



**American Water Works
Association**

The Authoritative Resource on Safe Water®

ANSI/AWWA G410-09
(First Edition)

AWWA Standard

Business Practices for Operation and Management



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AWWA Standard

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Foreword

This foreword is for information only and is not a part of ANSI/AWWA G410.

I. Introduction.

I.A. *Background.* The AWWA Standards Program is designed to serve water and wastewater utilities, their customers, owners, service providers, and government regulators. The standards developed under the program are generally intended to improve a utility's overall operations and service. Among these standards is this effort to establish formal management and operations guidelines. These guidelines identify appropriate practices, procedures, and behaviors whose implementation will promote effective and efficient utility operations and contribute to protection of public health, public safety, and the environment.

AWWA's standards process has been used for more than ninety years to produce ANSI-recognized standards for materials and processes that are used by the water and wastewater utility industries. These standards are recognized worldwide and have been adopted by many utilities and organizations. Likewise, this performance standard is developed using the same ANSI-recognized formal process. Volunteer standards committees establish standard practices in a uniform and appropriate format.

Formal standards committees have been and continue to be formed to address the individual standard practices for the diverse areas of water and wastewater utility operations. A formal standards committee was created in November 2006 to create this standard, Business Practices for Operation and Management.

I.B. *History.* This is the first edition of this standard.

I.C. *Acceptance.* No applicable information for this section.

II. Special Issues.

II.A. *Advisory Information on Application of Standards.* This standard includes only those requirements that are limited exclusively to establishing effective operation and management business practices for drinking water or wastewater systems. Separate standards will cover in more detail programs such as establishing a utility management system framework, water treatment plant operation and management, distribution system operation and management, source water protection, security practices, emergency preparedness, and customer relations and communications.

III. Use of This Standard. It is the responsibility of the user of an AWWA standard to determine that the products and provisions described in that standard are suitable for and compatible with the user's intended application being considered.

III.A. *Options and Alternatives.* It is anticipated that options and alternatives to this standard may be identified during the pilot process.

III.B. *Modification to Standard.* No applicable information for this section.

IV. Major Revisions. This is the first edition; as such, there are no major revisions.

V. Comments. If you have any comments or questions about this standard, please call the AWWA Volunteer and Technical Support Group at 303.794.7711, Fax at 303.794.6303, write to the group at 6666 West Quincy Avenue, Denver, CO 80235, or e-mail the group at standards@awwa.org.



**American Water Works
Association**

AWWA Standard

Business Practices for Operation and Management

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes the critical elements of effective business practices for the operation and management of water and wastewater utilities. It encompasses the major functions necessary to sustain a successful utility and information management.

Sec. 1.2 Purpose

The purpose of this standard is to establish criteria for how water and wastewater utilities develop, measure the performance of, and improve the strategic planning, resource management, and support functions necessary to create and sustain a high-performing organization. This standard describes the framework that successful utilities should use in developing and improving the performance of these business practices, including the establishment of policies and performance standards, the creation of functions and practices, the development of organization capacity and technology, and integration of functions and practices with the larger organization and its strategies.

Sec. 1.3 Application

This standard can be referenced in the development and evaluation of the business practices described in Sec. 1.1. The stipulations of this standard apply when this document has been referenced and then only to business practices described in Sec. 1.1.

SECTION 2: REFERENCES

This standard has no applicable information for this section.

SECTION 3: DEFINITIONS

This standard has no applicable information for this section.

SECTION 4: REQUIREMENTS

Sec. 4.1 Strategic Planning

4.1.1 *Policies and performance standards.* To meet this standard, an organization must demonstrate that it has in place policies and performance standards for strategic planning as follows:

4.1.1.1 Mission development. The governing body of an organization shall clearly identify the mission of the organization, including how the success of the organization in fulfilling that mission will be measured.

4.1.1.2 Policies for developing and updating the strategic plan. Policies and procedures for developing and updating the organization's strategic plan shall be identified.

4.1.1.3 Policies related to expectations of management. The policies related to strategic planning shall clearly communicate the expectation for management to implement necessary programs, services, and projects to accomplish the mission of the organization.

4.1.1.4 Policies related to strategic planning processes and performance measurement. An organization shall establish policies describing the process for developing the strategic plan, key participants, time frames for developing the plan, and how the plan objectives will be established, measured, and reported.

4.1.2 *Functions and practices.* To meet this standard, an organization must demonstrate that it has in place functions and practices for strategic planning as follows:

4.1.2.1 Strategic plan development. An organization shall develop, and periodically update, a strategic plan that guides the delivery of the organization's core services, maintenance of and investment in infrastructure, hiring and development of employees, and customer service. The strategic plan shall describe the organization's mission, vision, and core values; key constituencies and their objectives; and key assumptions and environmental influences. The strategic plan shall identify long-term goals and measurable objectives. The strategic plan shall identify the strategies and tactics for achieving these objectives.

4.1.2.2 Strategic plan updates. An organization shall update the strategic plan on a regular basis, no more than annually and no less than every five years, depending on the rate of change in the organization.

4.1.2.3 Capital improvement plan to support the strategic plan. An organization shall have in place a capital improvement plan that identifies the capital investments needed over the strategic plan time frame as well as a financial plan that adequately funds the strategies, construction, operation, and maintenance of facilities and programs outlined in the strategic plan.

4.1.2.4 Annual reporting of strategic plan progress. Each year, an organization shall report progress toward accomplishing the goals and objectives of the strategic plan to employees, its governing body, customers, and other key stakeholders.

4.1.3 *Organizational capacity and technology.* To meet this standard, an organization must demonstrate that it has in place the organizational capacity and technology for strategic planning as follows:

4.1.3.1 Staff capacity. An organization shall have in place the administrative and management personnel and capability to conduct and monitor the strategic planning and implementation process.

4.1.3.2 Technology. An organization shall have access to enabling technologies commensurate with the level of complexity and needs of the organization.

4.1.4 *Integration of functions and practices.* To meet this standard, an organization must demonstrate that its functions and practices for strategic planning are integrated into the organization as follows:

4.1.4.1 Integration with performance management. An organization shall have management and employee performance goals, objectives, and action

items that are linked to the organization's strategic plan. Annual performance appraisals shall reference achievement of the objectives of the strategic plan.

4.1.4.2 Integration with strategic and operational plans. An organization shall have mechanisms in place for the integration of the strategic plan into the departmental operational plan, budgets, work plans, goals, and objectives.

Sec. 4.2 Capital Improvement Program

4.2.1 *Policies and performance standards.* To meet this standard, an organization must demonstrate that it has in place policies and performance standards for its capital improvement program (CIP) as follows:

4.2.1.1 Capital improvement planning policies. To ensure acceptable performance of its infrastructure over the long run (including the ability to meet current and emerging regulatory requirements, population growth), an organization shall have in place a policy of developing a multiyear capital improvement program that specifies in detail the organization's plans for replacing, rehabilitating, and/or expanding its system infrastructure.

4.2.1.2 Policies for utilizing consultants. An organization shall have in place a policy or strategy for utilizing consultants to support the planning and execution of its CIP. The policy or strategy shall consider the cost-effectiveness and risk associated with hiring individuals with highly specialized skills versus contracting for those same skills.

4.2.1.3 Performance measurement. An organization shall have in place performance standards and metrics for the execution of its capital improvement program to ensure that the scope, schedule, and budget of individual projects, as well as the CIP as a whole, meet the organization's standards for performance. These standards and metrics shall be used to monitor the execution of the CIP, to assist in making course corrections where necessary, and to compare the performance of the organization's CIP with that of other similar organizations.

4.2.1.4 Policies for project selection. An organization shall have in place policies that stipulate how CIP project alternatives will be developed, evaluated, and selected. Such policies may call for the use of cost-benefit analysis, multi-objective decision-making tools, committee-based evaluation processes, and value-engineering, among others.

4.2.1.5 Policies for financing system growth. An organization shall have in place policies that establish how system growth and expansion will be financed (that is, the role of developers' fees, etc.). An organization shall also have in place standards for design and construction of system infrastructure that is financed and

construction by private developers, and policies that clearly establish the responsibility for maintaining that infrastructure in the future.

4.2.2 Functions and practices. To meet this standard, an organization must demonstrate that it has in place functions and practices to support its capital improvement program as follows:

4.2.2.1 Accountability for program execution. An organization shall establish clear accountability for its CIP with a single individual—either a capital improvement program director/manager, or in the case of smaller systems, the general manager, or another management-level employee with adequate engineering and system planning experience and the ability to effectively manage contract resources.

4.2.2.2 Stakeholder involvement. The process of developing an organization's CIP shall include key stakeholders, including engineering, maintenance, finance, customer service, and other stakeholders as necessary.

4.2.2.3 Consideration of costs in selecting among alternatives. An organization's process for selecting between capital improvement project alternatives shall consider each alternative's life-cycle costs (that is, long-term maintenance costs, as well as capital costs), environmental costs, and community impacts ("social" costs).

4.2.2.4 Supporting tools. An organization shall have in place robust programs/tools for supporting the development of its CIP, including condition assessment programs, and tools for forecasting future population and consumption.

4.2.2.5 Practices for updating the CIP. An organization shall review and update its capital improvement program annually, and perform "major" updates approximately every five years.

4.2.2.6 Community and stakeholder communication. An organization shall have in place an ongoing communications program for communicating its capital improvement plans to community stakeholders, regulators, and other key stakeholders. This program shall insure a proper level of involvement of stakeholders in siting decisions.

4.2.3 Organizational capacity and technology. To meet this standard, an organization must demonstrate that it has in place the capacity and technology for developing and implementing a capital improvement program as follows:

4.2.3.1 Staff capacity. An organization shall hire, develop, and retain staff that can effectively manage the organization's CIP, including elements of the program that are performed in-house and those that are performed by consultants.

4.2.3.2 *Organizational structure.* An organization shall continually evaluate its structure to ensure it is organized to effectively carry out its capital improvement program.

4.2.3.3 *Technology.* An organization shall have in place business systems and technologies, including data collection processes and procedures, that allow it to effectively plan, implement, and evaluate its capital improvement program. SCADA systems, maintenance management systems, CAD systems, GIS tools, and project management systems are among the various systems needed to support the planning and execution of a CIP.

4.2.4 *Integration of functions and practices.* To meet this standard, an organization must demonstrate that its functions and practices for implementing a capital improvement program are integrated into the organization as follows:

4.2.4.1 *Training.* An organization's staff shall be fully trained in their areas of responsibility related to the organization's CIP. Training shall occur on a regular basis and enhance the staff's planning and engineering skills, develop their project analysis skills (e.g., cost-benefit analysis), enhance their knowledge and use of available technology, and enhance their ability to plan and manage the CIP and to manage people.

4.2.4.2 *Integration with strategic, system, and financial plans.* An organization's CIP shall be executed consistent with the organization's strategic plan, system plans, and financial plan.

Sec. 4.3 Continuous Improvement

4.3.1 *Policies and performance standards.* To meet this standard, an organization must demonstrate that it has policies and performance standards for continuous improvement in place as follows:

4.3.1.1 *Policies to guide continuous-improvement strategy.* A corporate policy shall be in place that clearly describes organizational goals for identifying and implementing improvements to service quality, effectiveness, and efficiency within the context of an overall strategic plan; the framework(s) by which the organization will pursue such goals (e.g., industry programs such as QualServe and the Partnership for Safe Water and/or broader environmental management systems and quality management programs, such as the International Standards Organization (ISO) standards); and the tools and strategies the organization will use to manage toward its goals within such framework(s) (e.g., quarterly and annual management reports).