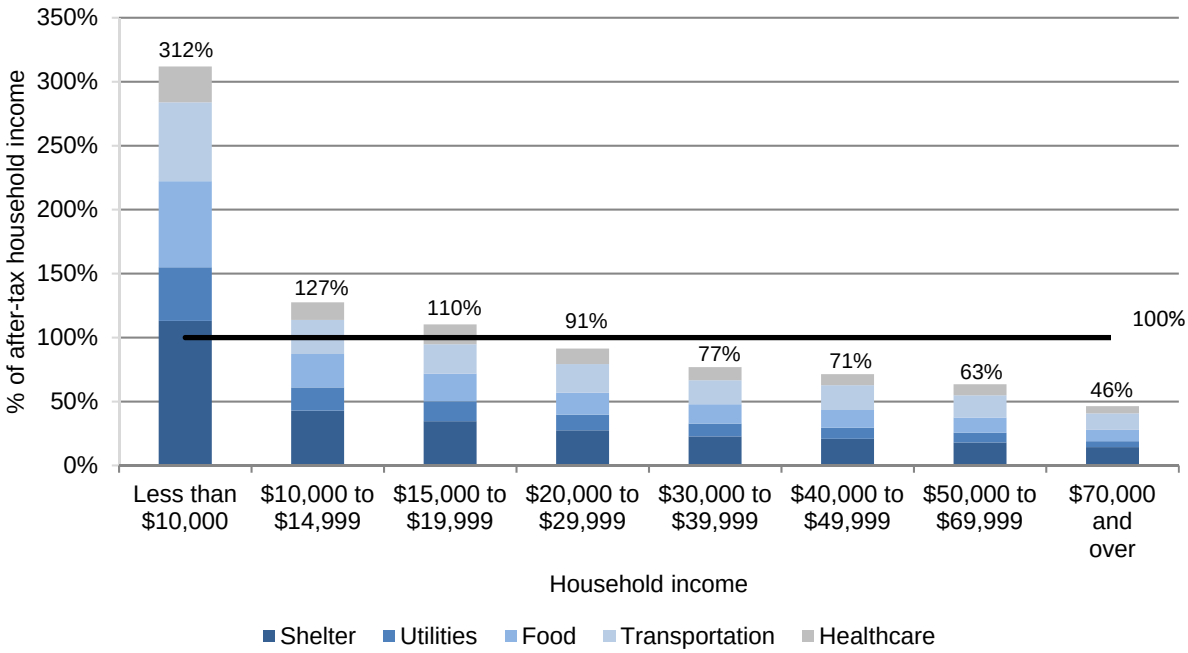


Source: Data from CEX 2015.

Figure 2.1 Basic shelter and utility costs as a percentage of after-tax household income

U.S. Census data confirm that lower-income multi-family households and single-family renters have similar housing cost burdens. For example, based on the U.S. Census PUMS data, multi-family households and single family renters earning less than the national median household income (MHI) respectively spent 39% and 42% of their income on housing in 2014, on average. The average for all renter households (i.e., across the income distribution) is 30%.

Affordability challenges for low-income, H2R households go beyond paying for housing and utilities. Figure 2.2 shows basic household expenses, including shelter, utilities, food, clothing, and transportation, as a percentage of after-tax income for all households by income category. As shown, when additional non-discretionary expenses are considered, lower-income households have very little (if any) money left over to cover other important purchases (including increased rents associated with water and wastewater rate increases), or to deal with unexpected expenses associated with job loss, illness, or other extenuating circumstances.



Source: Data from CEX 2015.

Figure 2.2 Basic household expenditures as a percentage of after-tax household income, by income category

GOVERNMENT ASSISTANCE BENEFITS

Many low-income households, including the H2R, receive government assistance to help offset the costs of non-discretionary expenses. Common government assistance programs include the Supplemental Nutrition Assistance Program (SNAP, formerly the Food Stamp program), Temporary Assistance for Needy Families (TANF), LIHEAP, and Supplemental Security Income (SSI), among others.[6] Many low-income residents also live in public or subsidized housing, which in addition to providing affordable rent, typically includes reduced payments or subsidies to help offset the cost of utilities.

Of the 21.6 million H2R households in the United States that do not pay directly for water and wastewater services, 5.8 million, or 22%, receive government assistance through SNAP or other programs that provide cash assistance (PUMS 2014). This is higher than the rate of assistance

6. These benefits are reflected in the after-tax incomes of participants.

of 13% for all U.S. households, because the H2R population has a much higher percentage of low-income households. However, for all households, the rate of assistance does not reflect the percentage of households in need. For example, Delaney (2013) reports that roughly one-fourth of Americans that are eligible for SNAP are not enrolled. Similarly, the LIHEAP program covers only 20% of eligible households (AWWA 2014).

In addition, per the U.S. Department of Housing and Urban Development (HUD), there are approximately 4.5 million subsidized or public housing units in the United States. Most of these households pay for water and wastewater through their subsidized rent, and are therefore part of the H2R population. While it depends on the type of housing, households living in public housing or subsidized units typically pay 30% of their income for rent and utilities, and the remaining portion is subsidized through HUD. In cases where the household pays for the utilities outside of the rent, they are eligible to receive utility allowances to help offset these costs. Chapter 6 describes the different types of public and subsidized housing, as well as how utility costs are paid for under each program. The extent to which H2R households receive subsidies for utility costs is important to understand when developing assistance programs.

SUMMARY

Table 2.4 provides a summary of the affordability challenges of H2R households, compared to all U.S. households. As shown, even though many multi-family households pay less for water and wastewater services relative to the average household, they have a similar water and wastewater burden. However, H2R households in lower-income categories often have trouble meeting basic expenses. For example, multi-family households and single family renters earning less than $30,000 per year spend more than 50% of their after-tax income on housing and basic utilities, on average. This leaves little left over to cover other basics (e.g., food), or additional expenses, including increased water and wastewater costs.

Table 2.4
Summary of affordability challenges of U.S. H2R population of water and wastewater utility customers

	All U.S. households	H2R households
Number of households	117.1	21.6
% receiving SNAP assistance	13%	22%
% receiving public assistance income	2%	3%
Average cost of water and wastewater services	$800	$688 (MF households) $788 (SF renters)
Housing cost burden	32%	44% (MF households) 38% (SF renters)

Source: Data from PUMS 2014 and CEX 2015

CHAPTER 3
LITERATURE-BASED INSIGHTS RELEVANT TO THE HARD-TO-REACH

This chapter provides an overview of literature and resources that water utility professionals may want to review to increase their understanding of the H2R challenge and related customer assistance program (CAP) strategies. We organized this chapter around several key topic areas, as follows:

- Existing general research and guidance on water and wastewater affordability and CAPs
- The extent of the H2R challenge
- Potential assistance strategies for H2R customers
- Reaching and communicating with the H2R

EXISTING GENERAL RESEARCH AND GUIDANCE ON WATER AND WASTEWATER AFFORDABILITY AND CAPS

Key Literature Sources

- *Best Practices in Customer Assistance Programs* (Cromwell et al. 2010). This comprehensive guidance manual, sponsored by the Water Research Foundation (WRF) and the U.S. Environmental Protection Agency (EPA), describes options and best practices in utility customer assistance and affordability programs, including options for "shrinking the bills," "shrinking the overdue caseload and arrearages," and "shrinking the cost of collections." The guidance also includes detailed strategies for developing a business process model to help utilities develop and implement successful CAPs. The business process model developed as part of the 2010 research serves as the foundation of the guidance for H2R CAPs, as presented in Chapters 4 through 16 of this report.

Additional key resources and articles that provide a deeper understanding of the current knowledge on affordability and CAPs include:

- *Water Affordability Programs* (Saunders et al. 1998). This report provided the first comprehensive review and guidance related to programs that water utilities can implement to help address affordability concerns. The report largely focuses on the feasibility of alternative rate designs to improve affordability. However, it also provides guidance on legal issues, program outreach, administering program eligibility, and most importantly for this context, potential program strategies to help tenants who pay for water through their rent.
- *Principles of Water Rates, Fees, and Charges* (AWWA 2000). This manual, first included a chapter on "low-income affordability rates" in its fifth edition, published in 2000. Although brief, this section of the manual outlines alternative, low-income rate

structures, the advantages and disadvantages of different options, and relevant policy issues.

- *Water Utility Options for Low-Income Assistance Programs* (*Journal of the American Water Works Association [AWWA])* (Hasson 2002). In this article, David Hasson demonstrates that a utility can provide a comprehensive suite of programs to address the affordability of service. This report is based on Hasson's experience in the development of low-income assistance programs in Portland, OR, from the mid-1980s to 2002.
- *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers* (AWWA 2005, 2014). This report provides an overview of tools that utilities can use to identify and assist low-income customers. Originally published in 2005 and updated in 2014, this document describes best practices for assessing affordability, developing CAPs, and communicating with low-income customers. Several of the strategies included in this guidance may be applicable to customers that do not directly pay their water or wastewater bills.
- *Affordability Assessment Tool for Federal Water Mandates* (AWWA et al. 2013). The purpose of the tool and guidance is to help utilities assess affordability within the context of complying with federal water-related mandates. However, it contains useful strategies for identifying vulnerable populations and assessing the affordability challenges they face. Many of these strategies are can be applied to "hard-to-reach" populations.
- *Drinking Water and Wastewater Utility Customer Assistance Programs* (EPA 2016). This most recent report is based on a review of 795 large and medium-sized utilities. In addition to providing short case studies and compiling information on existing utility programs, the compendium provides an overview of the different types of programs available and associated issues and considerations.

Literature-Based Insights

Existing research and guidance has largely focused on assisting customers who receive and pay a water bill. As outlined by EPA (2016), CAPs typically include bill discounts, flexible terms (e.g., bill timing adjustment, levelized billing, arrearage payment plans), lifeline rates, temporary or emergency assistance, and/or water efficiency programs.

Much less attention has been directed at how to best identify and assist economically vulnerable households that do not receive a bill and, thus, do not pay directly for water services. Cromwell et al. (2010) acknowledges the importance of this issue in the 2010 WRF and EPA report, *Best Practices in Customer Assistance Programs,* stating:

> The present research project has focused exclusively on providing assistance to single-family residential customers. Nationally, this covers only about half of the low-income population. The other half live in rental apartments. For the most part, rental units do not have individual water meters so the customer relationship is between the utility and the landlord. This is a totally different dynamic and requires a totally different set of strategies and practices from those described here. Moreover, water utilities are alone in this area since energy use is metered in most individual apartments. Policies for coping with payment-troubled

> landlords are a significant challenge that call for the utility to closely integrate its activities with local housing officials and regulators. … A consortium research study on this topic could be very fruitful in this regard.

EPA's 2016 compendium of *Drinking Water and Wastewater Utility Customer Assistance Programs* also briefly highlights the "Owner-Occupier Dilemma," stating:

> Customer assistance program (CAP) recipients are often required to be the owner-occupier of a residence; this prevents landlords from receiving benefits and not passing them along. However, because low-income households are generally less likely to own the home they occupy, this requirement can prevent access to CAPs. Drinking water and wastewater utilities often find it difficult to provide assistance to households paying for water indirectly through rent or condo fees because those households do not receive a water bill. Similar CAP access problems arise for those receiving subsidized housing through the Housing Choice Voucher Program (Section 8) or other programs. … When developing a CAP, utilities should identify ways to reach needy households who are not owner-occupiers.

In addition to outlining potential assistance strategies for H2R customers (described in a subsequent section), Saunders et al. (1998) also noted that increased water and wastewater bills can pose undue risks to landlords, and increase arrearages among rental properties. Specifically, the authors state that a "water system should not assume that, because the poor household does not pay its water bills directly to the utility, the credit and collection costs regularly associated with dealing with low-income households are not also an issue when dealing with landlords." The author's theory is that when rents of low-income tenants are increased to compensate for increased utility costs, the level of defaults in the payment of rents by the tenants increases accordingly. This is because, as noted above, households with low incomes have little discretionary income to absorb increased rents. Therefore, the rents charged are generally the maximum the market can bear. As a result, any increases in rent "will lead to increased costs and risks for landlords, many of whom are individuals who own a small number of properties. Although the degree of discretionary spending available in landlords' income is generally more flexible than in the tenants' spending, landlords may still find it necessary to pay housing-associated expenses late, or default altogether" (Saunders et al. 1998).

THE EXTENT OF THE H2R CHALLENGE

Key Literature Sources

- *Journal of AWWA, Census Data Shed Light on U.S. Water and Wastewater Costs* (Rubin 2005). This article documents the scope of the H2R challenge. For the analysis, the author used Public Use Microdata from the 2000 U.S. Census to explore characteristics of low-income populations that do and do not receive a water bill.

Literature-Based Insights

Figure 3.1 provides a summary of the statistics provided in *Census Data Shed Light on U.S. Water and Wastewater Costs* (Rubin 2005). In sum, Rubin found that there were approximately 103.4 million U.S. households with incomes of at least $1,000 during 1999. Of these, approximately 64.1 million (62%) paid directly for water and wastewater service. Among the households that did not pay directly for the service, 18.4 million (18% of total households) reported that the cost of water and wastewater was included in their rent or maintenance fee. The remaining 20.9 million households (20% of total households) did not pay for service (presumably most of these households supplied their own water and wastewater needs through private wells and septic systems). Additional relevant findings from this analysis included:

- Low-income households are more likely to pay for water and wastewater as part of their monthly rent. As the level of household income increased, the household was more likely to pay directly for water and wastewater. Specifically, only 42% of households with incomes below $10,000 per year paid directly for water and wastewater services. This figure increased as income increased, with more than 77% of households with annual incomes of $100,000 or more paying directly.
- The median household income (MHI) for H2R customers is much lower than the national average. The national MHI among households with incomes of $1,000 or more in 1999 was $42,700. Households that did not pay their water and wastewater directly because it was included in their rent or in another fee had an MHI of only $30,000. In contrast, the MHI for households paying directly for water and wastewater in 1999 was $49,900.
- The type of housing unit has a significant effect on whether the household paid directly for water and wastewater service. More than 81% of detached, single-family homes paid directly. This figure declined steadily as the type of housing became more clustered, culminating in buildings with 10 or more units having fewer than 10% of households paying directly for service.
- Tenants in larger multi-family buildings have a lower water/wastewater burden. Among those households paying directly, the percentage of income spent for service increased for single and two-family buildings as the housing became more clustered, going from 1.4% of income for one-unit detached homes to 2.2% of income for two-unit buildings. Larger buildings, however, then saw a decline in the water and wastewater burden.
- Some groups often thought to have little direct responsibility for paying for service did, in fact, pay bills directly. These groups included mobile home dwellers (47% paid directly for service), households with incomes of less than $10,000 per year (42% paid directly), household with incomes between $10,000 and $20,000 per year (50% paid directly), and single-person households (49% paid directly).

Households with Incomes over $1,000 in the United States = 103.4 Million

- 62% paid their water and wastewater bill directly
- 38% Do NOT pay water and wastewater bill directly
  - 18% (18.4 million households) pay water and wastewater bill through rent
  - 20% (20.9 million households) presumably have private wells/septic

Income Level

- Household Income less than $10,000: 42% pay bill directly
- Household Income between $10,000 and $20,000: 50% pay bill directly
- Households with incomes above $100,00: 77% pay bill directly

MHI

- MHI for all households in the United States in 1999 = $42,700
- MHI for those who directly pay water and wastewater bills = $49,900
- MHI for those who do NOT directly pay water and wastewater bills = $30,000

Water and Wastewater Burden

- Single family dwelling = 1.4% of income
- Two-unit dwellings = 2.2% of income
- As unit numbers in dwelling increases burden decreases

Housing Type

- Single family dwelling
  - 81% pay water and wastewater bills directly
  - 19% do NOT pay water and wastewater bills directly
- Buildings with 10 or more units
  - 10% or fewer pay water and wastewater bills directly
  - 90% or greater do NOT pay water and wastewater bills directly
- Mobil Home dwellers = 47% pay bill directly
- Single person households = 49% pay bill directly

Source: Data from Rubin 2005.

Figure 3.1 H2R statistics from the 2000 census

Saunders et al. (1998) reported similar numbers for the percentage of low-income customers that pay their bill directly, stating that at the time the report was written, 43% of low-income households (defined as households living at or below 150% of the federal poverty level) were homeowners, and likely paid their bills directly. This means that a large percentage (up to 57%, not accounting for households that supply their own water) may not pay their bill directly, and therefore fall within the H2R category.

POTENTIAL ASSISTANCE STRATEGIES

Key Literature Sources

- *Water Affordability Programs* (Saunders et al. 1998). As part this larger WRF report, Saunders et al. (1998) suggested several ways that water utilities could provide discounts to renters who do not receive a bill. The authors deemed several of these proposed options as being difficult to implement, or facing potentially insurmountable challenges. However, as described in subsequent chapters, several utilities have developed H2R assistance programs that employ various aspects of the proposed options.
- *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers* (AWWA 2005, 2014). As noted above, this report provides an overview of tools that utilities can use to identify and assist low-income customers. Several of the strategies included in this guidance may be applicable to customers who do not directly pay their water or wastewater bills.

Literature-Based Insights

Saunders et al. (1998) seems to be one of the only guidance documents that outline potential programs for providing assistance to H2R customers.[7] The authors' proposed options include:

- Low-income discount rates (e.g., reduced usage or service charges, or lifeline rates that apply to rental properties), with a requirement that the discounts be passed along to the low-income tenants. Saunders et al. (1998) noted a number of challenges associated with this option, including (1) the landlord would have to apply for the program on behalf of all tenants, and may have little incentive to do so; (2) there would likely be a high administrative burden associated with enforcing that the discount is directly passed on to tenants; and (3) rents are typically paid in advance, while water bills are paid based on the amount of water already used. Thus, there may be administrative or practical difficulties marrying prospective rental payments with retroactive water bills (note that a flat rate discount based on historical usage would likely avoid this problem).
- Water vouchers supplied to low-income households to use to pay a portion of their rent. Under a water voucher program, the water or wastewater utility provides a direct rebate or water stamp to low-income H2R households. A potentially fatal flaw with voucher programs is the impact they may have on other government benefits that low-income households receive. Government assistance programs (e.g., food stamps, Supplemental Security Income [SSI]) typically use income to determine a household's eligibility. If water vouchers are considered a source of income (or in-kind income), this could affect the level of the benefits that the household receives from other programs, as well as basic eligibility (Saunders et al. 1998). In addition, water voucher programs can be

7. Saunders et al. (1998) note that many of the approaches they proposed were originally developed by consulting firm Camp, Dresser, and McGee, documented in a 1990 report to the Boston Water and Sewer Commission. The research team could not locate this original source.

challenging to administer to tenants when multiple units share a single meter (OECD 2002).

- Discounts on other utility bills that are paid for directly by the households. With this option, the water or wastewater utility provides a credit to low-income "hard-to-reach" customers through the households' energy or telecommunications bill, which most households pay directly. Saunders et al. (1998) notes administrative difficulties associated with option, presumably because it requires the water and/or wastewater utility to coordinate billing with other utility agencies. However, as noted below, Seattle Public Utilities (SPU) has seemingly overcome these challenges, and has recently implemented this model.
- Discounts on state or local income taxes commensurate with the annual water affordability program benefits provided to low-income households who pay their water bill directly. Although Saunders et al. (1998) put forth this model, the authors recognize it as being infeasible for the following reasons: (1) this is not a utility program, and may only be feasible for municipally operated utilities; (2) most low-income households do not file income tax returns; and (3) it would provide an annual credit.[8] Thus, it would not address the primary challenge for most low-income households, which is that they have difficulties meeting monthly expenses; and (4) there would likely be a high administrative burden for the utility and taxing authority.
- Conservation programs that provide mechanisms to help landlords improve water efficiency and reduce water consumption. Water utility conservation programs for multi-family buildings seem to be relatively common in the water sector. The primary objective of many of these programs has been to reduce water demand; however, Saunders et al. (1998) report that "conservation programs are the best way for landlords to lessen the impact of high water rates on tenants." Again, the rationale here seems to be that lower water bills for multi-family buildings may not result in a direct discount for H2R customers, but lower water bills can help to maintain affordable rental rates for low-income residents by reducing rent increases caused by unaffordable water and sewer bills.

Beecher et al. (2001, p. 62) discussed and evaluated the challenges and opportunities associated with water conservation programs for low-income and H2R households. Those authors' conclusions included the following:

> Different types of conservation measures that utilities might implement have potentially different socioeconomic consequences. … As a broad illustration, … socioeconomic impacts might be positive or negative, large or small, and direct or indirect. A sizable direct and positive impact example is the impact of a direct install ultra-low-flush toilet in a low-income household. A sizable direct and negative impact is the introduction of submetering on low-income apartment

8. Note that these are the conclusions of Saunders et al. (1998). As described in Part 2, Chapter 6 of this report, annual credits (such as the Earned Income Tax Credit [EITC]) can be an effective tool in addressing affordability concerns, especially if a budget billing approach is used to minimize monthly swings in bills—and having the annual reconciliation coincide with the timing of the annual credit. In addition, most low-income households file state and local tax returns.

dwellers who reside in older housing with leak-prone fixtures and no means of fixing them.

Also with respect to conservation, Ballard-Reisch et al. (2007) stress the importance of creating incentives for both landlords and renters to improve water efficiency (Ballard-Reisch et al. 2007). The authors note that oftentimes, landlords do not have a strong financial incentive to reduce the amount of water used in the buildings they own because they may be able to pass all the costs directly to the tenants. At the same time, renters do not have the financial incentive to make many substantial water efficiency improvements on their own if they do not intend to live in the apartment for more than a couple of years.

Holt et al. (2015) conducted a comprehensive study of multi-family efficiency opportunities in Florida for both energy and water, finding the potential for significant monetary savings for both landlords and tenants. The authors modeled the potential energy and water savings from efficiency retrofits to "typical" Florida multi-family rental units under "shallow" and "deep" retrofit package scenarios. Modeling results indicated that "shallow" water retrofits to "typical" Florida multi-family units constructed prior to 1983 would save 34,624 gallons per year per unit (57% of base use and $346 in avoided water and wastewater bills), while "deep" retrofits would save 40,020 gallons per year (66% of base use and $400 in avoided water and wastewater bills). If scaled to reach the state's 1.3 million existing multi-family rental units, combined energy and water improvements could save Florida's multi-family property owners and renters an estimated $714 million in annual utility bills (Holt et al. 2015).[9]

In addition to the strategies outlined in Saunders et al. (1998), AWWA's 2014 *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers* encourages utilities to "think outside the bill" by helping low-income customers access existing assistance programs, such as those for home heating and telephone service. AWWA's rationale is that "a local utility can improve its customers' overall economic well-being, thus making the water bill more affordable" (AWWA 2014). This strategy can also be applied to customers that do not receive a bill, helping them to afford rent, and therefore indirectly afford water and wastewater services. AWWA (2014) highlights three federal assistance programs that are currently underutilized including, LIHEAP, the Federal Communications Commission Telephone Lifeline Program, and the EITC Program. There are also likely many community-based programs that H2R customers can benefit from. Utilities can support these programs through different communication strategies tailored to individuals that do not receive a bill (i.e., bill stuffers won't work!).

In an article for the magazine *Governing*, Vock (2014) offers similar insights from an interview with Janice Beecher, director of the Institute of Public Utilities at Michigan State University and an expert on water affordability. In the interview, Beecher stated that utilities may have to look beyond rates to help low-income customers, noting that "it's very difficult to solve our poverty and equity issues all within rate design." Based on the interview, the article acknowledges that many utilities use nonprofit groups to provide financial assistance to customers, and that the public sector can also help them by ensuring there is enough funding for the federal LIHEAP and its state counterparts. Beecher indicated that "in many cases, we're talking about the same families who are struggling. Rather than reinvent the wheel, maybe we should have some

9. For this scenario, the authors assumed shallow retrofits to newer units (those built since 1983) and deep retrofits to older units (those built prior to 1983).

coordinated effort to make sure they're able to pay their energy bills. That will make it easier to afford their water bill" (Vock 2014).

REACHING AND COMMUNICATING WITH THE H2R

Key Literature Sources

- *Rate Approval Process Communication Strategy and Toolkit* (Mastracchio et al. 2016). This WRF guidance document provides water utility professionals with focused insights into the information needs of a broad range of internal and external audiences regarding financial information. It also provides guidance on how to develop a communication strategy using a communication mapping system. The communication map outlined in this report can be easily applied to the development of a H2R customer assistance communication strategy.
- *Increasing Home Energy Costs and Public Safety: The Use of Academic-Private Industry Partnerships to Develop Strategies for Effective Communication with Hard-to-Reach Buildings* (Ballard-Reisch et al. 2007). 135th Annual Meeting and Exposition of the American Public Health Association.
- *Effective Strategies for Achieving High Participation and Deeper Savings in Income-Eligible Multifamily Buildings* (ACEEE 2014). This technical report provides best practices and strategies for achieving high participation in low-cost, multi-family energy efficiency programs for income-eligible properties. To address these topics, the report includes an introduction to affordable housing providers and other key stakeholders.

Literature-Based Insights

In addition to having no direct relationship with the utility, low-income renters and multi-family tenants are also more likely to have other characteristics that make them H2R, including poor access to information, learning disabilities, low literacy, and language barriers. Communication challenges exist even when the communication would be financially beneficial to the customer through their enrollment in a payment assistance program. As with any low-income assistance program, a key component of an effective H2R assistance strategy is to effectively communicate with, and conduct outreach to, specific H2R populations.

Many of the communication strategies identified in the literature are designed to increase a water utility's ability to reach all customers; including those who have no direct financial relationship with the utility. Best practices for communication strategies that are directly relevant to this sub-population include:

- Be actively involved in the community. A major theme in the literature regarding effective communication is the importance of having the utility be actively involved in the community (Ballard-Reisch et al. 2007; Cromwell et al. 2010; Gorman et al. 2013; Schwartz 2014). A utility can increase its community involvement, for example, by hosting meetings where the public can learn about various utility programs.
- Provide opportunities to hear from customers. Effective communication is a two-way street. Hosted meetings also provide a forum for the public to voice concerns; providing

opportunities to hear from customers is critical to good communication (Raucher et al. 2014, Mastracchio et al. 2016).

- Partner with community-based organizations. Partnerships with local social services, non-governmental organizations (NGOs), and charitable organizations allow utilities to communicate indirectly with H2R groups. These community-based organizations (CBOs) have existing outreach systems; are knowledgeable about their targeted groups' needs; and can easily distribute information and assist with the process of enrolling customers in utility assistance programs. These groups also generally have earned the respect and trust of the community. Partnering with local groups is a common practice among electric and water utilities (ACEEE 2014).
- Partner with industry trade and public housing organizations. Many diverse organizations are involved in multi-family housing that serve lower income groups and can be useful channels for reaching buildings owners. These organizations include multi-family and affordable housing trade organizations, affordable housing providers and developers, housing finance agencies, and public housing authorities. These groups often share an interest in keeping housing (including utility costs) affordable (ACEEE 2014) and, therefore, may serve as strategic partners in implementing water and wastewater CAPs for H2R customers.
- Make connections with the media. Developing personal relationships with members of, community radio, television, and newspapers can significantly increase the value of the media as a tool for effective communication.
- Connect with the values and communication needs of specific audience segments. With the information overload, we all face every day engaging audiences requires connecting with them where they want to engage. This requires understanding how large segments of utility customers respond to messages as well as their current questions of critical concern. Customer satisfaction surveys and audience segmentation analysis can be useful tools for utilities to use to identify value connectors and audience segment needs. And of course, don't forget to identify ethnic and foreign language communication needs (Raucher et al. 2014).
- Make the utility's customer service department approachable, positive, and competent (Ballard-Reisch et al. 2007; Cromwell et al. 2010; Schwartz 2014). This means having a customer service staff that is empathetic, non-judgmental, and knowledgeable about all of the utility's programs (at least on a cursory level). It is also important to have some staff members who can speak the major languages present in the community. Hiring individuals from the community with foreign language skills can be an effective way to spread the utility's messages to population groups who are non-native English speakers; employees with foreign language skills will often have connections with the non-native English speaker population. It is also important that customers do not have to wait a long time to speak to someone when they call customer service and that phone calls placed by customers to the utility are returned in a timely manner when the initial phone contact does not result in a complete resolution.

Utility communications to customers regarding affordability programs require special communication considerations (in addition to application of the best management practice outlined above). Specifically, insights gained from the communication literature inform us that in order to ensure long-term support for CAPs, it is necessary to communicate with the broader public about

why the programs are beneficial to those enrolled, as well as the benefits to the entire community (Gorman et al. 2013, Raucher et al. 2014). CAPs benefit the broader public by reducing collection costs, service disconnections, arrearages, and debt write-offs (Costello 2009, Harak 2013). Moreover, there can be health-related impacts, including to the broader community, when a household does not have affordable (or completely lacks) access to water (OECD 2002, Pacific Institute 2013). Releasing data to the community regarding participation numbers can also convince struggling households that they are not alone—there are programs available that can help them pay their water bill.

SUMMARY

Our review of the literature confirms that although there are a number of valuable guidance documents and resources related to water and wastewater affordability and CAPs, few have addressed the H2R challenge. At the same time, H2R households account for a significant percentage of customers in need of assistance.

Potential strategies for assisting low-income H2R customers include both direct assistance (e.g., providing discounts through other utility bills or discounts to landlords to ensure that rents remain affordable) and indirect assistance (e.g., partnering with charity organizations and promoting other types of assistance programs). In addition, there are several key components for developing effective H2R assistance programs, including understanding the characteristics of these different customers and effectively communicating with them. In the subsequent chapters of this report, we further explore these key components and considerations through the business process framework for H2R CAPs.

PART 2
THE HARD-TO-REACH BUSINESS PROCESS FRAMEWORK

CHAPTER 4
INTRODUCTION AND OVERVIEW: THE HARD-TO-REACH BUSINESS PROCESS FRAMEWORK

INTRODUCTION

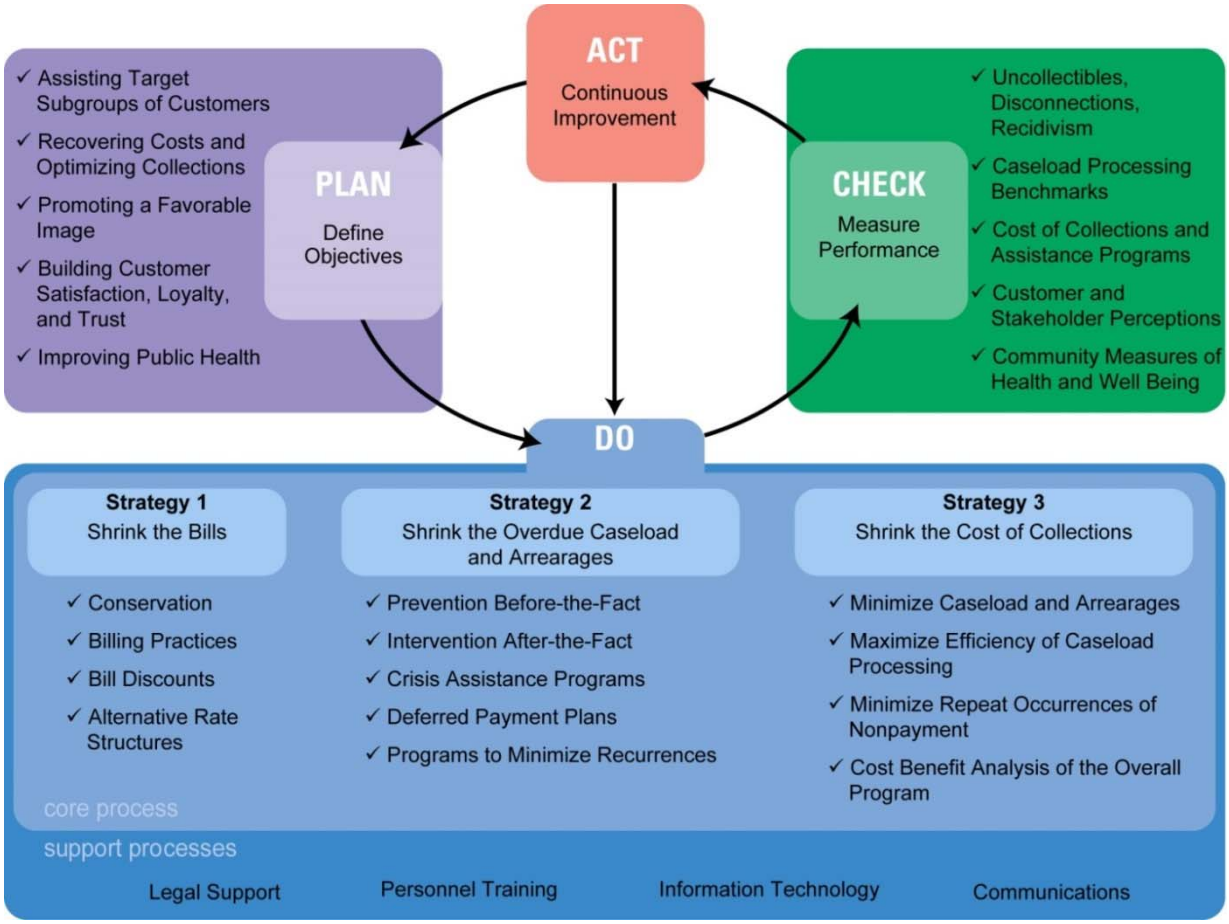
In Part 2 of this report (Chapters 4 through 16), we provide extensive research, best practices, and real world examples through the lens of a business process framework that water and wastewater utilities can draw upon to develop, implement, and evaluate H2R assistance strategies. Each chapter in Part 2 relates to a specific component of the business process framework. In this chapter (Chapter 4), we provide an overview of the business process framework, as well as a general outline for the remainder of Part 2.

BACKGROUND: THE BUSINESS PROCESS FRAMEWORK FOR CAPS

In 2010, the Water Research Foundation (WRF) and the U.S. Environmental Protection Agency (EPA) published *Best Practices in Customer Assistance Programs* (Cromwell et al. 2010). This comprehensive guidance manual describes options and best practices for CAPs, and provides detailed strategies for developing these programs within a business process framework. The business process framework provides a structured means of designing, implementing, and continually improving utility assistance programs.

Figure 4.1 presents the business process framework for CAPs, as developed by Cromwell et al. for the 2010 report. As shown, the first step in the business process is the "plan" phase, which includes a thorough articulation of the utility's objective(s) for assisting low-income customers. The next step is to define and implement a strategy that contains a specific combination of practices or programs that satisfy the program objectives. This is embodied in the "do" portion of the business process. Such a strategy may be viewed as a hypothesis of best practices that can be tested using performance measures for targeted outcomes - the "check" portion of the business process. Finally, under the "act" segment, utilities should continually refine and improve their strategy to ensure that it continues to meet utility objectives and desired outcomes (Cromwell et al. 2010).

The business process framework developed by Cromwell et al. (2010) focuses exclusively on programs for direct utility customers (i.e., bill-paying households), with the objective of enabling a utility to better recover its costs, optimize collections, and shrink the number and duration of arrearages. In contrast, this report focuses on providing strategies and developing a business process that utilities can use to implement CAPs for H2R households. Accordingly, Figure 4.2 illustrates a business process framework specific to H2R assistance programs, designed by the research team to better meet the needs of this subset of customers. The modifications relative to Figure 4.1 reflect the fact that by shifting the focus to H2R households, there are associated modifications to the planning phase and strategies that now apply to the process. We also have added a "communicate" hub, reflecting the critical value of having a well-conceived communication strategy to accompany each component of the plan-do-check-act cycle. This business process framework serves as the foundation for the research, strategies, and guidance included throughout the remainder of this report.



Source: Cromwell et al. 2010.

Figure 4.1 The CAP business process framework for bill-paying households

ROADMAP TO PART 2 RESEARCH AND GUIDANCE

Figure 4.3 provides an overview of the structure of Part 2 (Chapters 4 – 16): The Hard-to-Reach Business Process Framework, noting how the topics and chapters align with the "plan-do-check-act" components of the H2R business process framework. In addition, embedded within the following chapters are a series of utility-oriented examples and short case studies that illustrate utility experiences with efforts to assist the H2R population—including success stories, challenges, and lessons learned. The case study examples are placed in the chapters covering the topics and approaches relevant to each utility illustration.

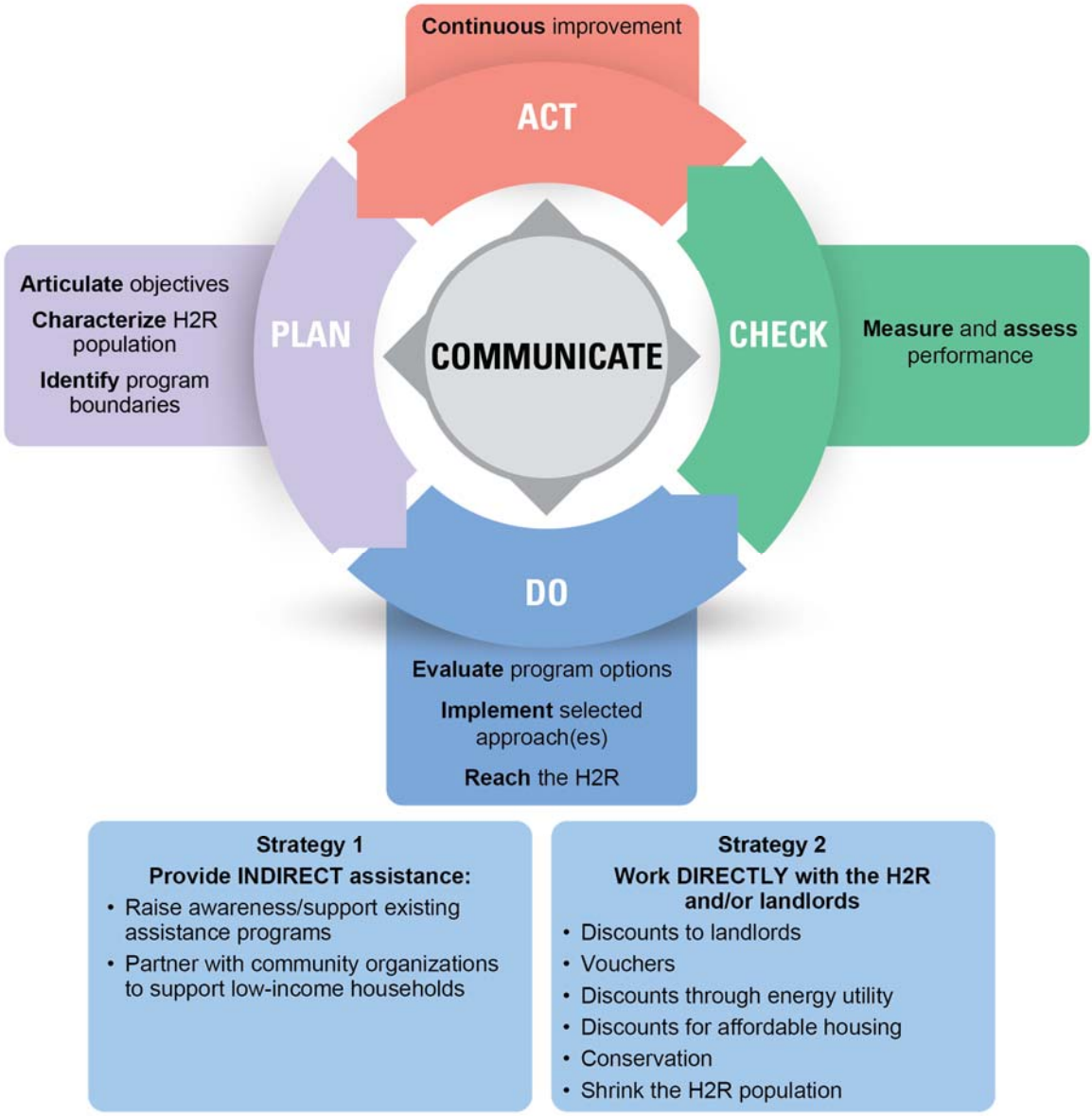


Figure 4.2 CAP business process framework, adapted for assisting H2R households

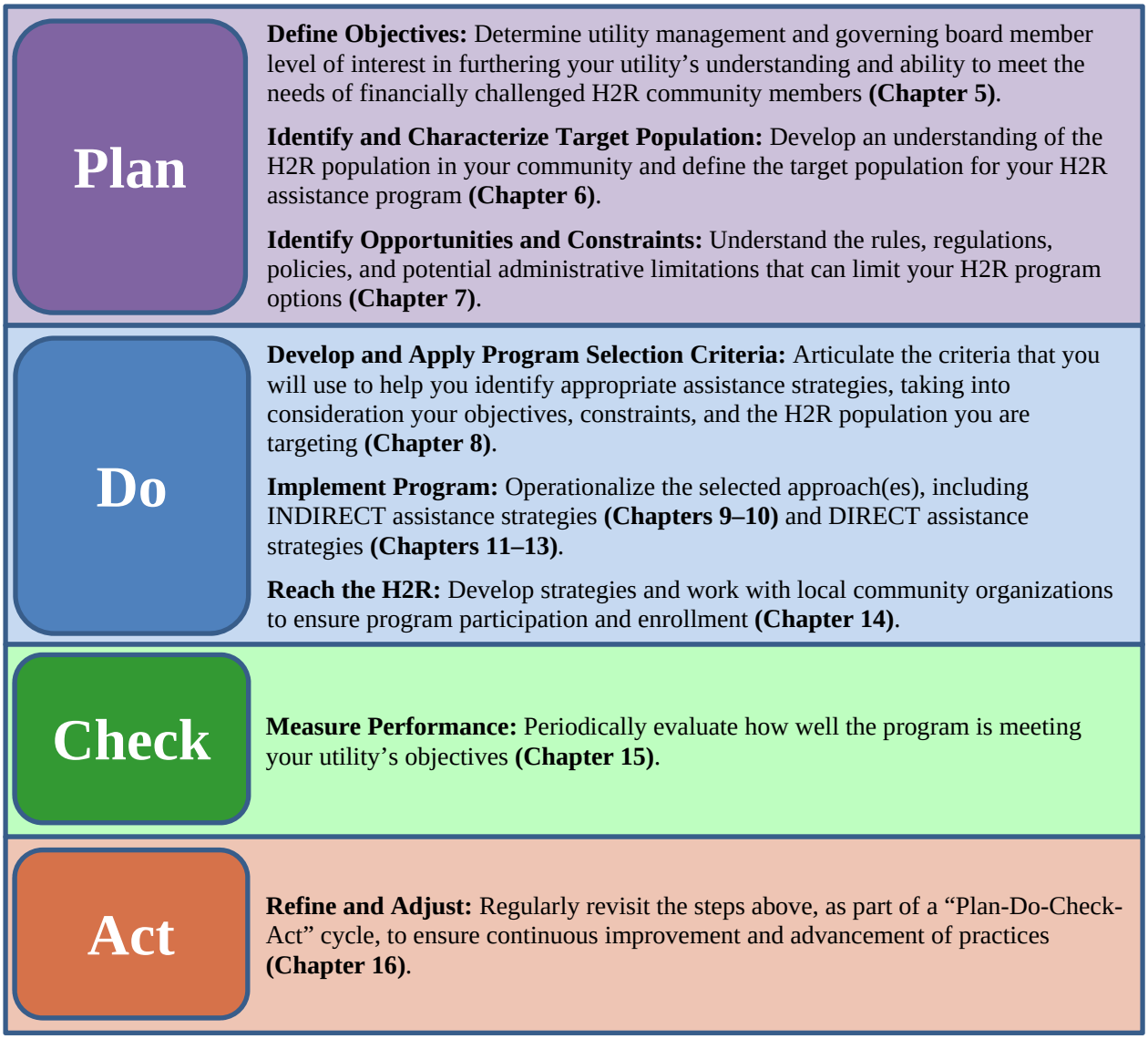


Figure 4.3 Steps for applying the business process flow model, and guide to Part 2

CHAPTER 5
PLAN: ARTICULATE OBJECTIVES FOR ASSISTING HARD-TO-REACH CUSTOMERS

Chapter 5 focuses on the first element of the PLAN portion of the business process framework: *defining the utility's objectives* for assisting hard-to-reach (H2R) households that face economic and/or other significant hardships (Figure 5.1). As described in more detail in later chapters, a utility's objective(s) for providing assistance serve as an important set of criteria for program selection, as a metric by which to measure and assess program performance, and as an important communication piece.

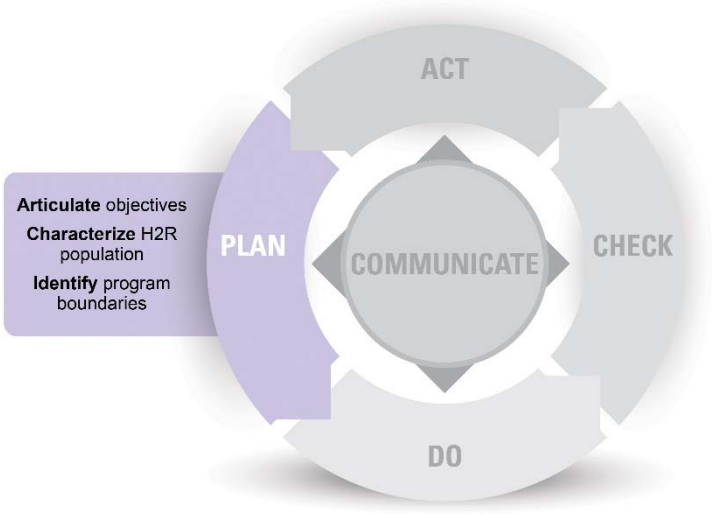


Figure 5.1 The H2R business process framework: PLAN, articulate objectives

While this chapter provides a background and overview of the different types of objectives for working with H2R households, Part 3 provides the reader with implementation guidance and tools they can use to develop an appropriate and focused objective statement that both informs the program selection and evaluation process, and creates significant communication opportunities.

DEFINING THE UTILITY'S BROAD MISSION

A utility's objectives for providing assistance to low-income customers, including H2R households, is derived from its stakeholders', managers' and Governing Board's perspectives regarding the utility's core mission within the community. Throughout the course of this research, the project team has heard several different perspectives on why water and wastewater utilities should (or should not) develop programs to assist their H2R customer base.

On one hand, water and wastewater utilities serve the public interest as providers of an essential service—the reliable delivery of safe, high-quality, and affordable water. This mission includes the protection of public health and enhancement of community well-being. That is, water suppliers support the health, sanitation, welfare, and livelihoods of those who reside and work within their service area's boundaries.

This broad view of a water utility's mission supports the perspective that those within the community facing significant economic or other hardships should be taken into consideration as the utility provides its services, establishes rates, and considers ways to assist those in distress. That is, a broad view of the utility's responsibilities in the service of its community provides a rationale for considering ways to assist the economically challenged, including the H2R households it serves.

However, water and wastewater utilities are also business organizations with a mission that can be defined more narrowly as water services provision. The utility incurs considerable costs in providing its goods and services to its customers, and sufficient revenues must be collected to cover these costs. Within this more narrowly defined business perspective, providing financial assistance to economically challenged members of the community may not be viewed as part of the utility's core mission.

When utilities opt to adhere to this more narrowly defined business mission, they may consider customer assistance programs (CAPs) only insofar as they help manage utility costs and enhance revenue flows by better enabling low-income customers to pay their bills, reduce arrearages, and avoid costly collection programs and service shutoffs (Cromwell et al. 2010). Because H2R households are not "customers" in terms of having a direct financial connection with the utility, they do not benefit from any bill-related assistance programs a utility may offer.

Needless to say, specific legal authority and restrictions vary significantly from one jurisdiction to another. Utilities must exercise caution and consult with legal counsel to ensure that they have the legal authority to undertake any particular program or initiative (see Chapter 7 for additional information on identifying program constraints).

Regardless of the utility's mission statement, legal environment, and sense of community welfare responsibility, there are several objectives that may be considered when determining whether and how to work with H2R households. These objectives are outlined in the following section.

POTENTIAL UTILITY OBJECTIVES FOR WORKING WITH H2R POPULATIONS

For the purposes of this report, we focus on the broader, community-minded definition of a utility's mission and objectives. Using this perspective, the objectives for engaging in an H2R assistance program may include the following:

- Establishing a relationship and lines of communication with H2R populations. Even though these households are not bill-receiving customers with a formal financial contractual relationship with the utility, they are nonetheless a part of the community relying on services provided by the utility. There are numerous reasons why establishing a connection with these households may be important for the utility. These include conveying important information about water conservation, water quality, planned service disruptions, water use restrictions, or other issues. Indeed, when a utility is required to give public notification of a problem with the drinking water system (such as a violation of a water quality requirement), the U.S. Environmental Protection Agency (EPA) regulations require the utility to "provide public notice to persons *served* by the water system" [40 CFR § 141.201(c)(1), Public Notification of Drinking Water Regulations, (emphasis added)]. The "persons served" by the water system can go well beyond those who are paying customers of the utility.
- Assisting low-income customers most in need. As shown in Part 1 of this report, socioeconomic data indicate that many H2R households are facing significant economic or other hardships. A water utility may believe that it is part of their mission and obligation to provide assistance to these members of their served community. Further, the literature suggests that increases in the costs of water and wastewater

services are directly passed on to low-income tenants, particularly those living in market-rate apartments.

- Promoting affordable housing and living conditions. The utility, and the broader community, may have a considerable interest in ensuring that housing and other essential services remain affordable within the service area. If the utility is municipally owned, it may be subject to a duty to ensure that all residents receive the benefits of safe drinking water and appropriate housing. For example, the charter of the City of Detroit includes the following in its "declaration of rights": "The people have a right to expect city government to provide for its residents, decent housing; … clean air and waterways, safe drinking water and a sanitary, environmentally sound city."
- Promoting equity across all low-income customers. A utility with low-income assistance programs aimed at its bill-paying, low-income customers may also find it a matter of fairness to also find ways to support those economically challenged households that do not directly receive or pay water bills.
- Protecting tenants' rights. In several communities, water utilities have reported issues with single-family renters where the utility bill is in their name, but they are facing unaffordable water bills because the owner of the property refuses to fix leaks or install conservation technologies that would shrink the customer's bills. In this case the landlord is the H2R customer.
- Building community loyalty, trust, and a favorable public image. A utility may obtain broad support and trust across the greater community by finding ways to effectively assist H2R households. There may be community-based values supporting activities of the utility to help economically challenged households regardless of whether they directly receive a water bill.
- Improving public health throughout the community. As a public health agency, a water utility may take a broad perspective on supporting the health and well-being of all hardship-facing households in the community, regardless of whether they directly receive a water bill. In fact, the Safe Drinking Water Act begins with the following Congressional finding: "safe drinking water is essential to the protection of public health" (42 U.S.C. § 300f note, Safe Drinking Water Act 2004).
- Privately owned water utilities, of course, are subject to the same drinking water standards as publicly owned utilities. Similarly, state laws may impose obligations on privately owned water utilities to protect public health. For example, the California Public Utilities Commission has "general and specific powers to ensure the health, safety, and availability of drinking water served by the utilities subject to its jurisdiction" [California Health and Safety Code 2004 § 116455(a)(2)].

Table 5.1 summarizes the stated objectives of assistance programs for H2R households, low-income customers that several of the utilities supporting this research have implemented. The objective statements provide each utility with clear direction (i.e., criteria) that will drive their selection of a CAP for the H2R approach.

Table 5.1
Stated utility objectives for H2R programs

Utility	Program description	Stated objective
Seattle Public Utilities	• Partner with local energy utility to provide direct discounts via energy bills • Vouchers for households that do not receive an energy or water bill	Community leaders have made it a priority to maintain affordable housing within the city through assistance programs for housing and utilities to the poor
Portland Water Bureau	Work with housing agencies that manage subsidized housing units to pass water discounts directly on to renters	Promote equity across customer base by making low-income assistance available to all customers
New York City Department of Environmental Protection	Concept developed for flat rate, per unit credit to landlords of multi-family buildings who have affordability agreements with New York City Department of Housing Preservation and Development	Support NYC initiatives to maintain the stock of affordable housing in the city
City of Columbus Department of Public Utilities	Discount for low income multi-unit master metered properties. Owners must bill the tenant for water to be eligible for the discount on commodity charges.	Support low-income housing in Columbus by offering discount programs for water and sewer to H2R customers.

CHAPTER 6
PLAN: IDENTIFY AND CHARACTERIZE HARD-TO-REACH HOUSEHOLDS

A key first step within the PLAN portion of the hard-to-reach (H2R) business process framework is to identify and understand the characteristics of H2R households in the utility's service area, as well as the affordability challenges they face (Figure 6.1).

In this chapter, we provide an overview of the different types of H2R households, and describe general strategies and data that utilities can use to better understand the scope of the H2R challenge within their service area. Specifically, we draw upon three case study examples from water utilities to describe and summarize different approaches for identifying and characterizing H2R populations. This includes relatively simple approaches that most utilities can easily implement, as well as more complex analyses that may require additional resources and/or external expertise. The Implementation Guidance (Part 3 of this report) provides pragmatic tips and additional detail needed to implement the strategies we highlight in this chapter.

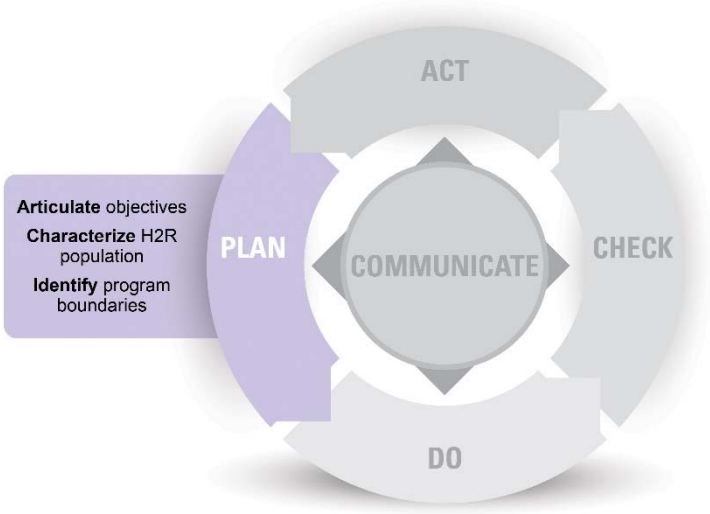


Figure 6.1 The H2R business process framework: PLAN, characterize H2R population

UNDERSTANDING THE DIFFERENT TYPES OF H2R HOUSEHOLDS

Understanding the different types of H2R households in a community is key to developing an assistance program that meets utility objectives and that best serves the needs of H2R customers within a utility's service area. And, because the nature of the H2R population may vary considerably across communities, it is important that water utilities gain a clear understanding of the H2R households in their service areas, as well as how these households may overlap with the economically disadvantaged and other life-challenged members of the communities they serve.

For example, in many large urban areas, a significant portion of the served population resides in multi-family dwellings. As such, up to half or more of the served households in some cities may not receive a water bill, or have any other direct connection to the water utility. In many such cities, a large percentage of these multi-family households may be economically disadvantaged or otherwise life-challenged. In such instances, having a program that targets renter households in multi-family dwellings may be an effective, well-targeted strategy for assisting low-income H2R populations.

In other areas, in-fill development may be creating multi-family housing units targeted for middle- and upper-income condominium owners rather than low-income renters. And, in other

parts of some communities, a large segment of the rental population may consist of college students, many of whom may be receiving considerable financial support from middle- or upper-income parents. In such cases, the fact that some households are H2R customers does not imply that they necessarily need to be targeted for financial assistance.

As another example, many H2R customers may live in public housing or affordable housing units, and already receive discounts on water and wastewater services in the form of reduced rent. For this reason, some utilities may not feel the need to cover these customers as part of their affordability programs. For other utilities, the objective may be to support or help sustain the stock of affordable housing within their communities. These utilities may specifically develop a program that targets public housing agencies and/or subsidized housing tenants and landlords.

As these examples indicate, it is therefore important that each water utility be able to characterize the nature of H2R populations in their service areas, and gain an understanding of how and where the H2R population overlaps with the population of low-income and other life-challenged households. This characterization will help identify the extent and nature of the need for assistance, and enable utilities to better design and target their customer assistance programs (CAPs) to address the challenges faced by the portion of their local H2R population that is economically disadvantaged. Figure 6.2 provides a brief overview of the different types of H2R households, and how these households typically pay for utilities.

Multi-Family Households

Multi-family households account for 78% of the national H2R population (83% of multi-family households do not pay a water bill directly). Approximately 42% of multi-family households live in buildings with 10 or more units, while 69% are renters. Accordingly, an examination of the main types of multi-family housing situations is an important component of characterizing your H2R population. More specifically, to effectively provide assistance to these customers, it is important to understand the different multi-family housing markets (ACEEE 2014) and the mechanisms that landlords and public housing agencies have established for charging tenants for water and wastewater services:

1. ***Market-rate housing, including housing units that are affordable to lower-income groups but are not subsidized (i.e., households or property owners do not receive any form of government assistance for housing or utilities).*** Because most multi-family units do not have individual water meters, tenants in market-rate apartments typically pay for water and wastewater services through their rent. Our research indicates that low-income households in market-rate apartments account for the largest population of customers in need. Only about 30% of eligible households actually live in subsidized or public housing; the remainder live in market-rate apartments, receiving no assistance in the form of subsidized rent or utilities (Meryl Finkel, Housing and Communities Practice Leader, Abt Associates, pers. comm., July 18, 2016).
2. ***Public housing administered and owned by a local housing authority***. Tenants living in buildings owned by public housing authorities (PHAs) typically pay about 30% of their income for rent if utilities are included, and less than 30% if utilities are not included (i.e., if the tenant receives the utility bill directly; MLRI 2009). Generally, water is included in a tenant's total rent costs in public housing units, and the building owner pays the utility for the building's total water use. When utilities are included in rent costs, the PHA pays the full utility costs and seeks reimbursement from the U.S. Department of Housing and Urban Development (HUD).
3. ***Privately owned rental housing in which households receive government-issued rental assistance.*** In this case, the tenant uses vouchers administered and managed by a local housing authority or nonprofit organization to pay for a portion of the rent. The federal Housing Choice Voucher Program (formerly Section 8 Voucher Program) follows this model. If utilities are individually metered, tenants enrolled in voucher programs are eligible to receive a "utility allowance" from HUD to help offset utility costs. The cost of utilities is added to the gross rent cost and used to calculate this utility allowance. However, because many units do not have individual water meters, water costs generally are included in the contracted rent amount, and tenants do not receive an allowance specifically for water costs; this allowance generally only covers energy utility costs.
4. ***Project-based subsidized housing owned by a private landlord or corporation that receives government subsidies to provide affordable housing (i.e., the government-issued subsidy stays with the housing development, not a particular tenant).*** In multi-family subsidized housing, rents are calculated differently for different programs. In some programs, tenants' rents (including a reasonable cost for utilities if they are not individually metered) are set at a percentage of income similar to those for public housing. In other programs, rents may be set at a fixed amount that is lower than market-rate housing (based on the number of bedrooms; MLRI 2009). Tenants generally pay for water and wastewater services through their rent because units most often do not have individual water meters.

Single-Family Households

The next largest group of H2R households includes customers who rent single-family homes; these households account for 13% of the national H2R population. Single-family renters that are H2R do not have an account with the utility because it is in the landlord's name. Single family homes are most often rented at market rates (i.e., they are not subsidized), and low-income, single-family renters living in these household do not typically receive assistance in paying for water and wastewater services.

In addition, while the majority of single-family home owners receive a bill for water and wastewater services directly from their utility, a small percentage pay for these services through a homeowners' association or similar home maintenance fee. These households make up approximately 4% of the national H2R population.

Figure 6.2 The "taxonomy" of H2R households

THREE EXAMPLES OF USING DATA ANALYSIS TO CHARACTERIZE YOUR H2R

Drawing on case study examples from the water sector, the rest of this chapter focuses on three different approaches that water utilities can use to develop analyses to help them better understand how many H2R households they serve, where they live, and how many of these households are economically challenged or otherwise disadvantaged. These different approaches include:

- Using simple and easily accessible data from the U.S. Census American Community Survey (ACS) to obtain an initial understanding of the scope of the H2R challenge
- Using the U.S. Census Public Use Microdata Sample (PUMS) to perform a more in-depth analysis
- Pairing utility billing data with County Assessor's/tax information and/or other demographic data sources

Table 6.1 provides a summary of these different approaches, and key findings from the case study entities that implemented them. Subsequent sections provide additional detail and briefly describe and how the three case study utilities, including Orange Water and Sewer Authority (OWASA), Denver Water, and the New York City Department of Environmental Protection (NYC DEP), respectively, used these approaches to gain insights on their H2R populations.

Approach #1: Using Simple and Easily Accessible Data from the U.S. Census ACS to Obtain an Initial Understanding of the Scope of the H2R Challenge

The ACS is a household survey conducted by the U.S. Census Bureau with a current annual sample size of approximately 3.5 million households. It is considered the most reliable source of detailed socioeconomic data currently available, and is the only source of data available for small geographies. ACS data are available at different geographic scales, including at the county, city, Census tract- (geographic units that typically contain between 1,500 to 8,000 people), and/or Census block group-level (Census block groups typically contain between 600 and 3,000 people). Utilities can easily access and download ACS data on the U.S. Census Bureau's American Fact Finder website.

The ACS contains several H2R-relevant statistics. For example, it provides information on number of renters, multi-family households, and income levels for renter versus owner-occupied households within a given community. It also allows utilities to examine important community- and neighborhood-level affordability indicators, such as the number of elderly households, disabled households, households that receive government assistance, and poverty rates. As an important note, the ACS does not provide information on public/subsidized housing. Figure 6.3 describes the best source of easily accessible data on this topic.

Table 6.1
Summary of H2R analysis approaches and relevant case studies

Analysis approach	Advantages	Disadvantages	Case study entity	Insights gained on H2R
Using data from the U.S. Census ACS	• Data easily accessible at multiple geographic scales • ACS contains multiple H2R- and affordability-relevant statistics • Can provide general understanding of scope of H2R issue in service area • Can pair with billing data to examine water use in areas with a high percentage of H2R household types	• Cannot calculate statistics for H2R customers or determine exact number of H2R households • Requires some geographic information system (GIS) expertise for more detailed analysis • For Census tracts and smaller communities, data only available as 3- or 5-year averages	OWASA	• There are approximately 7,300 multi-family renter households in the service area that are H2R, accounting for 28% of service area households. • Most renters live in multi-family buildings • High percentage of H2R households appear to be students, and may not need financial assistance in paying their water bills • Some correlation of H2R household types and areas with a high percentage of households that speak English as a second language
Using PUMS to perform a more in-depth analysis	• Can determine number of households that are H2R, and characteristics of those households • Allows for a much more detailed analysis • PUMS contains multiple H2R and affordability-relevant statistics • Single-year estimates	• Requires additional resources and/or external expertise for advanced statistical analysis • Must pay close attention to sample size when calculating statistics for subpopulations; some groups may be too small to draw conclusions about at the Public Use Microdata Areas (PUMA) level	Denver Water	• 58% of households below service-area median household income (MHI) are H2R • 77% of H2R households are multi-family renters • On average, H2R household types have lower incomes than the types of households that pay their bill directly • Multi-family households and renters pay the same for water, as a percentage of their income, as single-family home owners • Some customers have trouble paying their bills; however, there is a much greater issue associated with unaffordable housing in the region, of which water costs contribute a small part

(continued)

Table 6.1 (Continued)

Analysis approach	Advantages	Disadvantages	Case study entity	Insights gained on H2R
Pairing utility billing data with County Assessor's/tax information and/or other demographic data sources	• Allows utilities to examine consumption for multi-family households, public housing, and subsidized housing units • Allows utilities to examine consumption and characteristics in areas with a high number of H2R households • Can assess affordability implications for tenants, subsidized housing landlords, and H2R tenants	• Can require complex analysis, depending on level of in-house expertise, format of utility billing data • Does not provide information on whether single-family households are renters that are H2R customers	NYC DEP	• Meter-billed multi-family households generally use less water than single-family households • Public housing units generally use more than the average household • Consumption and socioeconomic analysis allowed NYC DEP to better understand water costs for different household types.

Utilities cannot use data from the ACS to determine the exact number of H2R households within their service areas, or to calculate how many of these households might be eligible for assistance. However, they can use the ACS to develop a general sense of the scope of the H2R challenge, and gain a better understanding of some of the different characteristics of households that make up their H2R population. This information serves as a good starting point to help utilities set objectives, evaluate and select appropriate assistance strategies, and develop effective communication and outreach plans. The following section describes the type of information that utilities can learn from the ACS, based on a case study we developed for OWASA. In addition to this information, utilities can also combine ACS data with utility billing data to examine water use (and costs) in areas with a high percentage of H2R household types (e.g., multi-family buildings, renters) and/or other H2R characteristics.

The ACS does not contain information related to public housing at the Census tract, city, or county scale. HUD serves as the best resource for this information, providing several different data sources. The HUD Picture of Subsidized Households is the most-user friendly and simple database on this topic. It provides a summary of all subsidized households and public units by program type at the city and county scale. The Picture of Subsidized Households allows users to select the information they would like and easily downloads this information in an Excel format.

Figure 6.3 HUD picture of subsidized households

Case Study #1: Using the ACS to Better Understand H2R Populations within the OWASA Service Area

OWASA is a nonprofit, public agency that provides water, sewer, and reclaimed water services to households and businesses within the Carrboro-Chapel Hill community in southern Orange County, North Carolina (including the University of North Carolina). Based on ACS data aggregated from the Census tract level, there are approximately 26,100 total households within the OWASA service area;[10] 49% of these households (12,700 households) live in multi-family units and 54% are renters (14,100 households). The number of renters within the service area is considerably higher than the national average of 36%, presumably because most students at the University of North Carolina at Chapel Hill rent their homes and apartments.

As shown in Table 6.2, most renters (74% or approximately 10,500 total renter households) also live in multi-family units. Based on national data (see Chapter 1), we can assume that roughly 70% of these multi-family renter households likely do not pay their water bill directly, and are therefore H2R. In total, this would mean that there are approximately 7,300 multi-family renters within OWASA's H2R population, which accounts for 28% of households in the service area. Similar calculations can be used to estimate the number of multi-family owner households and single-family renters that are also H2R.

10. Weighted to reflect the portion of Census tracts that fall within OWASA service area boundaries, thus, represents an approximate estimate.

Table 6.2
Estimated characteristics of renter- and owner-occupied households in OWASA service area

	Renter households	Owner households
Total households	14,100	12,000
Percentage of households that are multi-family	74%	8%
Average household size	2.2	2.6
Percentage of households earning less than $25,000 per year	39%	8%
Median monthly housing costs[1]	$942	$2,146
Percentage of households paying more than 35% of their income for housing	45%	18%

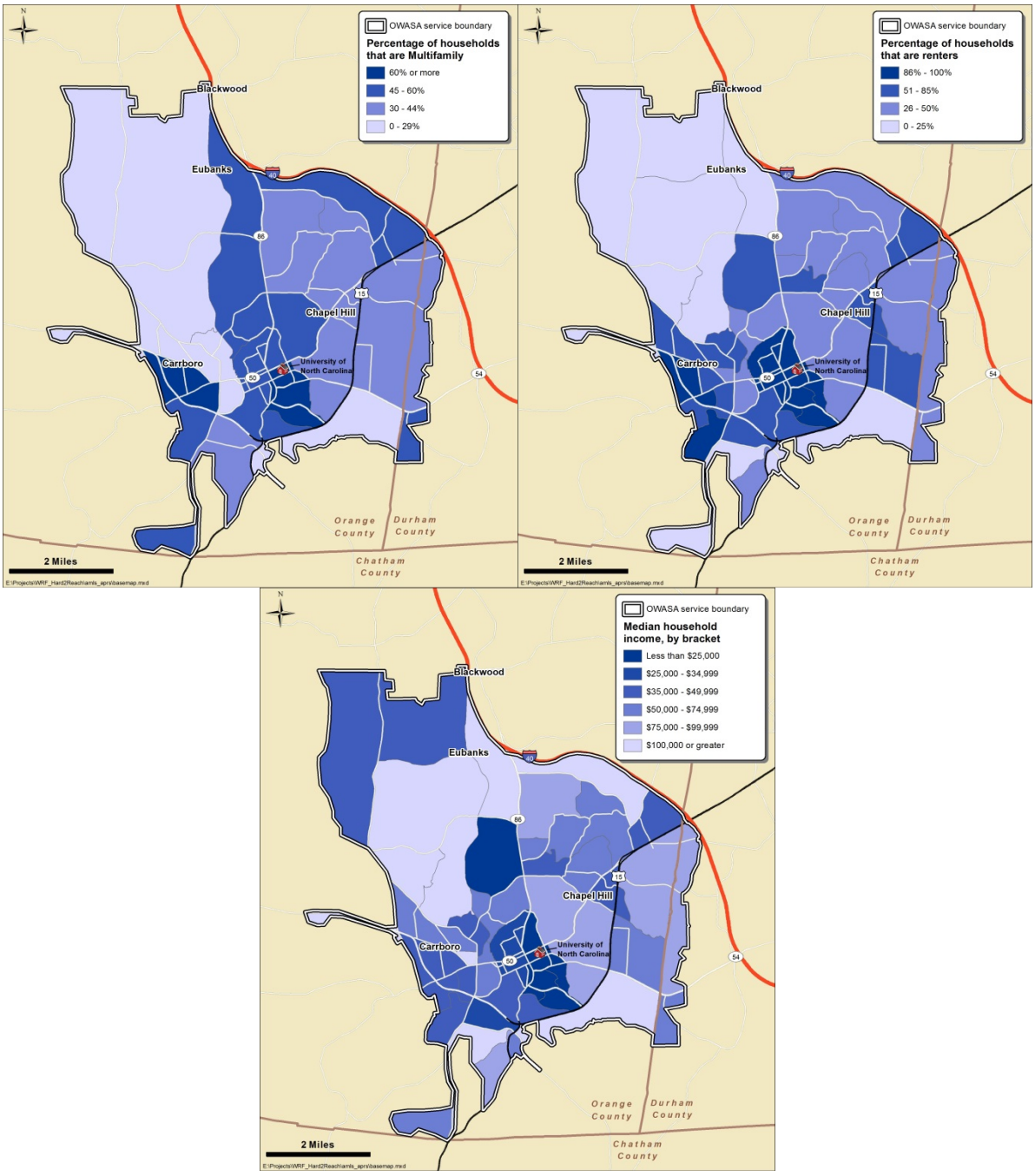
Source: Data from ACS 2015
[1]Median owner costs include selected monthly owner costs for owner households with a mortgage and gross rent for renter households.

ACS data can also provide insights on the number of H2R households that are low-income. For example, Table 6.2 shows that in the OWASA service area, a relatively large number of renter households earn less than $25,000 and would likely qualify for some type of assistance. Further, although renters have lower monthly housing costs (and often use less water), they pay a higher percentage of their income for housing. However, OWASA is somewhat unique in that a relatively large portion of its service area is made up of students, many of whom are full-time and do not earn incomes or only have part-time jobs. Although ACS data show these households as low-income households, many of them likely draw upon parental support or other resources, and would not need or qualify for utility assistance.

To better understand how the renters, multi-family households, students, and low-income households intersect, we prepared a series of maps of OWASA's service area, mapping these variables by Census block group and Census tract (Figure 6.4). Census maps can be created by utility GIS staff, or through the online Census mapping TIGER tool. The maps are useful for visually portraying the intersection of renters and low-income households.

As shown, there seems to be a strong correlation between renter, multi-family, and low-income households. However, many of the lower-income Census Block Groups are located next to the University of North Carolina campus, and likely include a large number of students (in total, there are approximately 2,500 renter households within the 8 block groups surrounding the campus). Thus, the H2R challenge may be less than the data might initially indicate (at least within the context of providing low-income customer assistance) because some of these households likely are not in need of financial assistance.

Utilities can create similar maps to understand how other demographic characteristics correlate with areas that likely have a high number of H2R households. For example, although not shown here, we also developed a map to examine the presence of households that do not speak English "very well" in areas with a high percentage of renters, multi-family households, and lower-income households. This exercise indicated that many households who speak English as a second language may also be H2R, indicating that OWASA may need to develop targeted strategies for communicating with these customers if it were to develop an H2R low-income assistance program.



Source: Data from ACS 2015.

Figure 6.4 Maps portraying percentage of multi-family households, households that are renters, and MHI in OWASA service area, by Census Block Group

Approach #2: Performing a More In-Depth Review to Understand the Characteristics of H2R Households

In addition to analyzing readily available data from the ACS, some utilities have used U.S. Census PUMS data to develop more in-depth analyses of the characteristics of their service area population and to better assess affordability challenges. Although these utilities have generally not conducted these analyses with the specific objective of identifying and characterizing their H2R populations, in many cases the H2R challenge has become readily apparent.

PUMS data are the raw data upon which the ACS and the American Housing Survey, (AHS) are based. PUMS data are available for Public Use Microdata Areas (PUMA), which are Census-defined geographic units consisting of at least 10,000 people (and based upon Census tract boundaries).[11] The U.S. Census Bureau releases PUMS data annually, typically in the fall of each year.

With PUMS data, analysts can perform statistical analyses to develop cross-tabs of all types of demographic information. For example, there is a variable within the PUMS dataset that indicates whether a household pays for water directly, pays for water as part of their rent or home maintenance fee, or does not pay for water at all (presumably because they self-supply through a private well). Utilities can use PUMS data to further analyze (and determine the number of) their H2R population, learning how many rent their home, live in multi-family buildings, would qualify for an assistance program, and/or have other H2R characteristics, including how many are elderly, disabled, and/or non-native speakers, among others. The following section presents an overview of an analysis that Denver Water performed using ACS and PUMS data to assess affordability challenges for their customers.

Case Study #2: Using PUMS Data to Understand Denver Water's H2R Populations

Denver Water provides drinking water and non-potable water supplies to 1.4 million people in the City of Denver and many of its surrounding suburbs. As part of its rate-setting process, in 2014 Denver Water conducted an in-depth analysis of affordability challenges within its service area. As a first step, using a methodology similar to the methodology described in Case Study #1, the utility compiled ACS data on key demographics, including income levels, household type and tenure, poverty rates, rates of public assistance, as well as data on elderly, renter-occupied, and owner-occupied households. These statistics showed that the demographics for its customers located inside the City of Denver were generally on par with the demographic data for the United States.

However, the analysis also identified several "at-risk" Census tracts and populations of households, including elderly and renter-occupied households. Further, the ACS data indicated that a high percentage of households within the service area lived in multi-family units and/or were renters, and that housing costs were extremely high relative to income levels. Denver Water wanted to further explore these issues, recognizing that many multi-family households and renters likely did not pay a bill directly to Denver Water.

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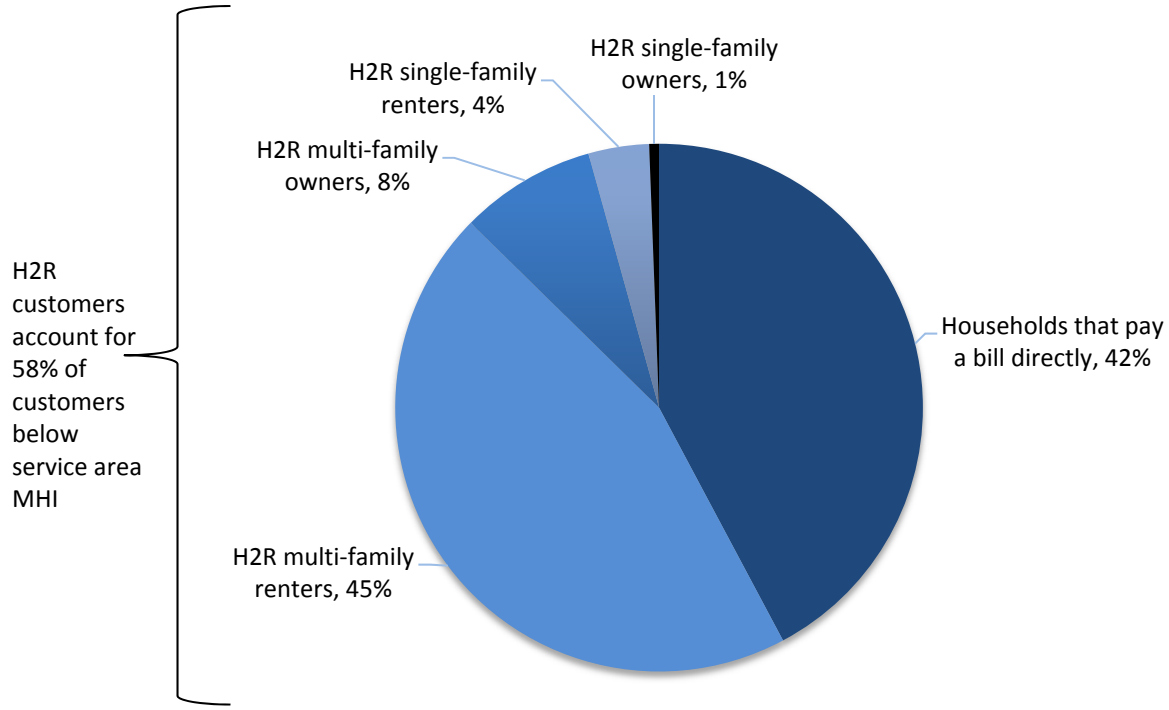
11. Given their size, in some cases, one PUMA can encompass an entire small town or utility service area, and therefore the PUMS data cannot be used to identify concentrations of H2R customers. However, it can provide information on the characteristics of these customers.

As shown in Figure 6.5, Denver Water used PUMS data to determine that 58% of households earning less than the service area MHI (81,200 total households) do not pay Denver Water directly for their water service. Multi-family renters make up the largest percentage of this population, followed by multi-family homeowners and single-family renters.



Source: Data from PUMS 2012.

Figure 6.5 Denver Water inside-city customers, households earning less than the area-wide MHI that are H2R

Through the PUMS analysis, Denver Water also evaluated several other relevant H2R characteristics, including income levels and non-discretionary spending needs for different types of households. As part of this analysis, Denver Water found that single-family and multi-family households within the city spend about the same, as a percentage of their income, on water, electric, and housing costs. However, the MHI for multi-family households is significantly lower than the MHI of single-family households. Based on the MHIs reported in Table 6.3 for all households, after paying for water, electric, and rent, single-family renter households would have $44,630 left to cover other important items such as food and clothing, while multi-family households would have approximately $22,416 left. In addition, on average, all households were spending more than 30% of their income on housing, which government agencies define as having a "moderate housing burden."

In addition, Denver Water found that although multi-family and single-family households paid about the same for rent and/or mortgage as a percentage of their income, most households in lower-income categories, including both renter- and owner-households, had a "severe housing

burden," meaning they spend more 50% of their incomes on housing. High housing costs were particularly pronounced for H2R households.

Table 6.3
MHI (2012 USD) and non-discretionary spending, inside-city customers, Denver Water service area

	Single-family households	Multi-family households
MHI (all households)	$72,735	$37,378
Owners	$80,109	$63,643
Renters	$46,571	$32,155
Average water bill as % of MHI[1]	0.57	0.58
Average electric bill as % of MHI	1.97	2.25
Average selected monthly owner costs as % of household income	28.4	27.8
Average gross rent as % of household income	36.1	37.2

Source: Data from PUMS 2012 and Denver Water billing data.

[1]Includes water bill only, not wastewater bill

Based on this analysis, Denver Water realized that renters, particularly multi-family renters, are an "at-risk" population in terms of water affordability. Further, households within the service area that are in greatest need of assistance are mostly H2R, and the utility may need to come up with different ways to communicate with these customers. Further, although some customers have trouble paying their bills, there is a much greater issue associated with unaffordable housing in the region, of which water costs contribute a small part.

Approach #3: Pairing Utility Billing Data with Other Data Sources to Analyze H2R Multi-Family Water Use and Neighborhood Characteristics

Another approach that utilities can use to identify and characterize their multi-family H2R customers, and to better understand water usage by these customers, is to analyze their own billing data. In most areas, multi-family buildings have one master meter and are classified in utility billing systems as commercial customers (or at least classified separately from single-family residential customers). Some utilities include the number of units in each multi-family building as a data field in their utility billing system and, therefore, can relatively easily compute the number of multi-family units that do not receive a bill, as well as the average water usage per unit.[12]

However, many utilities do not denote the number of units in multi-family buildings in their billing system. When this is the case, utility billing datasets can sometimes be paired with County Assessor or tax data, which generally contains information on the number of units within multi-family properties, as well as other building characteristics. Utilities can join these databases using a common parcel number or other identifier in both systems, or through spatial/GIS analysis that joins the meter location to the parcel number or address.

If the number of units (and potentially other building characteristics, including some information related to affordable housing) can be obtained, then multi-family water use data can also be paired with ACS data, allowing utilities to examine general demographic characteristics in

12. Note that this does not help utilities identify renters of single-family homes who do not have a water bill in their name.

the areas where H2R, multi-family customers are generally located. Utilities can use these different data sources to:

- Examine water use for H2R multi-family households compared to single-family households to understand how rate increases might affect these households and compare water use to income levels for different household types.
- Understand neighborhood characteristics of areas with a high number of H2R multi-family households, including poverty rates, income levels, and other affordability indicators.
- Analyze consumption and other factors affecting water use for H2R customers at the neighborhood level. This can entail complex analyses, but can be useful to help utilities determine where they might focus their efforts for conservation and/or assistance programs.

This approach to helping utilities identify and characterize their H2R populations can vary significantly in terms of complexity, depending on the level of expertise available within the utility, and the format of the utility billing system and the County Assessor or similar tax data. The following section presents a short case study on how NYC DEP paired consumption data with the city's Primary Land Use Tax Lot Output (PLUTO) database to analyze household water consumption by household type (e.g., single-family metered accounts, multi-family metered accounts), and to assess the impact of potential rate increases on different customers.

Case Study #3: NYC DEP Analyzing Consumption Data to Understand the Impacts of Rates on Landlords, Public Housing Agencies, and Their H2R Tenants

In NYC, the affordability issue is complicated by the City's high population of renters, which account for approximately 67% of all households. Most of these households pay for water and wastewater services indirectly, as part of their monthly rent. In recent years, affordability concerns have been compounded in NYC because gross median rents have increased, while the median income for renter households has decreased.

Increases in water and wastewater rates affect renter households in various ways. Although renters may not directly receive water and wastewater bills, these costs are often indirectly passed on to them in the form of rent increases. In some cases, increases in water and sewer costs are borne by landlords and property owners; however, this can also (indirectly) impact tenants because it may limit the funds available to perform necessary building maintenance. With public housing, total payment for rent and utility services may be capped under government assistance programs, meaning that the government might pay a significant portion of any increases in utility charges.

NYC DEP felt it was important to analyze the different impacts associated with increased water and wastewater bills, including impacts on non-household ratepayers (e.g., public housing agencies, landlords), as well as their H2R tenants. To do this, NYC DEP joined their water consumption data with the city's "PLUTO" database to determine average consumption by household type. Not surprisingly, results of this analysis indicated that for meter-billed customers, single-family households have a higher average annual use (80,000 gallons per year) than households in multi-family buildings (52,000 gallons per year). In addition, the analysis indicated that the average consumption in New York City Housing Authority (NYCHA) public housing units was much greater than the average household consumption for metered accounts in all

boroughs. More than 90% of NYCHA billings are calculated under the Multi-Family Conservation Program (MCP) rate, which includes a flat per unit fee for building owners who implement certain conservation measures. (see Chapter 12 for more detail on this program).

As shown in Table 6.4, DEP calculated the estimated average annual water and wastewater costs for these different household types and compared them the City's MHI.

Table 6.4
NYC residential water and wastewater costs compared to citywide median household income (MHI)

	Average annual wastewater bill ($/year)	Average wastewater bill as percentage of MHI[1] (%)	Average water and wastewater bill ($/Year)	Average water and wastewater bill as percentage of MHI (%)
Single-family[2]	648	1.11	1,055	1.81
Multi-family[3]	421	0.72	686	1.18
Average Household Consumption[4]	531	0.91	864	1.48
MCP[5]	617	1.06	1,005	1.72

Source: NYC DEP 2017
[1]MHI is $55,752 based on 2015 ACS data, DEP adjusted to $58,306 to reflect 2017 USD
[2]Based on 80,000 gallons/year consumption and Fiscal Year (FY) 2016 rates
[3]Based on 52,000 gallons/year consumption and FY2016 rates.
[4]Based on average consumption across all metered residential units of 65,534 gallons/year and FY2016 rates.
[5]Multi-family Conservation Plan (MCP) is a flat fee per unit for customers who will implement certain conservation measures.

As shown in Table 6.4, the cost of wastewater for different household types varies between 0.74% and 1.14% of City-wide MHI, depending on household type. Because DEP is a water and wastewater utility and ratepayers receive one bill for both charges, it is also appropriate to look at the total water and wastewater as a percentage of MHI, which varies from 1.21% to 1.86% of MHI. In addition, New York City Housing Authority (NYCHA) is responsible for 177,634 affordable housing units, which accounts for 9% of the total renter households in NYC. NYCHA paid approximately $188 million for water and wastewater in FY2016. This total represents approximately 5.6% of its $3.38 billion operating budget.

Several factors, however, limit using citywide MHI as a financial indicator for a city like New York. NYC currently ranks as one of the most unequal cities in the United States in terms of income distribution, with a high percentage of households at either end of the income spectrum (i.e., the median household does not represent the "typical" household). NYC's income distribution highlights the need to focus on metrics other than citywide MHI to capture the disproportionate impact on households in the lowest income brackets. For example, as shown in Table 6.5, NYC DEP also looked at the average wastewater bill as a percentage of 20th and 40th percentile household income levels. In New York and other areas, many H2R multifamily households fall within these lower income brackets (see Chapter 1). Thus, although single-family households generally use more water, many H2R multi-family households may pay a greater percentage of their income for water and wastewater services.

Table 6.5
Average NYC household wastewater cost as a percentage of different income levels, FY2016 rates

Income Level	Average household wastewater cost as percentage of household income level[(1)]	Average household water and wastewater costs as a percentage of household income level
20th Percentile	2.78%	4.53%
40th Percentile	1.26%	2.05%
Citywide MHI	0.91%	1.48%

Source: Data from NYC DEP 2017
[1]Calculated by dividing average household consumption annual wastewater bill of $531 (using FY 2016 rates) by income level values adjusted to 2017 dollars.

SUMMARY

As this chapter indicates, there are several different methods that utilities can use to better understand and characterize the H2R population within their service area. These different methods can help utilities identify the extent and nature of the need for assistance among H2R customers, and design and target CAPs accordingly. The approaches described in this chapter include relatively simple analysis methods that many utilities can easily implement, as well more complex methods that may require external assistance. The type of analysis a utility conducts will depend on its overall objective and available resources.

In addition to the approaches outlined in this chapter, other local agencies and organizations, including public housing agencies, planning departments, regional planning commissions, nonprofit groups, and others, often collect socioeconomic data and/or have in-house knowledge that can help utilities assess H2R affordability challenges within their service area. It is important to reach out to these agencies when conducting analyses of H2R households, and throughout implementation of the business process framework.

CHAPTER 7
PLAN: IDENTIFY PROGRAM BOUNDARIES

In this chapter, we continue to focus on the PLAN portion of the business process framework (Figure 7.1), providing utility professionals with insights into the regulations, policies, and potential administrative limitations that can create boundaries on a utility's available options for customer assistance programs (CAPs).

While this chapter provides background and examples on the different types of constraints and opportunities that utilities might consider, Part 3 of this report contains guidance and tools that utilities can use to incorporate their identified constraints and opportunities into the program selection process.

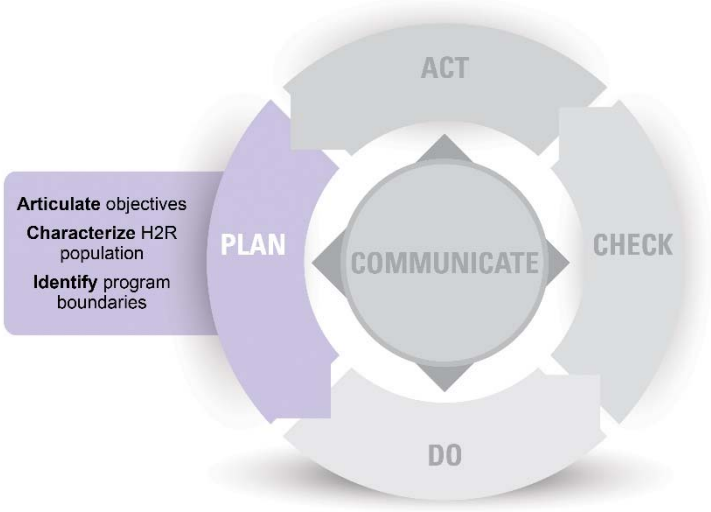


Figure 7.1 The H2R business process framework: PLAN, identify program boundaries

PROGRAM CONSTRAINTS AND OPPORTUNITIES

Program constraints and opportunities define the boundaries for the types of CAPs a utility can use to assist its low-income, hard-to-reach (H2R) customers (or its other low-income customers). It is important to identify potential program constraints and opportunities as early in the process as possible in order to begin the program selection process with an understanding of which assistance approaches may or may not be legally or administratively feasible (or in some cases, may even be mandated), and which assistance approaches may offer unique advantages or opportunities for the utility. Program constraints and opportunities come in many forms, for example:

- Municipal or state regulations, statutory mandates, or other policies may preclude utilities from offering some forms of assistance. For example, in many states, applicable laws preclude or limit the use of cross-subsidies, wherein rate-based revenues collected from some customers cannot be used to reduce water bills for low-income households.[13] There may also be local policies or regulations that create opportunities for providing assistance.

13. Several members of the research team are currently involved in a project to document state-level regulations related to customer assistance programs. This study is being led by the University of North Carolina Environmental Finance Center and funded by several water- and wastewater-related associations. For more information visit: www.addinwebsite.com.

- Administrative capacity also constrains the kind (and scale) of assistance program that is feasible. Keeping administrative burden low means establishing an assistance program that does not require a lot of utility staff time or other resources to determine applicant eligibility (e.g., documenting income), enroll eligible households, or distribute assistance to the enrolled households. To reduce administrative burden, many utilities have taken advantage of opportunities to partner with local charities or other programs that have experience implementing assistance programs for low-income households.

Because program constraints define approaches that are legally or otherwise infeasible, they serve as important program selection criteria, helping the utility to select the subset of affordability approaches they want to examine in more detail. As noted above, Part 3 provides strategies and tools for developing and applying program selection criteria based not only on identified constraints and opportunities, but also based on the utility's objectives and identification of target H2R populations. This process helps utilities focus on, and then select, the assistance program approaches that align with the utility's internal strengths and constraints, and meets the specific program objectives and priorities.

POTENTIAL REGULATORY AND POLICY CONSTRAINTS AND OPPORTUNITIES

In many states and municipalities, there are regulations, policies, or legal mandates that may influence whether a CAP can be implemented by a water utility. These policies may also define the form such a CAP can or cannot take. Such policies and mandates may apply specifically to publicly (e.g., municipally) owned systems, privately (i.e., investor) owned utilities, or both.

To further complicate matters, in many jurisdictions the statutory or other language governing water utility rate-making and related CAPs can be vague and subject to interpretation. In some instances, case law and legal precedent based on cases challenging rate-setting or CAP activities may influence what is considered to be consistent with applicable mandates. This fuzziness can complicate utility assessments of what is allowed and what may not be acceptable under applicable regulations and policies.

For example, in many jurisdictions, there are explicit prohibitions against cross-subsidies from one set of customers to other customers. This generally means that all customers must be charged according to their "cost-of-service," which implies that revenues derived from the rates paid by some customers cannot be used to reduce water bills for other customers. However, many utilities in jurisdictions where these regulations apply have identified opportunities to fund low-income assistance programs through alternative revenue sources—such as voluntary bill "round up" programs, revenues from cell tower leases, or third party funds—or to provide assistance to economically disadvantaged customers in other ways.

Policies within the State of California offer an interesting illustration. Municipal and other publicly-owned utilities are precluded under Proposition 218 (California Right to Vote on Taxes Act 1996) from providing any cross-subsidies to their customers; all customers must be charged according to the cost of service. Thus, CAPs in public systems in California are fairly constrained. In contrast, the California Public Utilities Commission highly encourages investor-owned water utilities provide fiscal assistance to their low-income customers. Private utilities meet this requirement by piggybacking on the federal Low-Income Heating and Energy Assistance Program

(LIHEAP; discussed in some detail in Chapter 9) to provide financial support to the low-income households in their service areas.

Another interesting example of how a utility was able to take advantage of a policy opportunity to provide assistance to customers is in the City of Camden, New Jersey, where state law limits the ability of government-owned utilities to provide financial assistance to low-income customers. Specifically, Figure 7.2 describes how Camden County Municipal Utility Authority (CCMUA) took advantage of a "host community" benefit to provide low-income assistance.

Pursuant to state statutes, government-owned utilities in New Jersey could only provide low income assistance to elderly and disabled customers that met certain income requirements. To provide a discount to a larger group of customers, CCMUA recently entered into a special arrangement with Camden City (where CCMUA's primary wastewater treatment plant is located) to provide a "host benefit" in the form of a bill discount to city residents. While this benefits affluent Camden City residents, it also benefits the City's lower-income residents. CCMUA reports that Camden City is one of the most economically challenged cities in the country and, therefore, providing the benefit in this way comes very close to providing rate relief on an income basis. That is, a high percentage of the individuals who receive the host community discount would receive a rate benefit if CCMUA was legally allowed to offer an income-based rate reduction. CCMUA reports that they can provide the host community benefit for the following reasons:

- The property utilized by the plant could be used by a private company that would pay taxes. So, the host community benefit is in lieu of the tax rates that the city is missing out on (CCMUA, as a governmental entity, does not pay taxes).
- CCMUA's regional wastewater treatment plant is in Camden City. The regional sewer system that CCMUA built to bring sewage flow from its 36 suburban municipalities to the treatment plant benefits those municipalities but does not benefit Camden. So, Camden City residents should not have to pay for the full cost of the system.

While this program was not specifically targeted to H2R customers, they could indirectly benefit through lower wastewater rates for multi-family building owners if the discount applies to these customers.

Source: Andy Kricun, Executive Director/Chief Engineer, Camden County Municipal Utilities Authority, personal communication, December 3, 2016; and UNC Environmental Finance Center 2017.

Figure 7.2 Taking advantage of a policy opportunity to provide low-income assistance: CCMUA

POTENTIAL ADMINISTRATIVE CONSTRAINTS AND OPPORTUNITIES

There is well-established literature in public policy and applied economics regarding the categories of constraints that bind assistance programs for economically challenged households. Much of this base of knowledge is associated with efforts over past decades to design, evaluate, and improve public "welfare" programs, such as the Supplemental Nutrition Assistance Program (SNAP; the food stamp program) and the Earned Income Tax Credit (EITC). Insights from welfare reform efforts that also apply to water-oriented assistance program administrative challenges are outlined below.

Administrative Burden

Administrative burden to the utility refers to the personnel and resource costs associated with the utility setup and running of the program. Administrative burden to the customer refers to the time and resources required of them to apply for and maintain assistance. Questions to consider include: Is it advantageous to piggy-back onto other programs that have well-defined eligibility criteria? Can customers in need readily apply for and gain access to the program?

For example, a utility that sets up and runs its own assistance program will need to establish program eligibility requirements (e.g., income cutoff levels), and then obtain and verify data from applicants to confirm eligibility and manage enrollments. The utility may also need to manage the disbursement of assistance (e.g., delivering checks). Program applicants will also be burdened by the need to enroll in a new program, provide relevant documentation, and so forth.

Because of these practical administrative burden realities, it can be advantageous to support an existing assistance program, often managed by another trusted assistance provider (e.g., a program run by either a public agency or a private entity). If a utility opts to set up its own program, then some degree of administrative simplicity can be attained, and administrative burden reduced, by relying on easily verified eligibility for other established assistance programs (such as LIHEAP or SNAP). Figure 7.3 provides an example, wherein SPU was able to piggyback on its electric utility program to readily administer a water-oriented CAP. Another common approach is to have a community-based organization (CBO) administer various (or all) aspects of a utility-established program. There are several examples from the water sector where, CBOs perform recruitment, verification, enrollment, and other administrative activities for utility-established low-income assistance programs. In addition, Chapter 14 describes several strategies for reducing the administrative burden for H2R customers (i.e., making it easy to enroll!).

Seattle Public Utilities (SPU), a department within the City of Seattle, handles solid waste, sewer, drainage, and drinking water services for the city. SPU has been successful at providing financial assistance to users who live in multi-family housing and do not receive a water bill by working with Seattle City Lights to provide water credits on customers' electricity bills. This works well for SPU as City Lights shares the same billing system.

Figure 7.3 Administrative burden reduction opportunities

Target Efficiency

Target efficiency is a measure of how well the program reaches its intended population. For example, does the program direct its resources to those truly in need, without unfairly creating gaps in coverage for others in need? Does the program avoid supporting households or others who do not have a true need?

A prime example of a target-efficiency concern relates to the challenge of assisting those H2R populations that are renters and residents of multi-family buildings. If water rate relief in some form is provided to the landlord or property manager (e.g., through discounts, credits, or conservation assistance), how much of this support will reach the economically challenged households? Will building owners simply pocket the savings as additional profit? Or, will lowering water costs relieve upward pressures on rental charges and help maintain the stock of affordable housing within the community (i.e., is the assistance provided to landlords effectively reaching the target population of H2R, economically disadvantaged households?)?

Horizontal Equity

Horizontal equity reflects whether the program provides equivalent assistance to all households facing similar fiscal circumstances. For example, does it avoid or fill coverage gaps by helping those in need, who may not be eligible for or may not have managed to enroll in other assistance programs? Does it support people who fall between the cracks of the existing social assistance network?

Horizontal equity is a concern for H2R households facing fiscal challenges but who, for some reason, are either not eligible for assistance from other programs (e.g., because their income levels are just slightly above a fixed threshold), or who have failed to enroll in other programs because of lack of awareness, limited mobility, language barriers, or other factors. For this reason, horizontal equity considerations may steer a utility to develop its own assistance program, rather than piggy-backing on other programs that are leaving coverage gaps. This reveals a potential tradeoff between the criterion of striving for administrative simplicity, versus aiming to improve horizontal equity for those households falling into the gaps created by existing programs. Utilities thus need to consider which criteria are most important for their circumstances.

Horizontal equity considerations also arise where a utility has well-developed CAPs for its economically challenged bill-paying customers, but none that support households facing comparable economic hardships who do not receive and pay a water bill. This disparity between how the utility supports similar low-income households may be a key consideration for developing assistance targeted to the H2R.

Vertical Equity

Vertical equity addresses whether the program treat households with different levels of economic distress in a manner that fairly provides greater assistance to those with the greatest needs. For water and wastewater assistance programs, this criterion applies to whether the level of assistance is calibrated in some fashion to the level of need, such as adjusted according to income level, household size, or other factors. Another vertical equity consideration is whether some households that do not have a true need nonetheless obtain assistance because eligibility requirements do not account for relevant factors (e.g., households with low reportable incomes but that have other assets or support, such as college students with parental funding).

Resource Efficiency/Incentive Alignment

A final consideration is whether the program sends the right message to low-income customers and/or help to meet other, related objectives. For example, does the support price signals for water use efficiency and conservation? Does it incentivize timely bill payment and satisfy other municipal objectives (e.g., tax compliance)? Are proper price and other signals transmitted to those who receive aid or those who may affect need, such as landlords?

SUMMARY

As a utility begins to consider its options for providing financial assistance to its low-income H2R population, it is important to consider what legal and policy constraints, incentives, or other mandates may govern what approaches are feasible. Some types of assistance programs

may not be allowed or, in some cases, may be required. Policy and regulatory mandates may also define how a given type of assistance program must (or cannot) be funded, structured, and/or implemented. Policy mandates are not always clearly defined, leaving some fuzziness and uncertainty for utility practitioners to address as they begin to frame their H2R assistance options.

In addition, there are practical administrative and other factors that a utility will want to consider as it weighs its options for what types of assistance programs to investigate and possibly implement. Administrative burden, and the ability to effectively target those households in need, are among the key considerations that utility practitioners may want to include as evaluation criteria when they weigh which CAP options best meet their utility's objectives for its H2R assistance program. The next chapter discusses the use of such criteria in the evaluation and option selection phase, as part of the "DO" portion of the business process.

CHAPTER 8
APPLY PROGRAM SELECTION CRITERIA

This chapter focuses on the first part of the DO portion of the business process: evaluating customer assistance program (CAP) options and selecting a preferred CAP approach (Figure 8.1). The purpose of this chapter is to increase water utility professionals' understanding of how to apply program selection criteria based on the following site-specific factors:

- Objectives and directives for providing assistance
- Characteristics of the hard-to-reach (H2R) community
- Rules, regulations and policies that govern what can and cannot be done
- Internal administrative and other utility capacity boundaries
- Any additional evaluation criteria, as may be suitable for the utility's circumstances and preferences

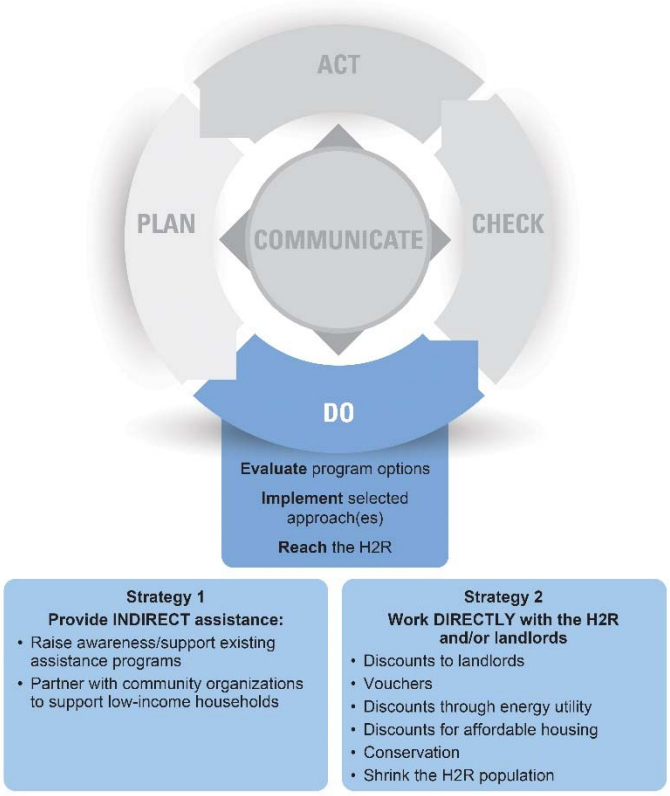


Figure 8.1 The H2R business process framework: DO, evaluate program options

While this chapter provides a general background and overview on evaluating and selecting appropriate CAP approaches, Part 3, the Implementation Guidance provides communication and process guidance on how to develop program selection criteria.

APPLYING PROGRAM SELECTION CRITERIA

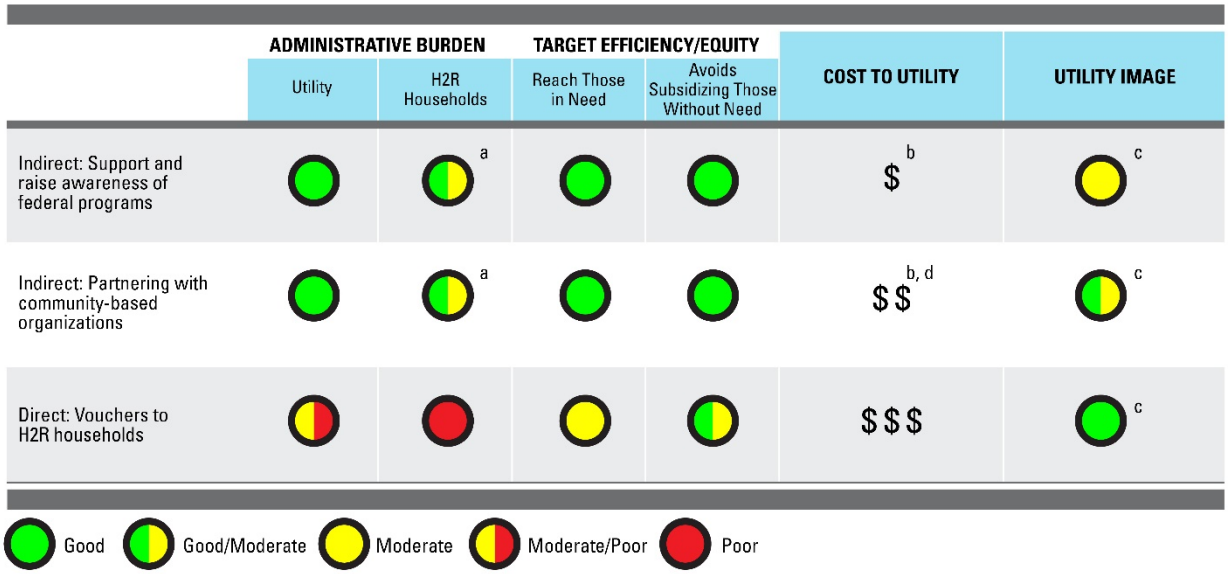
Program selection criteria support the ability of utility professionals to systematically narrow down the list of possible assistance approaches, and help the utility to focus on the alternatives that best meet its needs, circumstances, and objectives. Program selection criteria are also useful for communicating with utility management, board members, and the public, on how the utility developed recommendations regarding assistance approaches. The previous chapters provided several examples of potential selection criteria that a utility's staff may opt to weigh as they evaluate the alternative CAPs they are considering.

Program selection criteria may be applied in a qualitative manner or, where feasible and desirable, quantitative metrics may be developed. The key is to articulate the features and outcomes

that are important to the utility and that help define success, and then to keep these factors in mind as the utility considers which approaches best suit its needs and circumstances.

One example of how to apply criteria and portray the associated evaluation of options is provided in Figure 8.2. This is a "Consumers Report" style approach that is familiar to most utility professionals as well as utility managers, Board Members, and other interested parties, including the public. The keys to using this type of figure include:

1. Carefully selecting which criteria you want to focus on to differentiate amongst the CAP approaches your utility believes to be most promising as prospective available options
2. Labeling the criteria in a clear, succinct manner so that readers can readily grasp the attribute embodied in each selection criterion
3. Using words or symbols, and/or colors that readily communicate to the observer whether each specific approach ranks strongly or poorly against each criterion



a. Providing effective enrollment support, such as by partnering with trusted community organizations, can increase awareness and reduce administrative burden for H2R households.

b. Depends on level of utility interest and financial capability.

c. Depends on profile the utility wishes to foster and effectiveness of PR efforts.

d. May include utility funds going to support the community-based organizations' program.

Figure 8.2 Comparison of program strategies

In the illustration presented in Figure 8.2, three broad CAP strategies are evaluated. At a glance, the chart helps reveal that the two "indirect" approaches (raising awareness and supporting enrollments in existing state or federal assistance programs, and partnering with established and trusted community-based organizations already supporting local low income households) have relatively low administrative burdens compared to the more "direct" strategy of having the utility providing assistance to H2R households or their landlords. However, indirect programs may have lower target efficiency. For example, programs that raise awareness for federal assistance programs only apply to households who qualify for those programs. In many communities, however, households earning more than the federal assistance income threshold still struggle to

pay all non-discretionary expenses, including rent and utility bills. In addition, while the administrative burden can be high for some direct assistance programs (as indicated in Figure 8.2), utilities can lessen this burden by working with community-based organizations (CBOs) to implement various aspects of their program or by "piggybacking" onto another utility assistance program.

SUMMARY

This easy-to-grasp approach to applying and portraying a program evaluation enables utilities to quickly ascertain which CAP alternatives may be best suited to their needs and circumstances (and which are poor fits for the utility). Each utility can and should tailor their selection criteria, as well as their evaluation of how their options stack up against each criterion, to best fit with their community situation, H2R population characteristics, policy constraints, and other utility- and community-specific factors. In addition, as described in Part 3, it is important to engage stakeholders and other partners in developing selection criteria and evaluating program options. This initial evaluation can also be used to brief utility managers and board members, who can use the information to make decisions about which alternative CAP approach(es), if any, they would like to pursue. The next series of chapters describe the basic strategies—and the associated approaches under each general strategy—that are available to assist the H2R.

CHAPTER 9
DO: RAISE AWARENESS AND SUPPORT FOR EXISTING GOVERNMENT ASSISTANCE PROGRAMS

In this chapter, we focus on H2R assistance Strategy 1 (Indirect Assistance), providing water utility professionals with insights on how to raise awareness and support for government assistance programs that can benefit H2R customers (Figure 9.1). While this chapter focuses on federal and state-level programs, Chapter 10 describes options for partnering with local assistance programs and related community-based organizations.

Federal and state government programs discussed in this chapter include:

- Earned Income Tax Credit (EITC)
- Federal Low-Income Home Energy Assistance Program (LIHEAP) and the (proposed) Federal Water Ratepayer Assistance Program (WRAP)
- Supplemental Nutritional Assistance Program (SNAP) standard utility allowances (SUAs)

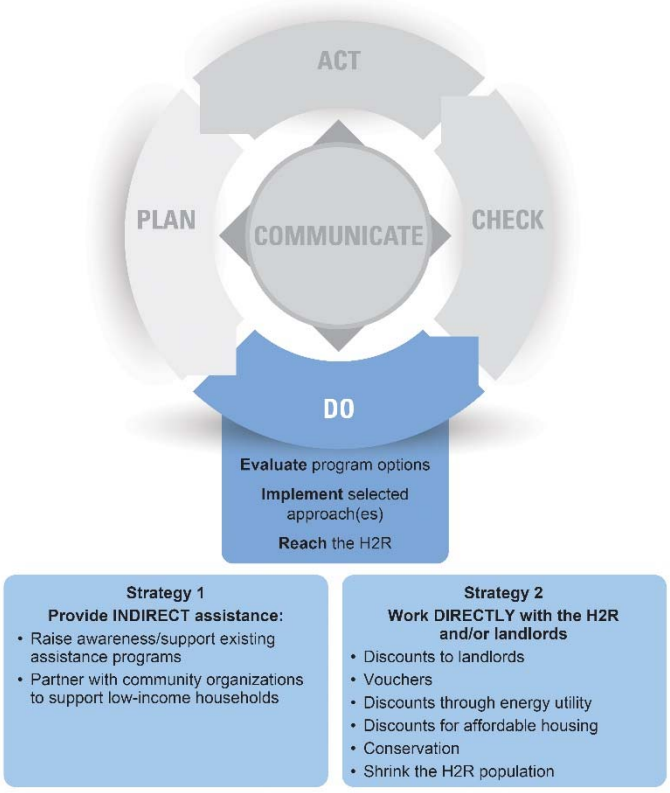


Figure 9.1 The H2R business process framework: DO, Strategy 1

BACKGROUND AND RATIONALE

Helping the H2R gain access to existing low-income assistance programs is administratively simple and relatively inexpensive for the utility, and can provide substantial financial and other support to economically challenged households in the community. For example, two of the government assistance programs outlined below are also highlighted in the American Water Works Association's (AWWA's) 2014 *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers*, which encourages utilities to "think outside the bill" by helping low-income customers access existing assistance programs. AWWA's rationale for this strategy is the belief that by encouraging additional participation in programs that are currently underutilized, "a local utility can improve its customers' overall economic well-being, thus making the water bill more affordable" (AWWA 2014). This strategy can also be

applied to customers who do not receive a bill, helping them to afford rent, and therefore indirectly afford water and wastewater services.

Vock (2014) offers similar insights from an interview with Janice Beecher, director of the Institute of Public Utilities at Michigan State University and a known expert on water affordability. In the interview, Beecher states that utilities may have to look beyond rates to help low-income customers, noting that "it's very difficult to solve our poverty and equity issues all within rate design." Beecher also indicated that "in many cases, we're talking about the same families who are struggling. Rather than reinvent the wheel, maybe we should have some coordinated effort to make sure they're able to pay their energy bills. That will make it easier to afford their water bill" (Vock 2014). Without direct access to H2R customers through a utility billing system, utilities will need to find new ways to communicate the benefits of these programs to this group of customers (see Chapter 14 for H2R outreach strategies). In some cases, utilities can pair these efforts with existing community outreach programs that target all community members, rather than direct bill-payers.

In addition to raising awareness to increase participation, utilities can also engage by providing support for existing programs. For example, Vock (2014) acknowledges that the public sector, including water and wastewater utilities, can help by ensuring there is enough funding for the federal LIHEAP and its state counterparts. As outlined below, the need for water sector support also extends to other assistance programs, including SNAP and WRAP.

EITC

Promoting the EITC is one of the most cost-effective, ways for a utility to generate assistance for its H2R customers. The federal EITC (and associated state EITC, where available) is commonly recognized as the largest anti-poverty program in the nation. As a refundable tax credit, the EITC not only reduces a household's tax liability, but will deliver cash to the household to the extent that the tax credit exceeds the tax liability.[14] Nationally, the EITC provides an average annual tax refund of more than $2,000. The level of benefits that a household receives depends on the household's earned income level and whether there are children in the household (Table 9.1). The EITC is generally available to households that earn too much money to qualify for public assistance programs but too little to consistently pay their utility bills.

Research by the IRS, and others, have found that the majority of households receiving EITC refunds use those refunds, at least in part, not only to pay utility bills, but to pay past-due utility bills (Figure 9.2). Although H2R customers would not use EITC refunds to directly pay their water and/or wastewater bills (because, by definition, they do not receive bills), this additional income would allow them to pay for other non-discretionary items, including their rent and other utilities. Reaching a modest goal of increasing EITC penetration by 5%, an objective that should be reasonably attainable in any jurisdiction, can mean millions of dollars statewide.

14. Nearly 90% of EITC program expenditures come in the form of tax refunds, with only 10% serving to reduce the tax liability (Goodman-Bacon and McGranahan 2008).

Table 9.1
2015 maximum EITC benefits and maximum income eligibility

		Maximum income	
	Maximum benefit[a]	Single	Married
Childless	$503	$14,820	$20,330
1 child	$3,359	$39,131	$44,651
2 children	$5,548	$44,454	$49,974
3 or more children	$6,242	$47,747	$53,267

Source: Data from IRS 2015
a. EITC benefits increase as earned income increases, before reaching a plateau, and then decreasing down to zero dollars.

Multiple studies show that EITC recipients use funds to pay bills, including utility bills, and reduce debt. For example:

- In a survey of participants in the University of Georgia's Financial Literacy Training Program, Linnenbrink et al. (2006) found that EITC recipients planned to use most of their refund to pay for or catch up on bills.
- A research paper from the Washington University Center for Social Development reported that: "compared with those who did not receive the EITC, EITC recipients in the 2013 [Household Financial] Survey were more likely to pay down debt and less likely to save the refund." The study also found that "recipients allocate their refunds carefully, meeting essential needs that they may have difficulty addressing with regular income" (Despard et al. 2015).
- Mendenhall et al. (2012) examined EITC recipients in both Boston and Central Illinois, finding that "paying bills and debts was another important category" for how recipients used their EITC benefits; 84% of the study population reportedly used some of their tax refund for these purposes.
- Mammen and Lawrence (2006) studied both urban and rural working families that received EITC benefits, reporting that almost 44% of the rural families in their sample indicated they used all or part of their tax credit to pay a variety of bills including utilities, cable, and credit card. The authors also found that some recipients used their EITC to pay in advance on bills, stating: "[p]aying bills such as electric, water, telephone, or insurance ahead of time may provide families peace of mind and ease their anxieties about not having the necessary funds when their bills are due."
- Research from New York City's Volunteer Income Tax Assistance (VITA) program found that the majority of EITC refunds were expected to be used to repay debt or meet immediate needs (Rhine et al. 2004). According to a study of EITC recipients in New York, 40% of participant households reported that they used their EITC refunds to pay utility bills, a higher percentage than those using their EITC benefits to pay for rent (31%), credit cards (28%), car payments (22%), and groceries (21%) (Simpson et al. 2006).
- In a 1994 study, Edison Electric Institute (EEI) found that one-third of all EITC recipients in New Jersey used their EITC refund to pay past-due bills, and one-quarter of all recipients used their EITC benefits to pay past-due *utility* bills (Colton 2002).

Figure 9.2 EITC recipients use funds to pay utility bills: Academic research provides supportive evidence

Utilities such as Entergy, a multi-state electricity company serving the Middle South of the United States, have found promotion of the EITC to result not merely in direct assistance, but in a substantial economic multiplier that benefits the utility beyond the bill payment impacts associated with low-income households. The Entergy EITC "success story" is described in Figure 9.3.

Although Entergy's program does not specifically target H2R customers (the majority of energy customers receive a bill directly), utilities could build similar programs that include strategies for reaching the H2R.

Entergy perhaps leads the nation in supporting the promotion of the EITC among utility companies. According to Entergy's EITC spokesperson, Elizabeth Brister, Entergy has used utility dollars to promote the EITC to the company's 2.8 million customers for more than a decade. Entergy spends more than a half million dollars a year on its EITC outreach activities.

Outreach and Communication

Entergy begins with a Comprehensive Media campaign. This plan involves paid media, including print, on-line, and social media. The media campaign not only encourages taxpayers to determine if they qualify for the EITC, but also directs people to the Entergy.com EITC website, which identifies all free tax preparation sites available to taxpayers in the EITC service territories.

In addition to its paid media, Entergy uses telephone calls and two bill inserts a year—one produced by the company and the other produced by the IRS—to promote the EITC. The IRS EITC mailers, Brister says, are the only non-Entergy literature the company allows to be included with its bills. The billing inserts are circulated with December and January bills, the two months in which the Company's customers begin to think about tax filing. (Note: Bill inserts are obviously not a way to reach H2R customers because they do not receive a bill; Chapter 14 describes other ways utilities can reach these customers with similar information.)

Tax Filing Assistance

Entergy seeks to help its low-income customers keep the full tax credit for their own use as well. One drain on the tax credit occurs when people use paid tax preparers to file their returns. Not only do such tax preparers charge hundreds of dollars for the relatively simple returns involved with EITC recipients, but many also prey on the financial problems of low-income households by offering "tax anticipation loans" with exorbitant interest rates. The annual interest rates on tax anticipation loans—under which the preparer offers to provide the tax filer with a short-term loan to be repaid when the tax refund is received—often reach as high as 200%.

To try to keep more of the EITC in low-income households, for the past four years, Entergy has sponsored 422 VITA sites providing free income tax preparation for income-qualified households. For the past three years, Entergy has supplemented these sponsored sites with "a couple of hundred" company employees who donate their time as volunteers to help staff the sites.

Measures of Success

Given its years of experience with EITC promotion, Entergy staff now say that they no longer need to "prove" the value of this effort to company management. The value of the tax refunds they help to generate is large and getting larger each year. From 2011 through 2015, for example, Entergy's efforts helped generate $125 million in assistance in its four-state service territory. In 2016 alone, Entergy helped its customers receive more than $35 million in tax credits. In addition to helping customers pay their bills, Brister says, these dollars help generate economic activity throughout the company's service territories, thus benefiting not only those who receive the benefits, but all customers, and the utility itself.

Broader Application

While Entergy may be the utility leader in promoting the EITC, it is certainly not the only utility engaging in such promotion. New Jersey's Public Service Electric and Gas (PSEG) promotes the EITC through various methods, including bill messages, press releases, and flyers. PSEG displays EITC information in many of its local Customer Service Centers (these could also easily be displayed at local community centers, fairs, food banks, or other spots where they will reach the H2R). The Michigan Public Service Commission includes information on the EITC in its "consumer alert," explaining the full range of winter heating assistance available in that state, including laws that protect consumers from shut-offs.

Source: Elizabeth Brister, Entergy Corporation, personal communication. July 23, 2016.

Figure 9.3 An energy sector success story: Getting the word out about EITC

LIHEAP

LIHEAP is a federal assistance program that is administered at the state level to assist low-income households cover energy and heating bills. Each state sets specific eligibility criteria and application procedures that are subject to certain federal requirements. In 2013, LIHEAP provided approximately $3.2 billion to help low-income households pay for heating and cooling their homes, usually with annual grants in the range of $200 to $500 per year per household. Currently, approximately 20% of eligible households receive LIHEAP benefits (AWWA 2014). Increasing awareness of LIHEAP among H2R customers can increase their level of enrollment and provide indirect financial assistance to those households.

LIHEAP has several aspects that are relevant to H2R customers. The program requires the customer to apply for a grant, with the funding going directly to the utility for the customer's account. However, in many states, households that pay their energy bill through their rent are also eligible for LIHEAP. For these households, instead of LIHEAP benefits going directly to a utility, the state provides the funds directly to the low-income household. For example, in Colorado, LIHEAP benefits are deposited into the recipients' Electronic Benefit Transfer (EBT) account, which allows the state to issue benefits via a magnetically encoded payment card. The recipient can then use those funds to help pay their rent (Jennifer Gremmert, Energy Outreach Colorado, personal communication, August 28, 2015).

In addition, the federal LIHEAP authorizing legislation directly addresses the effect of energy assistance benefits on income eligibility or level of benefits received from other assistance programs (e.g., Supplemental Security Income [SSI], SNAP; Saunders et al. 1998), which can be a barrier for water voucher programs. Specifically, the legislation states that LIHEAP benefits "should not be considered income or resources … for any purpose under any federal or state law, including any law relating to taxation, food stamps, public assistance, or welfare programs" (42 U.S.C. 8624 (f)(1) [Safe Drinking Water Act 1994, as cited in Saunders et al. 1998]).

WRAP

For several years, many water sector professionals have championed the idea of a federal WRAP, modeled after LIHEAP (NCLC 2014). In 2003 and 2009, the National Drinking Water Advisory Council (NDWAC) recommended that the government adopt a Low-Income Water Assistance Program (LIWAP, now referred to as WRAP) as an analog to LIHEAP, possibly to be implemented as grants to states to provide targeted assistance and funded by Congressional appropriation. As noted by NDWAC, "By providing financial assistance at the individual household level, rather than, or in addition to, assistance at the system level, more of the taxpayer funding would go to households in need." In recent years, the National Association of Clean Water Agencies and others have engaged in further efforts to implement WRAP at the federal level, and there are additional opportunities for utilities to become involved in this effort, including efforts in at least one state to introduce legislation that would secure state funding to help low-income residents pay their water utility bills.

One consideration related to developing a WRAP program is whether it may be more efficient and administratively effective to instead piggyback it onto the existing LIHEAP program. By supporting LIHEAP outreach and enrollment efforts, and/or supplementing LIHEAP payments, a water-motivated assistance program is likely to be much less administratively

burdensome for both utilities and targeted households than establishing a separate WRAP program aimed to reach the same economically challenged members of the community.

In addition, WRAP could be extended to H2R customers. For example, in Colorado, customers who do not receive an energy bill directly (i.e., H2R energy customers) but who are eligible for LIHEAP can receive LIHEAP funds on their Electronic Benefits Transfer (EBT) debit cards. EBT is an electronic system that allows state welfare departments to issue benefits via a magnetically encoded payment card, used in the United States.

SNAP AND SUAS

One of the largest "non-energy" utility assistance programs in the nation is the federal Food Stamp program, now known as SNAP. Under SNAP, recipients can take advantage of the "excess shelter deduction." Under this deduction, a household whose total shelter costs (including all utilities, with the exception of cellular telephone service) exceed 50% of its income can take the "excess" shelter expense as an income deduction for purposes of calculating both SNAP eligibility and total benefits that the household receives. Each $3 of income reduction tends to result in $2 of additional SNAP benefits. Rather than requiring households to "prove" the level of their utility bills, however, most states apply a statewide "standard utility allowance."

Most state SNAP offices do not have the technical capacity to calculate their "standard utility allowance" each year, and these offices could benefit from local utility involvement. For example, affordability expert, Roger Colton, calculates SUAs for several states. He reports that one state he worked with "did not realize that water bills and sewer bills were often separate bills." Another state he worked with to calculate energy utility allowances included monthly flat charges and usage (per-kWh) charges for electricity, but did not know about additional charges that utilities often add to energy bills (e.g., rate riders and adjustment clauses for purchased gas and fuel). In this state, adjustment clauses were more than half of the total electric bill.

Utility involvement in providing reasonably straightforward rate calculations would be helpful in providing adequate SUAs. This could result in qualifying some SNAP families that had not previously qualified for an excess shelter cost deduction, as well as increasing the deduction for some SNAP families that had previously qualified.

SUMMARY

Raising awareness and providing support for existing state and federal assistance programs is a relatively easy and low-cost way for utilities to indirectly support low-income, H2R customers within their service area. Many utilities may already be raising awareness for these programs among their direct customers (e.g., through bill inserts), and simply expanding this outreach to H2R customers might not take too much effort. As outlined in Chapter 14, more creative and sustained outreach methods may be necessary to raise awareness among H2R populations. Promoting the programs above can also serve as a complement to more direct assistance strategies.

CHAPTER 10
DO: PARTNER WITH COMMUNITY ORGANIZATIONS TO INDIRECTLY SUPPORT LOW-INCOME HOUSEHOLDS

This chapter focuses on a variation of Strategy 1 of the "DO" section in the business process framework (Figure 10.1), in which a utility partners with local community-based organizations (CBOs) to provide "indirect" assistance to hard-to-reach (H2R) customers. Specifically, this chapter outlines how utilities can work with community organizations to support or develop programs that treat the cause of utility (or rent) payment troubles. These programs can potentially benefit both customers that receive a bill, as well as H2R customers.

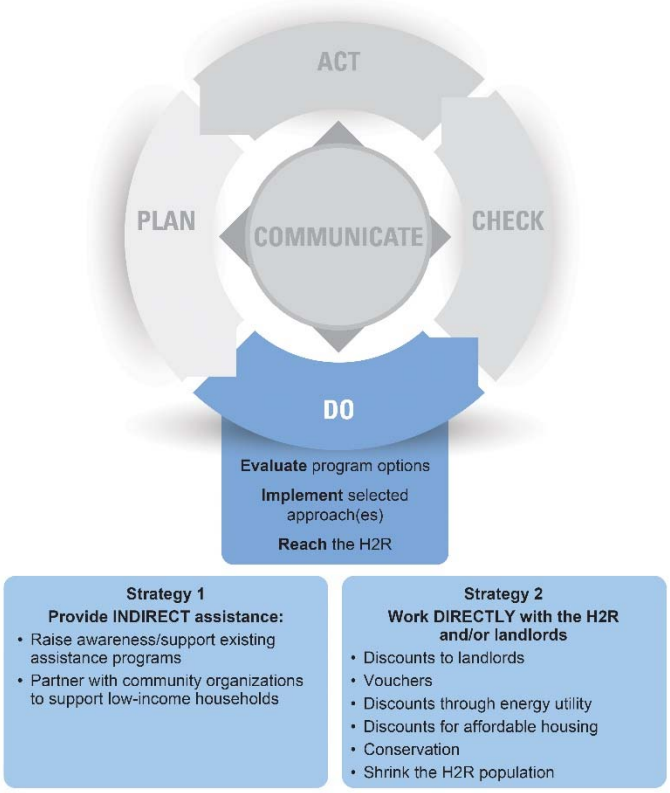


Figure 10.1 The H2R business process framework: DO, Strategy 1

BACKGROUND AND RATIONALE

The assistance strategies outlined in this chapter are based on extensive research that shows one of the best practices for assisting low-income customers is not to treat the bill (or rent) payment aspects of the nonpayment (i.e., by providing a direct discount), but rather to address the underlying problem. One way to accomplish this is for water utilities to become more active in supporting the ability of low-income households to develop and manage their resources or assets. This approach includes programs that enhance budgeting capabilities, promote savings, and thereby buttress the "fragile incomes" of H2R households.

This approach to assistance is supported by considerable research. For example, a 2010 study by the Urban Institute (Mills and Amick 2010) found that for households in lower income ranges, vulnerability to unexpected changes in income or expenses is especially pronounced. The authors report that more than two-thirds of households in the lowest income quintile hold no liquid assets, but that holding liquid assets of up to $1,999 (versus having no such assets) significantly reduces the incidence of material hardships, including missed utility payments (Mills and Amick 2010).[15] The authors concluded that "initiatives to promote low-income savings can avert hardship

15. Specifically, the study found that for households in the lowest income quintile, having liquid assets of between $1 and $1,999 would reduce missed utility payments by 4.2% (from 20.4% with no assets experiencing missed payments). It would reduce the percentage of utility shutoffs by 1.3% (from 3.9% with no assets experiencing shutoffs).

for low-income households, even if the amount of accumulated liquid assets is relatively modest. Such a buffer stock can enable households to fend off minor shocks to income or expenses and avert the more serious consequences that might otherwise result" (Mills and Amick 2010).

Another study by the Consumer Federation of American (CFA) reports that less than one-third of low-income households have a savings account, less than three-tenths have emergency savings of at least $500, and that the median amount of those with a checking and/or savings account is only $600 (Brobeck 2008). The study also found that for households with incomes under $25,000, the lower the level of "emergency savings," the more likely households are to express concern about paying monthly bills, have difficulty making monthly mortgage or rent payments, bounce checks, make only minimum credit card payments, and take out payday loans. In addition, low-income households perceive typical emergency savings needs to amount to approximately $1,500, but they typically spend $2,000 annually on these needs (Brobeck 2008). The CFA study concluded that inadequate liquid financial resources to pay for unexpected expenditures are related to many undesirable financial experiences.

Based on this research alone, it seems evident that helping to support the financial literacy of low-income, H2R customers can provide significant benefits, helping to reduce the need for direct assistance programs.

EXAMPLE PROGRAM MODELS

Implementing an indirect assistance strategy that reaches H2R customers can range in complexity and resources required, depending on the level of involvement desired by the utility. In some cases, utilities may wish to simply provide monetary support to an existing program. In other cases, they may want to play a more active role in developing, supporting, expanding, and/or communicating with H2R customers about the program. The key to successfully implementing an indirect assistance strategy is to identify and work with community and state-level organizations (as well as other utilities) that have experience implementing these types of programs.

Figures 10.2 and 10.3 provide examples of indirect assistance strategies implemented by local and state agencies for the purposes of helping low-income water and energy utility customers better afford their utility bills. The first example describes the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) and Public Service Company of New Mexico's (PNM's) efforts to partner with a local faith-based organization to provide budget and debt management courses. The second describes the Georgia Residential Energy Assistance CHallenge (REACH) project, under which the Georgia Department of Human Resources (DHR) and Partnership for Community Action, Inc. of Decatur, GA administered "Project Energize." While aspects of these programs are not (and should not be) implemented directly by the utilities, they represent successful utility partnerships.

ABCWUA and PNM are currently partnering with True North Financial Ministries, an organization that offers free budget and debt management trainings to residents and helps build their skills for long-term financial management. True North offers two different budget and debt management courses. Living Debt Free is a one-day, six-hour course that helps participants create a budget, increase savings, and eliminate debt. Money Academy is a comprehensive, six-week course that meets one night per week for two hours. It includes lessons on communication between couples, goal-setting, creating a budget by hand, increasing savings, and eliminating debt. "It's not about education alone, but application," says True North Executive Director Mike Cosgrove. "We have people sit down with pencil and paper and calculators."

Maddie Martinez-Vega, PNM's low-income program director, credits True North's trainings for helping residents turn their lives around. She attributes the success to Cosgrove's leadership in the community. "Mike doesn't stop with teaching," says Martinez-Vega. "He gives [participants] his cell phone number and takes their calls," providing ongoing coaching when residents seek advice on financial decisions.

Cosgrove believes that reframing the goal of assistance programs—providing training for long-term financial stability instead of providing handouts—is key to supporting low-income customers in a more meaningful and lasting way. "Utilities should provide direction and training to do better," says Cosgrove.

Figure 10.2 Providing budget and debt management courses, ABCWUA and PNM

Additional potential program models include:

- Programs that help low-income resident develop a pathway to homeownership. Given that the large majority of H2R households are renters, the advantage of supporting asset building for homeownership would yield significant benefits for this targeted low-income population.
- Programs that provide assistance during the summer months to customers with children. One of the largest income supplements to a low-income household during the school year is the Free and Reduced School Breakfast and Lunch program. When school is "out" during the summer, additional household food costs can create a major burden to households. The answer is to promote participation in summer food assistance programs or to support or help organize local institutions (summer camps, YMCAs, etc.) to apply for and be qualified to deliver summer food assistance programs.
- Partnering with private sector institutions to target the "unbanked" population, which accounts for a substantial portion of low-income households, by helping them to open checking or savings accounts or Individualized Development Accounts (IDAs).

These programs can benefit all low-income customers, including H2R populations. However, as with all H2R assistance strategies, more creative and sustained outreach methods may be necessary to raise awareness and facilitate program enrollment among this subpopulation (see Chapter 14).

One of the most concerted efforts to address the underlying "fragility" of income as it relates to economically-challenged utility customers occurred through the Georgia REACH project in the early 2000s. REACH is the Residential Energy Assistance CHallenge grant of the federal Low-Income Home Energy Assistance Program (LIHEAP).

Through Georgia REACH, the Georgia DHR and Partnership for Community Action, Inc. of Decatur, GA implemented "Project Energize." Key objectives of this program included: (1) addressing the need for reducing the energy burdens of low income families, (2) increasing the regularity of energy payments, (3) increasing energy supplier contributions to the reduction of household energy burdens, and (4) providing energy conservation tips and household budgeting education to low income families.

Project Energize targeted a specific segment of the LIHEAP client base: single-parent, female-headed DeKalb County households with children. The program was designed to identify household-specific barriers or risks to self-sufficiency and to implement household-specific interventions to help households overcome these barriers (Colton 2006). Georgia REACH indicates that participant's most commonly identified risks (aside from inadequate income) included the inability to respond to emergencies due to a lack of savings, and the inability to afford high seasonal bill burdens. Interventions directed to participant households involved "helping households create a savings plan, develop a money management plan, and apply for a Lifeline banking account in response to the lack of savings that would help in times of income or expense exigencies" (Colton 2006).

The Georgia REACH evaluation report for the program concluded:

> Targeting interventions tailored to the specifically-identified risks facing a household is an intense, and more expensive, proposition than delivering more generic energy assistance (either cash or efficiency investments). Nonetheless, the experience of the Georgia REACH project supports the conclusion that the adverse impacts of unaffordable home energy bills can manifest themselves as other than an "energy" problem. While the Project Energize family advocates helped negotiate deferred payments plans for the unpaid bills of a definable group of Cohort participants, they also helped generate resources such as additional food assistance (Food Stamps, National School Lunch/Breakfast Program), for households that worried they could not *both* pay their energy bills *and* put adequate food on the table. Even within the energy realm, while some households needed additional cash assistance, others needed help in negotiating the process of enrolling in levelized billing (simply to take seasonal peaks off of bills). While some households needed building shell improvements, others needed appliance replacements. The experience of Project Energize supports the conclusion that targeted, household-specific interventions are an important aspect of responding to home energy unaffordability (Colton 2006).

Figure 10.3 Georgia REACH: Project energize, addressing household risks

SUMMARY

The types of indirect assistance strategies described in this chapter aim to address the underlying problems associated with bill or rent payment troubles. A key aspect of providing this type of assistance is to identify and work with community and state-level organizations (as well as other utilities) that have experience implementing these programs. Partnering with well-established, highly trusted and effective CBOs is a key to successfully assisting the H2R and other economically challenged households in the service area. The level of complexity and resources required to implement these strategies depends on the level of involvement desired by the utility. In some cases, implementing these programs may be as easy as expanding outreach for an existing program to include H2R customers, and/or funneling funds and other resources to help bolster and expand successful existing community-focused support programs.

CHAPTER 11
DO: WORK DIRECTLY WITH HARD-TO-REACH CUSTOMERS AND THEIR LANDLORDS

This chapter focuses on Strategy 2 of the "DO" section in the business process framework: providing "direct" assistance to hard-to-reach (H2R) customers and/or their landlords in the form of discounts or credits (Figure 11.1). In the following sections, we provide some background and rationale for direct assistance programs, and an overview of the following program models:

- Offering discounts to landlords of low-income, H2R households
- Providing vouchers to H2R customers, which they can use to pay a portion of their rent
- Working with a local energy utility to provide discounts for water services on a household's energy bill
- Working with public housing agencies or landlords of affordable housing to offset utility costs or to "pass through" discounts directly to tenants

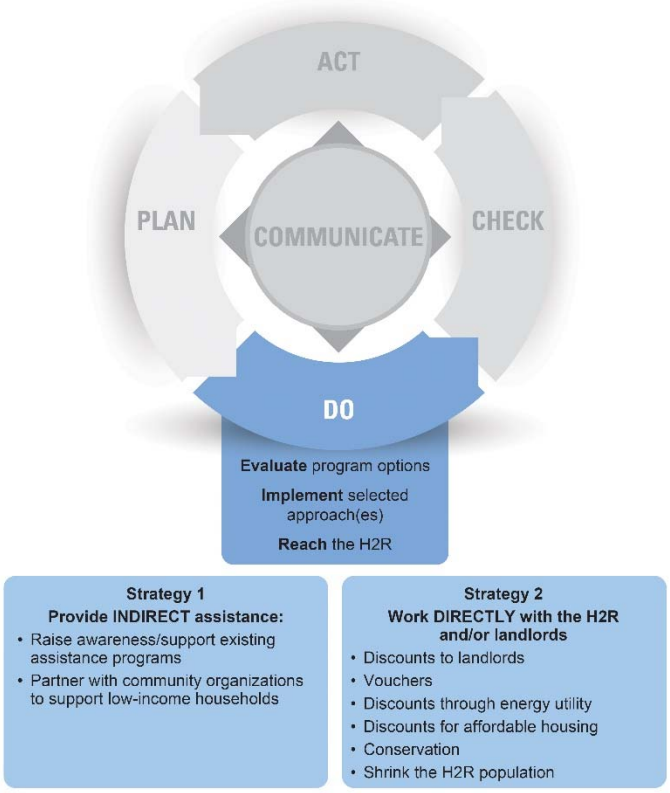


Figure 11.1 The H2R business process framework: DO, Strategy 2

BACKGROUND AND RATIONALE

Existing research indicates that the general result of higher utility bills for rental properties is an increase in rental charges. For example, in an early Water Research Foundation (WRF) report on customer assistance programs (CAPs), Saunders et al. (1998) state that "unless restricted by local, state, or federal rule, most landlords will pass increases in water and sewer rates along to their tenants." The authors also state that "the impact of these raised rents due to an increase in water costs can be as harmful to low-income households as is the increase in water rates itself. The financial burden that these costs place on low-income families is the same whether the additional income must go toward the water bill or the landlord for rent" (Saunders et al. 1998).

Hynek et al. (2012) make a similar argument within the context of energy assistance and conservation programs for multi-family buildings, noting that in large market-rate apartment buildings, utility/operating costs are typically included in the tenants' rent. The authors state that

"in buildings in heating-dominated climates, utility costs are typically the second largest operating expense, after debt service. Therefore, whether directly or indirectly, utility bill costs are paid by the tenants."

Hynek et al. (2012) also make the case for why savings or discounts from programs that reduce landlord costs for water services would more than likely be passed on to the tenant, writing that when the customer base is generally from the lower end of the income scale, tenants are very price-sensitive, and rents are very competitive. Saunders et al. (1998) report that when rents of low-income tenants are increased to compensate for increased utility costs, the level of defaults in the payment of rents by the tenants increases accordingly. Thus, landlords of lower-income housing have a clear incentive to maintain competitive prices.

Several utilities have developed low-income assistance programs that provide direct discounts to H2R customers and/or their landlords based on the axiom that (1) landlords pass water and wastewater costs directly on to their tenants, and (2) landlords have a clear incentive to pass utility discounts or savings on to tenants by maintaining competitive market rents. The following sections provide an overview of these different program models.

OFFERING DISCOUNTS TO LANDLORDS OF LOW-INCOME, H2R HOUSEHOLDS

Under this model, the utility may extend a traditional, bill-based credit or flat rate (per unit) discount to owners or landlords of multi-family buildings. Many utilities cite difficulties in ensuring that these credits or discounts are passed on to low-income tenants as the primary barrier to this approach. For example, the Portland Water Bureau (PWB) has considered several options for expanding its low-income assistance program to cover multi-family units. A key challenge for the utility is that because it receives funding from the U.S. Environmental Protection Agency (EPA), any rate discounts the utility provides must comply with federal guidelines. These guidelines require the utility to include a mechanism that ensures that landlords pass rate discounts on to tenants. PWB has not been able to identify a cost-effective way to meet this requirement. However, our research indicates that in some areas, enforcement may not be necessary (i.e., landlords will generally use the discounts to maintain affordable rents), particularly in areas with competitive market rents for low-income households.

In addition to enforcement issues, Saunders et al. (1998) noted a few challenges associated with this option, especially when landlords must apply for the program on behalf of all tenants, because they may find this process to be overly burdensome. The Columbus (OH) Department of Public Utilities has identified this as an ongoing challenge for their Low-Income Multi-Family Property Utility Discount Program (UDP; Figure 11.2). A potential solution to this problem is to associate program eligibility with the physical housing unit, rather than on the income levels of individual tenants. This would require an identification of low-income market-rate housing, but would eliminate the need to collect information from tenants. With this approach, program renewal could also be extended beyond the typical annual timeline, helping to decrease the administrative burden. The New York City Department of Environmental Protection Agency (NYC DEP) follows this model with its Multi-Family Water Assistance Program, which provides flat rate credits to landlords of affordable housing based on specific building characteristics (as described elsewhere in this chapter).

In addition, Saunders et al. (1998) note that rents are typically paid in advance, while water bills are paid based on the amount of water already used. Thus, there may be administrative or

practical difficulties marrying prospective rental payments with retroactive water bills. However, a flat rate discount would avoid this problem.

The City of Columbus Department of Public Utilities is one of the few utilities that has a discount program available to low-income renters in market-rate, multi-family buildings with a single meter. The program provides a 20% discount on water and sewer bills to eligible properties.

To be eligible for the multi-unit, low-income discount program, a building owner must bill tenants for water and sewer services (i.e., the lease must state that the tenant pays for these services). At least 80% of the building's units must have income levels of 150% or less of the federal poverty level, or must participate in another low-income program, which could include (1) food stamp programs, (2) Ohio Medicaid, (3) Low-Income Home Energy Assistance Program (LIHEAP), (4) Home Energy Assistance Program (HEAP), (5) Ohio Works First, (6) Social Security Disability, (7) subsidized or public housing benefits programs, or (8) another similar program approved by the Director of Public Utilities.

The program application requires building owners to indicate whether the building receives subsidized housing benefits and, if not, to provide documentation that 80% of the rental units meet income eligibility thresholds or that 80% of the tenants participate in other low-income programs. Building owners must also provide a copy of a signed tenant lease; a roster of current tenant names and addresses; and a copy of a current water and sewer bill that tenants receive and a copy of a tenant's payment or, if billing is handled by a third party, a copy of the current third-party contract.

In 2015, approximately 1,400 building owners participated in the program. However, this accounts for only a small percentage of total multi-family buildings. Representatives from the utility believe that the enrollment and documentation process may prove to be overly burdensome for many landlords.

Figure 11.2 Discount to landlords of low-income, multi-family households: Columbus, Ohio

WATER VOUCHERS SUPPLIED TO LOW-INCOME HOUSEHOLDS TO USE IN PAYING A PORTION OF THEIR RENT

Under a water voucher program, the water or wastewater utility provides a voucher or "water stamp" to low-income H2R households that they can use to pay a portion of their rent. A potential flaw with voucher programs is the impact they may have on other government benefits that low-income households receive. Government assistance programs (e.g., Supplemental Nutrition Assistance Program [SNAP], Supplemental Security Income [SSI]) typically use income to determine a household's eligibility. If water vouchers are considered a source of income (or in-kind income), this could affect the level of benefits that the household receives from other programs, as well as basic eligibility (Saunders et al. 1998). However, although it may make a substantial difference for low-income families in meeting monthly obligations, the total discount that customers receive under these programs would be relatively small. In addition, many customers in need of assistance make too much money to qualify for these other programs. As outlined in Figure 11.3, Seattle Public Utilities (SPU) recently initiated a program that provides vouchers to income-eligible households that do not receive an energy or water bill.

SPU has recently resurrected a program to provide credits to income-eligible water users who receive neither a water bill nor an electricity bill. In Seattle, the overwhelming majority of renters have their own electricity accounts. However, there is small group of households where the landlord handles even the electricity bill. Examples include mobile home parks; single residence occupancies; and, more recently, aPodment® Suites. In such cases, the city's utilities have no relationship with these tenants. However, SPU uses a voucher system to provide the credit directly to the renters. The process begins with SPU calculating the combined solid waste, sewer, drainage, and drinking water credit per household. Currently this amounts to about $52–85 per month. The tenant is given this amount in the form of a voucher. When rent is due, the tenant turns in the voucher as a part of the rent payment. The landlord then uses the voucher to pay part of the SPU bill.

Figure 11.3 Reaching those who receive neither a water nor electric bill: Seattle, Washington

DISCOUNTS ON OTHER UTILITY BILLS THAT ARE PAID FOR DIRECTLY BY THE HOUSEHOLDS

With this option, the water or wastewater utility provides a credit to low-income H2R customers through the households' energy or telecommunications bill, which most households pay directly. There can be administrative barriers associated with this option because it requires the water and/or wastewater utility to coordinate billing with other agencies. In many cases, however, such as with combined utilities, or where separate utilities are both owned by the city, these data may be accessible across departments. Utilities may also be able to work together to overcome this challenge. Figure 11.4 describes SPU's successful implementation of this model.

SPU is one department within the City of Seattle, but handles solid waste, sewer, drainage, and drinking water services for the city. SPU has successfully modified its UDP, which is relevant to households with an income at or below 70% of the state median income, to make it accessible to tenants who do not receive a water bill.

The UDP covers 50% of the SPU bill for eligible income levels. For those customers who do receive a bill, SPU calculates the income threshold based on household size. For tenants who are not billed directly, SPU provides a flat rate discount via the household's Seattle City Lights electricity bill. Though Seattle City Lights is a separate department, it shares the same billing system as SPU. The table below shows the monthly credits that H2R customers receive under this program.

Monthly credits for users not directly billed for SPU utilities

	Water	Sewer	Drainage	Garbage	Yard waste	Total
Single-family	$19.84	$26.38	$16.25	$17.00	$5.45	$84.92
Duplex	$19.84	$26.38	$8.13	$17.00	$5.45	$76.80
Multi-family	$12.38	$18.41	$1.74	$13.90	$5.45	$51.88

A typical single family bill for SPU's combination of services is about $168 per month.

Figure 11.4 SPU partnering with Seattle City Light to provide assistance to their H2R population

WORKING WITH PUBLIC HOUSING AGENCIES OR LANDLORDS OF AFFORDABLE HOUSING: OFFSETTING UTILITY COSTS OR PROVIDING "PASS THROUGH" DISCOUNTS DIRECTLY TO TENANTS

Depending on the utility's objective, another option for providing assistance to low-income H2R customers is to work through existing public or subsidized housing networks to provide direct assistance. Some utilities may find that they would rather focus on providing assistance to tenants in market-rate apartments because subsidized housing residents already receive assistance that helps to offset utility costs. Other utilities may find this is not the case. Still others may find it important to provide discounts to public housing agencies or landlords of affordable housing units in order to help maintain the stock of affordable housing within their community. As described in Figure 11.5, NYC DEP follows the latter model with its proposed Multi-Family Water Assistance Program. Figures 11.6 and 11.7 describe SPU's and PWB's initiatives for directly offering discounts to landlords to promote affordable housing, respectively.

NYC DEP has developed a Multi-Family Water Assistance Program that would provide a $250 per unit credit to landlords of affordable housing units to help pay for water and wastewater services. The NYC Housing Preservation and Development (HPD) will administer the program for DEP, and identify eligible housing projects. The program, as developed, provides $10 million of assistance per year, for up to 40,000 units.

Properties eligible for the Multi-Family Water Assistance Program must meet the following requirements: (1) provide multi-family residential housing with at least four units; (2) maintain affordable rent that costs 30% or less of income for average household that makes below 60% of Area Median Income; (3) meet these affordability guidelines for all units on the property; (4) establish agreement with HPD to maintain affordability for at least 15 years; and (5) comply with all applicable NYC DEP and Water Board regulations, including conservation requirements for metering and high-efficiency fixtures under NYC DEP's Multi-Family Conservation Program (MCP). See Chapter 12 for more information on the MCP.

Figure 11.5 NYC DEP concept for Multi-Family Water Assistance Program provides flat rate, per unit, credits to landlords to promote affordable housing

Prior to July 2016, tenants in Seattle Housing Authority (SHA) housing were expressly ineligible to participate in the UDP. The rationale for the exclusion lay in the fact that this is a federally subsidized housing program. There was a concern that since the federal subsidy includes utility allowances, if these tenants were enrolled in the UDP, then the housing authorities themselves would be the ultimate beneficiaries (through higher rents) from the UDP instead of the individual utility customers. Analyses by the city found this not to be the case. The new ordinance allows about 10,300 SHA households to be eligible to benefit from current credits for SPU and City Light utility services. As in the case of non-SHA subsidized housing, these tenants are now auto-enrolled into the UDP.

Figure 11.6 SPU: Expanding the UDP to tenants in subsidized housing

In January 2015, a Portland City Commissioner appointed a working group with the task of developing strategies for expanding its low-income CAPs to residents in multi-family units who do not receive water bills. Reviewing data for the PWB service area, the working group found that Portland has more than 80,000 multi-family rental units. Approximately 43,000 of these units are occupied by low-income households that make less than 50% of the state median family income, and thus qualify for the city's existing UDP. Further, 30,000 of low-income units are rented at market rates, while 13,000 are subsidized, or regulated.

After reviewing models from other cities and evaluating the advantages and disadvantages of alternative approaches, and having learned from an unsuccessful sub-metering pilot program, the working group recommended that PWB offer a discount to renters in regulated apartments by asking the managing housing agency to pass a discount on to tenants by reducing their rent, thus ensuring the utility discount directly benefits the renter (City of Portland 2015).

The working group chose to focus on regulated housing as a first step because housing authorities already have regulatory oversight that would enable them to handle this service. They also have procedures for passing through federal low-income and affordable housing tax credits to tenants by discounting their rent. In addition, renters must qualify for regulated housing by meeting certain income criteria. Therefore, PWB could adjust its discount program to use the same income threshold so that tenants would automatically meet the discount income criteria. This would reduce the administrative burden associated with program enrollment.

In evaluating potential program models, the working group explored the pass-through approach that regulated housing agencies use to distribute federal and state Low-Income Housing Tax Credits (LIHTC). Through LIHTC, housing authorities pass state or federal discounts along to their tenants by giving households a dollar-for-dollar discount on rent. The working group suggested this same model may be used to offset utility costs for low-income renters.

PWB is still working through the logistics of implementing a pass-through program for tenants in regulated housing. One issue under consideration is whether to provide these households with a flat-rate discount or to try to calculate a discount for each household as a percentage of the water it uses. Flat-rate discounts are easier to administer; however, they deliver disproportionate benefits because customers with low water use receive the same discount as customers with high water use. Flat-rate discounts therefore do not encourage conservation. Percentage-based discounts provide the most appropriate discounts based on a household's water use, but they are difficult to administer because discounts must be recalculated with each bill cycle. They also need to be calibrated for multiple household profiles because a single building could include units for single renters and units for large families. PWB's assistance program currently uses a flat-rate discount, and, according to Brad Blake (Program Coordinator, PWB), the utility likely will continue to use this approach because it is easier to administer. However, the utility would need to recalculate a flat-rate discount for average water use in apartments, which is likely less than average use in a single-family home, the utility's current basis for the discount rate.

Funding the program is another major consideration for the utility. PWB funds its existing CAP, which provides water and sewer discounts to single-family households, at an annual cost of approximately $4.4 million (2014) to assist the current 8,000 participants. Expanding the program to assist 13,000 additional customers would increase program costs to approximately $12.5 million. PWB could obtain this additional funding through increased rates, city general funds, or through customer donations. However, customer donations can be politically unpopular because new donation programs can redirect donations from existing causes, says Brad Blake.

Figure 11.7 PWB: Considering options for providing assistance to low-income renters in multi-family subsidized housing

RATE STRUCTURE CONSIDERATIONS

Another factor that utilities might consider is how their current rate structure affects affordability within their community. For example, in communities with combined sewer systems, use of an impervious area-based stormwater fee, separate from the wastewater fee, may be a way to appropriately shift undue cost burdens away from multifamily buildings. Multifamily buildings generally have high sewer usage in relation to their impervious footprint, whereas some other property types (e.g., big box stores, parking lots, warehouses) have low sewer usage in relation to their impervious area. If the revenue needs for the combined sewer system are met entirely through a wastewater charge, then multifamily buildings may be paying more than they might be if stormwater and wastewater services were billed for separately. Similarly, in a separately sewered community, where the same utility is responsible for wastewater and stormwater infrastructure and both are funded through a bill from that utility, the presence or absence of an impervious area-based stormwater fee will affect the cost burdens on multifamily buildings.

SUMMARY

As noted above, evidence suggests that landlords often eventually pass water and wastewater costs directly on to their tenants, by reducing cost-based pressure for future rent increases. Providing direct discounts to landlords can therefore serve as an effective way to reduce potential rent increases and/or maintain the affordable housing stock, while providing discounts to tenants serves to offset rent increases associated with increased utility bills. Over the past few years, several utilities have begun to successfully implement these approaches. Although direct assistance programs can require the utility to expend more resources and administrative time, working with local nonprofit organizations to help implement various aspects (or all) of the program can reduce or offset these costs, and result in more successful outreach and enrollment. In addition, following the business process framework, utilities can and should integrate these programs with any existing CAPs that they offer to customers that receive a bill directly. This can help to streamline efforts. Finally, as with all approaches targeting the H2R, more creative and sustained outreach methods may be necessary to raise awareness and facilitate program enrollment (see Chapter 14).

CHAPTER 12
DO: WORK DIRECTLY WITH THE HARD-TO-REACH AND/OR LANDLORDS—CONSERVATION PROGRAMS

This chapter continues the discussion of the previous chapter, focusing on Strategy 2 of the "DO" section in the business process framework: providing "direct" assistance to hard-to-reach (H2R) customers and/or their landlords (Figure 12.1). Specifically, in this chapter, we focus on the potential value of implementing conservation programs that help landlords reduce overall water consumption, thereby, reducing water and sewer bills embedded in rents.

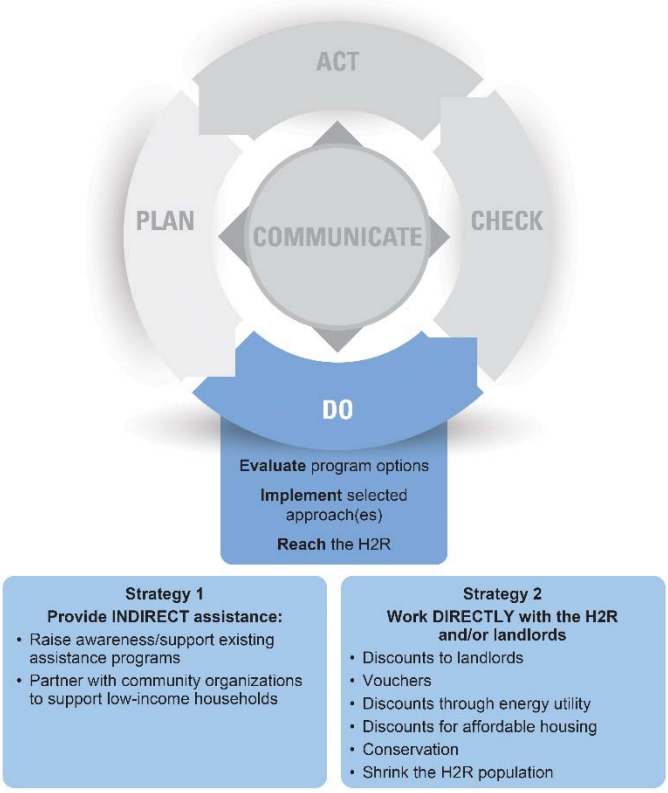


Figure 12.1 The H2R business process framework: DO, Strategy 2

BACKGROUND AND RATIONALE

The result of higher utility bills on rental property is often an increase in rent (see Chapter 3). Unless restricted by local, state, or federal rules, most landlords will ultimately pass increases in water and sewer rates along to their tenants (Saunders et al. 1998). Reducing water use in rental properties inhabited by low-income households—through targeted conservation and premise leak detection and repair programs—can help to reduce the fiscal challenge faced by H2R customers by reducing their landlords' water and sewer bills, which in turn reduces pressures to escalate rental fees.

Water utility conservation programs for multi-family buildings are relatively common in the water sector, and are one pathway to assisting the H2R customers who reside in such dwellings. The primary objective of many of these programs has been to reduce water demand; however, as Saunders et al. (1998) reports, "conservation programs are the best way for landlords to lessen the impact of high water rates on tenants." As demonstrated in Figure 12.2, water savings associated with multifamily conservation programs can be significant.

Holt et al. (2015) conducted a comprehensive study of multi-family efficiency opportunities in Florida for both energy and water, finding the potential for significant monetary savings for both landlords and tenants. The authors modeled the potential energy and water savings from efficiency retrofits to "typical" Florida multi-family rental units under "shallow" and "deep" retrofit package scenarios. Modeling results indicated that "shallow" water retrofits to "typical" Florida multi-family units constructed prior to 1983 would save 34,624 gallons per year *per unit* (57% of base use and $346 in avoided water and wastewater bills), while "deep" retrofits would save 40,020 gallons per year per unit (66% of base use and $400 in avoided water and wastewater bills). If scaled to reach the state's 1.3 million existing multi-family rental units, combined energy and water improvements could save Florida's multi-family property owners and renters an estimated $714 million in annual utility bills (Holt et al. 2015).

Figure 12.2 Florida study shows that water conservation savings can be significant

Many models for water conservation programs exist. Some utilities implement very simple approaches that are relevant to H2R households. For example, Pennsylvania American Water distributes free conservation kits that include low-flow shower heads and devices that lower fill levels in toilets. Other programs focus on lowering overall water building water use. For example, as described in Figure 12.3, the New York City Department of Environmental Protection (NYC DEP) offers a per-unit flat-rate water billing program to landlords/owners of buildings with four or more units who complete certain water efficiency measures.

NYC DEP offers a per-unit flat-rate water billing program, known as the Multi-Family Conservation Program (MCP), for buildings with four or more units that complete certain water efficiency measures. Properties with four or more apartments that were billed under the old "frontage" flat-rate program were automatically converted to the MCP rate on July 1, 2012. To be billed at the flat MCP rate, building owners must install Automated Meter Reading (AMR) devices, and complete required water efficiency measures by June 30, 2016. If they fail to implement these practices, they may be placed on metered billing, or NYC DEP may assess an additional charge on their MCP bill. Buildings that are currently on metered billing can also apply for the MCP rate, but they must complete all applicable water efficiency requirements before they submit an MCP application.

Building owners can use NYC DEP's Flat Rate Comparison Tool to compare the costs of MCP flat-rate bills to the costs of metered charges. In most cases, the MCP rate encourages conservation and lowers the owner's bills, thereby indirectly benefiting low-income renters of multi-family units located in buildings that participate in the program. Currently, more than 90% of New York City Housing Authority billings are calculated under the MCP Rate. In addition to promoting conservation and affordability, the program also provides stability for building owners and revenue stability for DEP.

To be eligible for NYC DEP's proposed Multi-Family Water Assistance Program (described in Chapter 11), multi-family building owners must meet MCP efficiency requirements.

Figure 12.3 Multi-Family Water Conservation Program: NYC DEP

ADDRESSING SPLIT INCENTIVES

From a water or wastewater utility's perspective, H2R customers have one distinguishing characteristic: the person(s) or entity that uses the water is not the utility's "customer" in the sense that they do not have a direct business (billing) relationship. In some instances, the user may be responsible for the maintenance, repair, and replacement of plumbing fixtures and water-using appliances; while in other arrangements, the building owner has some or all of that responsibility. This mix of responsibilities can create a "disconnect" that can impact the effectiveness of a conservation program by creating split incentives.

Water conservation programs, however, usually depend on the same person using water, paying the water bill, and investing in any changes in the plumbing fixtures. When there is a disconnect among these functions, the efficacy of a conservation program can be threatened. This phenomenon is generally known as "split incentives"—that is, the usual incentives for engaging in conservation are divided and can impede the implementation of cost-effective conservation measures (Bird and Hernández 2012). Including strategies to address H2R customers can alter the incentive structure so that cost-effective conservation measures will be undertaken.

The split incentive challenge is evident in implementing water conservation programs for multi-family buildings and single-family renter households that do not receive bills directly. When a landlord includes payment of the water bill in the rent, a tenant has little incentive to conserve water. Alternatively, when a tenant pays the cost of the bill, then the landlord has very little incentive to install water-efficient fixtures in the rental property. In the latter case, it can be the landlord who is "hard-to-reach." Figure 12.4 provides an example of how the Orange Water and Sewer Authority (OWASA) is tackling this issue to further its conservation and affordability goals.

According to the project team's analysis, approximately half of the dwelling units in OWASA's service area are rental properties (including single-family and multi-family dwellings), largely because of the local university student population. The 580 master meters in OWASA's service area represent over 12,000 multi-family dwelling units. About one-third of these premises are sub-metered, meaning that customers re-bill their tenants for water and wastewater service.

To better design outreach programs that overcome this split incentive, OWASA sought to understand the motivators and drivers of rental property owners and managers regarding investment in water use efficiency. As such, OWASA conducted two focus groups in 2016: one for multi-family residential customers who sub-meter and re-bill their tenants, and one for those that do not. In both cases, tenants in these multi-family buildings do not receive a bill directly from OWASA, and are therefore hard for the utility to reach. As indicated below, the owners/managers prefer to be the entity that communicates directly with the tenants, opposed to the utility communicating directly with tenants.

(continued)

Figure 12.4 OWASA: Focus groups on conservation measures for multi-family building owners and operators

Figure 12.4 (Continued)

Key Findings for OWASA

Key take-away points from the focus groups were as follows:

- As with many professionals, property owners/managers are incredibly busy and water is not at the top of their priority list.
- Some management companies use algorithms to set new rental rates daily; fluctuation in water prices affects both rental prices as well as companies' yearly budgeting.
- Owners/managers have interest in installing new, water efficient technologies, but may need external/innovative financing.
- Generally speaking, new property improvements and installation of amenities are due to liability/insurance issues or requests from owners/tenants.
- Managers see a lot of variation in water consumption among owners/tenants in their communities. However, once sub-meters are installed, there are generally significant changes in water-use behavior in tenants.
- Most property managers want to communicate water-related issues directly with owners/tenants in their building (rather than have the water utility do it) to avoid confusion.
- Creating new financing mechanisms, like a revolving loan fund or "On-Bill Financing," could lead to more usage of new, efficient technologies or innovative water reclamation projects.
- Water efficiency and leak identification is out-of-sight and out-of-mind for some buildings that sub-meter and re-bill; others use the data to proactively identify water use anomalies.
- For those buildings that don't sub-meter, identifying leaks can require a great deal of effort to identify within the building.
- Owners/managers are looking for a 6 to 12-month payback on investments in efficiency.
- Cost is not the only reason that owners/managers are not replacing inefficient toilets. Many participants believed that high efficiency toilets are inferior to older toilets.
- It may be important to explore water Public Service Announcements in newspapers and on billboards to communicate with H2R populations, and consider partnerships with other utilities, like recycling, to communicate eco-related behaviors.
- Most property managers preferred that OWASA communicate with them electronically, via email.

OWASA's Next Steps

Pursue outside funding for retrofits of those receiving bill assistance. Over the coming year, OWASA plans to work with community-based entities providing bill assistance to its customers (including Orange County Department of Social Services and churches) to discuss potential funding for the replacement of inefficient toilets, showerheads, and faucets in homes. In North Carolina, it is not permitted that a utility use rates revenue to provide this type of assistance to only certain groups within its customer base, hence the focus on obtaining "outside" funding.

Develop an interactive business case tool and demonstration of high-efficiency toilets for multi-family master-metered property managers and landlords. OWASA plans to develop a case study, as well as an interactive tool that can be tailored to individual situations, to help define the business case for toilet replacement. This business case will be especially salient for those multi-family property managers and landlords that do not sub-meter. Although, this will not likely have a direct impact on the affordability of the unit for the tenant, it will help keep overall costs low and will directly benefit individual tenants if the unit is sub-metered at some date in the future.

WORKING WITH PUBLIC HOUSING AGENCIES TO LOWER WATER USE

Beecher et al. (2001) reviewed successful conservation programs targeting multi-family housing, including public housing. These authors concluded that successful programs for multi-family buildings "tend to target some materials to residents and some to landlords or maintenance personnel," and that a properly designed conservation program for public housing can provide "a high degree of customer acceptance." That same report also notes that an apartment building retrofit program can achieve significant water conservation, as long as efforts are undertaken to include residents in the planning and implementation, which may require providing information to residents in languages other than English.

With respect to public housing agencies, the U.S. Department of Housing and Urban Development (HUD) emphasizes that water conservation is important, both for the environment and to help housing agencies control their costs for water, wastewater, and energy (HUD n.d.). The agency provides a water benchmarking spreadsheet model that public housing agencies can use to evaluate their water consumption against their peers.

Other studies confirm that a public housing agency's cost savings from a robust conservation program can be substantial. For example, CLPHA (n.d.) cites a 54% reduction in water usage in a public housing project in Seattle and annual savings of more than $4 million in energy and water costs from water- and energy-efficiency retrofits in a public housing program in Cleveland. Indeed, one report identified the savings in Seattle public housing as more than $800,000 per year just from upgrading to low-flow toilets (GAO 2008).

A review by the U.S. Government Accountability Office (GAO) found that water conservation measures in public housing could produce substantial savings and may pay for themselves in a short period of time (GAO 2008). The report noted, for example, that "HUD officials said that water conservation savings were significant and among the biggest potential opportunities for financial savings" and that "energy efficiency and water conservation measures can reduce utility costs and provide relatively quick payback on their initial investment."

That report cautions, however, that split incentives can be particularly problematic in public housing projects. Specifically, not only is there a split between water users and building owners, but many public housing owners or tenants receive a payment from HUD known as a "utility allowance." When utility costs decline because of conservation measures, the utility allowance also declines, meaning that HUD will capture a portion of the savings from conservation. These issues can be addressed, at least in part, through a well-designed utility-sponsored conservation program that works with tenants and building owners to ensure that costs and benefits are allocated appropriately.

An example from Denver highlights a successful partnership between a drinking water utility (Denver Water) and the local public housing agency (Denver Housing Authority, DHA Figure 12.5) to reduce water use and associated costs. In this example, the housing authority, not the utility, was responsible for all outreach and educational efforts directed at residents (the water users). This type of partnership may be an effective strategy in addressing the needs of H2R customers, particularly when it concerns their participation in a water conservation program that does not provide direct, tangible benefits to the water users.

Denver Water (DW) has been aggressively pursuing water conservation for many years. In the mid-2000s, DW recognized that it needed to address water usage in public housing developments. The Denver Housing Authority (DHA) owns nearly 5,000 housing units and was responsible for paying the water bill and making any capital improvements. Individuals and families, however, make day-to-day decisions about using water and reporting leaks.

An article about the Denver program provides some useful insight into the views of the residents (the H2R customers) when the program was first implemented:

> Initially, residents were apprehensive of the DHA water conservation efforts. Some felt it was "taking away" a choice or the "control factor" they had in their own units. DHA was challenged with providing outreach and frequent conservation education to the families, youth and children of DHA properties. Once managers and maintenance explained the water conservation efforts through extensive outreach, orientation, and education, there was acceptance of the water conservation program (DHA 2009).

Because the housing authority is responsible for paying water bill and capital improvements in the housing development, cost savings could indirectly benefit residents if they are redirected to fund building maintenance and other improvements.

Figure 12.5 Denver Water conservation program for public housing

TARGETING HOUSING UNITS (RATHER THAN HOUSEHOLDS)

One approach to reaching H2R customers, applied in the energy-efficiency arena, involves targeting interventions toward housing units rather than toward households. While it may seem self-evident that energy (or water) savings programs are directed toward the housing unit—such as installing insulation, replacing heating systems, and reducing the "leakiness" of homes—the basis of targeting, particularly for low-income programs, has historically involved identifying the household. Household targeting typically entails verifying a household's low-income status, and assessing certain energy (or water) usage and/or payment histories as the steps toward enrollment.

Evidence exists, however, that low-income households tend to live in low-income housing units. Program attention, therefore, can be diverted from an exclusive focus on the underlying household to the underlying housing unit with an expectation that low-income customers can be supported and benefited by programs such as water use efficiency and leak reduction measures (see Figure 12.6).

As early as 1994, the U.S. Census Bureau (1994) reported that low-income households could be associated with housing units that are smaller, older, lower valued, and "saddled with physical problems." HUD confirmed that these observations were true as recently as 2015. In its most recent annual report on "worst case housing needs," HUD reported that:

> Among the 18.5 million very low-income renters in 2013, 41.7 percent had worst case needs … The very low-income category includes extremely low-income renters, who have an even greater prevalence of worst case needs, 50.5 percent. Because extremely low-income households constitute the majority (60.0 percent) of very low-income renters, nearly three out of four (72.6 percent) households with worst case needs had extremely low incomes during 2013 (HUD n.d.).

> The combined information provided by HUD and the Census Bureau makes clear that there is a direct and substantial coalescence between low-income status and lower-quality housing. Moreover, research has found that housing which is affordable to low-income households, while not always inhabited by low-income households, tends to be inhabited by such households (Colton 1997).

Figure 12.6 Targeting low-income housing units effectively reaches low-income households

Increasingly, energy utilities are directing usage reduction investments toward multi-family housing units. A study, directed exclusively toward buildings subsidized through HUD funding, found that existing initiatives supported by state and utility dollars could achieve a 20% conservation saving using cost-effective measures (NRDC 2015). NRDC cited other studies that have found a similar ability to reach multi-family housing units with substantial usage reduction results.

The attention paid to multi-family housing is of particular importance to water utilities. Per a recent report by the Energy Programs Consortium (2014):

> For many, if not most, multifamily building owners, water is the largest master-metered expense. Since state laws [in some states] discourage or disallow individual metering of water in multifamily buildings generally, water is still on the master meter. Paradoxically, this situation has been a very significant contributor to larger project sizes for energy services companies and their clients in public housing.

Water and wastewater utilities can follow the lead of their energy counterparts to determine how to pursue substantive partnerships with multi-family and affordable housing programs.

WORKING WITH ENERGY UTILITIES

Another option for water and wastewater utilities is to partner with prevalent energy utility programs. Many water efficiency interventions also reduce energy use - for example, those that reduce hot water use in washing machines, showerheads, and faucet. This provides energy utilities aiming to meet energy efficiency goals with a direct incentive to work on (and even contribute financially to) water efficiency retrofits. Some water efficiency interventions could be very low-hanging fruit for energy efficiency programs. For example, replacing showerheads and faucets

(and thereby reducing hot water consumption) can be relatively inexpensive compared to many other energy efficiency improvements. On the water side, utilities can benefit by partnering with well-established energy efficiency programs.

COST-EFECTIVENESS AND OTHER CONSIDERATIONS

When considering options for conservation, utilities should evaluate the cost-effectiveness, in terms of meeting the utility's goal of reducing costs to tenants/landlords, of (1) utility spending on other types of assistance (e.g., direct credits or vouchers) vs. (2) utility spending on water efficient retrofit programs to reduce demand. For example, if a utility aims to reduce water and sewer costs for low-income housing units by $20 per month, the utility can determine how much of that $20 reduction might be achieved through conservation retrofits, as well as the "payback period" associated with a retrofit program. This analysis would help the utility understand whether it is worthwhile to invest in the retrofit program, rather than spending $20 per month per low-income customer in the form of a direct discount. The cost-effectiveness of retrofit programs will vary significantly by community, and depends on several factors including existing building stock and level of retrofits already undertaken, among others.

In addition, it is important to note that in some communities, sewer bills are determined based on a flat rate (as opposed to volumetric water usage). In places that have flat rates for sewers (or water for that matter), conservation will not achieve the goal of lowering bills for H2R residents. In these areas, switching to volumetric-based rates, in conjunction with water efficiency interventions, could be part of the strategy to reduce costs for low income households/housing units. However, this would have implications for building owners (in terms of bill stability/instability) and utility revenue stability.

SUMMARY

Water conservation programs provide a potentially effective approach to providing financial assistance to low-income, H2R households in a water utility's service area. In multi-family settings, public housing, and home rentals, water demand management and leak reduction programs may provide significant water savings and, indirectly through reduced landlord–borne costs, result in lower rental charges for low-income households. While split incentives can create a roadblock to effective water savings and water bill reductions, significant benefits can be achieved with effective engagement of tenants, landlords, and public housing authorities.

CHAPTER 13
DO: SHRINKING THE HARD-TO-REACH POPULATION

This chapter continues the discussion of the previous two chapters, focusing on Strategy 2 of the "DO" section in the business process framework: providing "direct" assistance to hard-to-reach (H2R) customers (Figure 13.1). Specifically, in this chapter, we focus on the potential for reducing the number of H2R households, thereby making traditional customer assistance program (CAP) options for bill-paying customers available to them.

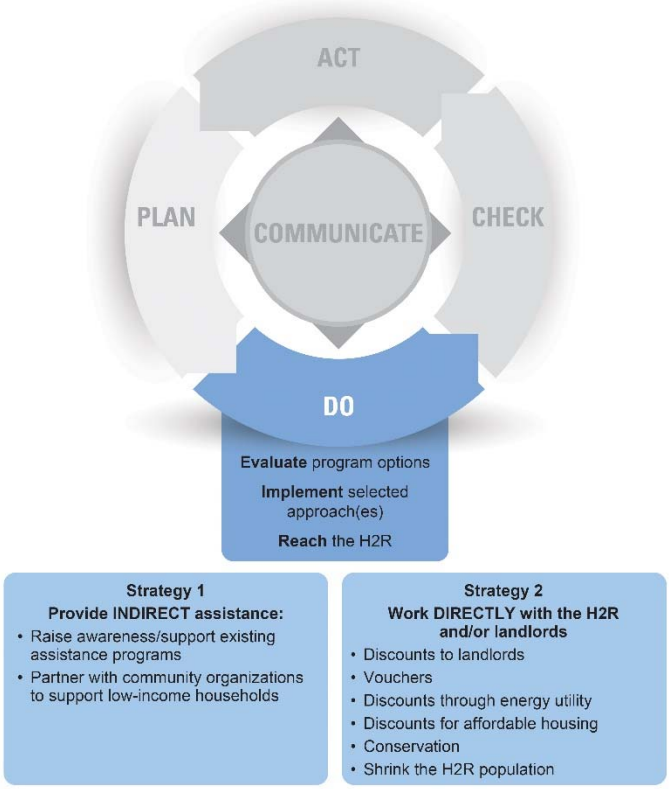


Figure 13.1 The H2R business process framework: DO, Strategy 2

BACKGROUND AND RATIONALE

There are two ways to reduce the number of H2R customers: (1) make them easier to reach (without making them paying customers), or (2) make them paying customers. There are several strategies that utilities can employ to attempt to reach these objectives. In the first instance, opening communication channels will facilitate providing support and critical information to the economically challenged H2R households. Under the second approach, turning H2R households into bill-paying customers opens channels to assist them through traditional CAP programs such as bill discounts.

REACHING H2R CUSTOMERS THROUGH BILL-PAYING BUILDING OWNERS

By definition, households and businesses that are not receiving utility bills directly from the utility have a relationship with someone who is a utility customer. The paying customer may be a homeowners' association, mobile home park owner, or landlord that receives and is responsible for paying the utility bill. The utility can think of these bill-paying customers as intermediaries between the utility and the actual consumer of the utility's service. That is, bill-paying customers become potential partners for the utility to exchange information with, and provide assistance to, H2R households that are the actual consumers of water or wastewater service.

Commercial building owners and managers in a metropolitan area often have trade associations or other organizations that can provide an easy point of contact for the utility to discuss

potential partnerships. Areas of common interest can be identified, conservation programs can be discussed, and methods to provide information directly to building occupants can be explored. The goal may not be to turn tenants into paying customers of the utility (though some building owners might welcome that development), but to facilitate communication with the actual end-users of water and wastewater services.

Those lines of communication could prove invaluable during emergencies (for example, a main break or plant shutdown requires immediate usage reductions, a contamination event requires a boil water notice). Moreover, developing relationships with commercial building owners can help a utility develop conservation programs that are designed to meet the specific needs of both building owners and occupants.

SUBMETERING OPTIONS: CONVERTING THE H2R INTO CUSTOMERS

There is a growing trend in the water industry to move away from the unmetered provision of water to customers in multi-tenant buildings or developments. A 2004 study conducted for the U.S. Environmental Protection Agency (EPA) and the housing industry concluded that metering each apartment unit separately reduced water consumption, on average, by more than 15% (21.8 gallons per apartment unit per day) compared to units where water costs were included in the rent and there was no separate metering (Mayer et al. 2004). As a result of the significant water-conservation potential, EPA recommends that all tenant spaces, whether residential or commercial, should be metered individually (EPA 2012).

While there appears to be a growing trend toward submetering, the legal requirements vary significantly among states, and even in some municipalities. A recent report in a housing industry publication notes that "statutes, regulations or rulings govern utility submetering in 22 states and three counties, as well as Washington, DC" (Steele 2016).

Indeed, a recently enacted statute in California requires all multi-unit residential or mixed residential-commercial buildings (except for low-income housing and buildings owned by an educational institution) constructed after 2017 to individually meter water usage in each unit (California Senate Bill No. 7 2016). The individual metering can be either utility-owned meters (meaning each unit is a utility customer) or submetering (meaning the building owner is the utility customer). One report concerning the new law states that 80% of the "15.6 million Californians living in apartments or other multi-family housing are not billed for their water use" (Davis Enterprise 2016). In Georgia, the Water Stewardship Act (2010) requires all new multifamily buildings to submeter.

Utility-Owned Submetering

If a utility decides to own the meters and make each unit a utility customer, then the H2R issue disappears for tenants in those newly metered units. Of course, that issue may be replaced with other concerns, such as the enhanced burden on customer service personnel, and related billing and collections concerns for potentially thousands of new customers. As evidenced by the Portland Water Bureau's (PWB's) experience with a pilot program (Figure 13.2), submetering programs can be expensive and administratively challenging.

PWB implemented a pilot program to increase the number of renters who pay water bills directly and provide a discount to low-income households. Though a partnership with Hacienda, a Latino Community Development Corporation that provides affordable housing and other services to Portland's low-income communities, Portland Water Bureau and Portland's Bureau of Environmental Services offered discounts to 297 submetered apartments in 5 different buildings.

The program was a major administrative challenge, according to Brad Blake, the Low-Income Discount Program Manager at PWB. Accurate record-keeping was difficult, and the utility had to handle billing manually.

In addition, the program involved two different submetering companies, and one company did not pass the discount onto renters, so only the owners received the benefit. Establishing a mechanism for this "pass-through" process from landlord to tenant presented another complication to the program. To comply with conditions of previous federal loans, PWB must be able to document that any utility discounts go directly to renters and not to landlords. The submetering option would likely be infeasible on a large scale.

Figure 13.2 Providing individual meters: PWB, Oregon

The concerns with adding residential renters as customers can be magnified because renters tend to move much more frequently than home owners. For example, according to the U.S. Census Bureau, in 2015, 50% of the occupants of rental properties lived in the same unit for three years or less; in contrast, the median occupancy period for home owners was 12 years (U.S. Census Bureau 2016). Thus, the mobility patterns of renters could place a much greater burden on the utility if property renters became direct customers of the utility.

Indeed, the mobility issue may be an over-arching concern of H2R customers. Even if a utility makes an effort to develop relationships with those customers, there is such great mobility among the low-income renter population that it will be an ongoing, and potentially expensive, process to keep up with the changes.

Building Owner Submetering

Often, the focus is on building owners installing their own meters (or contracting with a third-party service provider) so that they can bill tenants or unit owners. With this approach, a building owner continues to be the utility's customer, but rather than collecting water costs through the rent, the building owner (or a third party) bills each tenant separately for water service based on each tenant's metered usage.

If the building owner submeters each unit, then this may provide an opportunity for the utility to open lines of communication with the end-users. This could occur, for example, by the utility providing information to and receiving information from the submetering/billing provider used by the building owner.

Where the building owner is the utility customer, there is an additional method by which the H2R tenants may become utility customers. In some jurisdictions, when a building owner fails to pay the utility bill, such that a disconnection of utility service to the building is threatened, the tenants may have the right to take utility service in their own name (and deduct the utility costs from their rent). Examples of such laws can be found in Illinois, New Jersey, Pennsylvania, and Washington (e.g., Illinois Rental Property Utility Services Act, 765 Ill. Cons. Stat. 735/0.01 to 735/5; regulations of New Jersey Public Utilities, N J. Admin. Code § 14:3-3A.6; Pennsylvania

Utility Service Tenants Rights Act, 68 Pa. Stat. §§ 399.1 to 399.18; Revised Code of Wash. § 35.21.217). When a landlord defaults and the tenant takes on utility service in his or her own name, the utility develops a direct relationship with the end-user, at least until the landlord makes appropriate arrangements with the utility to pay any arrearages and resume responsibility for the utility bill.

The existence of such laws, the prevalence of their use, and the potential burden they can place on utilities (delaying disconnection or payment, leaving arrears unpaid for many years, and having to immediately process a change in the responsible party from one building owner to numerous tenants) may provide an incentive for some utilities to install individual meters on each apartment unit.

REQUIRING SINGLE-FAMILY RENTERS TO ESTABLISH ACCOUNTS WITH THE UTILITY

Establishing renter accounts that are not tied to a physical location (i.e., the account is in the renter's name rather than the building owner/landlord name) has its advantages and disadvantages. For example, many utilities do not have strategies for linking the water bill to the tenant if s/he changes residences, which is a common occurrence among low-income tenants. If a renter who receives a water bill falls into arrears, the landlord is ultimately responsible for the delinquent payment.

Utility staff have expressed an interest in billing systems that could address this problem, and some have considered alternatives. For example, utilities could associate water bills with individual customers' social security numbers, but some utilities are not equipped to collect and adequately protect this type of sensitive personal information.

Some utilities have specifically avoided establishing accounts with renters, and strictly adhere to linking accounts with building owners. One important rationale for this is that by linking the utility accounts to the property owner, many municipal utilities can place a lien on the property if the owner falls into arrears. This enforcement option may not be applicable if the water utility account is held by a tenant.

SUMMARY

Shrinking the number of H2R households can be an effective strategy to limit the scale of the challenges utilities face in trying to assist and communicate with these water service users. However, there are several important challenges associated with submetering or related approaches to turn tenants into bill-paying customers. Using building owners as conduits to communicate with renters is one approach that can help open up some H2R households to useful utility messages and programs.

CHAPTER 14
BEST PRACTICES FOR REACHING THE HARD-TO-REACH

In this chapter, we continue to focus on the DO portion of the hard-to-reach (H2R) business process framework (Figure 14.1), providing insights into best practices for reaching the H2R and encouraging program participation. This chapter draws upon findings from a utility survey and in-depth interviews with water and wastewater professionals, as well as insights gleaned from research in other sectors. Although some of the outreach strategies and examples presented in this chapter are not specific to households who do not receive a utility bill, the best practices presented below are directly applicable to this subset of water and wastewater customers.

Part 3 provides additional guidance for implementing H2R outreach strategies. Appendix A provides additional examples and studies that support the findings below based on research from sectors, including health care, insurance, early childhood education, and other social services.

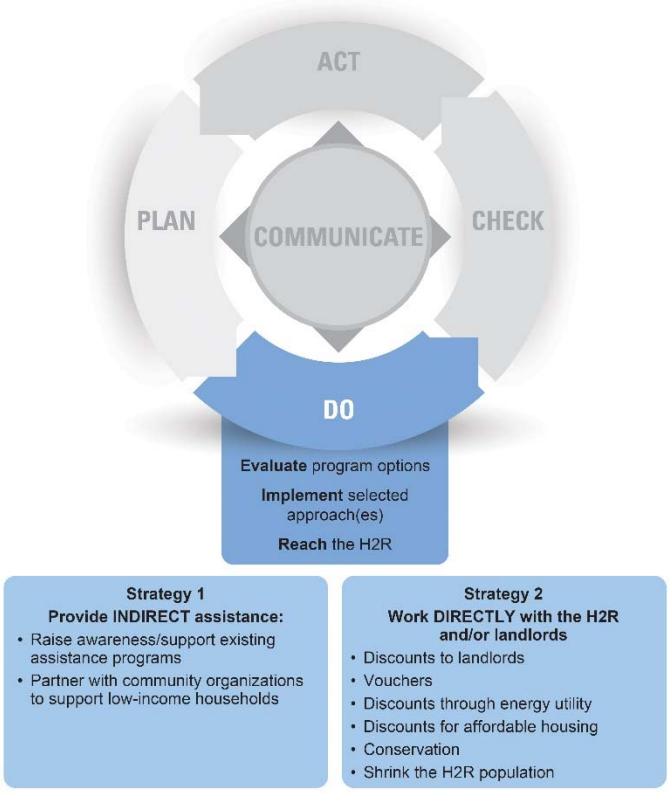


Figure 14.1 The H2R business process framework: DO, reach the H2R

BACKGROUND

Based on lessons learned from water and wastewater utilities, as well as past efforts and studies conducted in other sectors, several key themes emerge as being critical to successfully engaging and assisting the H2R:

1. Identify and aim to understand the characteristics and challenges of your H2R populations (e.g., the elderly, disabled, language challenged). This is essential so that you can better understand how to best serve these populations by developing appropriate messages, outreach strategies, and enrollment processes.
2. Partner with organizations that already reach the H2R. Building trust is a key. This is best accomplished by collaborating and drawing upon long-standing, effective, and well-trusted community-based organizations (CBOs) and local thought leaders to help identify and engage the H2R.

3. Use trusted messengers. Several studies have shown the importance of using trusted messengers, including members of target populations, to conduct outreach.
4. Go to your H2R populations and make consistent contact. This includes bringing the program to the targeted constituency (rather than having them come to you), and providing useful information and actionable steps, such as on-site enrollment/application assistance.
5. Commit adequate and stable resources to sustain long-term support. Reliable and lasting funding, staffing, and other program resources are essential for developing trust, building enrollments, and providing meaningful assistance over the long haul.
6. Work with landlords. In addition to reaching out to H2R individuals, many program options involve participation and enrollment from landlords. For these programs, finding opportunities to engage landlords and building owners is key to success.

In the following sections, we describe these best practices for reaching and engaging low-income H2R populations and other stakeholders.

IDENTIFY AND UNDERSTAND THE GROUPS THAT CONSTITUTE YOUR H2R POPULATION AND TARGET MESSAGING AND OUTREACH STRATEGEIS ACCORDINGLY

Perhaps the primary lesson on how to reach H2R populations is to put effort into understanding who they are, and the challenges they face.[16] For example, H2R customers are often hard-to-reach for reasons beyond the fact that they do not receive a bill. As outlined in Chapter 1, a relatively high percentage of low-income H2R customers are elderly, disabled, and/or non-native English speakers. Many low-income H2R households also face a constant set of life difficulties as they struggle to make ends meet. These difficulties not only create emotional barriers, but create physical and time-use barriers as well (Cortis et al. 2009). In addition, research shows that many low-income households (including the H2R) have had prior negative experiences accessing social services, making them less likely to enroll in other types of assistance programs (Flanagan and Hancock 2010).

Understanding the characteristics and challenges of H2R households is an essential first step to developing effective messages and outreach strategies, and building trust with H2R populations. For example, several of the utilities we interviewed as part of this research have large numbers of non-native English speakers in their service areas, many of whom are also H2R. Communicating with these populations can be a challenge; it requires providing services in their language, and understanding their cultural communication styles, needs, and expectations (see Figure 14.2). In addition, utilities can implement many of the best practices in this chapter, including partnering with community organizations and using trusted messengers, to reduce enrollment barriers associated with the daily challenges that many H2R customers face.

16. Chapters 1, 2, and 6 provide guidance and insights that utilities can use to identify and characterize their H2R populations.

- **The Portland Water Bureau (PWB)** prints materials in multiple languages—English, Vietnamese, Russian, and Spanish.
- **National Grid**, a natural gas and electric utility in upstate New York, began printing brochures in Russian, after consumer advocates went door-to-door during Hurricane Sandy recovery and learned that there was a large Russian population on Coney Island.
- **NYC Department of Environmental Protection (DEP)** has phone lines in Spanish, and hires customer service agents who speak other languages to staff its headquarters and borough offices.

Figure 14.2 Examples of simple practices for reaching non-native English speakers

PARTNER WITH ORGANIZATIONS THAT ALREADY REACH THE H2R

Another recurring theme that emerged from our utility survey and interviews is that there are multiple benefits of partnering with CBOs to reach low-income H2R customers. These groups have strategies and networks in place for reaching needy residents and understand their financial challenges. In addition, and perhaps most importantly, these groups are trusted sources of information in the community. Thus, working with trusted CBOs results in more effective program outreach and can further leverage scarce utility resources. Potential CBO partners include charities like the Salvation Army and United Way, community housing agencies, food pantries, churches and faith-based organizations, and local social services agencies.

The nature of utilities' partnerships with CBOs varies. Some community groups work closely with utilities and manage utilities' assistance program enrollment and administration. Others play a more indirect role in utilities' programs and simply refer eligible customers to utility customer service for program information and enrollment. Figure 14.3 provides several examples of water and energy utilities that have successfully partnered with CBOs to help implement their low-income assistance programs.

As described in more detail in Appendix A, research from energy and other sectors provides insights into the benefits of partnering with CBOs. For example, the California Energy Commission evaluated the ways in which the state's Electric Education Trust educated consumers about energy conservation and low-income assistance programs, among other topics (Hipps and Hungerford 2004). The Commission concluded that using CBOs to educate subpopulations on was an effective strategy for several reasons:

- Trust from the target community allowed CBOs to deliver messages that consumers accepted
- 'Piggybacking' occurred as education about electricity could be readily incorporated into other services the agency was providing. It was very common for consumers to tell the Commission that they had received information related to electricity when she came to the CBO for other services.
- Knowledge about the H2R populations was important. CEC noted that educating consumers required understanding the specific subpopulations living in California's diverse communities.

- **National Grid** in New York sends consumer advocates to community-based organizations' offices, where they talk with residents and help them obtain financial assistance with their energy bills. The consumer advocates rotate among community-based groups on a regular weekly schedule, so the organizations' staff can tell clients where to find the advocates on any specific day.
- **Orange Water and Sewer Authority (OWASA)** in North Carolina has partnered with the Marion Cheek Jackson Center in Chapel Hill to develop strategies for reducing customers' water bills. The Jackson Center is a public history and community development center that commemorates the civil rights history of the city and works to renew and build community in historic Chapel Hill neighborhoods. OWASA has distributed information about water conservation and money-saving strategies in the Center's newsletter, which reaches racially, ethnically, and economically diverse residents.
- **Atmos Energy**, a natural gas utility in Kansas, has provided significant support to Catholic Charities of Northeast Kansas to help expand the charity's services to rural residents, and to distribute information about utility assistance programs and other assistance services. In 2012, Atmos Energy donated an 11-passenger bus equipped with computers and work stations, to help Catholic Charities staff reach rural residents. The mobile resource bus allows Catholic Charities case managers to deliver food, clothing, and other supplies across 21 counties, and to help these residents access multiple assistance programs, including utility assistance.
- **Albuquerque Bernalillo County Water Utility Authority** (ABCWUA) developed a partnership with True North Financial Ministries, an organization that offers free budget and debt management trainings to customers and helps build skills for long-term financial management. True North Financial Ministries currently works with the Public Service Company of New Mexico (PNM), an electric utility, to advertise its financial training courses and to encourage utility customers who struggle with managing their finances to attend the free trainings (Chapter 7 provides more information on this program).
- **PWB** maintains regular communication and coordination with other local social services agencies and organizations. Every month, these groups gather to coordinate their activities. This allows for effective coordination between groups; some groups might not be able to provide direct funding for local assistance programs, but they might be able to supply food for needy residents.

Figure 14.3 Examples of utility partnerships with CBOs

USE TRUSTED MESSENGERS

Many organizations and researchers have found that using peer community members to identify and engage target populations is one of the most effective mechanisms for ensuring program participation. In a study of how Head Start is promoted in Chicago, Community Organizing and Family Issues (COFI n.d.) notes "it is well established that peer-to-peer outreach is a game changer in low-income communities. Public health practitioners long-ago realized that the messenger is as important as the message. The successful transmission of the message often depends upon the legitimacy and 'street cred' of the person delivering the message." The Chicago Head Start outreach program has successfully used "Head Start Parent Ambassadors" from the community to engage in peer-to-peer conversations. The program was created because "parent leaders understood that information would be best processed if it came from people that the families could relate to—other low-income parents and grandparents who have similar life experiences" (COFI n.d.). Studies related to health care, early childhood education, and other social services have found similar benefits associated with peer-to-peer outreach (see Appendix A).

GO TO YOUR H2R POPULATIONS AND MAKE CONSISTENT CONTACT

It is not simply who is charged with identifying and contacting H2R populations; it also is important to consider how those populations are contacted. In-person contact, rather than simply the provision of written notices or phone calls, is important. For example, a report on the enrollment of "hard-to-reach" populations in health insurance under the federal Affordable Care Act (ACA) stated that "consumers who received in-person help … were nearly twice as likely to sign up for a plan as those who tried to sign up online on their own, and they were more likely to say that signing up was very easy" (Enroll America 2014). The Enroll America campaign also reported that multiple contacts were an important outreach tool. Specifically, "consumers followed-up with multiple times were more likely to enroll…" and "were increasingly likely to report enrolling after each follow-up conversation that they had with a volunteer." (Enroll America 2015, p. 22). These multiple contacts are not simply necessary to convey information effectively; they are needed to develop trust.

In addition, it is important to engage the H2R where they "live, shop, work, play, and pray" (Boyd 2015). This can often be accomplished by partnering with CBOs, such as faith-based organizations or social service agencies. However, other venues may provide opportunities to reach H2R customers that do not have contact with these types of organizations. For example, as described in Figure 14.4, Energy Outreach Colorado (EOC), a non-profit that raises funds to assist low-income residents with energy bills, has made significant progress in identifying and enrolling H2R customers through a recent initiative with Denver Public Schools.

In 2014, Energy Outreach Colorado (EOC) implemented a pilot program with Denver Public Schools (DPS), United Way, and AmeriCorps, to enhance its outreach and provide information about energy assistance to H2R low-income families. The partner groups identified 16 DPS schools that have large numbers of families who are eligible for school lunch assistance programs. AmeriCorps case managers visit the schools daily to talk with parents and distribute information about community assistance services. The case managers received additional training from EOC to inform families about energy assistance programs, encourage them to apply for Low Income Energy Assistance Program (LEAP), and enroll participants in EOC programs.

In fiscal year 2014–2015, EOC increased funding to the program to $435,000, assisting over 1,100 low-income families. In fiscal year 2015–2016, EOC has already distributed $284,000 to 665 households. The majority of students in the DPS system are Hispanic, and some individual schools have a majority of African American students. EOC has successfully increased its reach to Hispanic families and African American families through its school outreach.

Figure 14.4 Energy Outreach Colorado's successful partnership with Denver Public Schools

SECURE ADEQUATE, STABLE, LONG-TERM FUNDING

Long-term funding and attention is essential to identifying and engaging H2R populations. As noted in Cortis et al. (2009, p. 14) "…participants pointed out that building trust and relationships with hard-to-reach groups tends to be a slow process, and services need to be in for the long haul to make engagement worthwhile … Program funding thus needs to recognize the time required for successful relationship building with hard-to-reach groups, and program sustainability is particularly important for some target groups. Lack of ongoing support could provide disincentives to engagement, suggesting that longer-term programs may be more appropriate for addressing the complex needs of hard-to-reach groups."

WORK WITH LANDLORDS AND HOUSING GROUPS

Working closely or consistently with landlords and/or associated housing agencies can be an effective strategy for reaching and extending assistance to residents in multi-family units. In some cases, landlords and building owners may be a utility's target population (e.g., programs that provide credits to landlords or public housing agencies, some conservation programs).

Many diverse organizations are involved in multi-family housing that serve lower income groups and can be useful channels for reaching buildings owners. These organizations include multi-family and affordable housing trade organizations, affordable housing providers and developers, housing finance agencies, and public housing authorities. These groups often share an interest in keeping housing (including utility costs) affordable (ACEEE 2014) and, therefore, may serve as strategic partners in implementing water and wastewater CAPs for H2R customers. Figures 14.5 and 14.6 respectively provide examples of water and energy utilities that have developed successful partnerships with these stakeholders.

- **The New York City Department of Environmental Protection** has dedicated staff who work with landlords and building owners, and communicate with them mainly through mailings and the utility call center.
- **El Paso Water Utilities** (EPWU) attends meetings with landlord trade organizations, and has relationships with many landlords. When new tenants move into multi-family buildings, EPWU works these landlords to provide these tenants with "water welcome kits" that include messages and tips related to water conservation.
- **OWASA** recently held focus groups with landlords to explore issues associated with conservation in multi-family buildings. Based on findings from these focus groups, OWASA identified several potential options for increasing water conservation retrofits in multi-family buildings.

Figure 14.5 Examples of water sector efforts to work with landlords and trade organizations

SUMMARY

This chapter presents a set of strategies that have been accepted as best practices by organizations and sectors that successfully reach and engage "hard-to-reach" populations to provide a range of social services. While most of these practices will help utilities reach a broader population of water and wastewater customers (i.e., not only the H2R subset), they are directly applicable to H2R CAPs. The takeaway from this chapter is that across all successful approaches, the key is to build trust by identifying important characteristics of the populations to be reached, and who these populations view as a trusted community partner/source of information. It is important to use these identified partners reach out and educate target populations in trusted locations.

ACEEE (2014) cites several examples of energy utilities working with associations or affordable housing groups, as follows:

- **Austin Energy** has had a longstanding partnership with the Austin Apartment Association, which has been a key driver of success for Austin Energy's multi-family program. The strong network of property managers has helped build awareness and spread adoption of the program as managers move around to various properties and companies. Austin Energy also works with the Independent Renters and Owners Committee (IROC) that represents owners of multiple smaller properties and educates onsite managers and maintenance staff to influence decision-making on the everyday operations of buildings.
- **Efficiency Vermont** developed its building performance and residential rental property rebate programs to provide owners with incentives for energy-efficiency projects that make sense for their buildings. Efficiency Vermont has developed a partnership with the Vermont Apartment Association in order to reach owners of rental properties directly through the association's newsletter and events.
- **Puget Sound Energy (PSE)** has become a member of multi-family organizations and attends association meetings as a way to reach the target population for its multi-family program. PSE actively engages in association events through purchasing booth space and exhibiting, and submits articles to organization publications.
- **The Energy Trust of Oregon** has program staff responsible for building relationships with specific sub-segments of the multi-family market: market-rate, campus living, assisted living, condos, and affordable.
- **Efficiency Maine** participates in trade shows targeting building owners and property managers. It organizes and hosts informational breakfasts for these audiences. Direct mail and e-marketing are additional means to market Efficiency Maine's multi-family program using tailored messages for these audiences. It also includes such messages in association mailers and communications when possible.

Figure 14.6 Examples of energy utilities working with landlords and associated housing organizations

CHAPTER 15
CHECK: EVALUATE PERFORMANCE

In this chapter, we focus on the CHECK portion of the business process framework (Figure 15.1). Specifically, we provide water utility professionals with insights and guidance on how to develop evaluation criteria and performance metrics that can be used to periodically review how well their utility's hard-to-reach (H2R) assistance program is meeting its objectives. Having well-defined performance metrics, and tracking these metrics over the program's implementation period, provides high value to the utility and is sound business practice.

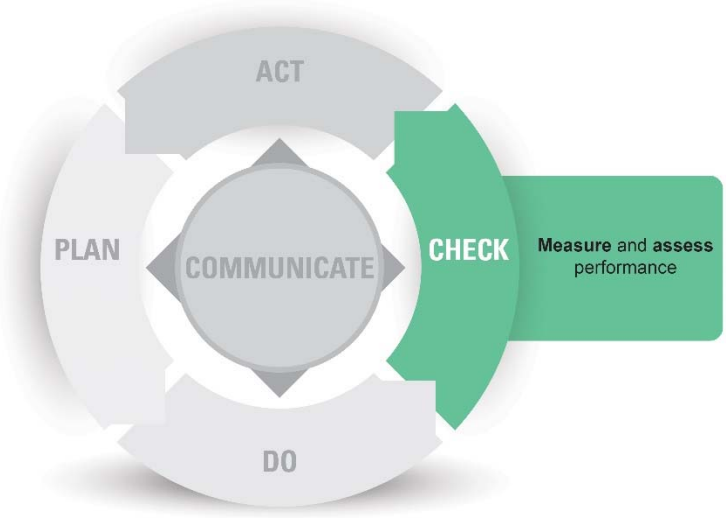


Figure 15.1 The H2R business process framework: CHECK, measure and assess performance

This chapter begins with a brief overview of the value of using well-defined performance metrics. Next, we share insights into how to link performance metrics to the objectives and criteria developed as part of the PLAN portion of the business process framework (as outlined in Chapter 4). The remainder of this chapter provides illustrative examples from other utilities based on findings from focused interviews.

THE VALUE OF WELL-DEFINED PERFORMANCE METRICS

Performance metrics provide a barometer of how well a program is functioning, relative to the established expectations and goals. If an assistance program's performance metrics reveal the program is not delivering up to the utility's stated expectations, then the utility should consider how to modify relevant portions of the assistance program so that it performs better in the future. The periodic use of clear performance metrics therefore serve as a gateway to continuous improvement. And, if performance persists below targeted levels, then the utility may wish to curtail the program and consider replacing it with an alternative approach for assisting its H2R households.

Further, if a program is succeeding at meeting its objectives, then having well-defined performance metrics provides a valuable way of documenting success. For example, if a utility governing board member asks why the utility is spending $X per year on an assistance program, having well documented evidence that the program is meeting or exceeding expectations and delivering value to the community is critical to maintaining management support and ensuring program continuity.

LINKING PERFORMANCE METRICS TO PROGRAM OBJECTIVES

Performance metrics are typically linked to the criteria and objectives developed in the PLAN portion of the business process. For example, if a stated objective when the program is being designed is to reach a meaningful portion of the utility-identified targeted H2R households by the end of the first full year of program implementation, then a logical performance metric might be measured according to "what percent of the identified target households have benefited from the program?"

There are several considerations to take into account when defining performance metrics. Perhaps the two most fundamental considerations are:

- Can the outcomes be measured empirically based on readily observed, objective information? That is, is the performance metric based on something that can be readily observed and quantified?
- Do the observable, countable outcomes reflect meaningful results, relative to the overall motivation for and objectives of the program being evaluated? That is, if we are bean counting, can we ensure that the beans reflect what is important?

The second of these considerations may be most important. As Albert Einstein noted: "Analysts may confuse things that are countable with the things that count." With that concern duly noted, there is often value in performance metrics that are semi-quantitative or even qualitative, especially if they reflect meaningful outcomes that reflect the overall objectives of the program. The key is to try to effectively track and communicate what matters, and to do so in an objective and transparent manner. Several objective- and criteria-driven performance metrics are suggested in the next section.

For example, if a primary program objective, which serves as objective criteria, is to maintain affordable housing stock, then level of affordable housing stock also serves as a measurable performance metric—How has our customer assistance program (CAP) for the H2R affected affordable housing stock. Part 3 provides insights into how to use program selection criteria as performance metrics. For example, it is not sufficient to simply measure affordable housing stock and use that as a program evaluation metric (although that information will be needed). It is necessary to include other factors that affect affordable housing into the evaluation analysis as well.

ILLUSTRATIVE PERFORMANCE METRICS

Administrative Simplicity

Administrative Simplicity is often an important consideration for assistance programs, and this criterion may be tracked using metrics such as number of hours (or staff time dollars) that administrative and other utility staff have to devote to the program to operationalize and properly maintain it. Or, this metric may reflect a projected dollar cost target, including the possibility of an external vendor being retained to help administer the program.

If after a year (or some other time interval) of implementation the program is more administrative unwieldly than projected at the planning stage (e.g., requiring a lot of effort to enlist recipients, and confirm their eligibility, and make payments), then having an administrative burden

performance metric should help identify this issue. Once this performance outcome identified, the utility needs to either adjust its expectations (i.e., adjust its target for the performance metric, if the program appears to otherwise be a success), or alter a costly component of the program (e.g., perhaps making eligibility based on another established program, such as Supplemental Nutrition Assistance Program (SNAP), rather than using some utility-defined alternative set of eligibility criteria).

Administrative simplicity also needs to consider the burden placed on targeted households. If eligibility and enrollment procedures are made too challenging—in terms of time, documentation, language, and other factors—then H2R households may not be willing or able to successfully enroll. In such instances, a performance metric related to levels of enrollment by targeted subgroups may be useful to discern if there are specific administrative impediments to address regarding the burden on intended recipients. A utility response strategy to address this challenge is provided by the illustration in Figure 15.2.

Seattle Public Utilities (SPU) provides credits to non-account holders and is actively trying to reach more of these types of customers. A major hurdle to subscribing to the current Utility Discount Program (UDP) is the **level of paperwork**. SPU struggles to keep this burden manageable for subscribers while collecting the documentation necessary for proper accountability. One means they have identified for reducing the paperwork burden is to "auto-enroll" everyone in UDP who passes the eligibility criteria for any related assistance program.

Historically, SPU has accepted eligibility for programs like SNAP as a way to reduce the level of paperwork for UDP subscribers. For households that do not receive a water bill, in 2015, persons living in non-Seattle Housing Authority (SHA) multi-family housing were able to be auto-enrolled in the UDP program. The Washington State Housing Finance Commission provides the list of relevant housing programs. The list includes programs run by non-profit organizations such as Catholic Charities and YWCA USA, Inc. that do careful verification of income and other criteria before accepting tenants. Hence, SPU was able to leverage this and auto-enroll these roughly 3,400 tenants in the UDP.

Figure 15.2 Auto-enrollment reduces paperwork burden: Seattle Public Utilities

Target Efficiency

Target Efficiency may be tracked according to the number or percentage of targeted households that are actually receiving benefits from the program. This type of metric requires that the utility have a well-defined target population and a reliable estimate of how many households are in the target group at the outset of developing the assistance program. This is information that should be developed by the utility in the PLAN phase of the business process (see Chapter 3).

A suitable performance metric might then be reaching 25% of these households after the first year of implementation, and 50% after 2 years (or whatever percentage is a reasonable expectation under the utility's specific circumstances). If the program cannot document success at the desired level, then this may serve as an indication that improvements need to be made in communicating the availability of the assistance, the eligibility and enrollment process, and/or some other facet of delivering the assistance.

An additional target efficiency performance metric some utilities may wish to examine reflects what portion of the assistance-receiving households are in the targeted group, as contrasted to a non-targeted group. For example, if a program is aimed at providing assistance to renters, but also may reach some economically-challenged households in owner-occupied dwellings, then the

percent of program-supported households that are renters becomes a relevant metric. If renters are a modest portion of the recipient group, then the utility may wish to find ways to better target the program. Alternatively, if the utility is pleased to assist any household that is facing financial hardship, regardless of renter/owner status, then such a targeted metric is not relevant for that program.

Horizontal and Vertical Equity

Horizontal and Vertical Equity may be difficult to track in a quantitative manner. However, qualitative assessment (e.g., strong, moderate, weak) can provide meaningful insights and serve as a useful benchmark for tracking performance. An example for horizontal equity may pertain to how well low income renters are supported through an assistance program, relative to the low-income households that directly receive and pay a water bill. If the assistance to renters is provided indirectly through utility programs directed at landlords, then it may not be practical or feasible to develop a meaningful quantitative measure of how much this program is actually assisting renters (e.g., how much improved water efficiency support in rental units is lowering landlord water bills and, thereby, moderating rent increases). The metrics challenge is heightened if the intent is to compare the support indirectly provided to renters to the support provided to home owners receiving bill payment assistance directly from the utility. In such a case, it may not be practical or feasible to develop a performance metric measuring horizontal equity, although metrics tracking landlord participation and water use reductions in enrolled rental properties can provide a useful indirect indicator of program performance.

For vertical equity, the focus is on whether greater levels of support are reaching those with the greatest needs. This implies that the level of assistance is scaled to some measure of the economic hardship facing a household (e.g., those well below the federal poverty threshold receiving greater aid than households between 100% and 150% of that threshold). This is another criterion for which it is challenging to develop a useful quantitative performance metric. It may suffice to simply indicate whether or not the level of assistance is scaled in some effective manner to a measure of economic hardship (e.g., a metric of yes/no, or low-medium-high).

IMPLEMENTATION CONSIDERATIONS AND CONCLUSIONS

It is important to define and apply useful performance metrics with which to periodically assess how well a utility's H2R (or other) assistance program is functioning. These metrics link the program's actual performance back to the original motivation and objectives for establishing the assistance program, and provide a basis for documenting success and identifying opportunities for continuous improvement or larger-scale modifications.

Performance metrics should link back to the original program selection criteria, and should be defined in a manner that reflects meaningful outcomes relative to the program's initial objectives. Performance metrics should balance simplicity and objectivity with a desire for clear-cut quantitative measures, with an over-riding consideration of aiming to meaningfully reflect what "counts" about the program being evaluated (versus what may be readily countable). Two to three well-conceived performance metrics, including qualitative ones, should suffice to guide periodic program reviews and effectively guide continuous improvement.

CHAPTER 16
ACT: REFINE AND ADJUST

In this chapter, we focus on the ACT portion of the business process framework (Figure 16.1), providing water utility professionals with insights into how to refine and adjust their assistance programs, based on their periodic evaluation of program performance. This reflects the phase of the business process in which the utility strives to provide continuous improvement for its hard-to-reach (H2R) assistance efforts.

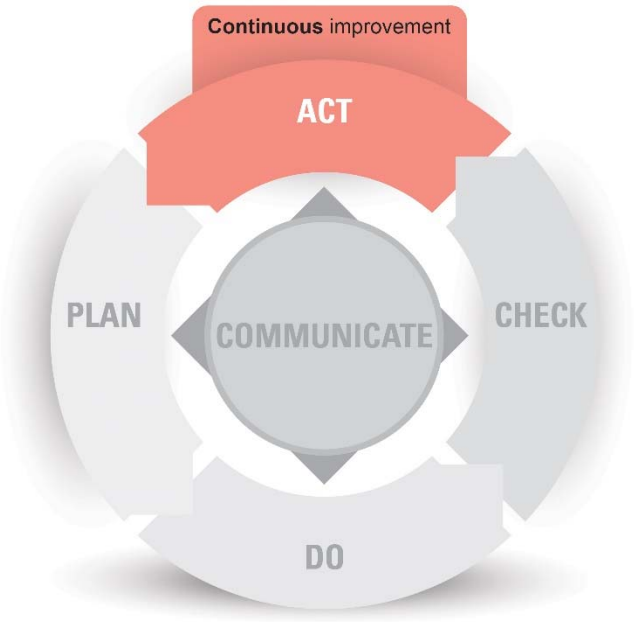


Figure 16.1 The H2R business process framework: ACT, continuous improvement

PROCESSES AND EXTENT OF ADJUSTMENT

Based on the results of the periodic program evaluation—developed using the utility's performance metrics and other possible feedback signals—it is likely to become evident that the utility's H2R assistance program has opportunities to improve. The extent of refinement and adjustment can vary significantly, from minor fine-tuning of a specific component, to a more comprehensive overhaul of major facets of the program.

The types of changes needed or recommended may be relatively easy to identify and implement, or they may require serious consideration and a significant amount of technical and procedural effort. Minor adjustments should be reasonably easy to consider and implement. Larger-scale changes or overhauls are likely to require time and resources to examine, and internal utility review and approval processes to implement. In the latter instance, the utility should move back to the PLAN portion of the business process to identify and evaluate the options available to modify and improve the program, and proceed from there to select and implement the preferred modifications.

COMMUNICATION AND PROGRAM REFINEMENTS

It is important to document and clearly communicate the findings of the periodic performance review. It also is important to:

- Articulate the areas in which improvement is desired
- Describe the options available for making adjustments
- Provide an evaluation of the pros and cons of the various options available for improving (or discontinuing) the program

It also will be vital to clearly document and communicate any utility decisions regarding the selected program modifications and, subsequently, report how performance has improved once the changes have been implemented and tracked.

PART 3
THE HARD-TO-REACH BUSINESS PROCESS FRAMEWORK: IMPLEMENTATION STRATEGIES AND TOOLS

CHAPTER 17
HARD-TO-REACH BUSINESS PROCESS FRAMEWORK IMPLEMENTATION GUIDANCE AND TOOLS

Many water and wastewater utilities today are asking the question: "Do we need to provide financial assistance to low-income customers who do not receive a bill directly from our utility, and if so, what are the available options?" This report addresses this question by providing data and information to help utilities understand the scope of the H2R challenge (Part 1) and by developing an H2R business process framework that allows utilities to evaluate available options and ultimately implement successful programs (Part 2, Figure 17.1).

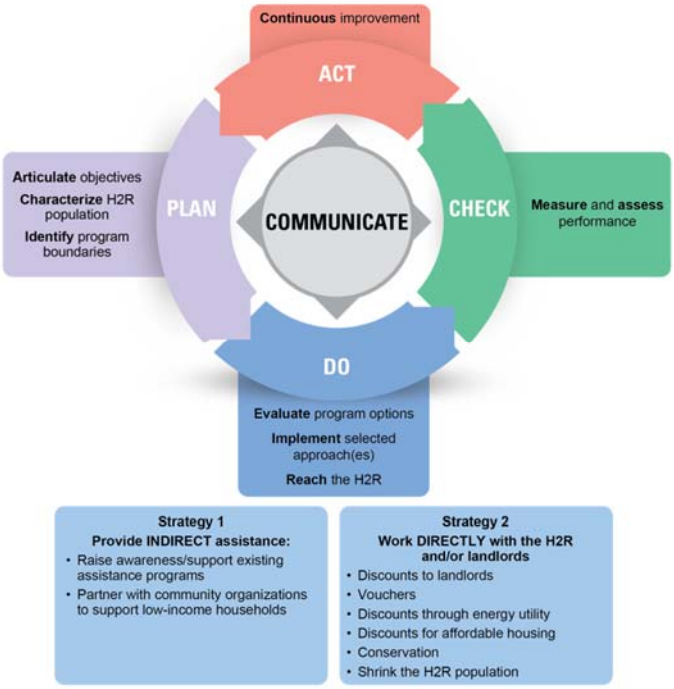


Figure 17.1 The H2R business process framework

In this section, Part 3, we provide water utility professionals with hands-on strategies and worksheets to help utilities successfully engage in the PLAN, DO and CHECK portions of the H2R business process framework (Figure 17.1). Specifically, Part 3 provides you, the water utility professional, with a process you can use to develop an initial understanding of the need for a CAP for low-income H2R customers in your service area, and to select the best approach for providing assistance to these customers, given your utility-specific needs, constraints, and opportunities.

Figure 17.2 illustrates the four-step strategic process the research team recommends you use as an initial foray into the H2R CAP business process framework. Although we leave you with suggestions for the CHECK and ACT portions of the business process framework, the focus of Part 3 is on initial engagement strategies and screening tools related to the PLAN and DO activities. For each step of the engagement strategy, we also provide engagement process and communication tips you can use to make the process easier.

As you begin the process of determining if your utility and community can benefit from a CAP for the H2R, remember the best practices identified in this research:

1. Know your audience. Develop a data-based understanding of the H2R customers in your service area.
2. Know your potential partners. Work with the people and organizations that already understand, and are already reaching, the H2R.
3. Build trust. Make contacts personal, ongoing, frequent, and culturally appropriate. These specific characteristics of engagement are necessary to build trust, and you can't help the H2R if they don't trust you.
4. Be creative. There is a wide range of ways to reach and assist H2R customers.
5. Go to them. Whether through a partnering organization or your utility, go directly to the H2R. Don't wait for them to find your communications.
6. Make it simple for them to engage. Remember the significance of people's life challenges and the hurdles they face. These challenges may make it difficult for them to even fill out a simple form, travel to an enrollment location, or use the internet. Make it even simpler than simple for them to receive assistance.
7. Make a long-term commitment. Commit to the provision of adequate and stable resources that are necessary to sustain long-term support.
8. Be persistent. Remember that losing water services can create a downward spiral for those without financial safety nets. Your utility has the opportunity to help keep housing affordable and to help households in need build a safety net. Be persistent in your efforts to reach the H2R.

Step 1. Pre-PLAN: Initial Engagement Strategies

Identify participants and logistics
Identify *Why* the utility is engaging in a CAP H2R process
Provide education

Step 2. PLAN: Program Selection Screening Strategies

Develop *your* strategic process
Identify objectives and criteria
Identify community H2R characteristics
Identify potential regulatory and resource constraints

Step 3. DO: Program Selection Strategies

Develop and apply program selection criteria

Step 4. CHECK: Strategic Review

Develop and apply evaluation criteria
Check in with others
Refine CAP for H2R as needed

Figure 17.2 H2R engagement strategy outline

ENGAGEMENT TIPS

- It is highly recommended that you review the full report presented in Parts 1 and 2 before engaging in the implementation process outlined in Part 3
- Refer to the research and guidance in Parts 1 and 2 throughout the initial engagement process

Figure 17.3 provides you with easy access to the tools we developed for Part 3 to help you develop and navigate the H2R business process framework. Figure 17.3 is a live dashboard that allows you easily click and go to a description of the tool of interest. Of course, we recommend you read all of Part 3, as well as Parts 1 and 2, before using any individual tool.

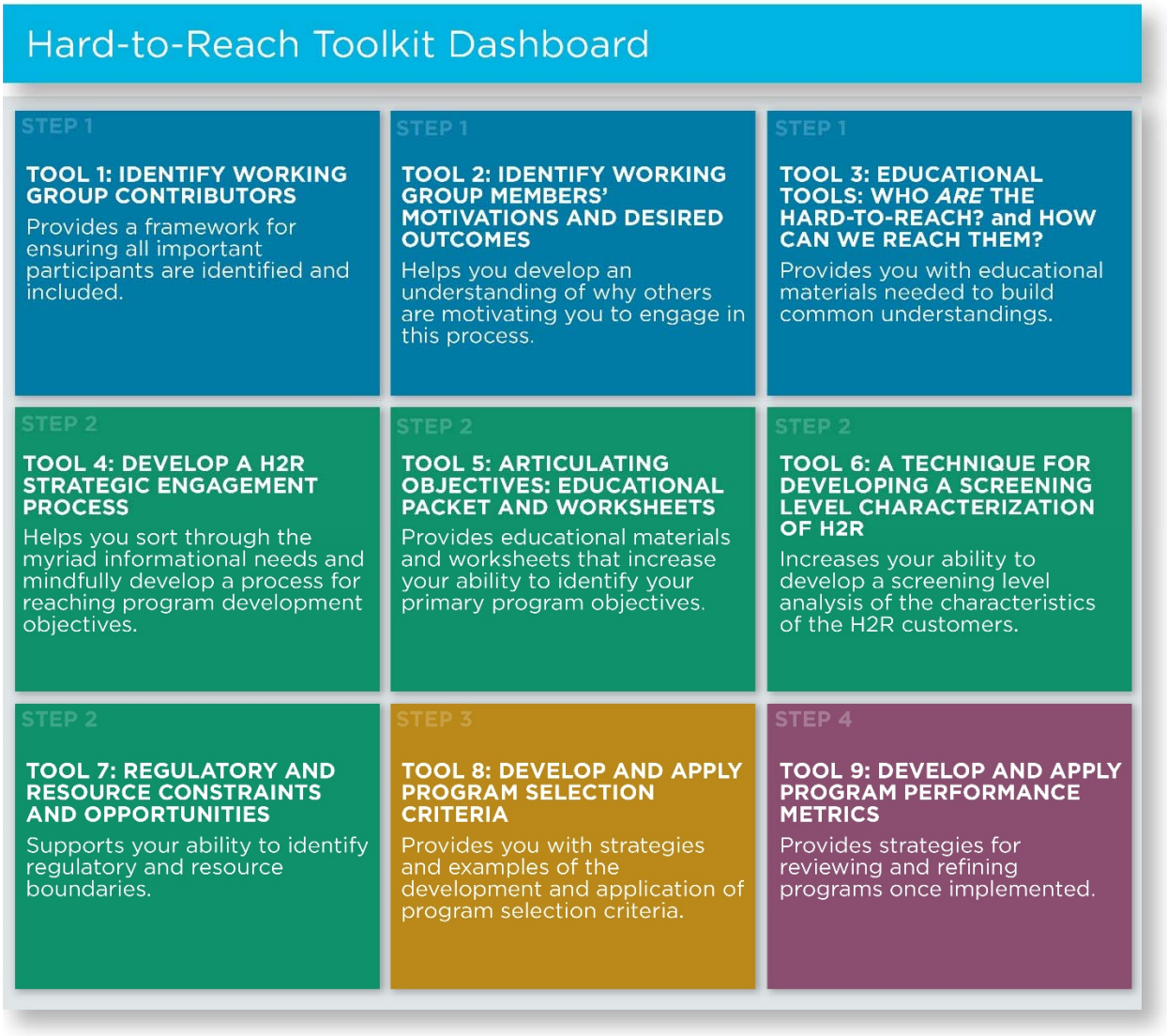


Figure 17.3 H2R business process framework: Tools link

CHAPTER 18
STEP 1. PRE-PLAN: INITIAL ENGAGEMENT STRATEGIES

If you have been charged with examining the need for a customer assistance program (CAP) for hard-to-reach (H2R) customers in your service area, your first set of tasks, as highlighted in Figure 18.1, is to identify who wants and needs to participate in the business process and why they are, or are not, interested in assisting low-income H2R customers. It is also likely that you will need to educate both internal and external participants about the H2R CAP challenges before you can dive too deeply into the H2R business process framework.

Step 1. Pre-PLAN: Initial Engagement Strategies

- Identify participants and logistics
- Identify *Why* the utility is engaging in a CAP H2R process
- Provide education

Step 2. PLAN: Program Selection Screening Strategies

- Develop *your* strategic process
- Identify objectives and criteria
- Identify community H2R characteristics
- Identify potential regulatory and resource constraints

Step 3. DO: Program Selection Strategies

- Develop and apply program selection criteria

Step 4. CHECK: Strategic Review

- Develop and apply evaluation criteria
- Check in with others
- Refine CAP for H2R as needed

Figure 18.1 H2R engagement strategy outline

IDENTIFY WORKING GROUP CONTRIBUTORS AND LOGISTICS

The first step is to develop an understanding of who wants or needs to be engaged in the H2R CAP business process and the role they want or need to play. This includes partners within your utility (e.g., utility staff in various departments including communications, legal, billing, governing board members), as well as representatives from other agencies and organizations that may already work with, or have connections to, your H2R customers (e.g., local housing agencies, community-based organizations). Many of these agencies and organizations may serve as potential program partners. At this stage, it is also important to identify the chain of command and if there are specific events, deadlines or other logistical needs that need to be incorporated into the engagement process. Tool #1: Identify Working Group Contributors, can assist you in this process (Figure 18.2).

Tool #1 includes a broad list of potential participants that utilities can use to ensure they identify the full range of interested and needed participants with suggestions for how to sort participants into groups that will participate in similar manners and therefore require similar sets of information.

Overview of Tool #1: Identify participants

	Role in business process framework				
Players	All aspects	Decision maker	Already understand or reach the H2R	Working group	Contact name and email address
Internal					
External					
Current providers					

Figure 18.2 Tool #1: Identify working group contributors

Engagement Strategies

- Although it is tempting to assume you know who wants to participate in developing the program, and how to group participants, identifying participants and their desired role provides an important strategic opportunity to clarify expectations and to set a collaborative tone for the entire H2R business process—use this opportunity wisely!
- One of the key findings from this research is that there are clear advantages in working with individuals, community-based organizations, and participants who already understand and reach your H2R customers. Make it a priority to identify them and include them in the process early.

Communication and Process Tips

- Clarify who you will be reporting to, and who they are reporting to. If you have been asked to engage in this process verbally, then send a clarifying email that shares: (1) your initial understanding of your responsibilities, (2) the objective of the initial engagement, (3) who you will be working with, (4) the specific information you will be gathering, and (5) any time, resource, or product requirements.
- Share the list of participants and the role they will play with other team members to gain buy-in and understandings, as well as to identify participants you may not know.
- Clarify expectations in writing, frequently!
- Create a list of individuals and organizations that will play a key role in program development, with separate categories for those based on the role they will play in the business process framework. Consider creating your own categories based on your specific utility needs. Ask for suggestions on how to modify these categories so they function better; the objective is to create groups that need the same set of information so that it is easy for you to communicate effectively.

- Establish and maintain a calendar with any initial important dates and communicate these dates to the other participants. Step 2 (Chapter 3) has strategies for creating a process map.

IDENTIFY WHY THE UTILITY IS ENGAGING IN A CAP FOR THE H2R

If you have been asked to initiate a process to examine the need for a CAP for H2R customers, you need to ask yourself: Who and what is driving our utility to engage in research to determine the need for, and/or to develop and implement, a CAP for the H2R? The answer to this question will, at least in part, drive your H2R business process.

In many cases, the people who are driving you to examine the need for a program (e.g., Board Member, Council Member, General Manager, citizens group) have a specific set of "engagement' objectives or motivations for examining the need for an H2R CAP, and desired outcomes, and they want to tell you! To create a program that is responsive to these preconceived program needs, they must first be clearly identified and articulated. For example, the General Manger may have been in a meeting with state public health officials who were very concerned about the public health impacts of water shut-offs. Or, the local housing authority may have reached out because they have identified that affordable housing stock in the community is being reduced, in part because of the escalating costs of utilities. Tool #2 will help you understand who, and what, is motivating the utility to examine a CAP for the H2R (Figure 18.3).

This tool provides two approaches for capturing the motivations and desired outcomes that utility management have for considering a utility H2R CAP.

Figure 18.3 Tool #2: Identify working group members' motivations and desired outcomes

Engagement Strategies

Use a kick-off call or meeting, phone interview, or short survey to solicit the information needed to populate Tool #2. Ask people why they are interested (motivated) in examining the need for a CAP for the H2R and what they would like to see come about as a result of a program. Also, let people know this is the first step in identifying whether a CAP for the H2R is needed or appropriate for your customers. Finally, tell them that you will get back to them for clarification, and that you will share a summary developed from others as well.

Communication and Process Tips

- It may be useful to provide education first, and then identify motivations and desired outcomes next, so that participants have a broader understanding of the full range of potential objectives for developing a CAP for the H2R
- As new people join in the H2R process, don't forget to identify their motivations and desired outcomes, and to add them to the list of participants

PROVIDE EDUCATION

In many cases, those initiating a discussion of the need for a CAP for H2R, and those who need to be involved in the H2R program development process, may not clearly understand the challenges and opportunities of reaching and/or providing assistance to the H2R. This means that for many utilities, educating participants is a critical first step.

The research team has developed two educational pieces as part of Tool #3 you can share with decision makers and others identified in Step 1, to increase their understanding of the H2R, the financial challenges they face at a national level, and the potential approaches for providing them with assistance (Figure 18.4).

Tool #3 provides two educational pieces:

- Tool 3A: A simple PowerPoint presentation, with written narration, that provides an overview of the national H2R population, their challenges, and potential utility approaches for reaching them
- Tool 3B: A summary of materials form the main report you can use to educate utility management and other organizations about the primary strategies for reaching the H2R and providing them with assistance

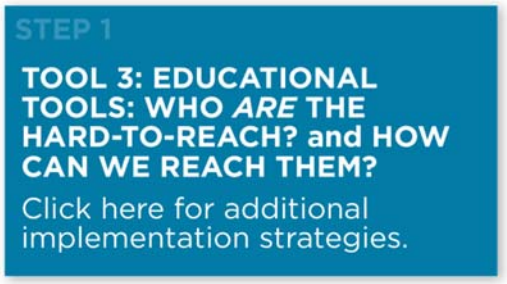


Figure 18.4 Tool #3: Educational tools: Who are the hard-to-reach? And how can we reach them?

Engagement Strategies

Use these pieces in initial discussions to build a common understanding of the primary questions that will be asked about H2R CAPs.

Communication and Process Tips

- Use the information in the main sections of this Report as a primary source for additional educational materials.
- Return to education whenever the process feels stuck or like it isn't working—this is critical strategy!

CHAPTER 19
STEP 2. PLAN: SCREENING STRATEGIES: DO WE NEED A CAP FOR THE H2R? AND IF SO, WHAT CAP ATTRIBUTES MATTER?

Once you have completed the initial engagement strategies in Step 1, the next step is to develop the background information necessary to determine if your utility needs a customer assistance program (CAP) for your hard-to-reach (H2R) customers and, if so, what program attributes are needed and desired.

At the conclusion of Step 2, as illustrated in Figure 19.1 you will have developed an initial understanding of the criteria you will use to select a program approach based on your utility's site-specific:

- Program objectives
- Characteristics of the H2R population
- Regulatory and resource constraints

Each of the screening strategies presented in Step 2 requires information from other screening strategies; making Step 2 intensively iterative. As an important note, Step 2 does not provide the details necessary to support completion of a robust program selection criteria analysis. Rather, it provides you with the knowledge necessary to engage in a screening level process that can be used to determine if you need to engage further in the H2R business process framework and, if so, the specific additional information that needs to be developed to support selection of a program approach.

Step 1. Pre-PLAN: Initial Engagement Strategies

Identify participants and logistics
Identify *Why* the utility is engaging in a CAP H2R process
Provide education

Step 2. PLAN: Program Selection Screening Strategies

Develop *your* strategic process
Identify objectives and criteria
Identify community H2R characteristics
Identify potential regulatory and resource constraints

Step 3. DO: Program Selection Strategies

Develop and apply program selection criteria

Step 4. CHECK: Strategic Review

Develop and apply evaluation criteria
Check in with others
Refine CAP for H2R as needed

Figure 19.1 H2R engagement strategy outline

DEVELOP YOUR STRATEGIC PROCESS

Step 2 requires significant data collection, analysis, and the narrowing of a great deal of information related to the three factors that influence final program selection, including: your utility's objective(s) for providing assistance, the characteristics or you H2R population, and site-specific regulatory and resource constraints.

Accordingly, the first tool we developed for Step 2, Tool #4 (Figure 19.2), provides you with a process you can use to help you effectively manage the gathering, use and sharing of all the information you need to conduct a screening level assessment

The objective of Tool #4 is to make it easier for you to visualize all the steps you need to complete as part of a screening level assessment of the need for a CAP for the H2R so that you don't miss any, and so that you can share the complexity of your process challenge with others.

Figure 19.2 Tool #4: Develop a H2R strategic engagement process

Engagement Strategies

Share your draft strategic process with the chain of command and H2R Working Group as established in Step 1. Continue to share the information with the H2R Working Group to acknowledge the necessary revisions, and to keep everyone on the same page so the process itself runs smoothly

Communication and Process Tips

- Develop and keep an up-to-date Strategic Process Guide that tracks progress in each area
- Develop a regular, ongoing meeting structure that provides opportunities for those working on the challenge to come together and share new information and brainstorm next steps
- Keep these meetings short and focused by providing pre-meeting educational packets of information and by articulating and sharing specific meeting outcome objectives
- Identify, confirm, and reconfirm the utility's resource commitment to the H2R business process framework
- Make sure those you are reporting to have realistic expectations
- Don't skip the development of program selection criteria; it will come back and haunt you later if you do; at least perform a simple screening level analysis

DEVELOP YOUR OBJECTIVE STATEMENT AND CRITERIA

An H2R Objective Statement serves as a concise, guiding description of why the utility is interested in engaging in an H2R assistance program, and provides the utility with important overall program guidance. The H2R Objective Statement will be shared with others, both inside and outside the utility, and may be the only knowledge they receive regarding a utility's H2R program. It is important, therefore, to develop an Objective Statement that performs as a critical outreach message, as well as program selection criteria.

To develop an effective Objective Statement, it is important to understand the characteristics of your H2R population, the affordability challenges they face, as well as any ongoing programs or efforts in your community that already assist these customers. This information will help your utility develop an objective that effectively addresses the H2R challenge, and to develop and apply objective-based program selection criteria. This means that

you will need to bring information from other tools in Step 2 to your objective development process.

Tool #5 (Figure 19.3), Articulating Objectives: Educational Packet and Worksheets, includes information you can use to develop an effective objective statement. Chapter 5 provides additional background information on utility objectives for providing assistance.

Tool #5 contains several tools you can use with both internal and external team members to increase their understanding of potential objective criteria, and to identify the ones that matter to them.

- Tool #5A: H2R Objective: Educational Packet
- Tool #5B: Turn Motivations and Outcomes into Potential Objective Statements and Criteria
- Tool #5C: Draft Potential Objective Criteria

The educational packet in Tool #5 includes background information taken from Part 2, including a list of Objective Statements developed and used by the participating research utilities, because it is often instructive to learn by example.

Figure 19.3 Tool #5: Articulating objectives: Educational packet and worksheets

Engagement Strategies

Use objective development as a meeting topic for several meetings; don't try and develop a common, high level understanding and articulate an Objective Statement and identify objective criteria all in one meeting.

Developing an Objective Statement requires the collection and analysis of a great deal of background information and is, therefore, not the first step in identifying potential program selection criteria. However, discussing H2R program objectives is likely to be an H2R topic that is interesting to decision makers and those initially involved in examining the need. Therefore, the development of an Objective Statement provides a great engagement strategy. It is also one of the final decision making points, so it serves as an important process goal.

Communication and Process Tips

- Develop and share the process the utility will use to develop an Objective Statement. This will provide Team members with comfort and an understanding of the significant amount and kinds of additional background information requirements.
- Because developing the Objective Statement is a higher order need (i.e., something the Higher Ups want to be involved in) use it as your e-mail and memo subject heading to increase high level interest in all aspects of the development of program selection criteria.

IDENTIFY THE CHARACTERISTICS OF THE H2R IN YOUR CUSTOMER SERVICE AREA

It is critical that utilities characterize the nature of the H2R populations in their service area to develop an understanding for how and where the H2R population overlaps with the population of low-income and other life-challenged households. This characterization will help you identify the extent and nature of the need for assistance for the H2R, and enable your utility to better design and target their CAPs. It also provides significant information that informs development of your program objective.

In this section, we share an overview of the kind of information you would like to have about the characteristics of the H2R. In Part 2 (Chapter 6) of this report, the research team presents three different approaches, with case study examples. The three approaches for identifying the characteristics of the H2R outlined in Part 2 include:

- Using simple and easily accessible data from the U.S. Census American Community Survey (ACS) to obtain an initial understanding of the scope of the H2R challenge
- Using U.S. Census Public Use Microdata Sample (PUMS) to perform a more in-depth analysis
- Pairing utility billing data with County Assessor's/tax information and/or other demographic data sources

It is beyond the scope of this report to provide the guidance needed to conduct detailed analyses of your H2R populations. However, as detailed in Part 2, most utilities can use ACS data and/or billing data to conduct a relatively simple screening level analysis that will provide you with sufficient information to determine if you need a CAP for your service area H2R customers or if you want or need to develop a more robust analysis of the H2R population before selecting a program approach.

However, ideally, your utility would have the following information in its H2R CAP decision making tool kit:

- Number (approximate) of H2R households, by the five categories of H2R household described in Figure 19.4
- Number (approximate) of H2R households, by household type, that have affordability challenges, and the significance of their affordability challenge
- The composition of H2R, by household type, including: disability, language, and age
- The water usage rate by household type
- The geographic location (e.g., neighborhood, census tract) of H2R by household type

Each of these pieces of information is critical information that together provides a full picture of the attributes of the H2R that are needed to develop an assistance program (Figure 19.5).

1. Multi-family market-rate housing, including housing units that are affordable to lower-income groups but are not subsidized
2. Multi-family public housing administered and owned by a local housing authority
3. Multi-family privately owned rental housing in which households receive government-issued rental assistance
4. Multi-family project-based subsidized housing owned by a private landlord or corporation that receives government subsidies to provide affordable housing (i.e., the government-issued subsidy stays with the housing development, not a specific tenant)
5. Single-family rental households

Figure 19.4 Five categories of H2R households

Tool #6 provides you an overview of how to develop a screening level characterization of the H2R in your community.

Figure 19.5 Tool #6: A Technique for developing a screening level characterization of H2R

Engagement Strategies

It can be difficult to characterize people who are defined by your inability to reach them. Ask all your participants for any data and information they can share as a first step. This includes internal utility account managers and external community affordability providers.

Communication and Process Tips

- Characterizing the H2R can be time consuming, so start early and mange resources accordingly. You may want to start with a simple screening level analysis to start, looking to develop a "big picture" sense of the H2R in your community (rather than a lot of specific, hard-to-assemble details).
- Review gathered information periodically to ensure that you are not lost in the weeds!
- Include your site-specific information needs regarding the H2R in your objective setting process and review of potential program approaches and vice versa.
- All three types of program selection criteria need to be developed jointly as they inform the depth of information that needs to be developed.

RECOGNIZE YOUR REGULATORY, POLICY, AND RESOURCE CONSTRAINTS AND OPPORTUNITIES

In determining whether to engage further in the business process framework and evaluating potential program options, it is important to identify regulatory and internal resource constraints that might influence program development. Tool #7 (Figure 19.6) provides a template for examining the regulatory and resource constraints and opportunities applicable to your utility.

Tool #7 provides resources for identifying whether your state has regulations that preclude specific assistance approach, as well as a list of other types of rules, regulations, and policies to be aware of.

Figure 19.6 Tool #7: Regulatory and resource constraints and opportunities

At a national level, there are no regulations that govern the approaches a water utility can use to provide financial assistance. However, there are several state and local categories of regulations, policies, and rules that govern the legal feasibility of specific approaches. The most important of these is a common state (and/or municipal) regulation that precludes the use of utility funds derived from customer rate-based revenues for any individual class of customers. This type of regulation prevents utilities from providing financial assistance to one group of customers (defined by any attribute, including income) using revenues collected from other rate-paying customers.

As described in Part 2, there are also several opportunities that utilities may be able to leverage in order to provide assistance. For example, partnering with local charities or other programs that have experience implementing assistance programs for low-income households can significantly reduce administrative burden for your utility. It is important to identify these potential partnerships early in the process.

It also is important to identify potential internal resource constraints and opportunities as early in the process as possible in order to understand which assistance approaches may or may not be administratively feasible, or in some cases mandated, and which assistance approaches may offer unique advantages or opportunities for the utility.

Engagement Strategies

Be sure and involve legal and compliance departments in this process; they are likely to have information to share and they can also help you understand any legal grey areas. You will also want to reach out to other participants who are providing assistance in the community to develop an understanding of site-specific opportunities to leverage resources.

Communication and Process Tips

- It is critical to work with a broad range of internal departments and department levels (don't just ask the manager, ask those who would actually be responsible for the work) to fully identify potential internal constraints.
- Education is required for team members to understand the ramifications. Feel free to develop an educational packet using information from Part 2 of this report. This is not likely to be a topic of interest to most team members other than the findings.
- Don't forget to look for opportunities! One of the primary research findings is the need to be creative when reaching the H2R. For example, if you have a facility located in an

area with large segments of your H2R population, look for ways to leverage this as a resource, perhaps by sharing space with others who have programs to reach the H2R.

- Opportunities may also exist to partner with existing community programs

GAIN APPROVAL FOR THE DRAFT PROGRAM OBJECTIVE STATEMENT AND A DRAFT SET OF SELECTION CRITERIA, AND IDENTIFY ADDITIONAL RESOURCE NEEDS

As a final part of your Step 2 process, ask for agreement on the draft objective and other program selection criteria. You will use this agreement as background for engagement in Step 3: DO: Program Selection Strategies.

This is also a good time to identify any additional background development needs. If you have significant remaining background needs after this screening approach, do not move forward at this time. Go back to your team and use the materials developed to date to identify where and how to focus in order to develop sufficient program selection criteria.

CHAPTER 20
STEP 3. DO: PROGRAM SELECTION STRATEGIES

Based on the strategic process you developed and implemented in Step 2, you now have a solid understanding of your agency's decision making process including who is involved, and what is important to them. You have also articulated your utility's objectives, characterized your hard-to-reach (H2R) population, and identified program constraints and opportunities. Step 3 you can turn this information into useful program selection criteria and begin the process of evaluating potential assistance strategies and selecting a customer assistance program (CAP) approach. The objective of Step 3, as illustrated in Figure 20.1 is to increase your ability to strategically apply the information developed in Step 2.

Step 1. Pre-PLAN: Initial Engagement Strategies

- Identify participants and logistics
- Identify *Why* the utility is engaging in a CAP H2R process
- Provide education

Step 2. PLAN: Program Selection Screening Strategies

- Develop *your* strategic process
- Identify objectives and criteria
- Identify community H2R characteristics
- Identify potential regulatory and resource constraints

Step 3. DO: Program Selection Strategies

- Develop and apply program selection criteria

Step 4. CHECK: Strategic Review

- Develop and apply evaluation criteria
- Check in with others
- Refine CAP for H2R as needed

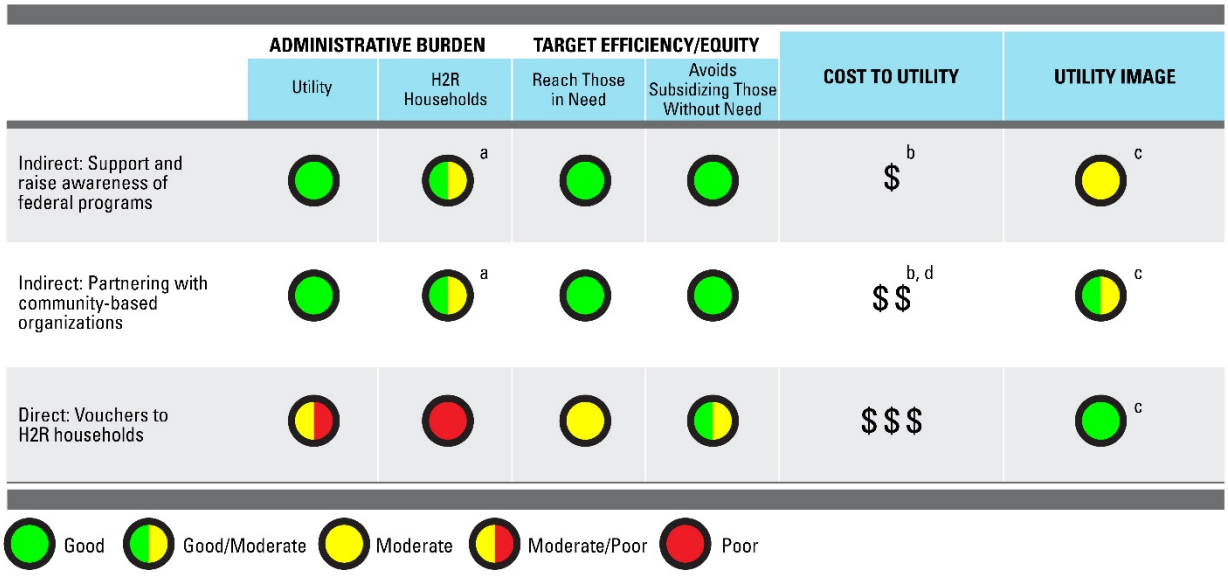
Figure 20.1 H2R engagement strategy outline

DEVELOP AND APPLY PROGRAM SELECTION CRITERIA

Program selection criteria are intended to be useful in systematically winnowing down the list of possible assistance approaches, and helping the utility focus on the alternatives that best meet its needs, circumstances, and objectives. The criteria also are useful as a way to communicate to utility management and board members, and the public, the basis for how assistance approaches were winnowed down and recommendations developed.

The key is to articulate the features and outcomes that are important to the utility and that help define success, and then to keep these factors in mind as the utility considers which approaches best suit its needs and circumstances. This is why you spent so much time teasing out the specific attributes that are important for your site-specific needs.

Tool #8 (Figure 20.2) provides you with an example of a simple presentation approach, using a format familiar from *Consumer Reports*, that makes it easy to visually understand the pros and cons of various program approaches. In this example, the utility identified administrative burden for the utility and H2R households, target efficiency/equity, cost to the utility, and utility image, as the most important program selection criteria to them. In Tool #8 we see how this fictitious utility applies this set of selection criteria to three specific programs.



a. Providing effective enrollment support, such as by partnering with trusted community organizations, can increase awareness and reduce administrative burden for H2R households.

b. Depends on level of utility interest and financial capability.

c. Depends on profile the utility wishes to foster and effectiveness of PR efforts.

d. May include utility funds going to support the community-based organizations' program.

Figure 20.2 Tool # 8: Example of program selection criteria in use

Tool #8, as illustrated in Figure 20.3 is designed to support decision making discussions—not to use as a final decision matrix. For example, from just looking at the presentation you might determine that the third option: Direct Vouchers, could be removed from the set of choices due to its "poor" rating for Administrative Burden. However, if in earlier discussion the utility determined that the only mandatory criterion is utility image, then this option, the only one with a "good" for Utility Image, might be selected. In addition, the "poor" rating for Administrative Burden may inspire you to find alternative options for reducing administrative burden, such as having a third-party (e.g., a community-based organization) run various aspects of the program.

Tool #8 is designed to help you turn the information developed in Step 2 into useful program selection criteria.

Figure 20.3 Tool #8: Develop and apply program selection criteria

Engagement Strategies

- Before you can share how the program selection criteria apply, it is critical to first develop an understanding of the set of program options available in your area. Next you will need to develop an analysis of how each program performs against each of the selected criteria. This work will require its own unique strategic process to develop the information and then educate and inform other team members. You can apply a similar process approach to the one shared in Step 2 for developing program selection criteria.
- Be sure everyone has a common high level understanding of each program and its performance under each criterion individually, before sharing how they compare.

Communication and Process Tips

- If you have developed a strong collaborative process this can be an exciting point—program selection. But it can also be a challenging point if there are strong differences of opinion. Having a specific decision point to work toward keeps everyone focused and energized.
- Use education strategically to open log jams. Many times, when decisions feel stuck, people need ideas on how to reframe the situation/decision. Breaking the decisions into smaller pieces can make it easier. For example, if you cannot decide on the set of objective attributes that need to be mandatory, go back and agree on those you want and agree to leave it at that for a while.

CHAPTER 21
STEP 4. CHECK: STRATEGIC REVIEW

In Step 4 we provide water utility professionals with brief insights and guidance, as highlighted in blue in Figure 21.1, on how to develop evaluation criteria/performance metrics that can be used to CHECK, i.e., periodically review, how well your utility's hard-to-reach (H2R) assistance program is meeting program objectives.

Having well-defined performance metrics, and tracking these metrics over the program's implementation period provides high value to the utility and is sound business practice. It also provides a key strategy for keeping management engaged and informed in the H2R business process framework.

Continued engagement is critical to program success. It ensures:

- The ongoing resources required to build the trust needed to reach the H2R are sustained
- Program concerns are identified early and responded to in a timely manner
- H2R customer assistance programs (CAPs) receive continuous improvement
- The H2R CAP continues to contribute to the utility's reputation as a professional, caring, engaged, community leader

Step 1. Pre-PLAN: Initial Engagement Strategies

Identify participants and logistics
Identify *Why* the utility is engaging in a CAP H2R process
Provide education

Step 2. PLAN: Program Selection Screening Strategies

Develop *your* strategic process
Identify objectives and criteria
Identify community H2R characteristics
Identify potential regulatory and resource constraints

Step 3. DO: Program Selection Strategies

Develop and apply program selection criteria

Step 4. CHECK: Strategic Review

Develop and apply evaluation criteria
Check in with others
Refine CAP for H2R as needed

Figure 21.1 H2R engagement strategy outline

LINKING PERFORMANCE METRICS TO PROGRAM OBJECTIVES

Performance metrics are often linked to the criteria and objectives developed in the PLAN portion of the business process framework. For example, if a mandatory adopted objective is to reach a meaningful portion of the utility-identified targeted H2R households by the end of the first full year of program implementation, then a logical performance metric might be measured according to "what percent of the identified target households have benefited from the program?"

There are several factors to consider when defining performance metrics. Perhaps the two most fundamental considerations are:

- Can the outcomes be measured empirically based on readily observed, objective information? That is, is the performance metric based on something that can be readily observed and quantified?
- Do the observable, countable outcomes reflect meaningful results, relative to the overall motivation for and objectives of the program being evaluated? That is, if we are bean counting, can we ensure that the beans reflect what is important? Hopefully you have meet this consideration through your thorough examination of metrics that matter in Step 2.

TOOL #9: DEVELOP AND APPLY PROGRAM PERFORMANCE METRICS

Tool #9 (Figure 21.2) provides a list of illustrative performance metrics you can use to help you identify the full set of potential performance metrics.

The objective of this Tool is to increase your ability to develop and apply program performance metrics that bring valuable information.

Figure 21.2 Tool #9: Develop and apply program performance metrics

Engagement Strategies

It is important to think about what you will use as performance metrics as you are establishing your performance selection criteria.

Use discussion of performance metrics as a strategic opportunity to bring participants back together. Remember, one of the primary findings of the research is the need to build trust, and that building trust requires on going, committed program. In fact, we recommend that all utilities include, as one of their performance metrics, "provides for ongoing committed program."

Communication and Process Tips

- Performance metrics should link back to the original program selection criteria, and should be defined in a manner that reflects meaningful outcomes relative to the program's initial objectives
- Performance metrics should balance simplicity and objectivity with a desire for clear-cut quantitative measures, with an over-riding consideration of aiming to meaningfully reflect what "counts" about the program being evaluated (versus what may be readily countable)
- Two to three well-conceived performance metrics, including qualitative ones, should suffice to guide periodic program reviews and effectively guide continuous improvement

CHAPTER 22
HARD-TO-REACH STRATEGIC PROCESS TOOLS

The tools, techniques and communication strategies (Tools) discussed in Steps 1, 2, 3, and 4 are collected here, with specific instructions. Figure 22.1 below provides a link to each Tool; click on the button and you will be taken directly to the tool. The button next to each tool will take you back to this dashboard for easy navigation between tools.

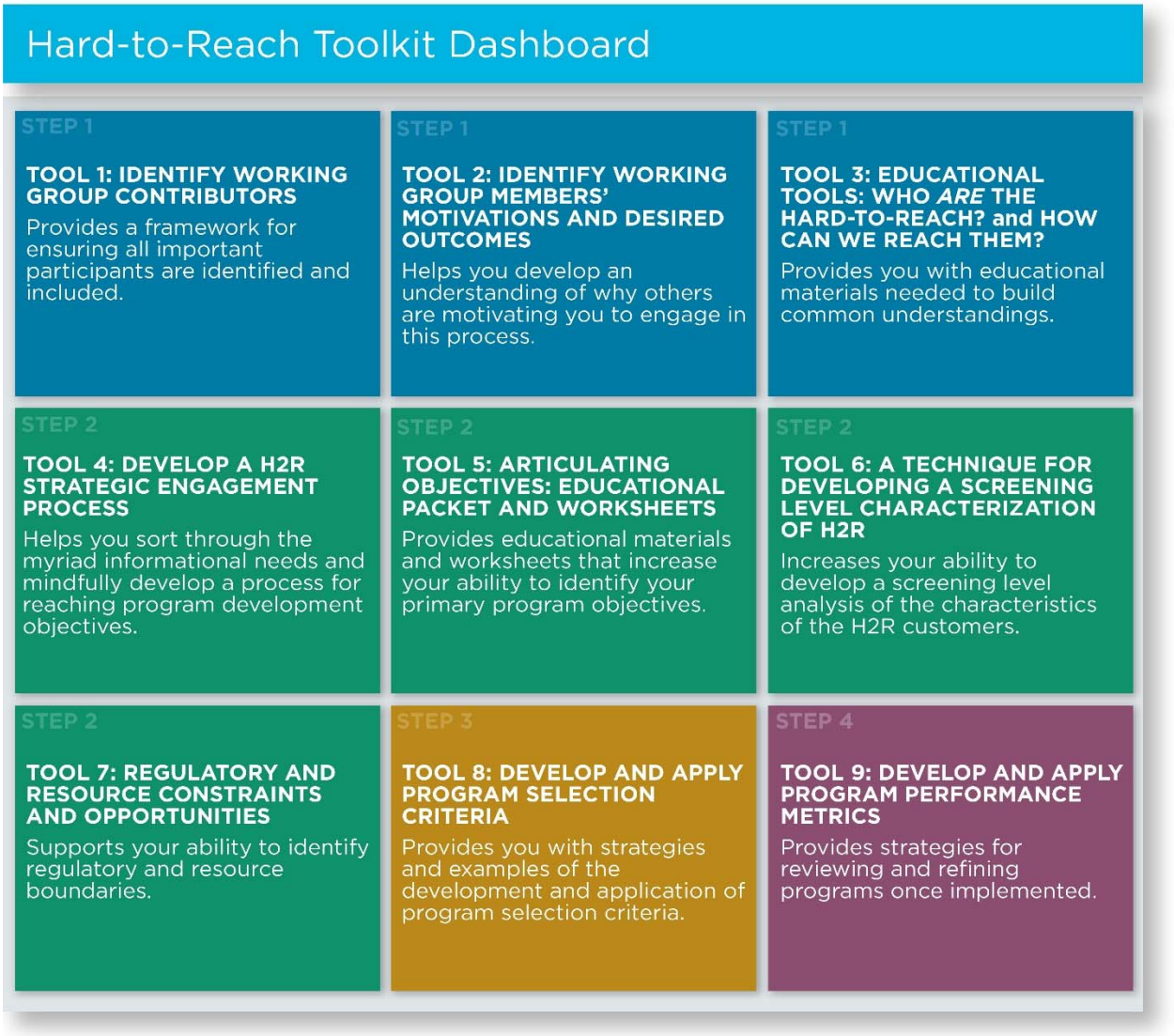


Figure 22.1 Hard-to-reach (H2R) business process framework: Tools link

TOOL #1: IDENTIFY WORKING GROUP CONTRIBUTORS

This worksheet provides a framework for ensuring all the participants that need to be included in the working group examining the need for a customer assistance program (CAP) for the H2R are identified and included, as appropriate, in the H2R business process framework.

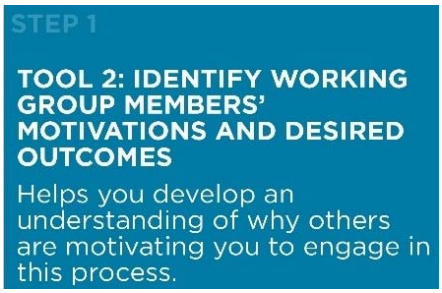
Instructions

1. Use the list below (Figure 22.2) as a starting place for identifying the internal and external organizations and individuals that need to participate in at least one aspect of the H2R business process framework. Be as broad thinking as possible; don't forget that internal colleagues from legal and billing have important information to contribute.
2. Once the full list of potential working group contributors has been developed, work with decision makers to identify where and how you want to include each participant in the business process framework. Keeping this list updated will significantly increase your ability to collaborate easily and effectively. Add columns to sort participants based on criteria that is important and useful for your site-specific needs.

Players	Role in business process framework			Contact name and email address
	All aspects	Decision maker	Current assistance provider\knowledge about local H2R	
Internal				
General mangers				
Board members				
Legal				
Customer assistance				
Customer service				
Local and state health departments				
Local and state housing authorities				
Local and state assistance providers				
Food banks				
Charitable organizations				
Other Utilities				
Add others as relevant to your situation!				

Figure 22.2 Worksheet for Tool #1: Identifying participating organizations and individuals

TOOL #2: IDENTIFY WORKING GROUP MEMBERS' MOTIVATIONS AND DESIRED OUTCOMES



This tool provides two approaches for capturing the motivations and desired outcomes that inform potential program objectives.

Instructions: Tool #2(A)

1. Use results from Tool #1 to populate a list of current and potential participants in Worksheet 2(A)
2. Ask working group members to fill in Worksheet 2(A) (Figure 22.3)

List of individuals and organizations interested in developing a CAP for the H2R	Motivation	Desired outcomes
Ex. State Health Department	Increase public health outcomes	Reduce number of water shutoffs to at-risk households
Insert rows as needed		

Figure 22.3 Worksheet for Tool #2(A): Identify working group members' motivations and desired outcomes

Instructions: Tool #2(B)

You can also use the questions below (Figure 22.4) to identify motivations and desired outcomes. This list of questions can be used in as a short survey instrument to solicit information. Provide engagement and facilitate higher order discussion.

Suggested Cover Note: Utility X is interested in examining the need to provide financial assistance to our customers who do not directly receive a bill because they live in multi-family housing or are renters. As part of this discussion we are interested in understanding more from you. Please complete the short survey (at survey monkey link, below, etc.) by close of business on X date.

1. What are your primary reasons/motivations for examining the need for a CAP for H2R in our service area today?

2. What do you think the primary reasons are for others who are pushing us to examine the need for a CAP for the H2R?

3. Please indicate, using the list below, the three top objectives you think are the most important reasons for our utility to consider providing customer assistance to our customers that do not receive a bill directly from us? Mark your three priority reasons.

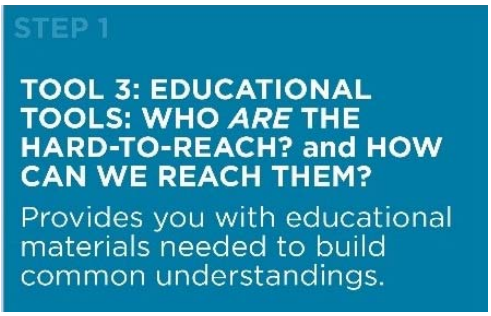
    - To improve public health throughout the community.
    - To assist the low-income customers most in need.
    - To establish a relationship and lines of communication with H2R populations.
    - To promote affordable housing and living conditions.
    - To promote equity across all low-income customers.
    - To protect tenants' rights.
    - To build community loyalty, trust, and a favorable public image for the utility.
    - Other (please write-in) _____.

4. Using the same list of primary objectives for engaging in a H2R CAP program, mark any objective you do not think apply in our community.

    - To improve public health throughout the community.
    - To assist the low-income customers most in need.
    - To establish a relationship and lines of communication with H2R populations.
    - To promote affordable housing and living conditions. To promote equity across all low-income customers.
    - To protect tenants' rights.
    - To build community loyalty, trust, and a favorable public image.
    - Other, please write-in.

Figure 22.4 Tool #2(B): Identify working group members' motivations and desired outcomes

TOOL #3: EDUCATIONAL TOOLS: WHO ARE THE HARD-TO-REACH? AND HOW CAN WE REACH THEM?



There are two components to this tool: a PowerPoint presentation (Tool #3[A]), and a guide providing an overview of some possible strategies for providing assistance to the H2R (Tool 3[B]).

Tool #3(A): Who Are the Hard-to-Reach?

This PowerPoint, with suggested narration in the notes section, provides water professionals with easy access to a characterization of the H2R and their affordability challenges at a national level, as well as an overview of the challenges and opportunities water utilities have for providing them with financial assistance. The PowerPoint can be found on the #4557 project page of the WRF Website, under Presentations

Instructions

1. Review the PowerPoint slides located on the #4557 project page of the WRF Website
2. Share the PowerPoint slides and information packet with team members to provide both education and discussion materials
3. Practice reading the narration out loud before sharing
4. If you have any site-specific information about the H2R in your community add it in!

Tool #3(B): How Can We Reach Them?

Instructions

1. Share available options (e.g., Figure 22.5) with working group members to build initial understanding
2. Use as a hand out during a meeting or as background materials shared prior to a meeting
3. Gather and share additional materials, if desired, from Part 2

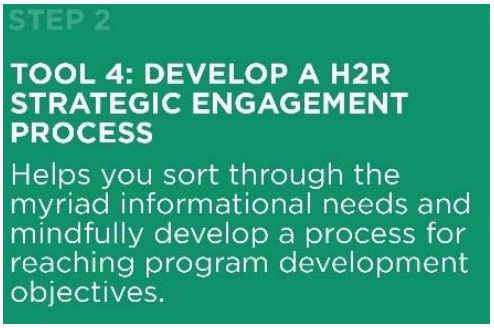
Suggested Cover Note: "Attached is a brief overview of the types of assistance strategies available for us to use with our H2R customers. This information comes from a recent Water Research Foundation report, *Customer Assistance Programs for Multi-Family Residential and Other Hard-to-Reach Customers.* Please note that the summary information attached is not intended to provide a comprehensive evaluation of the main types of strategies. Rather it is provided as background information for discussion purposes."

Share early in the process, as many participants will be very interested in this topic. You can also share this information during the development of program selection process to increase understanding of the selection attributes that are part of each potential program approach.

H2R CAP strategy	Key advantages	Key disadvantages	Comments
Indirect Assistance: Promoting Use of Existing State and Federal Low Income Assistance Programs	• Utility-borne costs limited to promoting enrollments (actual assistance dollars come from federal or state program) • Easy to administer for the utility, especially if partnering with a community-based organization (CBO) to promote enrollments	• Amount of assistance ultimately limited, and does not provide additional assistance to those H2R who are already enrolled • May not gain a lot of recognition and appreciation for the utility	• Functions most effectively when partnering with a trusted and established entity, such as a CBO • Used effectively by some utilities to bring significant dollars into their service area's H2R households
Indirect Assistance: Partnering with CBOs (e.g., supporting a local non-profit charity providing emergency fiscal assistance, or offering budget and debt management training)	• Easy to administer for the utility (typically includes outreach to help steer H2R to the CBO, and may include providing financial support to bolster the local CBO's effective programs) • Taps into effective, trusted organizations established in the community, who build on sustained relationships with the low income and other life-challenged H2R households in the service area	• May not gain a lot of recognition and appreciation for the utility (i.e., the utility's role in providing fiscal or other support may not be broadly recognized in the community, unless the utility effectively promotes its involvement and support) • Utility does not have control over how the program operates	• Functions most effectively when partnering with trusted and established local entity, such as a CBO • Used effectively by some utilities to cost-effectively funnel various forms of support to their service area's H2R households
Direct Assistance to H2R Households or Their Landlords (e.g., providing vouchers for tenants and/or discounts to landlords)	• Funnels support directly to H2R households (or their landlords) • Assistance directly linked to escalating water service cost • May include leak detection/repair and conservation elements	• Can require more resources and involvement by utility to set up and administer (e.g., verifying eligibility, updating enrollments, distributing funds) • Landlords may not pass through all discounts to renters	• Can be challenging and costly for a utility to establish and administer its own assistance programs, especially when targeting low income renters and other H2R households. However, administrative burden can be reduced by partnering with third party organizations and/or other utilities to implement various (or all) aspects of program.

Figure 22.5 Tool #3(B): Example overview and evaluation of H2R CAP strategies

TOOL #4: DEVELOP A H2R STRATEGIC ENGAGEMENT PROCESS



The objective of Tool #4 is to make it easier for you to visualize all the steps you need to complete as part of a screening level assessment of the need for a CAP for the H2R so that you don't miss any, and so that you can share the complexity of your process challenge with others.

It is critical that you modify this process to meet your site-specific needs, and that you keep it updated.

Instructions

1. Review the list of Process Objectives in the worksheet for Tool #4 (Figure 22.6).
2. Identify those that do NOT pertain to your situation, and remove them from your list.
3. It may be useful to create sub-tables for individual process objectives. For example, there may be several steps involved in identifying H2R customer characteristics. Creating a separate template that provides tracking of who is involved, specific process pieces, and timelines for the characterization of H2R customers will help you keep track of the specific process needs of this specific process objective. Then you can input important process and timeline points into the primary Engagement Process chart illustrated in Tool #4 to keep the rest of the team informed.

Process objective and decision points	Process	Timeline	Team members and responsibilities
Create common broad understanding	• Share Tool #3 with kick-off team • Share Tool #3 in community meeting • Repeat sharing of Tool #3 with new team members • Share as needed to build understanding		Leadership: Internal working group • All participants • New team members
Create common understanding and support for the strategic engagement process			• Internal working group • All participants
Identify participant motivations and outcome objectives			
Create high level understanding of potential attributes that inform objectives			
Develop list of potential objective criteria			
Create high level understanding of potential H2R customer characteristics			
Identify characteristic of your H2R customers			
Create high level understanding of potential regulatory and administrative challenges and opportunities			
Identify regulatory boundaries			
Identify administrative boundaries			
Develop a draft list of program selection criteria			
Develop a draft Objective Statement			
Decision-Point—Yea or nay to moving forward			
Decision-Point—Approval of program selection criteria			
Decision-Point—Approval of Objective Statement			

Figure 22.6 Worksheet for Tool #4: Creating a H2R strategic engagement process

TOOL #5: ARTICULATING OBJECTIVES: EDUCATIONAL PACKET AND WORKSHEETS

Tool #5 includes a series of tools you can use to develop an Objective Statement and Objective Criteria that reflect your site-specific needs and opportunities. Objective related tools include:

- Tool #5(A): H2R CAP Informational Packet
- Tool #5(B): Turn Motivations and Outcomes into Potential Objective Statements and Criteria
- Tool #5(C): Draft Potential Objective Criteria

Tool #5(A): H2R CAP Informational Packet

Tool #5(A) (Figure 22.7) provides information from the main research report that can be used to increase understanding of the potential objectives a utility can have for engaging in a CAP for the H2R.

Instructions

1. Share this packet of materials before a working group's first meeting focused on objectives. Do not use this tool as part of an initial kick-off meeting; use Tool #3 instead.
2. It is critical that you modify this packet to meet the needs of your participants and strategic process. The material below is offered as a starting point for the Tool #5(A) packet.

Hi,

We are sharing this packet with you today as part of our process to examine the need for a customer assistance program (CAP) for the hard-to-reach (H2R) customers in our service area. This packet provides you with background information on potential program objectives for engaging in CAP for our customers who pay for water services indirectly, for example through a landlord or homeowner association (HOA).

This background information comes from a Water Research Foundation (WRF) report on *Reaching the Hard to Reach* (WRF project #4557, Clements et al. 2017) and is shared with you to increase your awareness of potential program objectives. The packet includes a brief description of a range of potential utility objectives for reaching the H2R as well as a table with objective statements developed by four large water utilities.

(continued)

Figure 22.7 Tool #5(A): Suggested cover note

Figure 22.7 Continued

Overview of Potential Program Objectives

A utility's broad mission statement needs to align closely with its objectives for engaging in a CAP for the H2R. In general, utilities often think about their mission in two ways:

1. To serve the public interest as providers of an essential service—the reliable delivery of safe, high quality and affordable water. This mission includes the protection of public health and enhancement of community well-being. That is, water suppliers support the health, sanitation, welfare, and livelihoods of those who reside and work within their service area's boundaries.

   This broad view of a water utility's mission supports the perspective that those within the community facing significant economic or other hardships should be taken into consideration as the utility provides its services, establishes rates, and considers ways to assist those in distress. That is, a broad view of the utility's responsibilities in the service of its community provides a rationale for considering ways to assist the economically challenged, including the H2R households it serves.

2. As business organizations with a mission that can be defined more narrowly as water services provision. The utility incurs considerable costs in providing its goods and services to its customers, and sufficient revenues must be collected to cover these costs. Within this more narrowly defined business perspective, providing assistance to the community's economically challenged may not be viewed as part of the utility's core mission.

3. When utilities opt to adhere to this more narrowly defined business mission, they may consider (CAPs only insofar as they help manage utility costs and enhance revenue flows by better enabling low income customers to pay their bills, reduce arrearages, and avoid costly collection programs and service shut offs (Cromwell et al. 2010). Because the H2R households are not "customers" in terms of having a direct financial connection with the utility, they do not benefit from any bill-related assistance programs a utility may offer.

Regardless of the utility's broad mission statement there are several objectives that may be considered when determining whether and how to work with the H2R. These objectives include:

- ***Establishing a relationship and lines of communication with H2R populations.*** Even though these households are not bill-receiving customers with a formal financial contractual relationship with the utility, they are nonetheless part of the community relying on the services provided by the utility. There are numerous reasons why establishing a connection with these households may be important for the utility. These include conveying important information about water conservation, water quality, planned service disruptions, water use restrictions, or other issues.

- ***Assisting low-income customers most in need.*** As shown in Part 1 of this report, socio-economic data indicate that the many H2R households are facing significant economic or other hardships. A water utility may believe that it is part of their mission and obligation to provide assistance to these members of their served community. Further, the literature suggests that increases in the costs of water and wastewater services are directly passed on to low-income tenants, particularly those living in market-rate apartments.

(continued)

Figure 22.7 Continued

- ***Promoting affordable housing and living conditions.*** The utility, and the broader community, may have a considerable interest in ensuring that housing and other essential services remain affordable within the service area. If the utility is municipally owned, it may be subject to a duty to ensure that all residents receive the benefits of safe drinking water and appropriate housing.

- ***Promoting equity across all low-income customers.*** A utility with low income assistance programs aimed at their bill-paying low income customers may also find it a matter of fairness to also find ways to support those economically challenged households that do not directly receive or pay water bills.

- ***Protecting tenants' rights.*** In several communities, water utilities have reported issues with single-family renters where the utility bill is in their name, but they are facing unaffordable water bills because the owner of the property refuses to fix leaks or install conservation technologies that would shrink the customer's bills. In this case the landlord is the H2R customer. Alternatively, other utilities have reported that in cases where the bill is in the property owner's name (rather than the renters'), they often get "stuck with the bill" if a renter leaves unexpectedly or is several months behind on rent.

- ***Building community loyalty, trust, and a favorable public image.*** A utility may obtain broad support and trust across the greater community by finding ways to effectively assist H2R households. There may be community-based values supporting activities of the utility to help economically challenged households regardless of whether they directly receive a water bill.

- ***Improving public health throughout the community.*** As a public health agency, a water utility may take a broad perspective on supporting the health and well-being of all the hardship-facing households in the community, regardless of whether they directly receive a water bill. In fact, the Safe Drinking Water Act begins with the following Congressional finding: "safe drinking water is essential to the protection of public health" 42 U.S.C. § 300f note.

- ***Privately owned water utilities***, of course, are subject to the same drinking water standards as publicly owned utilities. Similarly, state laws may impose obligations on privately owned water utilities to protect public health. For example, the California Public Utilities Commission has "general and specific powers to ensure the health, safety, and availability of drinking water served by the utilities subject to its jurisdiction" Cal. Health & Saf Code § 116455(a)(2).

(continued)

Figure 22.7 Continued

We also provide examples of H2R CAP Objective Statements developed by other agencies in the table below, as it is often easiest to learn by example.

Stated utility objectives for H2R programs

Utility	Stated objective
Seattle Public Utilities	Community leaders have made it a priority to maintain affordable housing within the City through assistance programs for housing and utilities to the poor.
Portland Water Bureau	Promote equity across customer base by making low-income assistance available to all customers.
New York City Department of Environmental Protection	Support Mayor's Sustainability Plan by helping to maintain the stock of affordable housing in the City
City of Columbus Department of Public Utilities	Ensure that all customers can afford water, an essential commodity.

Tool #5(B): Turn Motivations and Outcomes into Potential Objective Statements and Criteria

Tool #5(B) (Figure 22.8) can assist the utility in identifying potential program objectives from a broad range of internal and external team members.

Instructions

1. The first column of the worksheet for Tool #5(B) provides the user with the complete list of potential objectives identified in the research. Take the list of motivations and desired outcomes developed in Tool #2 and place them next to the potential objective that resonates with the specific motivation and outcome.
2. It may be that a participant's motivations and desired outcome can be associated with more than one objective. Place the individual or organization and their motivation and outcome next to as many objectives as may apply—start big and trim later.
3. It is also fine to have more than one organization or person's motivation and outcomes in each potential objective.

Potential objective	Individual or organization	Motivation	Outcome
To improve public health throughout the community	Ex. State Health Department Ex. General Manger	Increase public health outcomes Ensure we meet our public health mission	Reduce number of water shutoffs to at-risk households Identify the needs of all our customers
To assist the low-income customers most in need			
To establish a relationship and lines of communication with H2R populations			
To promote affordable housing and living conditions			
To promote equity across all low-income customers			
To protect tenant's rights.			
To build community loyalty, trust, and a favorable public image			
To improve public health throughout the community. To assist the low-income customers most in need			
To establish a relationship and lines of communication with H2R populations			
To promote affordable housing and living conditions			
To promote equity across all low-income customers			
To protect tenant's rights			
Others…			

Figure 22.8 Tool #5(B): Developing objective statements

Tool 5(C): Draft Potential Objective Criteria

Instructions

1. At this point you want to start wordsmithing potential objectives so that they resonate with your community. You may also want to begin sorting the attributes into those that are mandatory and those that are useful but not required. Use the simple framework below (Figure 22.9) to inspire development of a worksheet that provides a simple visual presentation of the materials and make it easy for revisions.
2. If you decide to make this an open document that can be worked on by any participant, consider hosting the document on Google Drive or other open source.

Draft wording	Required for program success *Why?*	Highly desired *Why?*	Not important *Why?*
Example: *To ensure that all of our customers in need receive short-term financial assistance*	Example: *This is the main motivation expressed by almost all participants*.		

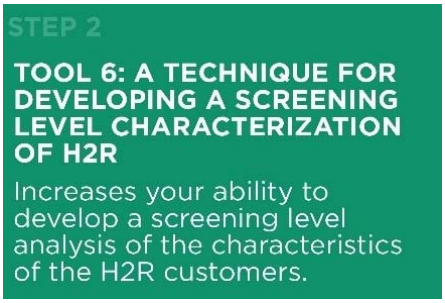
Figure 22.9 Tool #5(C): Articulation of draft potential objective criteria

Engagement Strategies for Developing Your Objective Statement

Risk communication research informs us that the human brain can only handle, at one time, 27 words or less, that can be spoken in 9 seconds or less, and have 3 or fewer main points (27/9/3). This knowledge is critical in developing an Objective Statement that also serves as a critical communication strategy. This does not mean that your Objective Statement is limited to a 27/9/3 format. Rather, it means that the first part of your Mission Statement should include a 27/9/3 banner headline type statement. Your banner headline is the information that everyone in your utility uses whenever talking about this program.

Don't rush the final articulation; ensure that the educational foundation is well established, and that you understand your H2R community and their needs before finalizing. Developing the Objective Statement will be one of your final products, but a draft statement will serve you well for a long time as you work through the process.

TOOL #6: A TECHNIQUE FOR DEVELOPING A SCREENING LEVEL CHARACTERIZATION OF H2R



The objectives of this tool are to increase the ability of water professionals to:

- Develop a screening level analysis of the characteristics of the H2R customers
- Conduct a simple affordability assessment to ascertain the degree to which an affordability challenge exists for your low income H2R customers
- Identify if a screening level analysis of the characteristics of the H2R is sufficient for program selection and program evaluation

Instructions

1. Review Tools #6(A), #6(B), and #6(C)
2. Apply Tool #6(A): Talk with those who are already providing assistance in your community to learn more about your H2R population and their needs
3. Apply Tool #6(B): Mine American Community Survey (ACS) data to help characterize your H2R
4. Apply Tool 6(C): Map the ACS data to gain insight as to where your H2R may be concentrated within your service area
5. Apply Tool #6(D): Learn what you can from internal billing data to help identify multi-family and other accounts that define where your H2R households exist.
6. Bring the information you developed earlier to a water and wastewater residential rates and affordability assessment tool to assess the extent of the affordability challenge that may exist in your community. The University of North Carolina Finance Center has created one that is very user friendly: https://efc.sog.unc.edu/reslib/item/water-wastewater-residential-rates-affordability-assessment-tool.
7. Identify which H2R CAP approach(es) you will engage in
8. Provide team managers and members with periodic updates that includes:
   - A description of information gathered to date
   - Pending information gathering actions
   - How close we to having sufficient information for a screening analysis? What specific additional information do we want and need?

Also, periodically remind process managers of the current resources committed to this screening process and updates on expenditures and remaining resources.

Tool #6(A): Talk with Those Who Are Already Providing Assistance in Your Community

Instructions

1. Reach out to the individuals and organizations you identified in Tool #1 who are already working with the H2R in your community.

2. Ask them what data they have that will support your understanding of the H2R. Specific questions to ask that may provide you with valuable information include:

    - How large is the affordability challenge in our community?
    - Besides lack of access to financial resources, what other characteristics do the low-income and other H2R in our community have in common? What are the common characteristics of the low income in our community? E.g., senior, disability, students, military, factory workers, famers, miners, maids, waitresses and other service providers, etc.
    - What types of households, from the 5 broad categories identified in Part 2, have significant affordability challenges?
    - Do we have significant affordable housing stock in our community? If so, what kinds and who administers?
    - What services are already available to the H2R in our community?
    - What do you see as gaps in assistance provisions?
    - What role do you think water service payments play in their challenges?
    - How do you think our utility can provide support to H2R low-income customers?

Tool #6(B): Mine ACS Data to Help Characterize Your H2R

Instructions

1. Access the U.S. Census Bureau ACS
2. Find the census tracts that best represent the physical boundaries of your service area
3. Populate Worksheet 6(B) (Figure 22.10)
4. Turn Worksheet 6(B) into presentation tool
5. Share

Characteristic	Data
Total households	
Number of renters	
Number of multi-family unit households	
Medium household income	
Medium household income in multi-family units	
Income distribution for renter households	
Housing burden	
Percent of household: elderly	
Percent of households: disabled	
Poverty rates	
Percent of Households receiving public assistance	
Percentage of households paying more than 35% of their income for housing	
Percentage of households earning less than $25,000 per year	
Average household size	

Note that the ACS does not provide information on public/subsidized housing.

Figure 22.10 Worksheet 6(B): H2R characteristic from the U.S. Census Bureau ACS

The information in Table 22.1 provides the reader with an example of the characteristics the H2R that can be developed from ACS data in a format that provides an easily accessible presentation.

Table 22.1
Characteristics of renter- and owner-occupied households in OWASA service area

	Renter households	Owner households
Total households	14,135	11,954
Percentage of households that are multi-family	74	8%
Average household size	2.2	2.6
Percentage of households earning less than $25,000 per year	39%	8%
Median monthly housing costs[a]	$942	$2,146
Percentage of households paying more than 35% of their income for housing	45%	18%

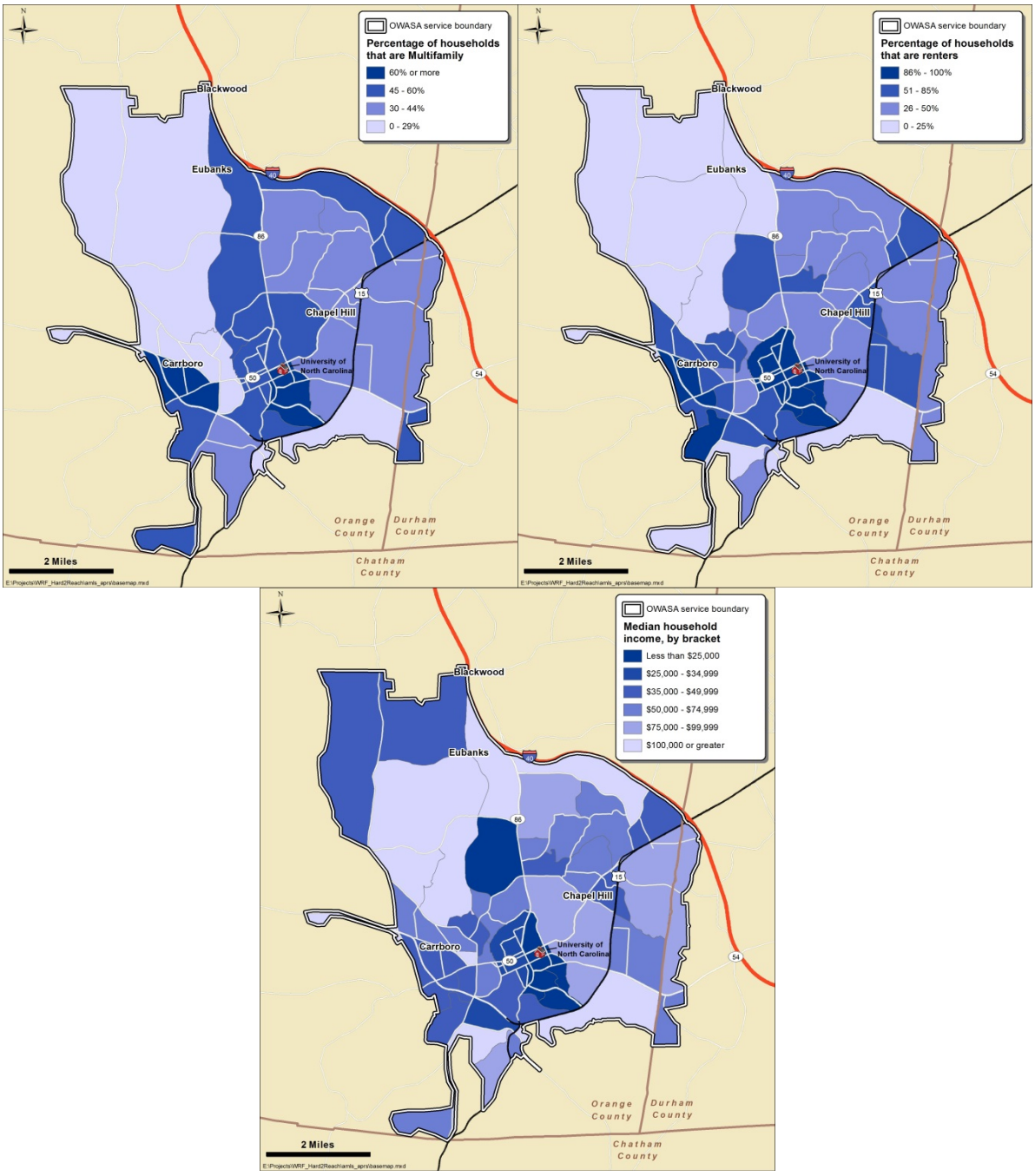
Source: Data from ACS 2015 and PUMS 2015
OWASA: Orange Water and Sewer Authority.
a. Median owner costs include selected monthly owner costs for owner households with a mortgage and gross rent for renter households.

Tool #6(C): Mapping ACS Data

Instructions

Utility staff can use data from ACS to create census maps through the online Census mapping TIGER tool. The maps are useful for visually portraying information regarding the intersection of renters and low income households. Figure 22.11 provides a mapping example that illustrates how maps can be used to visually identify correlation between renter, multi-family, and low-income households. In the mapping example provided utilities were able to identify that, many of the lower-income Census Block Groups are located next to the University of North Carolina campus, and therefore are likely to include a large number of students. Thus, their H2R challenge may be less than the numbers in the table might indicate (at least within the context of providing low-income customer assistance) because some of these households likely are not in need of financial assistance.

Utilities can create similar maps to understand how other demographic characteristics correlate with areas that likely have a high number of H2R households. For example, although not shown, we also developed a map to examine the presence of households that do not speak English "very well" in areas with a high percentage of renters, multi-family households, and lower income levels. This exercise indicated that many households who speak English as a second language may also be H2R, indicating that OWASA may need to develop targeted strategies for communicating with these customers if they were to develop.



Source: Data from ACS 2015.

Figure 22.11 Maps portraying percentage of multi-family households, households that are renters, and median household income in OWASA service area, by Census Block Group

Tool #6(D): Learn What You Can from Internal Billing Data

Instructions

Depending upon your data system you can use your billing data in one of two ways:

1. If your billing data has multi-family buildings that have one master meter classified as commercial customers, or at least classified separately from single-family residential customers, and your utility has the number of units in each multi-family building as a data field in their utility billing system, then you can relatively easily compute the number of multi-family units that do not receive a bill, as well as the average water usage per unit.
2. If you do not have this information in your billing system, it is possible to pair utility billing datasets with County Assessor's or tax data, which generally contains information on the number of units within multi-family properties, as well as other building characteristics. Utilities can join these databases using a common parcel number or other identifier in both systems, or through spatial/ geographic information system analysis that joins the meter location to the parcel number or address.

TOOL #7: REGULATORY AND RESOURCE CONSTRAINTS AND OPPORTUNITIES

The objective of this tool is to support your ability to identify state, local, and internal policies, rules and regulations that define what is and is not legal by providing you with sources and insights on what to look for.

The primary regulation you are looking for governs whether and how you can use utility funds to assist specific classes of customers; i.e., whether a utility can provide cross-subsidies. These restrictions typically apply to using revenues derived from water rates paid by some customers to provide financial support to other customers. You will also want to examine community and internal utility rules and policies.

Identifying Cross-Subsidy Regulations and Policies

Privately-Owned Utilities and Other Utilities Regulated by Public Utility Commissions

If you are a utility that is regulated by your state's Public Utility Commission (PUC), you are subject to state laws that may limit, or provide opportunities or requirements, for low-income assistance programs. Your PUC can provide you with the information you need to know. State statutes can also provide you with the information you need regarding rates and the feasibility of various kinds of cross subsidies. However, be aware that relevant case law may also affect how the regulations are interpreted.

Municipal and Other Government-Owned Utilities

Regulations related to low-income assistance programs for municipal and other government-owned water and wastewater utilities vary widely by state and local jurisdiction.

A new report, *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs* (UNC Environmental Finance Center 2017) provides a useful state-by-state overview of restrictions and opportunities for water and wastewater utility CAPs. This report summarizes relevant state law (including Constitutional requirements and state statutes) and case law that may affect the ability of both private and government-owned utilities to provide low-income assistance programs, and how these programs can be funded.

TOOL #8: DEVELOP AND APPLY PROGRAM SELECTION CRITERIA

STEP 3

TOOL 8: DEVELOP AND APPLY PROGRAM SELECTION CRITERIA

Provides you with strategies and examples of the development and application of program selection criteria.

Instructions

1. Select the appropriate subset of program approaches.
2. Select the set of program selection criteria that will drive program selection (see Figure 22.12 for an example).

The keys to using the type of figure outlined in Figure 22.12 include:

- Carefully selecting which criteria you want to focus on to differentiate amongst the CAP approaches your utility believes to be most promising as prospective available options
- Labeling the criteria in a clear, succinct manner so that readers can readily grasp the attribute embodied in each selection criterion
- Using words or symbols, and/or colors that readily communicate to the observer whether each specific approach ranks strongly or poorly against each criterion.

Once the evaluation is complete, you can brief utility managers and board members and make an informed decision about which alternative CAP approach, if any, they opt to pursue.

	ADMINISTRATIVE BURDEN		TARGET EFFICIENCY/EQUITY		COST TO UTILITY	UTILITY IMAGE
	Utility	H2R Households	Reach Those in Need	Avoids Subsidizing Those Without Need		
Indirect: Support and raise awareness of federal programs		 [a]			$ [b]	 [c]
Indirect: Partnering with community-based organizations		 [a]			$$ [b, d]	 [c]
Direct: Vouchers to H2R households					$$$	 [c]

a. Providing effective enrollment support, such as by partnering with trusted community organizations, can increase awareness and reduce administrative burden for H2R households.

b. Depends on level of utility interest and financial capability.

c. Depends on profile the utility wishes to foster and effectiveness of PR efforts.

d. May include utility funds going to support the community-based organizations' program.

Figure 22.12 Tool #8: Example of program selection criteria in use

TOOL #9: DEVELOP AND APPLY PROGRAM PERFORMANCE METRICS

The objective of Tool #9 (Figure 22.13) is to help you identify and apply the kinds of program performance metrics that provide meaningful measurement and assessment of the program as defined in your Objective Statement and program selection criteria. Having well-defined performance metrics provides a valuable way of documenting success, identifying opportunities for improvement and for building reputational capital.

Instructions

1. Gather information from Tool #1: Begin by reviewing objectives developed in Step 2, and identifying those that are mandatory as well as those that have empirical evaluation opportunities. In the example below we can see that the outcome column provides critical insights for use in performance metrics.
2. Gather information from Tool #5: Next bring forward your final set of program selection criteria articulated in Tool #5(C).
3. Gather information from Tool #6: Add the information regarding the characteristics of the H2R next to any objective where the information could be used as a metric.
4. Add in utility program implementation metrics, as outlined in Part 2, Chapter 15.
5. Share Tool #9 as part of discussion on performance evaluation.
6. Identify additional impacts on metrics: In most cases your program will not be the driving force behind large community changes in affordable housing, housing burden, etc. Instead, it will be one important aspect of a community-wide effect. This means that part of your performance metric will be how well the partnership itself is functioning.
7. Take the time to articulate your performance metrics, even if they are all narrative. Use the program evaluation process as a media release to build community understanding of the program and your reputational capital as a professional, caring, engaged community leader.

Input from Tool #2			
Potential objective	**Individual or organization**	**Motivation**	**Outcome**
To improve public health throughout the community	Ex. State Health Department Ex. General Manger	Increase public health outcomes Ensure we meet our public health mission	Reduce number of water shutoffs to at-risk households Identify the needs of all our customers
Input from Tool #5			
Draft wording	**Potential metric**	**From Tool #6**	**Additional knowledge needs**
To contribute to the City Council goal of reducing the trend in the increase in financial housing burden in our community	Housing Burden	The Housing Burden in 2016 in our census tracks is 0.5% larger this year than last.	Other factors affecting housing burden Range of expected impact on housing burden from utility program
Insert rows as needed—don't forget internal and equity considerations!			

Figure 22.13 Tool #9: Develop and apply program performance metrics

APPENDIX A
REACHING THE HARD-TO-REACH: LESSONS LEARNED FROM ENERGY, HEALTH, AND OTHER SECTORS

This appendix provides examples and lessons learned regarding effective outreach strategies from agencies and organizations in other (i.e., non-water related) sectors, including examples from the international community, as well as in the United States. The information in this appendix supports the information presented in Chapter 14 of the full report.

AUSTRALIAN SOCIAL SERVICES—IDENTIFYING AND ENGAGING THE H2R

Perhaps the primary lesson on how to reach H2R populations is to put effort into understanding who they are and the challenges they face. One of the best studies of H2R populations was done in Australia (Cortis et al. 2009). This study of H2R families and children, within the context of providing a range of social services, identified three types of H2R populations:

- Populations under-represented in service provision. These persons include marginalized and socially excluded populations.
- Service users (or potential users) who may be invisible to or overlooked by service providers. These persons include those who slip through the net being cast because the service does not address their needs (e.g., they believe the services are irrelevant).
- Service users (potential users) who are resistant to service provisions. These are the persons who choose not engage. They often fear the risks of being stigmatized, are wary of engagement, or who are unaware of the service offering.

The Australian study found it is important to engage these individual populations for a variety of reasons. First, the marginalized groups may be the primary intended beneficiaries of the services. In addition, identifying and serving these populations may improve the aggregate well-being by redressing a tendency to exacerbate inequality by leaving the H2R behind and improving only the easiest to reach. Finally, identifying and addressing the needs of these populations may improve the program design to meet the needs of the most vulnerable.

AUSTRALIAN SOCIAL SERVICES—UNDERSTANDING THE CHALLENGES FACED BY THE H2R

Cortis et al. (2009) highlight the importance of recognizing the life difficulties facing H2R populations. One attribute of H2R populations is the constant set of life difficulties facing them on a daily basis. These difficulties not only create emotional barriers, but create physical and time-use barriers as well. The authors note that frequent and regular contact with service staff may also be difficult where families face daily stresses and have chaotic routines, especially for care givers in low-income families, sole parents, and those with children with disabilities, or where parents are experiencing complex problems like depression or postnatal depression, poor literacy, learning or community difficulties, mental health issues or substance abuse.

The study found that many vulnerable families who refused were unable to understand information about service provision, while others felt too burdened by the complexity of their lives to be able to think about the possible benefits of a new service: "They are disengaged from so much in their lives. To access a support service is so hard if you haven't slept properly or eaten that day. It's hard to step outside that cycle" (Cortis et al. 2009, p. 16).

Cortis et al. (2009) also found that using other community members as a mechanism to identify and engage H2R populations has repeatedly been found to be one of the more effective mechanisms to use in service H2R populations. The Australia study on children and families refers to this strategy as a means to "limit the distance between staff and service users."

BRITISH HEALTH CARE AND SOCIAL SERVICES—REACHING DISCOURAGED POPULATIONS

A British research project looked at H2R populations in the provision of health care and social services (Flanagan and Hancock 2010). The British research found that a number of participants made explicit reference to the fact that many potential service users may not engage because of their previous negative experiences of accessing services: "In particular, it would seem that statutory services were conceived as being particularly impenetrable, thus discouraging individuals to access help."

The study found that these discouraging experiences help to explain what needs to be done to reach the H2R, and why certain strategies are consistently found to be important and effective. Some of the successful strategies identified include (1) using the community as a means of identifying, enrolling, and continually engaging the H2R population; (2) collaborating with trusted community organizations when possible; (3) focusing on relationship-building; and (4) going to the community rather than making the community come to you.

UNITED STATES HEALTH SERVICES—TAPPING THE LOCAL COMMUNITY

One population that is frequently difficult to identify, let alone engage, involves the aged, particularly those facing medical difficulties. In response, the Medicare-Medicaid Coordination Office (MMCO), along with the Centers for Medicare and Medicaid Services (CMS), initiated a specific program toward H2R individuals (Resources for Integrated Care 2015).

Based on a focus group with representatives from seven health plans in California, Massachusetts, Ohio, and Virginia that have experience locating and engaging Medicare-Medicaid enrollees, the study recommends hiring staff from the community for outreach because individuals from the community likely have existing connections with local health and social service organizations, as well as knowledge about how to find and connect with community members. They indicate that outreach staff should have lived in the community for a certain number of years or have previously worked with a community agency. They recommended, based on their experiences with H2R populations, to "go into their world [and] reach them where they live, work, shop, play and pray" (Boyd 2015).

UNITED STATES AFFORDABLE CARE ACT ENROLLMENT—EFFECTIVENESS OF IN-PERSON AND MULTIPLE CONTACTS

It is not simply who is charged with identifying and contacting H2R populations; it also is important to consider how those populations are contacted. In-person contact, rather than simply the provision of written notices, is important. A report on the enrollment of H2R populations in health insurance under the federal Affordable Care Act (ACA) stated that "consumers who received in-person help … were nearly twice as likely to sign up for a plan as those who tried to sign up online on their own, and they were more likely to say that signing up was very easy" (Enroll America 2014).

The evaluation found that trusted messengers at the national and local levels were more important than ever. The evaluation found that "partner collaboration has a multiplier effect. Teaming up with established, trusted institutions made it possible for Enroll America, and other organizations focused on enrollment, to meet a greater number of consumers with a higher level of credibility. Among the organizations that Enroll America surveyed, more than two-thirds identified collaboration as one of the most effective strategies in their toolbox…" (Enroll America 2015, p. 22).

Finally, the Enroll America campaign reported that multiple contacts were an important outreach tool. "Consumers followed-up with multiple times were more likely to enroll… [C]onsumers were increasingly likely to report enrolling after each follow-up conversation that they had with a volunteer. The increase in enrollment rates was especially striking among populations that had higher uninsured rates in the first place. African American and Latino consumers were about twice as likely to enroll after the third follow-up, and young people were more than twice as likely to enroll after the third follow-up." (Enroll America 2015, p. 22). These multiple contacts are not simply necessary to convey information effectively; they are needed to develop trust.

UNITED STATES HEALTH CARE ENROLLMENTS—THE VALUE OF COLLABORATING WITH TRUSTED SOURCES

A study funded by Blue Shield of California, and performed by Institute of Medicine (IoM), undertook a comprehensive review of evaluations from organizations from all across the United States that focused on "enrollment of hard-to-reach populations." The IoM report stated that "the marker of success was not only total enrollment numbers but whether outreach and enrollment were better than expected for the populations of interest" (Parker et al. 2015). The lessons reported by IoM included the following:

- "Every source that we examined noted that in-person assistance and 'touches' were vital to enrollment effort, particularly among hard-to-reach populations."
- Community partnerships were also an important resource for enrollment efforts to reach H2R populations. Partnerships with longstanding and trusted community organizations provided access to H2R communities and served as trusted sources of information and trusted spaces for enrollment to occur.
- "It is important to know where the community gets its health information and who its trusted messengers are for that information… It is also important to understand that different groups have different needs."

Parker et al. (2015) indicate that the need to rely on "trusted sources" cannot be overstated. The IoM evaluation noted that such an approach could occur either through their own organization, if it was a community-based trusted source, or through a partnership with groups and individuals who were trusted in the community.

Every community has different trusted sources, including advocacy groups, social services and community support groups, and faith-based groups. Although different, these trusted community partners had all been active in the communities prior to the enrollment process and were either already aware of or uniquely positioned to identify population-specific challenges and sensitive issues in the targeted populations.

Across all successful approaches, the key for building trust was identifying the populations to be reached, assessing who would be a trusted community partner, and using those partners to reach out and educate the populations in trusted locations.

Other key findings include:

1. Retaining successful workers is needed which, in turn, implicates the need for a long-term stable funding sources. Retaining the services of individuals who are effective at interacting with and engaging H2R populations is key.
2. Multiple contacts and in-person assistance are required for H2R populations. The IoM study identified several approaches as successful in activating consumers to move from outreach and education to actual sign-up. The study indicated that the most important of these were the need for multiple contact points and for in-person assistance for as many of these encounters as possible.

ACA ENROLLMENTS—USING "GRASS TOPS" STRATEGIES

The Robert Wood Johnson (RWJ) Foundation studied how states sought to reach H2R populations in the implementation of the ACA (Dorn 2014). The RWJ report found that "grass tops" education was important, which focused on "clergy and other community leaders who were equipped to educate their grassroots constituents." The RWJ evaluation found that many states used trusted community groups to reach immigrant and Native American communities, which can be H2R effectively through other methods. Community partners can include a broad range of entities, including community-based nonprofit agencies, family resource centers, faith-based organizations, food banks, schools, Head Start and preschool programs.

The RWJ study also found that one-on-one application assistance was often essential to helping the uninsured enroll, and that specific H2R subgroups were particularly helped by in-person assistance. RWJ found this to be the case for many Latinos, for people with complex health conditions or eligibility situations, people uncomfortable with computers, and people without easy internet access. Particular application assistance practices that provided helpful included ensuring that application assisters go out into the community rather than stay in their offices. The study also confirmed the importance of enlisting the support of trusted community members and organizations—closely tied to ethnic and other communities of interest—for reaching the H2R.

U.S. CHILDHOOD EARLY CARE AND EDUCATION PROGRAMS—THE VALUE OF CONSISTENT CONTACT

Special efforts have been made and documented in the effort to make early childhood education as universally available as possible. The Illinois Hard to Reach Families Project Evaluation, for example, performed at the University of Illinois (Champaign-Urbana) examined the six agencies that received federal funds in 2012 "to develop effective and innovative strategies to recruit young children from families considered 'hard to reach' and enroll them in quality early care and education (ECE) programs" (Fowler et al. 2013, p. 8). The six programs were aimed at identifying recruitment strategies that worked.

Consistent contact was perhaps the most important strategy found by the Illinois ECE programs. This contact should "expose [the families] to the benefits of early education services, whether through a voluntary drop-in preschool, child parent socialization groups, or home visits" (Fowler et al. 2013, p. 7). Once someone was identified by one of the six programs, "immediate follow-up calls or visits were critical for maintaining communication with the family." This was true even if the ongoing contact was not the full array of early childhood education services, but was instead some interim service that would simply maintain the contact.

The Illinois program found lessons similar to those learned from health care and health insurance regarding the value of using community members. One specific recommendation was to use parents from the community as recruiters. Successful agencies trained volunteers, "usually parents who had received services and could serve as ambassadors for the program" (Fowler et al. 2013, p. 9). Another lesson learned, similar to the health care and health insurance programs, was the advantage of taking the services to the constituency rather than making them come to the service providers.

One lesson reported by the Illinois project was the lack of success from attending community fairs. "…community fairs and activities were not very effective in finding families who had never been served. [Staff] noted that 'only the families who know about our services already come to our community events: the hard-to-reach families either don't know about these events or don't see the value in them" (Fowler et al. 2013, p. 16). In contrast, Illinois reported, "the most successful pilot programs shifted their recruitment efforts and some service provision from program-centric to family-centric, taking the recruitment, enrollment, and some services to where the families live and spend their time. These programs recognized that enrollment is a complex process for many families, requiring multiple meetings, appointments, and forms" (Fowler et al. 2013, p. 17).

In sum, the Illinois ECE experience reported that "the three most successful and potentially sustainable [strategies] include: (1) increased collaboration with larger agencies; (2) increased collaboration with other stakeholders within the community; and (3) the use of the drop-in preschool in local neighborhoods" (Fowler et al. 2013, p. 21). Each of these strategies would have their beneficial counterparts in the water utility industry. The "drop-in preschool" equivalent, for example, is simply an example of one of the "interim services" so successfully used by the Illinois ECE initiatives.

U.S. HEAD START ENROLLMENT—THE IMPORTANCE OF PEER-TO-PEER OUTREACH

The Illinois ECE lessons extend on to the closely-related program of Head Start. One analysis examined how Head Start is promoted in Chicago. According to Community Organizing and Family Issues (COFI n.d.), "it is well established that peer-to-peer outreach is a game changer in low-income communities. Public health practitioners long-ago realized that the messenger is as important as the message. The successful transmission of the message often depends upon the legitimacy and 'street cred' of the person delivering the message" (COFI n.d., p. 3).

The Chicago Head Start outreach involves "Head Start Ambassadors." Over the most recent three-year period, the Ambassadors have had peer-to-peer conversations with nearly 20,000 families, about half of who have children under age five. According to COFI, the effort of Head Start Ambassadors works for reasons which include, but are not limited to, the fact that Parent Ambassadors build relations. COFI notes that Parent Ambassadors not only share valuable information, but when they do so, they speak from experience. The program was created because "parent leaders understood that information would be best processed if it came from people that the families could relate to—other low-income parents and grandparents who have similar life experiences" (COFI n.d., p. 4).

CALIFORNIA ENERGY ASSISTANCE—USING ONGOING CONTACT VIA COMMUNITY ORGANIZATIONS

Switching services completely does not change the messages that are routinely communicated. The California Energy Commission (CEC), for example, in the late 1990s, studied the ways in which that state's Electric Education Trust sought to educate consumers about changes to the state's electric industry as it transitioned to direct access (Hipps and Hungerford 2004). The Commission's evaluation of the Community Outreach Program (COP) concluded that using CBOs to educate subpopulations on energy conservation issues and assistance programs for low-income consumers was an effective strategy. CEC reported that "trust within the target community allowed CBOs to deliver messages that consumers accepted" (Hipps and Hungerford 2004, p. 7-111).

CEC reached conclusions similar to those reached in other industries and other circumstances. For example, the commission found that the approach that CBOs mentioned most frequently was educating clients through one-on-one contact. The contacts could occur at the agency's office or at a client's home, during a home visit by an outreach worker going door-to-door in a neighborhood.

CEC reported that collaboration was important. Piggybacking occurred as education about electricity could be readily incorporated into other services the agency was providing. It was very common for a consumer to tell us that she had received information related to electricity when she came to the CBO for other services.

Knowledge about the H2R populations was important. CEC noted that educating H2R consumers required understanding the specific subpopulations living in California's diverse communities. They found that general information campaigns do not educate these subpopulations, and instead requires knowledge of the groups you with to contact and engage.

CEC concluded that "while these may seem to be elementary points, they are important to keep in mind as they help understand the value of incorporating CBOs into education efforts. Such

information provides a roadmap for effectively working with consumers who would not otherwise be served by education efforts" (Hipps and Hungerford 2004, p. 7-120).

MULTIPLE STUDIES—ADEQUATE, STABLE, LONG-TERM FUNDING IS EXTREMELY IMPORTANT

Long-term funding and attention is absolutely essential to identifying and engaging H2R populations. As noted in Cortis et al. (2009, p. 14) "…participants pointed out that building trust and relationships with hard-to-reach groups tends to be a slow process, and services need to be in for the long haul to make engagement worthwhile … Program funding thus needs to recognize the time required for successful relationship building with hard-to-reach groups, and program sustainability is particularly important for some target groups. Lack of ongoing support could provide disincentives to engagement, suggesting that longer-term programs may be more appropriate for addressing the complex needs of hard-to-reach groups."

The short-term nature of some interventions also contributes to wariness by populations who grow weary of repeated promises of assistance that are not, or cannot be sustained. Known as "initiative fatigue," this impact is seen where families are weary or suspicious of new services, especially where they are short-term. As noted in Cortis et al. "Overwhelmingly, participants agreed that longer-term funding was necessary to properly serve vulnerable populations. Short-term funding translated to short-term relationships. These were not only considered ineffective, but also unethical if they raised the expectations of, and then abandoned, vulnerable service users" (2009, p. 33).

CONCLUSIONS

The lessons learned from the diverse group of non-water initiatives described in this chapter are directly applicable for water sector efforts to define, reach, and engage H2R populations. While the lessons stated above may appear to be repetitive, they are emphasized because they have become generally accepted. There is great value and insight for the water sector to embrace the lessons and recommendations that have emerged almost universally from the experiences of other sector practitioners and researchers.

REFERENCES

ACEEE (American Council for an Energy Efficient Economy). 2014. *Effective Strategies for Achieving High Participation and Deeper Savings in Income-Eligible Multifamily Buildings*. Cited May 2, 2016. http://aceee.org/sites/default/files/pdf/strategies-high-participation-multifamily.pdf.

ACS (American Community Survey). 2014. "2014 Single-Year Estimates." https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

ACS (American Community Survey). 2015. "2011–2014, 5-Year Average Estimates." https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

Allegretto, S. 2005. "Basic Family Budgets: Working Families' Incomes Often Fail to Meet Living Expenses around the U.S." Briefing Paper #165. Cited July 27, 2016. http://www.epi.org/publication/bp165/.

AWWA (American Water Works Association). 2000. *M1: Principles of Water Rates, Fees, and Charges*, Fifth Edition. Denver, Colo: AWWA.

AWWA (American Water Works Association). 2005. *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers*. Denver, Colo: AWWA.

AWWA (American Water Works Association). 2014. *Thinking Outside the Bill: A Utility Manager's Guide to Assisting Low-Income Water Customers*, Second Edition. Denver, Colo: AWWA.

AWWA, WEF, and USCM (American Water Works Association, Water Environment Federation, and United States Conference of Mayors). 2013. *Affordability Assessment Tool for Federal Water Mandates*. Cited July 26, 2016. http://www.awwa.org/Portals/0/files/legreg/documents/affordability/AffordabilityAssessmentTool.pdf.

Ballard-Reisch, D., T. Sacks, and K. Ross. 2007. Increasing Home Energy Costs and Public Safety: The Use of Academic-Private Industry Partnerships to Develop Strategies for Effective Communication with Hard-to-Reach Populations. Refereed poster presentation at the 135th Annual Meeting and Exposition of the American Public Health Association.

Beecher, J., T. W. Chesnutt, and D. M. Pekelney. 2001. *Socioeconomic Impacts of Water Conservation*. Project #497. Denver, Colo: AwwaRF.

Bird, S., and D. Hernández. 2012. "Policy Options for the Split Incentive: Increasing Energy Efficiency for Low-Income Renters." *Energy Policy*, 48:506–514.

Boushey, H., C. Brocht, B. Gundersen, and J. Bernstein. 2001. *Hardships in America: The Real Story of Working Families.* Washington, DC: Economic Policy Institute.

Boyd, L. W. 2015. *The Power of Innovative Tactics to Reach the Uninsured*. Cited December 30, 2016. http://www.pachc.com/Annual%20Conference%20Presentations%202015/The%20Power%20of%20Innovative%20Tactics%20to%20Reach%20the%20Unisured.pdf.

Brobeck, S. 2008. *The Essential Role of Banks and Credit Unions in Facilitating Lower-Income Household Saving for Emergencies*. Washington, DC: Consumer Federation of America.

California Senate Bill No. 7. 2016. Housing: Water Meters: Multiunit Structures. Approved by the Governor September 25. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB7.

California Right to Vote on Taxes Act. 1996. Articles XIIIC and XIIID of the California Constitution.
California Health and Safety Code. 2004. Section 116455(a)(2).
CEX (Consumer Expenditure Survey). 2015. *Bureau of Labor Statistics Consumer Expenditure Survey: 2014 Estimates.* Washington, DC: Bureau of Labor Statistics.
City of Portland. 2015. *2015 Low-Income Discount Report, Expanding City Utility Discounts in Portland*. Portland, OR: Portland Water Bureau.
CLPHA (Council of Large Public Housing Authorities). n.d. "Green Building and Community Planning Fact Sheet." Cited November 1, 2016. http://www.clpha.org/factsheet.
COFI (Community Organizing and Family Issues). n.d.. *How We Got Johnny, Jada, José into Preschool: Briefings from the Ground Up.* Cited December 31, 2016. http://www.cofionline.org/COFI/wp-content/uploads/2015/04/Briefings_complete_WEB3.pdf.
Colton, R. 1997. Fair Housing and Affordable Housing: Availability, Distribution and Quality. *Colloquium: Cornell Journal of Planning and Urban Issues*, 9.
Colton, R. 2002. *Energy Safety Net Toolkit, Tool #2: Credit Where Credit is Due: Public Utilities and the Earned Income Tax Credit for Working Poor Utility Customers*. National Fuel Funds Network. Cited August 1, 2016. http://www.fsconline.com/downloads/Papers/2002%2002%20credit-is-due.pdf.
Colton, R. 2006. *Georgia REACH Project Energize: Final Program Evaluation*. Atlanta, GA: Georgia Department of Human Resources.
Cortis, N., I. Katz, and R. Patulny. 2009. *Occasional Paper No. 26: Engaging Hard-to-Reach Families and Children.* Australian Government, Department of Families, Housing, Community Services and Indigenous Affairs. Cited December 31, 2016. https://www.dss.gov.au/sites/default/files/documents/op26.pdf.
Costello, K. 2009. *How to Determine the Effectiveness of Energy Assistance, and Why It's Important*. Silver Spring, MD: National Regulatory Research Institute.
Cromwell, J. E., R. D. Colton, S. J. Rubin, C. N. Herrick, J. Mobley, K. Reinhardt, and R. Wilson. 2010. *Best Practices in Customer Payment Assistance Programs*. Project #4004. Denver, Colo.: Water Research Foundation.
Davis Enterprise. 2016. "New Law Helps Renters, Property Owners Save Water." Cited December 31, 2016. http://www.davisenterprise.com/local-news/new-law-helps-renters-property-owners-save-water/.
Delaney, A. 2013. "Food Stamps Avoided by Millions of Eligible Americans." *Huffington Post*. Cited August 5, 2016. http://www.huffingtonpost.com/2013/08/14/food-stamps_n_3757052.html.
Despard, M., D. Perantie, J. Oliphant, and M. Grinstein-Weiss. 2015. *Do EITC Recipients Use Their Tax Refunds to Get Ahead? Evidence from the Refund to Savings Initiative*. CSD Research Brief No. 15-38. St. Louis, MO: Washington University in St. Louis, Center for Social Development. Cited December 31, 2016. https://csd.wustl.edu/Publications/Documents/RB15-38.pdf.
DHA (Denver Housing Authority). 2009. "Q&A: Water Conservation Initiatives in Public Housing." *Journal of Housing & Community Development*, 66 (4): 28–30.

Dorn, S. 2014. *ACA Implementation—Monitoring and Tracking: Public Education, Outreach and Application Assistance*. Washington, DC: Urban Institute for Robert Wood Johnson Foundation. Cited December 31, 2016. http://www.rwjf.org/content/dam/farm/reports/reports/2014/rwjf416839.

Energy Programs Consortium. 2014. *Multifamily Energy Efficiency: Water We Know and What's Next*. Washington, DC: Energy Programs Consortium.

Enroll America. 2014. *The State of Enrollment: Lessons Learned from Connecting America to Coverage*. Cited December 31, 2016. https://www.enrollamerica.org/soe_report/.

Enroll America. 2015. *State of Enrollment: Helping America Get Covered and Stay Covered, 2014–2015*. Cited December 31, 2016. https://www.enrollamerica.org/soe_report_2015/.

EPA (U.S. Environmental Protection Agency). 2012. *WaterSense at Work: Best Management Practices for Commercial and Institutional Facilities*. EPA 832-F-12-034. Washington, DC: EPA.

EPA (U.S. Environmental Protection Agency). 2016. *Drinking Water and Wastewater Utility Customer Assistance Programs. C*ited July 26, 2016. https://www.epa.gov/sites/production/files/2016-04/documents/dw-ww_utilities_cap_combined_508.pdf.

Flanagan, S., and B. Hancock. 2010. "'Reaching the Hard to Reach'—Lessons Learned from the VCS (Voluntary and Community Sector): A Qualitative Study." Cited December 31, 2016. http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-10-92.

Fowler, S., D. Thomas, J. Tompkins, L. Hartle, and C. Corr. 2013. *Illinois Hard to Reach Families Project Evaluation*. Champaign, IL: University of Illinois Urbana-Champaign. Cited December 30, 2016. http://ecap.crc.illinois.edu/pubs/htr/htr-final-report.pdf.

GAO (U.S. Government Accountability Office). 2008. *HUD Has Made Progress in Promoting Green Building, but Expanding Efforts Could Help Reduce Energy Costs and Benefit Tenants*. GAO-09-46. Washington, DC: GAO.

Georgia Water Stewardship Act. 2010. Article 1 of Chapter 2 of Title 8 of the Official Code of 16 Georgia Annotated.

Goodman-Bacon, A., and L. McGranahan. 2008. *How Do EITC Recipients Spend Their Refunds*? Chicago, IL: Federal Reserve Bank of Chicago. Cited December 31, 2016. https://www.chicagofed.org/publications/economic-perspectives/2008/2qtr2008-part2-goodman-etal.

Gorman, K. S., A. M. Smith, M. E. Cimini, K. M. Halloran, and A. G. Lubiner. 2013. "Reaching the Hard to Reach: Lessons from a Statewide Outreach Initiative." *Journal of Community Practice*, 21 (1–2): 105–123.

Gould, E., T. Cooke, and W. Kimball. 2015. "What Families Need to Get By: EPI's 2015 Family Budget Calculator." Washington, DC: Economic Policy Institute. Cited July 26, 2016. http://www.epi.org/publication/what-families-need-to-get-by-epis-2015-family-budget-calculator/.

Harak, C. 2013. *Helping Low-Income Utility Customers Manage Overdue Bills through Arrearage Management Programs (AMP)*. Boston: National Consumer Law Center.

Hasson, D.S. 2002. "Water Utility Options for Low-Income Assistance Programs." *Journal AWWA*, 94 (4): 128–138.

Hipps, J., and D. Hungerford. 2004. *Communicating Messages to Hard-to-Reach Consumers: Lessons from the Electric Education Trust*. Cited December 31, 2016. http://aceee.org/files/proceedings/2004/data/papers/SS04_Panel7_Paper10.pdf.

Holt, L., M. Jamison, T. Kury, M. Phillips, L. Jarrett, P. Jones, C. Miller, J. K. Searcy, N. Taylor, D. Chasar, J. Nelson, J. Sonne, and R. Vieira. 2015. *Florida Multifamily Efficiency Opportunities Study: Final Report*. Tallahassee, FL: Florida Department of Agriculture and Consumer Services. Cited January 15, 2017. http://www.freshfromflorida.com/content/download/60388/1263496/MFEOpportunities_FinalReport_1-9-15.pdf.

HUD (U.S. Department of Housing and Urban Development). n.d. "Public Housing Environmental & Conservation Clearinghouse: Water Conservation." Cited November 1, 2016. http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/programs/ph/phecc/watercon.

Hynek, D., M. Levy, and B. Smith. 2012. *Follow the Money: Overcoming the Split Incentive for Effective Energy Efficiency Program Design in Multi-Family Buildings*. Wisconsin Division of Energy Services. Cited January 15, 2017. http://aceee.org/files/proceedings/2012/data/papers/0193-000192.pdf.

Illinois Rental Property Utility Services Act. 765 Illinois Compiled Statutes Sections 735/0.01 to 735/5.

IRS (Internal Revenue Service). 2015. "2015 EITC Income Limits, Maximum Credit Amounts and Tax Law Updates." Accessed August 1, 2016. https://www.irs.gov/credits-deductions/individuals/earned-income-tax-credit/eitc-income-limits-maximum-credit-amounts.

Linnenbrink, M., M. Linnenbrink, M. Rupured, T. Mauldin, and J. K. Moss. 2006. *The Earned Income Tax Credit: Experiences from and Implications of the Voluntary Income Tax Assistance Program in Georgia*. Cited December 31, 2016. http://www.fermascholar.org/wp-content/uploads/2013/06/2-Earned-Income-Tax-Credit.pdf.

Mammen, S., and F. Lawrence. 2006. "How Rural Working Families Use the Earned Income Tax Credit: A Mixed Methods Analysis." *Journal of Financial Counseling and Planning*, 17 (1).

Mastracchio, J., A. Santos, R. Giardina, R. Raucher, K. Raucher, M. W. Tiger, and J. Huges. 2016. *Rate Approval Process Communication Strategy and Toolkit*. Project #4455. Denver, Colo.: Water Research Foundation.

Mayer, P., E. Towler, W. B. DeOreo, E. Caldwell, T. Miller, E. R. Osann, E. Brown, P. J. Bickel, and S. B. Fisher. 2004. "National Multiple Family Submetering and Allocation Billing Program Study." Cited November 20, 2016. http://www.allianceforwaterefficiency.org/WorkArea/DownloadAsset.aspx?id=704.

Mendenhall, R., K. Edin, S. Crowley, J. Sykes, L. Tach, K. Kriz, and J. R. Kling. 2012. *The Role of Earned Income Tax Credit in the Budgets of Low-Income Households*. Cited December 31, 2016. http://users.nber.org/~kling/eitc.pdf.

Mills, G., and J. Amick. 2010. *Can Savings Help Overcome Income Instability?* Brief 18. Washington, DC: The Urban Institute.

MLRI (Massachusetts Law Reform Institute). 2009. "Differences Between Public and Subsidized Housing." Cited July 26, 2016. http://www.masslegalhelp.org/housing/public-subsidized-differences.

NCLC (National Consumer Law Center). 2014. *Review and Recommendations for Water and Wastewater Affordability Programs in the United States*. National Consumer Law Center and Missouri Office of the Public Council. Cited October 15, 2015. http://www.nclc.org/images/pdf/pr-reports/report-water-affordability.pdf.

New Jersey Board of Public Utilities. 2014. New Jersey Administrative Code Title 14 Sec 3-3A.6.

NLIHC (National Low Income Housing Coalition). 2015. *Affordable Housing is Nowhere to be Found for Millions*. Cited August 5, 2016. http://nlihc.org/sites/default/files/Housing-Spotlight_Volume-5_Issue-1.pdf.

NRDC (Natural Resources Defense Council). 2015. *Energy Efficiency for All. Program Design Guide: Energy Efficiency Programs in Multifamily Affordable Housing*. New York, NY: NRDC.

NYC DEP (New York City Department of Environmental Protection). 2017. "Newton Creek CSO Long Term Control Plan." Cited July 5, 2017. http://www.nyc.gov/html/dep/html/cso_long_term_control_plan/newtown_creek_ltcp.shtml.

OECD (Organization for Economic Co-Operation and Development). 2002. *Social Issues in the Provision and Pricing of Water Services*. Paris: OECD Publishing.

Pacific Institute. 2013. *Water Rates: Water Affordability*. Cited August 5, 2016. http://pacinst.org/wp-content/uploads/2013/01/water-rates-affordability.pdf.

Parker, R., V. Wu, and K. Patel. 2015. *Successfully Engaging Hard-to-Reach Populations in Health Insurance: A Focus on Outreach, Sign up and Retention, and Use*. Washington, DC: Institute of Medicine, Roundtable on Health Literacy, Collaborative on Health Literacy and Access, Health Care Coverage, and Care. Cited December 31, 2016. http://www.nationalacademies.org/hmd/~/media/Files/Activity%20Files/PublicHealth/HealthLiteracy/Commissioned-Papers/EngagingHardtoReachPopsinInsurance.pdf?la=en.

Pennsylvania Utility Service Tenants Rights Act. 1978. 68 Pennsylvania Statutes Sections 399.1 to 399.18.

Public Notification of Drinking Water Violations. n.d. Code of Federal Regulations Title 40 Sec 141.201.

PUMS (Public Use Microdata Sample). 2012. *U.S. Census Bureau Public Use Microdata Sample: 2012 Single-Year Estimates.* Washington, DC: U.S. Census Bureau.

PUMS (Public Use Microdata Sample). 2014. *U.S. Census Bureau Public Use Microdata Sample: 2014 Single-Year Estimates.* Washington, DC: U.S. Census Bureau.

PUMS (Public Use Microdata Sample). 2015. *U.S. Census Bureau Public Use Microdata Sample: ACS 2011–2014 Five-Year Average Estimates*. Washington, DC: U.S. Census Bureau.

PWB (Portland Water Bureau). 2015. "2015 Low-Income Discount Report: Expanding City Utility Discounts in Portland." Portland, OR: PWB. Cited May 3, 2016. https://www.portlandoregon.gov/water/article/547944.

Raucher, R., K. Raucher, A. Leiserowitz, S. Conrad, M. Milan, B. Dugan, and E. Horsch. 2014. *Climate Change Communication for Water Utilities*. Project #4381. Denver, Colo.: Water Research Foundation.

Resources for Integrated Care. 2015. “Hard-to-Reach Populations: Innovative Strategies to Engage Isolated Individuals.” Cited December 31, 2016. https://www.resourcesforintegratedcare.com/behavioral_health/member_engagement/webinars.
Rhine, S., S. Su, Y. Osaki, and S. Lee. 2004. *Householder Response to the Earned Income Tax Credit: Path of Sustenance or Road to Asset Building*. New York: Federal Reserve Bank of New York.
Rubin, S. J. 2005. “Census Data Shed Light on U.S. Water and Wastewater Costs.” *Journal AWWA*, 97 (4): 99–110.
Safe Drinking Water Act. 1994. 42 U.S. Code Sec 300f 8624 (f)(1).
Saunders, M., P. Kimmel, M. Spade, and N. Brockway. 1998. *Water Affordability Programs.* Project #184. Denver, Colo.: AwwaRF.
Schwartz, J. 2014. *Low Income Consumer Decision Making*. Washington, DC: DEFG Low Income Energy Issues Forum.
Simpson, N., J. Hyde, and J. Tiefenthaler. 2006. *The Efficacy of the EITC: Evidence from Madison County (New York)*. Hamilton, NY: Colgate University Department of Economics.
Steele, J. 2016. “Subscribing to Submetering: Installations Expand as Incentives Increase.” *Multi-Housing News*. October.
UNC Environmental Finance Center (Environmental Finance Center at the University of North Carolina at Chapel Hill). 2017. *Navigating Legal Pathways to Rate-Funded Customer Assistance Programs: A Guide for Water and Wastewater Utilities*. WRF project #4671. http://www.waterrf.org/PublicReportLibrary/4671.pdf.
U.S. Census Bureau. 1994. *Housing of Low-Income Households*. U.S. Census Bureau Statistical Brief. September. Washington, DC: U.S. Census Bureau.
U.S. Census Bureau. 2016. “Median Year Householder Moved into Unit by Tenure. 2015 American Community Survey 1-Year Estimate.” Cited November 3, 2016http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_1YR_B25039&prodType=table.
Vock, D. 2014. “Utilities Worry Water’s Becoming Unaffordable.” Cited April 8, 2015http://www.governing.com/topics/transportation-infrastructure/gov-water-utilities-worry-about-high-costs-for-low-income-customers.html.
Washington Revise Code. Utility Services. Title 35 Chapter 35.21 Section 217.

ABBREVIATIONS

ABCWUA	Albuquerque Bernalillo County Water Utility Authority
ACA	Affordable Care Act
ACS	American Community Survey
AHS	American Housing Survey
AMR	Automated Meter Reading
AWWA	American Water Works Association
BBL	borough, block and lot
BLS	Bureau of Labor Statistics
CAP	customer assistance program
CBO	community-based organization
CCMUA	Camden County Municipal Utility Authority
CEC	California Energy Commission
CEX	Consumer Expenditure Survey
CFA	Consumer Federation of American
CMS	Centers for Medicare and Medicaid Services
COFI	Community Organizing and Family Issues
COP	Community Outreach Program
CSO	combined sewer overflow
DHA	Denver Housing Authority
DHR	Department of Human Resources
DPS	Denver Public Schools
DW	Denver Water
EBT	Electronic Benefit Transfer
ECE	early care and education
EEI	Edison Electric Institute
EFC	Environmental Finance Center
EITC	Earned Income Tax Credit
EOC	Energy Outreach Colorado
EPA	U.S. Environmental Protection Agency
EPWU	El Paso Water Utilities
GAO	U.S. Government Accountability Office
GIS	geographic information system
H2R	hard-to-reach
HEAP	Home Energy Assistance Program
HOA	homeowner association
HPD	Housing Preservation and Development
HUD	U.S. Department of Housing and Urban Development

IDA	Individualized Development Account
IoM	Institute of Medicine
IRS	Internal Revenue Service
LEAP	Low Income Energy Assistance Program
LIHEAP	Low-Income Heating and Energy Assistance Program
LIHTC	Low-Income Housing Tax Credits
MCP	Multi-Family Conservation Program
MFMM	multi-family, master-metered
MFWAP	Multi-Family Water Assistance Program
MHI	median household income
MMCO	Medicare-Medicaid Coordination Office
NDWAC	National Drinking Water Advisory Council
NGO	non-governmental organization
NLIHC	National Low Income Housing Coalition
NMHC	National Multi-Family Housing Council
NYC DEP	New York City Department of Environmental Protection
NYCHA	New York City Housing Authority
OWASA	Orange Water and Sewer Authority
PHA	public housing authority
PLUTO	Primary Land Use Tax Lot Output
PNM	Public Service Company of New Mexico
PSE	Puget Sound Energy
PSEG	Public Service Electric and Gas
PUMA	Public Use Microdata Area
PUMS	Public Use Microdata Sample
PWB	Portland Water Bureau
REACH	Residential Energy Assistance CHallenge
RWJ	Robert Wood Johnson
SHA	Seattle Housing Authority
SNAP	Supplemental Nutrition Assistance Program
SPU	Seattle Public Utilities
SSI	Supplemental Security Income
SUA	standard utility allowance
TANF	Temporary Assistance for Needy Families
UDP	Utility Discount Program
USGS	U.S. Geological Survey

VITA	Volunteer Income Tax Assistance
WRAP	Water Ratepayer Assistance Program
WRF	Water Research Foundation