CSA Z24512:10
(ISO 24512:2007, MOD)
National Standard of Canada
(reaffirmed 2019)

CSA Z24512:10
Activities relating to drinking water and wastewater services — Guidelines for the management of drinking water utilities and for the assessment of drinking water services
(ISO 24512:2007, MOD)

Standards Council of Canada
Conseil canadien des normes

Legal Notice for Standards

Canadian Standards Association (operating as "CSA Group") develops standards through a consensus standards development process approved by the Standards Council of Canada. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard. Although CSA Group administers the process and establishes rules to promote fairness in achieving consensus, it does not independently test, evaluate, or verify the content of standards.

Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document's fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party's intellectual property rights. CSA Group does not warrant the accuracy, completeness, or currency of any of the information published in this document. CSA Group makes no representations or warranties regarding this document's compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL CSA GROUP, ITS VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OR USE OF THIS DOCUMENT, EVEN IF CSA GROUP HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, CSA Group is not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and CSA Group accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

CSA Group is a private not-for-profit company that publishes voluntary standards and related documents. CSA Group has no power, nor does it undertake, to enforce compliance with the contents of the standards or other documents it publishes.

Intellectual property rights and ownership

As between CSA Group and the users of this document (whether it be in printed or electronic form), CSA Group is the owner, or the authorized licensee, of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. Without limitation, the unauthorized use, modification, copying, or disclosure of this document may violate laws that protect CSA Group's and/or others' intellectual property and may give rise to a right in CSA Group and/or others to seek legal redress for such use, modification, copying, or disclosure. To the extent permitted by licence or by law, CSA Group reserves all intellectual property rights in this document.

Patent rights

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. CSA Group shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

Authorized use of this document

This document is being provided by CSA Group for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in printed or paper form may be distributed only to persons who are authorized by CSA Group to have such copies, and only if this Legal Notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from CSA Group; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents thereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.

Standards Update Service

CSA Z24512:10
January 2010

Title: *Activities relating to drinking water and wastewater services — Guidelines for the management of drinking water utilities and for the assessment of drinking water services*

To register for e-mail notification about any updates to this publication
- go to **store.csagroup.org**
- click on **Product Updates**

The **List ID** that you will need to register for updates to this publication is **2020390**.

If you require assistance, please e-mail **techsupport@csagroup.org** or call 416-747-2233.

Visit CSA Group's policy on privacy at **www.csagroup.org/legal** to find out how we protect your personal information.

Canadian Standards Association (operating as "CSA Group"), under whose auspices this National Standard has been produced, was chartered in 1919 and accredited by the Standards Council of Canada to the National Standards system in 1973. It is a not-for-profit, nonstatutory, voluntary membership association engaged in standards development and certification activities.

CSA Group standards reflect a national consensus of producers and users — including manufacturers, consumers, retailers, unions and professional organizations, and governmental agencies. The standards are used widely by industry and commerce and often adopted by municipal, provincial, and federal governments in their regulations, particularly in the fields of health, safety, building and construction, and the environment.

Individuals, companies, and associations across Canada indicate their support for CSA Group's standards development by volunteering their time and skills to Committee work and supporting CSA Group's objectives through sustaining memberships. The more than 7000 committee volunteers and the 2000 sustaining memberships together form CSA Group's total membership from which its Directors are chosen. Sustaining memberships represent a major source of income for CSA Group's standards development activities.

CSA Group offers certification and testing services in support of and as an extension to its standards development activities. To ensure the integrity of its certification process, CSA Group regularly and continually audits and inspects products that bear the CSA Group Mark.

In addition to its head office and laboratory complex in Toronto, CSA Group has regional branch offices in major centres across Canada and inspection and testing agencies in eight countries. Since 1919, CSA Group has developed the necessary expertise to meet its corporate mission: CSA Group is an independent service organization whose mission is to provide an open and effective forum for activities facilitating the exchange of goods and services through the use of standards, certification and related services to meet national and international needs.

For further information on CSA Group services, write to
CSA Group
178 Rexdale Boulevard
Toronto, Ontario, M9W 1R3
Canada

A National Standard of Canada is a standard developed by a Standards Council of Canada (SCC) accredited Standards Development Organization, in compliance with requirements and guidance set out by SCC. More information on National Standards of Canada can be found at www.scc.ca.

SCC is a Crown corporation within the portfolio of Innovation, Science and Economic Development (ISED) Canada. With the goal of enhancing Canada's economic competitiveness and social well-being, SCC leads and facilitates the development and use of national and international standards. SCC also coordinates Canadian participation in standards development, and identifies strategies to advance Canadian standardization efforts.

Accreditation services are provided by SCC to various customers, including product certifiers, testing laboratories, and standards development organizations. A list of SCC programs and accredited bodies is publicly available at www.scc.ca.

Standards Council of Canada
600-55 Metcalfe Street
Ottawa, Ontario, K1P 6L5
Canada

Standards Council of Canada
Conseil canadien des normes

Cette Norme Nationale du Canada est disponible en versions française et anglaise.

Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users to judge its suitability for their particular purpose.

National Standard of Canada

CSA Z24512:10

Activities relating to drinking water and wastewater services — Guidelines for the management of drinking water utilities and for the assessment of drinking water services

(ISO 24512:2007, MOD)

Prepared by
International Organization for Standardization

Reviewed by

Published in January 2010 by CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3

To purchase standards and related publications, visit our Online Store at store.csagroup.org or call toll-free 1-800-463-6727 or 416-747-4044.

ICS 13.060.20; 93.025
ISBN 978-1-55491-228-5

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

CAN/CSA-Z24512-10
Activities relating to drinking water and wastewater services — Guidelines for the management of drinking water utilities and for the assessment of drinking water services

CSA Preface

This is the first edition of CAN/CSA-Z24512, *Activities relating to drinking water and wastewater services — Guidelines for the management of drinking water utilities and for the assessment of drinking water services*, which is an adoption, with Canadian deviations, of the identically titled ISO (International Organization for Standardization) Standard 24512 (first edition, 2007-12-01).

This Standard was reviewed for Canadian adoption by the CSA Technical Committee on Water Quality Management Systems, under the jurisdiction of the Strategic Steering Committee on Business Management and Sustainability, and has been formally approved by the Technical Committee. This Standard has been approved as a National Standard of Canada by the Standards Council of Canada.

January 2010

Inquiries regarding this National Standard of Canada should be addressed to
Canadian Standards Association
5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6
1-800-463-6727 • 416-747-4000
www.csa.ca

To purchase CSA Standards and related publications, visit CSA's Online Store at ***www.ShopCSA.ca*** *or call toll-free 1-800-463-6727 or 416-747-4044.*

CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee. To submit a proposal for change to CSA Standards, please send the following information to ***inquiries@csa.ca*** *and include "Proposal for change" in the subject line:*
(a) Standard designation (number);
(b) relevant clause, table, and/or figure number;
(c) wording of the proposed change; and
(d) rationale for the change.

Canadian deviations

Introduction

[Add the following]

A reliable supply of safe drinking water that is visually appealing and readily available is a fundamental expectation among Canadians. Similarly, Canadians want wastewater (including all solid and gaseous residues of human waste) to be disposed of or reused in a safe and environmentally sustainable manner. Utility owners and operators strive for continuous improvement of their water services and the professional development of their staff to ensure that they are able to meet and exceed users' needs and the applicable laws and regulations for their area of jurisdiction.

The new International Organization for Standardization standards, ISO 24510, ISO 24511, and ISO 24512, have been developed to provide guidelines for the improvement of service to users, the management of water utilities, and the assessment of water services. These Standards were published in December 2007 and are now being implemented throughout the world. In the context of these Standards, the word "water" is intended to cover drinking water and wastewater.

The CSA Technical Committee on Water Quality Management Systems was established to review these International Standards and help to bring about their application to Canadian water system management. The intent is to ensure that Canadian utilities and stakeholders have access to the best and most current guidelines available.

The ISO Standards, adopted with Canadian deviations as CAN/CSA-Z24510, CAN/CSA-Z24511, and CAN/CSA-Z24512, present a significant advance in using performance indicators to improve the management of water services and systems and build on existing concepts for improvement in a uniform and internationally recognized manner. The three Standards are intended to cover the complete range of performance indicators related to water system management.

The following is an overview and guide for users of these Standards in Canada:

CAN/CSA-Z24510 (guidelines for the assessment and improvement of service to users). This Standard outlines the objectives for service with respect to users' needs and expectations and the assessment of service to users. It also provides examples of performance indicators (PIs) linked to that assessment.

CAN/CSA-Z24511 and **CAN/CSA-Z24512** (guidelines for the management of water utilities and the assessment of water services)

These Standards provide brief descriptions of the physical/infrastructural and managerial/institutional components of water utilities. They outline the objectives for water utilities and provide guidelines for their management. They also set out guidelines for the assessment of water services and examples of performance indicators (PIs) linked to that assessment.

There are many stakeholders with an interest in water services in Canada. These Standards can be used by all stakeholders for guidance; however, the primary stakeholders are as follows:

Standard	Primarily used by
CAN/CSA-Z24510	Utility owners and operators and occasionally regulators, users, and special interest groups
CAN/CSA-Z24511	Utility owners and operators
CAN/CSA-Z24512	Utility owners and operators

Recommendations for use of these Standards

CAN/CSA-Z24511 and CAN/CSA-Z24512 provide guidance to utility managers and are intended to be used to measure achievements and improvements through the use of performance indicators. These Standards are very similar in structure and are focused on the continuous improvement of systems and development of staff to improve service as well as to meet regulatory and legal requirements. It is recommended that they be applied as follows:

Clause in CAN/CSA-Z24511 and CAN/CSA-Z24512	Recommended application in Canada
Introduction	General information
1 Scope	General information
2 Terms and definitions	Use as shown. **Notes:** **(1)** *"Responsible body" — in Canada, the responsible body is usually a municipal authority.* **(2)** *"Relevant authority" — in Canada, the relevant authority is usually the government of the province or territory in which the utility is located and can also be the federal government.*
3 Components of drinking water supply systems/ wastewater systems	Use as a checklist of system components that can be considered by the utility in future capital works. **Note:** *Some systems might not include all of these components.*
4 Objectives for the drinking water utility/ wastewater utility	Use these six objectives and develop sub-objectives for the utility where necessary to define the strategic and/or operational focus. **Note:** *For Objective 4.3, "Meeting users' needs and expectations", see ISO 24510.*
5 Management components of a drinking water utility/wastewater utility	Use as a checklist of management components that can be considered by the utility. **Note:** *The management system might not include some of these components.*
6 Guidelines for the management of drinking water utilities/wastewater utilities	Use these guidelines to define the strategic and/or operational focus.
7 Assessment of water services/wastewater services	This general guide for assessment should be used as necessary to define the strategic and/or operational focus.
8 Performance indicators	Use the methodology defined and develop at least two performance indicators for each objective (or sub-objective) defined in Clause 4.
Annexes A to F	Use the annexes as guidelines as referenced in the Standard.

Note: *The examples of performance indicators that appear in these Standards are used to illustrate a general approach to defining and monitoring performance indicators. In practice, to achieve meaningful measurements, the definition of a performance indicator and its related benchmarks should clearly state all of the sub-variables that might or should be part of the performance measurement. For example, when the number of written responses to written complaints is used as a performance indicator, the definition might need to specify the form of the written response, e.g., letter, fax, or e-mail.*

It is recommended that utilities use CAN/CSA-Z24510 as a supplement to CAN/CSA-Z24511 and CAN/CSA-Z24512 in the development of

(a) objectives related to meeting users' needs and expectations (see Clause 4.3 of CAN/CSA-Z24511 and CAN/CSA-Z24512); and
(b) user-related performance indicators (see Clause 8 of CAN/CSA-Z24511 and CAN/CSA-Z24512).

CAN/CSA-Z24510 also provides guidance on elements of service and guidelines for satisfying users.

E.2 Examples of performance indicators related to assessment criteria

E.2.1 General

[Add the following]

In Canada, the National Water and Wastewater Benchmarking Initiative should be examined to select benchmarks having relevance in the Canadian context. For further information, visit www.nationalbenchmarking.ca.

INTERNATIONAL STANDARD

ISO 24512

First edition
2007-12-01

Activities relating to drinking water and wastewater services — Guidelines for the management of drinking water utilities and for the assessment of drinking water services

Activités relatives aux services de l'eau potable et de l'assainissement — Lignes directrices pour le management des services publics de l'eau potable et pour l'évaluation des services fournis

Reference number
ISO 24512:2007(E)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 24512 was prepared by Technical Committee ISO/TC 224, *Service activities relating to drinking water supply systems and wastewater systems - Quality criteria of the service and performance indicators*.

ISO 24512 is one of a series of standards addressing water services. The full series consists of the following International Standards:

— ISO 24510, *Activities relating to drinking water and wastewater services — Guidelines for the assessment and for the improvement of the service to users*

— ISO 24511, *Activities relating to drinking water and wastewater services — Guidelines for the management of wastewater utilities and for the assessment of wastewater services*

— ISO 24512, *Activities relating to drinking water and wastewater services — Guidelines for the management of drinking water utilities and for the assessment of drinking water services*

Introduction

NOTE Words in bold are key terms which are defined in Clause 2.

0.1 Water issues: global context and policies framework

Water constitutes a worldwide challenge for the 21st century, both in terms of the **management** of available water resources and the provision of access to **drinking water** and sanitation for the world's population. In 2000, the United Nations (UN) recognized that access to water is an essential human right, and in conjunction with national governments, it set ambitious goals (the "Millennium Development Goals") to increase access to **drinking water** and **wastewater services,** including safe disposal or reuse of **residues** (hereinafter jointly referred to as "water **services**"), particularly in developing countries. International conferences on **sustainable development** and water (e.g. the World Summit on Sustainable Development in Johannesburg in September 2002, the third World Water Forum in Kyoto in March 2003 and the fourth World Water Forum in Mexico City in March 2006) have highlighted this issue, and UN agencies (including WHO and UNESCO) have developed recommendations and programmes to establish a framework in which to advance.

The United Nations' Commission on Sustainable Development (CSD13) has emphasised that governments (referred to as "**relevant authorities**" in this International Standard) have a primary role in promoting improved access to safe **drinking water** and basic sanitation through improved governance at all levels and appropriate enabling **environments** and regulatory frameworks, with the active involvement of all **stakeholders**. This **process** should incorporate institutional solutions to make the water sector more productive and the **management** of water resources more sustainable. In this respect, the Ministerial declarations from the Third and Fourth World Water Forum recommended that governments endeavour to reinforce the role of parliaments and local public authorities, particularly with regard to the provision of adequate water **services**, and recognized that an effective collaboration with and between these actors is a key factor for meeting water-related challenges and goals.

Examples of key issues for efficient **drinking water** and sanitation services policy frameworks are:

— clear definition of the roles of the different **stakeholders**;

— definition of sanitary rules and organization for **assessment** of compliance;

— processes to assure consistency between the policies regarding urban development and **water utility infrastructure**;

— regulation for water withdrawal and **wastewater** discharge;

— information to the **users** and to the **communities**.

0.2 Water utilities: general objectives

In addition to public health protection, sound **management** of the **drinking water** and **wastewater utilities** (hereinafter jointly referred to as "**water utilities**") is an essential element of integrated water resources **management**. When applied to these utilities, sound **management** practices will contribute, both quantitatively and qualitatively, to **sustainable development**. Sound utility **management** also contributes to social cohesion and economic development of the **communities** served, because the **quality** and **efficiency** of water **services** have implications for virtually all activities of society.

As water is considered a "social good" and activities related to water **services** support the three aspects (economic, social and environmental) of **sustainable development**: it is logical that the **management** of **water utilities** be transparent to and inclusive of all **stakeholders** identified in accordance with the local context.

There is a broad array of types of **stakeholders** that can play a role in activities related to water **services**.

Examples of such **stakeholders** include:

— governments or public agencies (international, national, regional or local) acting with legal or legislative authority;

— associations of the utilities themselves (e.g. international, regional/multinational and national **drinking water** or **wastewater** associations;

— autonomous bodies seeking to play an overview role (e.g. organizations concerned, such as non-governmental organizations);

— **users** and associations of water **users**.

The relationships between **stakeholders** and **water utilities** vary around the world. In many countries, there are bodies that have responsibility (in whole or in part) for overseeing the activities related to water **services**, whether the utilities are publicly or privately owned or operated and whether they are regulated by **relevant authorities** or acting in a system of technical self-regulation. Standardization and technical self-regulation are possible ways of ensuring involvement of all **stakeholders** and meeting the subsidiarity principle.

The aim of **water utilities** is logically to offer **services** to everybody in the area of responsibility of the utility, and to provide **users** with a continuous supply of **drinking water** and the collection and treatment of **wastewater**, under economic and social conditions that are acceptable to the **users** and to the utility. **Water utilities** are expected to meet the requirements of **relevant authorities** and the expectations specified by the **responsible bodies** in conjunction with the other **stakeholders**, while ensuring the long-term sustainability of the service. In a context of scarcity of resources, including financial resources, it is advisable that the investments made in installations be appropriate and that necessary attention be paid to proper maintenance and effective use of the installations. It is advisable that water **tariffs** generally aim at meeting cost-recovery principles and at promoting **efficiency** in the use of the resources, while striving to maintain affordable basic access to water **services**.

It is advisable that the **stakeholders** be involved in both setting **service** objectives and assessing the adequacy and **efficiency** of **service.**

0.3 Objectives, content and implementation of this International Standard

The objective of this International Standard is to provide the relevant **stakeholders** with guidelines for assessing and improving the **service** to **users**, and with guidance for managing **water utilities**, consistent with the overarching goals set by the **relevant authorities** and by the international intergovernmental organizations noted above. This International Standard is intended to facilitate dialogue between the **stakeholders**, enabling them to develop a mutual understanding of the functions and tasks that fall within the scope of **water utilities**.

The series of standards addressing water services consists of ISO 24510 (**service**-oriented), ISO 24511 and this International Standard (both **management**-oriented).

ISO 24510 addresses the following topics:

— a brief description of the components of the **service** relating to the **users**;

— core objectives for the **service**, with respect to **users**' needs and expectations;

— guidelines for satisfying **users**' needs and expectations;

— **assessment** criteria for **service to users** in accordance with the provided guidelines;

— examples of **performance indicators** linked to the **assessment** criteria that can be used for assessing the **performance** of the **service.**

ISO 24511 and this International Standard address the following topics:

— a brief description of the physical/infrastructural and managerial/institutional components of **water utilities**;

— core objectives for **water utilities**, considered to be globally relevant at the broadest level;

— guidelines for the **management** of the **water utilities**;

— guidelines for the **assessment** of the water **services** with **service assessment** criteria related to the objectives, and **performance indicators** linked to these criteria.

The **performance indicators** presented in this International Standard, ISO 24510 and ISO 24511 are simply for purposes of illustration, because assessing the **service** to **users** cannot be reduced to a single or universal set of **performance indicators**.

The scope formally excludes the installations inside a user's premises. However, attention is drawn to the fact that the **quality** of the supplied water (or discharged **wastewater**) can be adversely impacted between the **point-of-delivery** (or, in the case of wastewater, the **point-of-collection)**, and the **point-of-use** (or, in case of wastewater, the **point-of-discharge**) by the installations inside the premises. Some **stakeholders**, e.g. **relevant authorities**, owners, contractors and **users,** can have a role to play regarding this issue.

Because the organization of **water utilities** falls within a legal and institutional framework specific to each country, this International Standard does not prescribe the respective roles of various **stakeholders**, nor does it define required internal organizations for local, regional or national bodies that can be involved in the provision of water **services**. In particular, this International Standard does not interfere with the free choice of the **responsible bodies** regarding the general organization and the **management** of their **utilities**. This International Standard is applicable to publicly and privately owned and operated **utilities** alike, and does not favour any particular ownership or operational model.

The guidelines given in this International Standard, ISO 24510 and ISO 24511 focus on **users'** needs and expectations and on the water **services** themselves, without imposing a means of meeting those needs and expectations, the aim being to permit the broadest possible use of this International Standard, ISO 24510 and ISO 24511 while respecting the cultural, socio-economic, climatic, health and legislative characteristics of the different countries and regions of the world. It should therefore be understood that, in the short term, it might not always be possible to meet the expectations of local **users**. This can be due to factors such as climate conditions, resource availability and difficulties relating to the economic sustainability of the water **services**, particularly regarding financing and the **users'** ability to pay for improvements. These conditions can limit the achievement of some objectives or restrict the implementation of some recommendations in developing countries. However, this International Standard is drafted with such constraints in mind and, for example, allows for differing levels of fixed networks and the need for on-site alternatives. Notwithstanding the need for flexibility in terms of engineering and hardware, many recommendations in this International Standard, such as consultation mechanisms, are intended to apply universally.

In order to assess and improve the **service to users** and to ensure proper monitoring of the improvements, an appropriate number of **performance indicators (PIs)** or other methods for checking compliance with **requirements** can be established. The use of **PIs** is only one of the possible support tools for continuous improvement. Stakeholders can select **PIs** from the examples given or develop other relevant **PIs**, taking into account the principles described in this International Standard, ISO 24510 and ISO 24511. The **PIs** logically relate to the objectives for which they are defined through the **assessment** criteria, and are used to measure **performance**. They can also be used to set required or targeted values. This International Standard does not impose any specific **indicator** or any minimum value or **performance** range. It respects the principle of adaptability to local contexts, facilitating local implementation.

While it is in no way intended that this International Standard, ISO 24510 and ISO 24511, and more specifically the **performance indicators** given as examples, be considered as a prerequisite or condition for the implementation of a water policy or for the financing of projects or programmes, they can serve to assess progress towards policy goals and the objectives of financing programmes.

The objective of this International Standard, ISO 24510 and ISO 24511 is not to lay down systems of specifications supporting direct certification of conformity, but to provide guidelines for the continuous improvement and for the **assessment** of the **service**. Use of this International Standard, ISO 24510 and ISO 24511 is voluntary, in accordance with ISO rules.

This International Standard, ISO 24510 and ISO 24511 are consistent with the principle of the "plan-do-check-act" (PDCA) approach: they propose a step-by-step process, from identifying the components and defining the objectives of the utility to establishing **performance indicators**, with a loop back to the objectives and to the **management**, after having assessed the **performances**. Figure 1 summarizes the content and application of this International Standard. Implementation of this International Standard, ISO 24510 and ISO 24511 does not depend upon adoption of the ISO 9000 series and/or the ISO 14000 series of standards. Nevertheless, this International Standard, ISO 24510 and ISO 24511 are consistent with those **management systems** standards. Implementation of an overall ISO 9001 and/or ISO 14001 **management system** can facilitate the implementation of the guidelines contained within this International Standard, ISO 24510 and ISO 24511; conversely, these guidelines can help to achieve the technical provisions of ISO 9001 and ISO 14001 for organizations choosing to implement them.

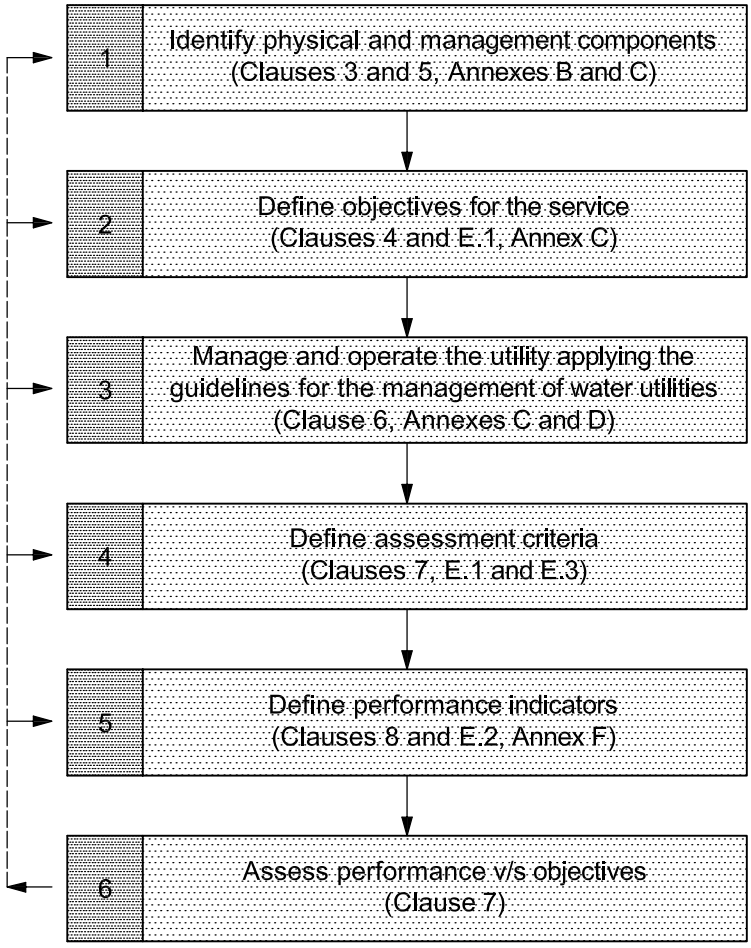

Figure 1 — Content and application of this International Standard

0.4 Drinking water supply services

When reading this International Standard, it is important to bear in mind that utilities have constructed **infrastructure** and facilities that are operated primarily to supply **drinking water** to **users** of the **service**. Many utilities can supply the **users** either by direct pipe **connection** or by other means (e.g. trucks, bottles). In broad terms, the social objectives of the **service** are to promote public health and social and economic development, while protecting the **environment**.

This International Standard only applies to **services** to and at the **point-of-delivery** to the **user** (which can be different from the point-of-consumption or use).

The function of utilities is to provide **drinking water** for civil life, urban activities and industrial or other uses. The supply of **drinking water** is considered to be a core activity on which society depends, and it therefore has a social as well as a public welfare role. Supplying **drinking water** involves the abstraction of water from the **environment** and the construction of **infrastructure** having a lifetime typically stretching over several human generations. This suggests that intergenerational equity and regard also need to be a feature of the **assessment** of the **service**. Consequently, a **water utility**, regardless of ownership, is public in nature and will be subject to public scrutiny and policy.

NOTE **Intergenerational equity** is a concept which recognizes that current societies or populations should not take actions or ignore current responsibilities that result in unfairly shifting economic or social burdens to future generations.

Operationally, under normal conditions, the broad objectives of a utility are to supply **drinking water** on a continuous basis. Some utilities cannot provide **drinking water** on a continuous, 24-hours-a-day, 7-days-a-week basis, nor is there an expectation that this will be achieved. Often these utilities are those that cannot deliver safe **drinking water**. In such cases, an intermittent but scheduled supply would be satisfactory if quantities supplied are sufficient to meet **users**' reasonable demands.

The **drinking water** needs to be suitable for direct human consumption in accordance with local potability **requirements**, regardless of the other uses made of the water delivered. Efforts need to be made to achieve that **quality** at all times. Where that is the general expectation, when potability standards are not maintained or achieved, a specific warning to **users** needs to be provided.

Activities relating to drinking water and wastewater services — Guidelines for the management of drinking water utilities and for the assessment of drinking water services

1 Scope

This International Standard provides guidelines for the management of drinking water utilities and for the assessment of drinking water services.

This International Standard is applicable to publicly and privately owned and operated water utilities. It does not favour any particular ownership or operating model.

This International Standard addresses drinking water systems in their entirety and is applicable to systems at any level of development (e.g. on-site systems, distribution networks, treatment facilities).

The following are within the scope of this International Standard:

— the definition of a language common to different stakeholders;

— the definition of the components of drinking water supply systems;

— guidelines for the management of drinking water utilities;

— guidelines for objectives, service assessment criteria and related performance indicators, appropriate for the assessment of drinking water services.

The following are outside the scope of this International Standard:

— target values and thresholds for proposed objectives, service assessments criteria and related performance indicators;

— matters relating to the design and construction of drinking water systems;

— matters relating to the management structure of drinking water utilities;

— matters relating to the regulation of drinking water services, including management and operational activities;

— matters relating to regulating the content of contracts or subcontracts;

— installations between point-of-delivery and point-of-use.

NOTE 1 This International Standard, ISO 24510 and ISO 24511 comprise a series of standards addressing water services. It is therefore advisable to use these three International Standards in conjunction with each other.

NOTE 2 The list of terms and definitions in Clause 2 is common to this International Standard, ISO 24510 and ISO 24511.

NOTE 3 Annex A contains three tables of correspondence between equivalent terms in English, French and Spanish.