



**American Water Works
Association**

Dedicated to the World's Most Important Resource®

ANSI/AWWA G410-18
(Revision of ANSI/AWWA G410-09)

AWWA Standard

Business Practices for Operation and Management

Effective date: Jan. 1, 2019.

First edition approved by AWWA Board of Directors Jan. 25, 2009.

This edition approved June 9, 2018.

Approved by American National Standards Institute Oct. 5, 2018.



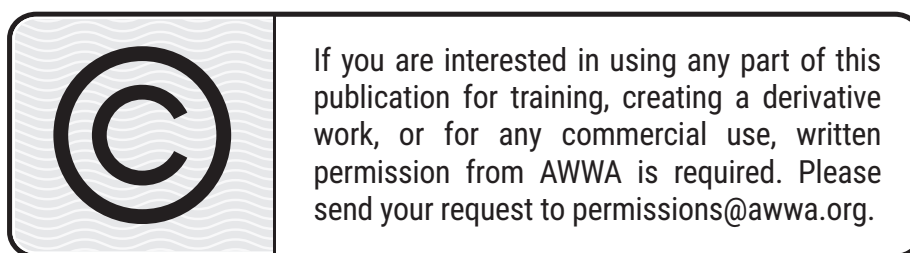
AWWA Standard

This document is an American Water Works Association (AWWA) standard. It is not a specification. AWWA standards describe minimum requirements and do not contain all of the engineering and administrative information normally contained in specifications. The AWWA standards usually contain options that must be evaluated by the user of the standard. Until each optional feature is specified by the user, the product or service is not fully defined. AWWA publication of a standard does not constitute endorsement of any product or product type, nor does AWWA test, certify, or approve any product. The use of AWWA standards is entirely voluntary. This standard does not supersede or take precedence over or displace any applicable law, regulation, or codes of any governmental authority. AWWA standards are intended to represent a consensus of the water industry that the product described will provide satisfactory service. When AWWA revises or withdraws this standard, an official notice of action will be placed in the Official Notice section of *Journal AWWA*. The action becomes effective on the first day of the month following the month of *Journal AWWA* publication of the official notice.

American National Standard

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. An American National Standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of an American National Standard does not in any respect preclude anyone, whether that person has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. American National Standards are subject to periodic review, and users are cautioned to obtain the latest editions. Producers of goods made in conformity with an American National Standard are encouraged to state on their own responsibility in advertising and promotional materials or on tags or labels that the goods are produced in conformity with particular American National Standards.

CAUTION NOTICE: The American National Standards Institute (ANSI) approval date on the front cover of this standard indicates completion of the ANSI approval process. This American National Standard may be revised or withdrawn at any time. ANSI procedures require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of ANSI approval. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036; (212) 642-4900, or e-mailing info@ansi.org.



ISBN-13, print: 978-1-62576-323-5

eISBN-13, electronic: 978-1-61300-497-5

DOI: <http://dx.doi.org/10.12999/AWWA.G410.18>

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including scanning, recording, or any information or retrieval system. Reproduction and commercial use of this material is prohibited, except with written permission from the publisher.

Copyright © 2018 by American Water Works Association
Printed in USA

Contents

All AWWA standards follow the general format indicated subsequently. Some variations from this format may be found in a particular standard.

SEC.	PAGE	SEC.	PAGE
<i>Foreword</i>		3	Definitions 3
I	Introduction..... vii	4	Requirements
I.A	Background..... vii	4.1	Strategic Planning 5
I.B	History..... viii	4.2	Capital Improvement Program 7
I.C	Acceptance viii	4.3	Continuous Improvement 10
II	Special Issues. viii	4.4	Engineering..... 12
II.A	Advisory Information on Application of Standards viii	4.5	Finance/Fiscal Management 16
III	Use of This Standard viii	4.6	Governance 22
III.A	Purchaser Options and Alternatives viii	4.7	Health and Safety 25
III.B	Modification to Standard..... viii	4.8	Human Resources 27
IV	Major Revisions..... viii	4.9	Information Management 29
V	Comments ix	4.10	Organizational Development..... 32
		4.11	Plant and Property Management 35
		4.12	Procurement..... 37
		4.13	Risk Management 40
		4.14	Asset Management 42
<i>Standard</i>			
1	General	5	Verification
1.1	Scope..... 1	5.1	Documentation Required..... 48
1.2	Purpose 1	5.2	Human Resources 49
1.3	Application..... 2		
2	References 2	6	Delivery 49

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, wastewater and reclaimed water utilities—hereafter, the water sector—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 90 years to produce American National Standards Institute (ANSI)—recognized standards for materials and processes that are used by the water sector. 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 AWWA standards committees have been and continue to be formed to address the individual standard practices for the diverse range of water sector utilities. A formal standards committee was created in November 2006 to create this standard, Business Practices for Operation and Management.

AWWA has developed a series of utility management standards designed to cover the principal activities of water sector utilities. Some examples of the individual topics in this series include those for water treatment plant operation and management, distribution system operation and management, source water protection, emergency preparedness practices, security practices, communication and customer relations, business practices, water conservation program operation and management, reclaimed water operation and management as well as wastewater collection system operation and management and wastewater treatment plant operations and management. More topics will be added over time, including additional standards related to wastewater operations.

* American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036.

I.B. *History.* The first edition was approved by the AWWA Board of Directors on January 25, 2009. This second edition of G410 was approved on June 9, 2018.

I.C. *Acceptance.* There is no applicable information for this section.

II. Special Issues.

II.A. *Advisory Information on Application of Standards.* This standard is limited exclusively to and includes only those requirements for establishing effective operation and management business practices for water sector utilities. Separate standards adopted by the Standards Program cover development of a utility management system framework and other programs such as 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. *Purchaser Options and Alternatives.* The following information should be provided by the purchaser:

1. Industry standard used—that is, ANSI/AWWA G410, Business Practices for Operation and Management, of latest revision.
2. Details of federal, state, and local requirements.

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

IV. Major Revisions. Major revisions made to the standard in this edition include the following:

1. Updated requirements related to strategic plan in Section 4.1.2.1
2. Section 4.2 added references to AWWA standards J100—Risk and Resilience Management of Water and Wastewater Systems and G430—Security Practices for Operation and Management.
3. Section 4.2 added requirements for effective capital improvement program (CIP) project delivery, technologies for information management and process controls, and training.
4. Section 4.3 added references to continual improvement programs and requirements for practices, tools, and training.
5. Section 4.4 added engineering requirements for outsourcing, inspection, design data requirements, practices, and tools.

6. Section 4.5 added requirements related to financial accounting procedures, debt management metrics, rate-making methodologies and internal management controls.

7. Section 4.6 added governance requirements for corporate policies related to assets and data.

8. Section 4.8 added suggested training for succession planning.

9. Section 4.9 added requirements for outsourcing information systems, accountability for program execution, processes for ensuring performance, methods for alternatives, incorporating best management practices (BMPs), stakeholder involvement, and allocation of resources.

10. Addition of Section 4.14 on asset management including policies, procedures, strategies, organizational capacity and technology, and integration of practices.

V. Comments. If you have any comments or questions about this standard, please call AWWA Engineering and Technical Services at 303.794.7711, FAX at 303.795.7603, write to the department at 6666 West Quincy Avenue, Denver, CO 80235-3098, or e-mail at standards@awwa.org.



**American Water Works
Association**

Dedicated to the World's Most Important Resource®

ANSI/AWWA G410-18
(Revision of ANSI/AWWA G410-09)

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, wastewater, and reclaimed water utilities (to be referred to as the water sector). It encompasses the major functions necessary to manage and sustain a successful utility.

Sec. 1.2 Purpose

The purpose of this standard is to establish criteria for how the water sector develops, measures the performance of, and improves 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.