American Water Works Association

Manual of Water Supply Practices

M1

Eighth Edition



Water Rates, Fees, and Charges

Manual of Water Supply Practices

M01

Principles of Water Rates, Fees, and Charges

Eighth Edition

American Water Works Association

Manual of Water Supply Practices—M01, Eighth Edition

Principles of Water Rates, Fees, and Charges

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Dedication

Dedication to Robert (Bob) F. Banker

The AWWA Rates and Charges Committee dedicates this eighth edition of M1 to Robert F. (Bob) Banker, who passed away on May 16, 2023. Bob, a civil engineer, spent his entire 42-year career with Black & Veatch. Bob was a true leader in the water utility industry and an active member of AWWA, joining in 1956 and receiving the Golden Drop award in 2006. After joining the Rates and Charges Committee in the early 1970s, Bob became the chair and played a leadership role in the development and publication of the third and fourth editions of M1. Assisting in the development of the base-extra capacity cost-of-service methodology set forth in the second edition of M1 in 1972, Bob was a staunch advocate of applying cost-of-service principles in establishing water rates and the value of this methodology to inform decision makers of customer-class cost of service. Bob worked tirelessly with colleagues on the Rates and Charges Committee to refine and enhance its concepts and applicability for water utilities throughout the United States.

In addition to his work as a consultant and advisor to water utilities, Bob served as an expert witness on behalf of water utilities supporting the use of the cost-of-service principles set forth in M1. Perhaps the most important of Bob's legacies was his mentorship of younger engineers and analysts during their careers, developing future leaders in our industry and sustaining the important work of the AWWA Rates and Charges Committee.

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Preface

In 1954, AWWA published the report "Determination of Water Rate Schedules," which later was issued as the first AWWA manual on water rates. Since then, AWWA Manual M1 has been updated several times, most recently in 2017. The seventh edition, titled *Principles of Water Rates, Fees, and Charges*, consolidated several previous publications into what has been referred to as the M1 Super Manual (see Woodcock 2013 for a historical perspective on M1). The issues associated with water rates and charges continue to evolve, and this update of M1, the eighth edition, is a reflection of that evolution.

The AWWA Rates and Charges committee established the following mission statement at the beginning of this process to ensure an improved user experience.

> The AWWA Rates and Charges Committee believes first and foremost the M1 manual should support principles-based cost recovery from user rates and charges to ensure financial sustainability. Full recovery of the utility system's revenue requirements assigned to water customers should be achieved by equitable distribution of costs to customer classes in proportion to their respective costs of service. To support the full cost recovery foundation, M1 provides detailed principle-focused guidance rather than prescribing "one-size-fits-all" solutions. Manual users are encouraged to apply the concepts discussed in the manual to develop tailored solutions to rate-setting.

This mission statement served as the foundation for the update to this edition. For instance, the chapter examples are more comprehensive, and there is now a full example of the cash-basis and utility-basis methods of determining revenue requirements. This edition uses the cash basis as the example within the text as this is the most common approach used by municipal utilities. Similarly, we have improved the utility basis cost-of-service example from previous editions and included those full tables in Appendix A. Other chapters have been revised to be more concise, and language has been updated to improve continuity and ease of understanding.

With these improvements, the manual better equips rate practitioners, utility managers, and policymakers with a comprehensive understanding of the complex water utility rate setting process.

The AWWA Policy Statement on Financing, Accounting and Rates also guided the work of the committee and the development of its mission statement. Please refer to page xxiii to view the policy statement.

As with the other manuals prepared by the Rates and Charges Committee and AWWA, the examples provided do not prescribe a solution. Rather, the examples are shown to demonstrate that if the principles promulgated throughout the manual are applied correctly, they can help address most circumstances a utility might face with rates and charges. In other words, the examples included are for illustrative purposes only. Each utility will have unique factors that influence their cost-of-service and rate design. Use of the numbers in the examples verbatim will result in erroneous outcomes.

REFERENCE

Woodcock, C.P.N. 2013. "A Brief History of Water Rates Manuals and Publications—The New England Water Works' Involvement." *Journal NEWWA*, 77:4:293–304.

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AWWA Policy Statement on Financing, Accounting and Rates

AWWA believes that the public can best be provided water and wastewater services by self-sustaining enterprises adequately supported by cost-of-service rates and charges based on sound economic, accounting, management, and financial principles.

Utilities should not implement policies or practices that compromise the long-term financial integrity of the utility or impair its ability to provide safe, high-quality, and reliable service to customers.

Utilities should follow the generally accepted accounting principles and adopt a standard uniform system of accounts, modified as necessary to meet the requirements of legislative, judicial, or regulatory bodies. Internal controls should ensure that the financial statements present fairly, in all material respects, the financial position, results of operations, and cash flows of the utility. In addition to having robust internal controls, financially strong utilities should also have management controls to guide and strategically align decisions and resources.

Revenue from water and wastewater rates and charges should be sufficient to pay for annual operation and maintenance expenses, fund and finance capital costs, maintain sufficient working capital and required reserves, and achieve desired financial performance metrics. Maintenance and capital costs should include the support of best management practices, such as having an asset management program that preserves utility assets at desired service levels.

Rates should be designed to distribute the cost of service equitably among each type and class of service. Alternative rate structures that achieve certain other objectives such as affordability and water conservation may be considered in some limited situations.

Utilities should provide information on a regular basis (at least annually) to customers, the financial community, and the general public about the utility's financial condition and the revenues necessary to provide service and to maintain utility assets on a sustained basis.

Utilities should account for and maintain their funds in separate accounts from other governmental or owning entity operations. Water and wastewater utility funds should not be diverted to uses unrelated to the utility's services. Reasonable and defensible taxes, payments in lieu of taxes, and payments for services rendered to the utility by a local government or other divisions of the owning entity may be included in the utility's revenue requirements.

Practices specified in this policy statement are consistent with all other pertinent AWWA policy statements.

Adopted by the Board of Directors Executive Committee Jan. 25, 1965; revised Jan. 31, 1982; and reaffirmed Jan. 25, 1987; and revised Jan. 26, 1992; June 21, 1998; Jan. 16, 2005; Jan. 17, 2010; June 7, 2015; Apr. 20, 2020; and Mar. 27, 2025.

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Chapter 1

Overview of Cost-Based Water Utility Rate-Setting

Establishing cost-based rates, fees, and charges is important in a well-managed and well-operated water utility. When implemented correctly, cost-based rates help to ensure sufficient funding to allow communities to build, operate, maintain, and reinvest in the water system, providing the community with safe, economically sound, and reliable water for drinking and fire protection. Properly and adequately funded water systems also allow for the economic development and sustainability of the local community. The purpose of this manual is to discuss standard practices in financial planning and rate-setting that a utility can use to establish cost-based rates, fees, and charges to recover the full costs associated with its water system.

The methods and analyses used to establish cost-based rates, fees, and charges have a long and proven history within the water utility industry. Owners and operators of the earliest water systems recognized the need for sufficient funding and rates to operate, maintain, and expand their facilities. As time passed, the water utility industry recognized the need for a manual of standard practice. AWWA created the Committee on Water Rates in 1949, resulting in the first such manual, the *Water Rates Manual,* in 1954 (Woodcock 2013). Although it has been updated many times since, some of the same concepts, methodologies, and analyses published in the first *Water Rates Manual* remain mainstays in the current text, now called AWWA Manual M1, *Principles of Water Rates, Fees, and Charges*. The development of this eighth edition of M1 reflects the continuing efforts of the AWWA Rates and Charges Committee to keep the water industry up to date in current financial and rate-setting practices.

AWWA policies advocate for cost-based principles and methodologies for establishing rates, charges, and fees. Establishing cost-based rates is technically challenging. It requires a working knowledge and understanding of finance, accounting, budgeting, economic pricing theories, engineering, system design, operations, customer service, public outreach