

WATER AFFORDABILITY BUSINESS CASE TOOL (V. 2.1): FAQ AND QUICK START GUIDE

*This Quick Start Guide accompanies the **Water Affordability Business Case Tool (version 2.1, October 2023)** developed by Roger Colton (Fisher, Sheehan & Colton, Public Finance & General Economics) under contract to the Natural Resources Defense Council.¹ Additional technical support developing the Tool was provided by Synapse Energy Economics Inc. The Tool was beta tested in 2022 with several water and wastewater utilities. Version 2.1 can be downloaded as an Excel file with an accompanying User Manual at the following link: <https://www.nrdc.org/resources/water-affordability-business-case-downloadable-tool>.*

This document provides a list of FAQs and Quick Start guidance to help you get started using the Tool. The full User Manual provides detailed instructions and guidelines for using the Tool, along with a thorough explanation of its methodology and underlying premises and assumptions.

FREQUENTLY ASKED QUESTIONS

WHAT IS THE PURPOSE OF THE WATER AFFORDABILITY BUSINESS CASE TOOL?

The Tool allows Users to model the financial impacts on a particular water, wastewater, and/or stormwater utility of providing bill discounts to low-income customers. Although discounted rates for low-income households are typically viewed as a cost to the utility, in the form of forgone billing, the Tool accounts for offsetting increases in revenue and avoided costs, which result from making bills more affordable to customers currently struggling to pay. This approach helps utilities assess the business case for offering a low-income discount program, by considering the program as a collection device designed to improve overall revenue and strengthen the utility's financial position. The water utility sector's most authoritative rate-setting manual expressly acknowledges this business case concept, as do publications by the Water Research Foundation.²

The Tool may also help utilities provide a legal rationale for funding these programs with rate revenues, based on financial benefits that accrue to ratepayers as a whole.

WHO SHOULD USE THIS TOOL?

The Tool is designed for use by water, wastewater, stormwater, or combined water service utilities that are considering low-income discount programs.* Additionally, community-based organizations, state and federal oversight agencies, and other stakeholders interested in improving water affordability for low-income households can encourage utilities to use the Tool. In some cases, sufficient information may be publicly available for such stakeholders to run the Tool independently, using assumptions to fill data gaps.

WHAT TYPES OF LOW-INCOME DISCOUNT PROGRAM DOES THE TOOL CONSIDER?

The Tool considers three program types:

- “Percentage of Income Program” (PIP), in which bills for participating households are capped at a percentage of income deemed by the User to be “affordable.” (A customer's bill as a percentage of household income is referred to as the customer's “bill burden.” A PIP results in an affordable bill burden for participants.)

* The Tool was designed primarily for use by publicly owned utilities. However, the *User Manual* suggests an adaptation, with respect to one input, that could allow an investor-owned utility to use this Tool.

- “Percentage of Bill” (POB) program, in which bills for participating households are set equal to a percentage discount from the total bill at standard rates. A POB may be designed to achieve affordable bill burdens, by providing a larger percentage discount for households at the lowest income levels. Alternatively, a POB may offer the same percentage discount for all participating households, without regard to the resulting bill burden.
- “Fixed Dollar Discount” (FDD) program, in which each participating household receives a set dollar-amount discount on its bill.

Within each program type, the User can select from various program design options. The User can also assess results using a range of participation rates by eligible customers, program administrative costs, and other factors.

For purposes of the Tool, for each of the three program types, all residential customers with household income at or below 150% of the Federal Poverty Guidelines are considered income-eligible.

WHAT SORTS OF RESULTS DOES THE TOOL PROVIDE?

After the User enters the necessary utility-specific data and selects program design features and other options, a Summary Tables page presents results for each of the three program types (PIP, POB, and FDD). These tables display changes in the utility’s receipts from residential customers (accounting for bill discounts and changes in bill collectability), offsets (including costs avoided through improved collectability of bills and costs incurred for program administration), and net program impacts (in absolute dollar terms and as a percentage of residential revenue or total revenue). Depending on options selected on the Tool’s input pages, results can be displayed either for a scenario in which program costs are recovered from nonparticipating ratepayers or for a scenario in which they are not.

HOW DOES THE TOOL WORK?

The Tool is a downloadable Excel file that can be run from any computer. The Tool has three main sections:

- Two informational pages: Welcome and Glossary.
- Four to six input pages (depending on which options are selected) that require User-entered information, and one page with default values for certain inputs that the User can modify. (See additional description below under “How do I enter data and select options on the input pages?”)
- A Summary Tables page that shows results, as described above (see “What sorts of results does the Tool provide?”). The Tool also contains worksheets that display the calculations running in the background of the model that generate the results that appear on the Summary Tables page. These are viewable by selecting “Restore default Excel functionality” on the Welcome page or the Input General Information page, or by selecting “See Supporting Worksheets” on the Summary Tables page.

Buttons within the Tool guide the User through the various pages based on up-front User selections. Additional guidance is provided in the *User Manual*.

DOES THE TOOL HELP DETERMINE HOW TO PAY FOR A LOW-INCOME DISCOUNT PROGRAM?

The Tool can be used to inform separate analyses of funding options that a utility may wish to conduct. Specifically, the Tool is designed to project the net change in utility revenue that results from a low-income discount program. The user can evaluate utility revenue impacts in a scenario in which costs are recovered from (i.e., paid for by) nonparticipating ratepayers, although the Tool does not project rate impacts for those nonparticipants. Alternatively, the user can run a scenario in which those costs are not recovered from nonparticipating ratepayers. That option allows the Tool to quantify any net costs of a program that the utility needs to recover from *somewhere*—whether from nonparticipating ratepayers or from other sources. Quantifying these costs can help the utility separately evaluate potential funding options.

WHOM CAN I CONTACT WITH QUESTIONS OR FEEDBACK ON THE TOOL?

For any questions about use of the Tool, feedback on your experience with using it, or recommendations for future revisions, please email WaterTool@nrdc.org. You can also use the same address to request to be added to a list to receive notifications of updates to the Tool.

GETTING STARTED

WHAT INFORMATION DO I NEED TO OPERATE THE TOOL?

Users will find the information they need in two places: internal utility records and U.S. Census data for the service area population. The Tool provides links and instructions for the User to retrieve necessary census data. The main inputs that must be retrieved from internal utility records are:

- Residential accounts, billing, and collections
 - Number of residential accounts
 - Annual residential customer revenue
 - Average residential bill and percentage of accounts higher and lower than average
 - Percentage of residential accounts in arrears (monthly average)
 - Average arrears per residential account in arrears
 - Percentage of residential revenues written-off as uncollectible
 - Number of months arrearages are carried after final bill before charge-off
- Residential disconnections for nonpayment
 - Number of disconnections for nonpayment
 - Number of disconnection notices for nonpayment
 - Cost per disconnection

- Cost per disconnection notice
- Rate at which residential disconnected accounts are reconnected
- Other financial information
 - Total system revenue (including nonresidential sectors)
 - Annual interest (for carrying costs of arrears)

The remaining required inputs can be estimated on the basis of guidance from the Tool and the *User Manual*.

HOW DO I ENTER DATA AND SELECT OPTIONS ON THE INPUT PAGES?

The Tool will prompt Users to enter data specific to a utility and data concerning the population of its service area. Additionally, some of the User-selected inputs concern program design options or assumptions that the User can adjust.

All input fields are designated by light blue highlighting. For select fields, pop-ups to the right of the input field provide explanations and guidance, including recommended data sources, rationales for default assumptions, or help in selecting options. The *User Manual* also includes this supporting information.

Below is a brief overview of the input pages:

INPUT GENERAL INFORMATION

All Users start at the General Information page, where the User inputs the name of the water utility, the utility jurisdiction, and most important, the services the User would like to examine (water, wastewater, and/or stormwater). Where a utility provides multiple services but the service area for each one differs, the User can examine services individually by selecting “Yes” next to the applicable services and “No” under the combined service option. Alternatively, where a utility provides the same bundle of services to all of its customers across its service territory, the User should select “Yes” under combined service.

INPUT COMMON DATA

Once the User has selected services, the navigational buttons guide the User to the Input Common Data page. This page requests information that is common to all services, eliminating the need for the User to enter the same data multiple times. The inputs required on this page include both utility-specific data and selection of certain program design options.

INPUT WATER/WASTEWATER/STORMWATER DATA

There is a separate input page for each of the three service types (water, wastewater, and stormwater). Users are directed to the pages for the services they have opted to examine on the General Information page (unless they selected the “combined service” option). The inputs required on these pages include both utility-specific data and selection of certain program design options.

INPUT COMBINED SERVICE DATA

If Users select the “combined service” option, they are directed to this page *instead* of the service-specific input pages. The inputs required on this page include both utility-specific data and selection of certain program design options.

INPUT POVERTY AND HOUSEHOLD DATA

This page asks for two types of data on poverty and household size for the User’s service territory. The Tool provides specific instructions on how to easily access these data from the U.S. Census Bureau’s website.

DEFAULT VALUES

The Default Values page is accessible by clicking a button at the bottom of the Input Common Data page. The Default Values page is pre-populated with various assumptions, consistent with industry practices, for certain inputs that may be overly burdensome for the average User to derive with available utility-specific data. All Users have the flexibility to modify the defaults on this page should they choose.

ENDNOTES

- 1 Mr. Colton works primarily on low-income utility issues. Over the course of the past 36 years, he has frequently been involved, in multiple capacities, in planning, implementing, and evaluating utility programs responding to low-income households’ inability-to-pay. This includes regulatory work (with testimony in more than 320 proceedings in 43 states and Canada), as well as research into low-income customer usage, payment patterns, and affordability programs. Mr. Colton’s clients include water and energy utilities, state agencies, federal agencies, and non-profit organizations. He has advised municipalities on the design of water affordability and assistance programs and co-authored or contributed to reports on water affordability sponsored by the Water Research Foundation. He has authored more than 80 technical reports on low-income utility issues in the water, energy, and telecommunications sectors, as well as a similar number of articles in scholarly and trade journals.
- 2 See AWWA M-1 Manual, Principles of Water Rates, Fees, and Charges (7th ed, 2017), pp. 217-18 (“When customers have trouble paying utility bills, the cost to the utility is manifested in increased arrearages, late payments, disconnection notices, and service terminations...Some of the specific advantages of adopting customer financial assistance programs include...reducing utility collection costs, arrearages, disconnects, and reconnects, which improves the utility’s bottom line...”); John Cromwell et al., *Best Practices in Customer Payment Assistance Programs*, Water Research Foundation, January 2010, p. 91, https://aquadoc.typepad.com/files/water_affordability_4004.pdf (“[C]ustomer assistance programs have been shown to be capable of producing more total revenue for the dollars expended.”).