BRITISH STANDARD

BS ISO 24510:2007

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

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British Standards

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National foreword

This British Standard is the UK implementation of ISO 24510:2007.

The UK participation in its preparation was entrusted to Technical Committee CB/503, Drinking water and wastewater service levels.

A list of organizations represented on this committee can be obtained on request to its secretary.

The attention of users is drawn to the existence of legislation or regulatory requirements that may over-ride some provisions of this British Standard. Up-to-date advice should be sought from appropriate regulatory authorities. The attention of users is drawn in particular to the legislation or regulatory requirements of the following:

- The Guaranteed Standards Scheme (GSS) which is monitored by the Water Services Regulation Authority (Ofwat) and set out in statutory instruments 2000 No. 2301, 1996 No. 3065, 1993 No. 500, 1989 Nos. 1383 and 1989;
- Water Industry Commission for Scotland Information Note 7, Customer Service: Overall Performance Assessment (OPA) No. 1159;
- Water & Sewerage Services (NI) Order 2006.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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INTERNATIONAL STANDARD

ISO 24510

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

Activités relatives aux services de l'eau potable et de l'assainissement — Lignes directrices pour l'évaluation et l'amélioration du service aux usagers

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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 24510 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 24510 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*

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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 XXIst 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.

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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 this International Standard (**service**-oriented), ISO 24511 and ISO 24512 (both **management**-oriented).

This International Standard 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 ISO 24512 address the following topics:

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— 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 24511 and ISO 24512 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 24511 and ISO 24512 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 24511 and ISO 24512 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 24511 and ISO 24512. 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 24511 and ISO 24512, 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 24511 and ISO 24512 is not to lay down systems of specifications supporting direct certification of conformity, but to provide guidelines for the continuous

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improvement and for the **assessment** of the **service**. Use of this International Standard, ISO 24511 and ISO 24512 is voluntary, in accordance with ISO rules.

This International Standard, ISO 24511 and ISO 24512 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 24511 and ISO 24512 does not depend upon adoption of the ISO 9000 series and/or the ISO 14000 series of standards. Nevertheless, this International Standard, ISO 24511 and ISO 24512 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 24511 and ISO 24512; conversely, these guidelines can help to achieve the technical provisions of ISO 9001 and ISO 14001 for organizations choosing to implement them.

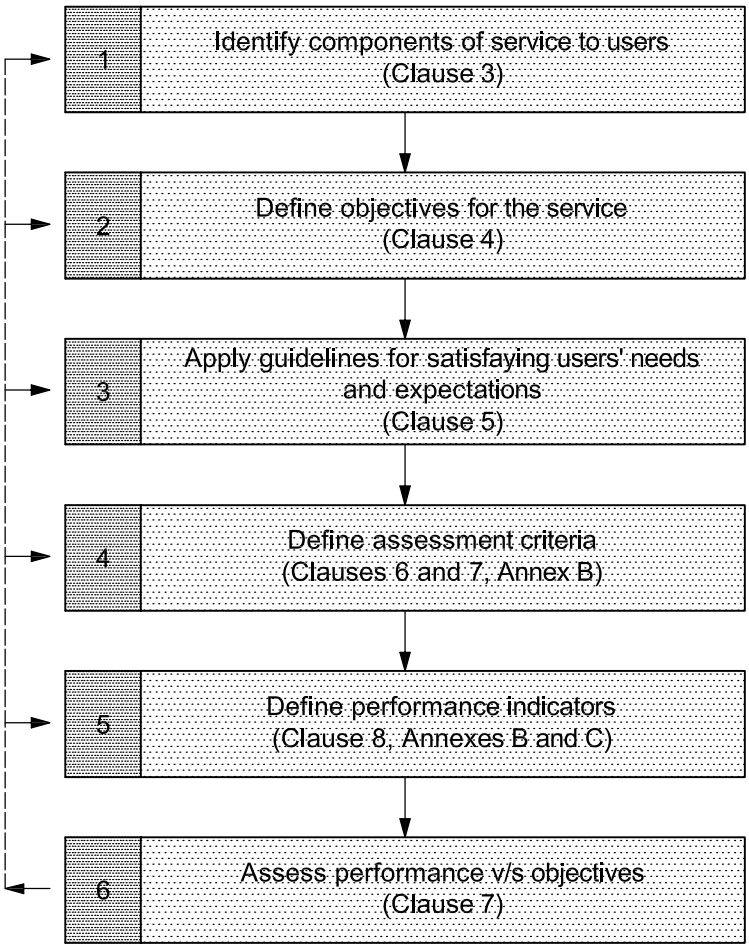

Figure 1 — Content and application of this International Standard

0.4 Service to users

This International Standard is different in nature from ISO 24511 and ISO 24512. The target audience of this International Standard addresses **users**' expectations that pertain to **relevant authorities**, **responsible bodies** and **operators**. It is written from the perspective of the **users** rather than from that of the **water utility**. Consequently, parts of this International Standard, ISO 24511 and ISO 24512 relate to the same issues, but the guidelines they contain are complementary, due to their differences in perspective and target audience.

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

1 Scope

This International Standard specifies the elements of drinking water and wastewater services of relevance and interest to users. It also provides guidance on how to identify users' needs and expectations and how to assess whether they are being met.

The following are within the scope of this International Standard:

— the definition of a language common to the different stakeholders;

— the definition of key elements and characteristics of the service to users;

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

— guidelines for satisfying users' needs and expectations;

— service to users assessment criteria;

— introduction to performance indicators;

— examples of performance indicators.

The following are outside the scope of this International Standard:

— methods of design and construction of drinking water and wastewater systems;

— the regulating management structure and methodology of operation and management of activities relating to drinking water and wastewater services, including contracting;

— topics relating to the system inside buildings.

NOTE 1 This International Standard, ISO 24511 and ISO 24512 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 24511 and ISO 24512.

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

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2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
accuracy
closeness of agreement between a measure and the accepted reference value

NOTE 1 The term “accuracy”, when applied to a set of measures, involves a combination of random components and a common systematic error or bias component.

NOTE 2 Adapted from ISO 5725-1:1994.

2.2
affordability
ability to be economically bearable for the **users** (2.50)

NOTE The affordability can be estimated through the degree to which charges for **services** (2.44) can be paid by targeted social groups of users without significant adverse economic or social impact, taking into account allowances for subsidies and payment assistance programmes for low-income users.

2.3
assessment
process (2.31), or result of this process, comparing a specified subject matter to relevant references

2.4
asset
capital-forming goods used for the provision of the **service** (2.44)

NOTE 1 Assets can be tangible or intangible. Examples of tangible assets are: land, buildings, pipes, wells, tanks, treatment plants, equipment, hardware. Examples of intangible assets are: software, databases.

NOTE 2 Contrary to consumables, assets can be depreciated in accounting systems.

2.5
asset management
processes (2.31) that enable a **water utility** (2.53) to direct, control and optimize the provision, **maintenance** (2.19) and disposal of **infrastructure** (2.17) **assets** (2.4), including the necessary costs for specified **performances** (2.24), over their life-cycle

2.6
availability
extent to which the **infrastructure** (2.17), **assets** (2.4), resources and employees of a **water utility** (2.53) enable effective provision of **services** (2.44) to **users** (2.50) according to specified **performances** (2.24)

2.7
community
one or more natural or legal persons and, in accordance with national legislation or practice, their associations, organizations or groups, having interests in the area where the **service** (2.44) is provided

2.8
confidence grade
assessment (2.3) of the **quality** (2.32) in terms of **accuracy** (2.1) and **reliability** (2.37)

2.9
connection
set of physical components ensuring the link between a **point-of-delivery** (2.26) and the local water main or the **point-of-collection** (2.25) and the sewer

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NOTE 1 For **drinking water systems** (2.12), the term “service pipe” is currently used, but the connection can include components other than the service pipe, such as valves, meters, etc.

NOTE 2 In English speaking countries, for **wastewater systems** (2.52), the term “drain” can also be used; the connection can also be equipped with ancillaries.

2.10
coverage
extent to which the **assets** (2.4) of a **water utility** (2.53) allow **services** (2.44) to **users** (2.50), within its defined area of responsibility

2.11
drinking water
water intended for human consumption

NOTE **Requirements** (2.40) for drinking water **quality** (2.32) specifications are generally laid down by the national **relevant authorities** (2.36). Guidelines are established by the World Health Organization (WHO).

2.12
drinking water system
tangible **assets** (2.4) necessary for abstracting, treating, distributing or supplying **drinking water** (2.11)

2.13
effectiveness
extent to which planned activities are realized and planned results achieved

[ISO 9000:2005]

2.14
efficiency
relationship between the result achieved and the resources used

[ISO 9000:2005]

2.15
environment
surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation

NOTE 1 Surroundings in this context extend from within an organization to the global system.

[ISO 14001:2004]

NOTE 2 For the application of this International Standard, environment is considered as a specific **stakeholder** (2.47). The interests of this specific **stakeholder** (2.47) can be represented by **relevant authorities** (2.36), by the **communities** (2.7) or by other groups, such as non-governmental organizations (NGOs).

2.16
indicator
parameter, or a value derived from parameters, which provides information about a subject matter with a significance extending beyond that directly associated with a parameter value

NOTE 1 Adapted from OECD works on “Core sets of indicators for environmental performance reviews”[10].

NOTE 2 Indicators can refer to context, conditions, means, activities or **performances** (2.24).

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2.17
infrastructure
system of tangible fixed **assets** (2.4) needed for the operation of a **water utility** (2.53)

NOTE 1 Adapted from ISO 9000:2005.

NOTE 2 It may also be necessary for the **water utility** (2.53) to use technical equipment for transport which is not fixed (e.g. trucks, vans, bottles) on a permanent or occasional basis, or in emergency situations. It is advisable to reserve the term "infrastructure" for fixed equipment and installations.

2.18
interruption
situation where the **service** (2.44) is not available

NOTE Interruptions can be planned or unplanned.

2.19
maintenance
combination of all technical, administrative and managerial actions during the life cycle of an **asset** (2.4) intended to retain it in, or restore it to, a state in which it can perform the required function

2.20
management
coordinated activities to direct and control an organization

NOTE 1 In English, the term "management" sometimes refers to people, i.e. a person or group of people with authority and responsibility for the conduct and control of an organization. When "management" is used in this sense, it should always be used with some form of qualifier to avoid confusion with the concept "management" defined above. For example, "management shall…" is deprecated whereas "top management shall…" is acceptable.

[ISO 9000:2005]

NOTE 2 The term "management" can be qualified by a specific domain it addresses. Examples are: public health management, environmental management, risk management, etc.

2.21
management system
system to establish policy and objectives and to achieve those objectives

[ISO 9000:2005]

NOTE A management system of a **water utility** (2.53) can include different management systems, such as a **quality** (2.32) management system, a financial management system or an environmental management system.

2.22
on-site system
set of physical **assets** (2.4) necessary for supplying **drinking water** (2.11) or collecting and treating **wastewater** (2.51) without physical **connection** (2.9) to centralized installations from a **water utility** (2.53)

2.23
operator
person or organization performing day-to-day **processes** (2.31) and activities necessary for the provision of the **service** (2.44)

NOTE 1 There can be one or several operators for a given **water utility** (2.53), e.g. distinct operators for installations operation, billing and recovering **service** (2.44). Their missions are determined by the **responsible body** (2.42). An operator may subcontract some of its operations to other contractors, if allowed by the responsible body.

NOTE 2 The operator(s) can be legally distinct, or not, from the **responsible body** (2.42). They can be public or private. Examples where responsible body and operator are not legally distinct: a technical department in a municipality, a

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specific division of a regional authority. Examples of legally distinct entities: a public organization, a private corporate company, a small contractor, an NGO, a cooperative.

NOTE 3 In the context of this International Standard, an “operator” is not a person employed within an organization to operate a piece of equipment or **process** (2.31).

2.24
performance
achievements of an activity, a **process** (2.31) or an organization

2.25
point-of-collection
⟨wastewater⟩ physical fixed interface, upstream of which the **water utility** (2.53) does not have the overall legal responsibility for the **service** (2.44) or **infrastructure** (2.17)

EXAMPLE The limit boundary between private and public property.

NOTE 1 The point-of-collection is generally defined in the **service agreement** (2.45).

NOTE 2 In general, the water utility employees have no legal empowerment for obtaining direct physical access to the installations upstream of the point-of-collection.

2.26
point-of-delivery
⟨drinking water⟩ physical fixed interface, downstream of which the **water utility** (2.53) does not have the overall legal responsibility for the **service** (2.44) or **infrastructure** (2.17)

EXAMPLES A **connection** (2.9) box, a meter, the limit boundary between public and private property.

NOTE 1 The point-of-delivery is generally defined in the **service agreement** (2.45).

NOTE 2 In general, water utility employees have no legal empowerment for obtaining direct physical access to the installations downstream of the point-of-delivery.

2.27
point-of-discharge
physical fixed interface where the **user** (2.50) normally discharges **wastewater** (2.51) for its collection and disposal

EXAMPLES A sink, a toilet.

2.28
point-of-use
physical fixed interface where the **user** (2.50) normally takes the water for the intended use

EXAMPLES A tap, a public drinking fountain.

NOTE 1 The point-of-use can be in private or public property.

NOTE 2 The point-of-use can be the same as the **point-of-delivery** (2.26), e.g. in the case of a public drinking fountain.

2.29
price
counterpart in money or alike paid for the supply or provision of a product or **service** (2.44)

NOTE When relevant, price is expressed relating to a unit of product or service.

EXAMPLE Price of a cubic metre of **drinking water** (2.11), price of a **connection** (2.9) of xx metres in length.

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2.30
procedure
specified way of carrying out an activity or a **process** (2.31)

NOTE Procedures can be documented or undocumented.

2.31
process
set of interrelated or interacting activities which transforms inputs into outputs

[ISO 9000:2005]

2.32
quality
degree to which a set of inherent characteristics fulfils **requirements** (2.40)

[ISO 9000:2005]

NOTE There is a clear distinction between quality of the product [**drinking water** (2.11) or treated **wastewater** (2.51)] and quality of the **service** (2.44). This International Standard does not give specifications for product quality.

2.33
rate of return
percent measure of project profitability, equal to project income divided by project investment

NOTE The time period of measurement can be annual or over the lifetime of the investment.

2.34
registered user
customer
user (2.50) for whom relevant information is recorded by the **responsible body** (2.42) or **operator** (2.23)

NOTE The term “customer” can be considered as a synonym, given that a customer has a commercial relationship, e.g. a **service agreement** (2.45), with the **water utility** (2.53). The term “customer” is currently used in such expressions as “customer relations”.

2.35
rehabilitation
operation on an **infrastructure** (2.17) that restores it to a defined level, or improves it to a higher level of **performance** (2.24)

2.36
relevant authority
public body entitled to set general policies, plans or **requirements** (2.40), or to check compliance with these rules, concerning all the **water utilities** (2.53) included in its area of jurisdiction

EXAMPLES National, regional or local governments, public agencies, regulators.

NOTE For a given water utility, there can be several relevant authorities, which have jurisdiction in different domains.

2.37
reliability
⟨information⟩ degree of confidence in the information for representing or for qualifying the relevant subject matter

NOTE Information can be data, **indicators** (2.16) or estimations.

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2.38
reliability
⟨asset, process⟩ probability that a device, system, or **process** (2.31) will perform its prescribed function without failure for a given time when operated correctly in a specified environment

2.39
repair
action on a non-conforming product, equipment or facility to make it acceptable for the intended use, but not changing the original parameters of the product, equipment or facility

NOTE 1 Adapted from ISO 9000:2005.

NOTE 2 Repair includes remedial action taken on a previously conforming product to restore it for use, e.g. as part of **maintenance** (2.19).

NOTE 3 Repair can affect or change parts of the non-conforming product.

NOTE 4 Repair can be planned [e.g. preventive **maintenance** (2.19)] or unplanned (e.g. in the case of damage).

2.40
requirement
need or expectation that is stated, generally implied or obligatory

[ISO 9000:2005]

NOTE "Generally implied" means that it is custom or common practice for the drinking water or wastewater utilities, the **users** (2.50) of the **service** (2.44) and other interested parties, that the need or expectation under consideration is implied.

2.41
residues
subproducts resulting from the different **processes** (2.31) applied to **drinking water** (2.11) or **wastewater** (2.51)

NOTE Residues can be liquid, solid, gaseous or mixtures.

EXAMPLES Sludge, septage, sand or grit, grease, debris.

2.42
responsible body
body that has the overall legal responsibility for providing **drinking water** (2.11) or **wastewater** (2.51) **services** (2.44) for a given geographic area

EXAMPLE A local or municipal government (i.e. for a village, town or city), a regional government, or a national or federal government through a specified agency, or a private company.

NOTE 1 The responsible body can be public or private.

NOTE 2 The responsible body acts within a framework of law and governance established by the **relevant authorities** (2.36); it generally establishes the strategy, the specific policies adapted to the characteristics of its area of responsibility and the general organization of the relevant **water utility** (2.53).

NOTE 3 The responsible body can operate the water utility directly with its own means through an internal **operator** [direct or internal **management** (2.20) or "in house"] or entrust one or several **operators** (2.23) for the operations ("outsourced" or contracted management).

2.43
restriction
situation where the **service** (2.44) does not meet the availability conditions specified in the **service agreement** (2.45)

NOTE Restrictions can be planned or unplanned.

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2.44
service
result of a **process** (2.31)

NOTE 1 Adapted from the definition of “product” in ISO 9000:2005.

NOTE 2 Services are one of the four generic categories of products with software, hardware and process materials. Many products comprise elements belonging to different generic product categories. Whether the product is then called “service” depends on the dominant element.

NOTE 3 Service is the result of at least one activity necessarily performed at the interface between the provider of the service and, in the first place, its **user** (2.50) and, in the second place, a **stakeholder** (2.47). Service is generally intangible. Provision of a service can involve for example the following:

— activity performed on a tangible product supplied by the user, e.g. **wastewater** (2.51),

— activity performed on an intangible product coming from the user, e.g. processing new **connection** (2.9) requests,

— delivery of an intangible product, e.g. delivery of information,

— creation of ambience for the user, e.g. reception offices.

NOTE 4 The word “service” in common English can also refer to the entity providing the actions related to the subject in question, as is implicit in such phrases as “bus service”, “police service”, “fire service” and “water or wastewater service”. In this context and usage, “service” implies the entity that is delivering the service, e.g. “the public transport of passengers”, “the provision of public security”, “fire protection and response”, and “delivering drinking water or collecting wastewater”. If “service” can be understood in this way, “water service” becomes synonymous with “**water utility**” (2.53); hence in this International Standard, in order to avoid confusion, only the definition in 2.44 applies.

2.45
service agreement
establishment of an accord between the **registered user** (2.50) and the **water utility** (2.53) on the conditions of **service** (2.44) provisions

EXAMPLE A contract.

NOTE It may be implicit or explicit.

2.46
service area
local geographic area where an organization has the legal or contractual responsibility to provide a **service** (2.44)

NOTE The service area can be established by political boundaries (e.g. citywide utility), by legislative action (e.g. formation of a utility district), or by interjurisdictional agreements [e.g. intercity agreements to provide **wastewater** (2.51) services].

2.47
stakeholder
person or group or organization having an interest in the **performance** (2.24) or success of an organization

EXAMPLES **Users** (2.50) and building owners, **relevant authorities** (2.36), **responsible bodies** (2.42), **operators** (2.23), employees of the operator, external product suppliers and providers of other **services** (2.44), contractors, **communities** (2.7), customers and environmental associations, financial institutions, scientific and technical organizations, laboratories.

NOTE 1 Adapted from the definition of “interested party” in ISO 9000:2005.

NOTE 2 For the application of this International Standard, **environment** (2.15) is considered as a specific stakeholder (see 2.15, Note 2).

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2.48
sustainable development
development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs

2.49
tariff
structured publicly available elements permitting calculation of the **price** (2.29) paid for a product or **service** (2.44)

EXAMPLE Flat (uniform) tariff for a cubic metre of **drinking water** (2.11), blocks with progressive or decreasing **prices** (2.29), prices of **connections** (2.9) depending on the pipe diameter.

2.50
user
person, group or organization that benefits from **drinking water** (2.11) delivery and related **services** (2.44), or from **wastewater** (2.51) service activities

NOTE 1 Users are a category of **stakeholder** (2.47).

NOTE 2 Users can belong to various economic sectors: domestic users, commerce, industry, tertiary activities, agriculture.

NOTE 3 The term “consumer” can also be used, but in most countries the term “user” is more frequent when referring to public services. It is not appropriate for wastewater services.

2.51
wastewater
water arising from any combination of domestic, industrial or commercial activities, surface runoff and any accidental sewer inflow/infiltration water and which can include collected storm water, discharged to the **environment** (2.15) or sewer

NOTE 1 The definition of wastewater in this International Standard also includes sanitary waste in undiluted form.

NOTE 2 Wastewater can flow in separate or combined sewer systems.

2.52
wastewater system
tangible **assets** (2.4) necessary for collecting, treating and disposing or reusing **wastewater** (2.51), as well as wastewater **residues** (2.41)

2.53
water utility
whole set of organization, **processes** (2.31), activities, means and resources necessary for abstracting, treating, distributing or supplying **drinking water** (2.11) or for collecting, treating and disposing of **wastewater** (2.51) and for providing the associated **services** (2.44)

NOTE 1 Some key features for a water utility are:

— its mission, to provide drinking water services or wastewater services, or both:

— its physical area of responsibility and the population within this area,

— its **responsible body** (2.42),

— the general organization with the function of **operator** (2.23) being carried out by the responsible body, or by legally distinct operator(s),

— the type of physical systems used to provide the services, with various degrees of centralization.

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NOTE 2 Drinking water utility addresses a utility dealing only with drinking water; wastewater utility addresses a utility dealing only with wastewater.

NOTE 3 When it is not necessary or it is difficult to make a distinction between responsible body and operator, the term “water utility” covers both.

NOTE 4 In common English, “water service” can be used as a synonym for “water utility” (see 2.44, Note 4), but this International Standard does not recommend using the term in this way.

3 Elements of the service relating to users

3.1 General

To promote the continuous improvement of service to users, its elements should first be identified. The essential elements of service to users are:

— access to and provision of the service,

— contract management and billing,

— promoting a good relationship with the users,

— protection of the environment, and

— safety and emergency management.

Unless stated otherwise, most of the elements of the service with regard to users are common to both drinking water services and wastewater services.

3.2 Access to water services

Access to service means not only connection to networked drinking water and wastewater systems, but also, if these are not available, access to other means of service. For drinking water supply, other options, such as wells, mobile water delivery, regulated bottle water vendors and drinking water points, can be used. For wastewater service, it could include septic tanks, pit latrines, composting toilets and other forms of disposal.

3.3 Provision of the service

3.3.1 Application for service

Application for the service comprises all the procedures for users to apply for water services.

3.3.2 Drinking water supply/wastewater collection, treatment and disposal

The drinking water supply includes all the procedures for supply and maintenance of the quality of drinking water services. The wastewater collection, treatment and disposal include all the procedures for provision and maintenance of the quality of wastewater services.

3.3.3 Drinking water quality

The quality of drinking water comprises the health and aesthetic aspects of the provided drinking water.

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3.4 Contract management and billing

3.4.1 Service agreement

The service agreement includes the establishment of an agreement, implicit or explicit, between the registered user and the water utility.

3.4.2 Billing

Billing encompasses the conditions relating to billing for service, terms of payment and information on applicable rates.

3.5 Promoting a good relationship with the users

3.5.1 General information

General information includes all procedures to provide the users with information on the service (name, address, contact information, standard procedures, etc.).

3.5.2 Contact with users

Contact with users involves all forms of communication between the user and the water utility.

3.5.3 Processing of requests and enquiries

Such processing includes all written or verbal responses to the user and any resulting actions necessary to address the user's request, complaint or notification.

3.5.4 Participation of users

Participation of users includes the different processes that enable users

— to take part in how the service is provided,

— to propose improvements, and

— to request information.

3.6 Protection of the environment

This protection encompasses all the permanent or temporary impacts of the water utilities' service activities on the environment. It includes the quality of the wastewater discharged, which can have an impact on the water bodies within the environment, and the appropriate management of any residues produced. The protection of the environment includes the maintenance of the infrastructure and the long-term protection of the water resources.

3.7 Safety and emergency management

Safety and emergency management procedures include the information, plans and solutions to maintain or restore service in the event of major incidents or natural disasters.

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