ALLIANCE FOR
WATER STEWARDSHIP

# INTERNATIONAL WATER STEWARDSHIP STANDARD

VERSION 2.0
22.03.2019

## NORMATIVE STATEMENT

This document contains the AWS Standard and is a key document in the AWS Standard System. The AWS Standard consists of the Glossary, Introduction, five steps and their associated Criteria and Indicators. The Introduction, Steps, Criteria, Indicators, and Glossary are considered normative. The Introduction is informative only but is important to understand the Normative Requirements.

## LIST OF NORMATIVE REFERENCES

The following documents listed below contain provisions, which, through reference in this text, become part of this document. The text of this document may add, delete, or modify requirements in these documents. When a normative reference differs with this document, the requirements as stated in this document shall apply. Note: When references specify a date or version number of later amendments or revisions of that document do not apply as a normative requirement. For documents without dates or version numbers, the latest published edition of the document referred to applies.

(i) No Normative References

## LEGAL NOTICE

Should any of The AWS International Water Stewardship Standard's Criteria and/or Indicators included in this document be in contradiction with local or national law, the latter shall prevail.

## CONFORMANCE

To be in conformance with this Standard, the user must conform with all Criteria and Indicators.

## COPYRIGHT NOTICE



## INTERPRETATION, DISPUTES AND COMPLAINTS NOTICE

Questions of interpretations of the AWS International Water Stewardship Standard are addressed through procedures devised by the Scheme Owner, the Alliance for Water Stewardship. When disputes and complaints arise between stakeholders concerning compliance or the interpretation of the AWS Standard, then the relevant AWS procedures for dispute resolution and interpretation shall apply.

## NOTES ON THIS VERSION

The Alliance for Water Stewardship as Scheme Owner has responsibility for this document and will periodically review and update it. The next revision is scheduled for 2023. The Alliance for Water Stewardship also welcomes comments on this document at any time. Contact: info@a4ws.org. Alliance for Water Stewardship, 2 Quality Street, North Berwick, Scotland, EH39 4HW.

## EFFECTIVE DATE: 22 MARCH 2019

This version of the AWS Standard is valid from 22 March 2019. This version supercedes all previous versions and includes new and changed requirements. Organizations that start their certification on or after 1 May 2019 will use this version. Organizations that are certified on or after 22 March 2018 will need to comply with all applicable requirements for surveillance and recertification audits following the AWS Document entitled: "AWS Transition of certifications to AWS Standard v 2.0_March 2019"

## INITIAL PUBLICATION DATE: 22 MARCH 2019

## VERSION HISTORY

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| V2.0 | 2019-03-22 | Second Version. Date Approved: 2019-01-28 |

## LANGUAGE VARIATION NOTICE

Translations of this standard and other documents in the AWS System may be accomplished by others. If there are differences between the English and other language versions, the English language version shall prevail.

## CONTACT INFORMATION

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# INTRODUCTION TO THE AWS STANDARD

**The Alliance for Water Stewardship (AWS) is a global membership collaboration of businesses, NGOs and the public sector. Our members contribute to the sustainability of local water resources through their adoption and promotion of a universal framework for the sustainable use of water – the International Water Stewardship Standard, or AWS Standard.**

**The objective of the AWS Standard is to drive water stewardship, which we define as:** *the use of water that is socially and culturally equitable, environmentally sustainable and economically beneficial, achieved through a stakeholder-inclusive process that involves site-and catchment-based actions.*

**Good water stewards understand their own water use, catchment context and shared concerns in terms of water governance; water balance; water quality; Important Water-Related Areas (IWRAs); Water, Sanitation and Hygiene (WASH), and then engage in meaningful individual and collective actions that benefit people, the economy and nature.**

## WATER IS VITAL TO MANY ASPECTS OF LIFE ON EARTH, FOR THE NATURAL ENVIRONMENT AND FOR HUMANS.

Water is essential to developing and maintaining successful and healthy economies and for human health and wellbeing. However, we must use water responsibly and sustainably to protect the needs of the natural environment and to ensure the ongoing availability of water as an essential resource and human right.

Any responsible business or organization should commit to causing no harm to the natural environment and communities and aspire to achieving a net benefit. In addition, a clear business case for water stewardship can be made on the basis of physical, regulatory and reputational risk. Saving water may not provide a substantial financial benefit (due to the typically low cost of water) but knowing and managing risk can protect a business from significant and unforeseen costs caused by quantity and quality issues, which could also restrict business growth and important socio-economic benefits. In addition to protection from physical risk, good water stewardship can protect an organization from regulatory breaches and negative reputational impacts, as well as offer the potential for positive reputational impact and generation of a net benefit to nature and society. Identifying and addressing challenges and risks also provides insight into opportunities associated with good water stewardship.

In principle, water is an endlessly renewable resource, provided it is managed responsibly and sustainably. The water we see and use today has been circulating on the planet for many millions of years. However, freshwater is lost from the water cycle if it becomes polluted, or if it is abstracted more quickly than it is replenished. The growing pressures on freshwater, with impacts on both quantity and quality, are well documented and are due to a range of factors including population growth, economic growth, increasing demand for food, rising living standards and climate. The impacts on the natural environment and vulnerable communities are already significant. Greater progress on achieving and implementing good water stewardship principles is required to ensure water use for human and economic needs does not continue to disrupt sustainable water cycles or cause ongoing harm to nature and biodiversity.

## WATER IS LOCAL

Water issues and risks vary enormously across the world depending on such factors as: climate, geography, geology, population density, the level of industrial and agricultural development, and the maturity of water governance and regulation.

The basic component of a local water environment is the river basin or catchment in terms of where an organization obtains its water supply and where its discharges and wastewater go. The relevant water catchment for a site may be exclusively surface water (e.g. a river basin), exclusively groundwater (e.g. an aquifer), or a combination of both systems. (see definition of 'catchment' in Glossary of Terms).

The local nature of water should not be over-simplified as the relationships can also be very complex with inter-basin and inter-catchment linkages, especially for users who draw water from multiple sources. Understanding how water behaves and moves in the environment, and its associated risks, is a must for any site.

## OUR THEORY OF CHANGE

Members of the Alliance for Water Stewardship unite behind our organizational intention in developing the AWS Standard – to provide a common, credible, globally-applicable framework for major water users to understand their own water use and impacts, and to work collaboratively and transparently with others for sustainable water management within the wider water catchment context.

A Theory of Change (ToC) articulates what impact or change an organization is hoping to achieve in the world and how its work brings about that change. To accompany Version 2.0 (V2.0) AWS has produced a new iteration of our Theory of Change. This revised ToC takes a broader view and covers the AWS Standard, the AWS Standard System and the AWS Organisation.

The AWS Standard should therefore be understood as one part of a set of strategies and activities used by the Alliance for Water Stewardship and its stakeholders to bring about change. The revised Theory of Change can be viewed on the AWS website at www.a4ws.org

## APPLICABILITY OF THE AWS INTERNATIONAL WATER STEWARDSHIP STANDARD

The AWS Standard is applicable globally to all organizations and industrial sectors, independent of their size and operational complexity, including agriculture, and non-profit sectors. The focus of the Standard is the operational site and its local water catchment, but with a broader goal to include indirect water use in the supply chain.

The Standard applies to all types of water used by an organization in its normal activities. This includes surface water, groundwater, recycled water, desalinized water (from ocean or brackish sources), precipitation, non-renewable reserves (fossil water), and unusual sources such as snow or ice. The scope applies to all water uses whether from private water sources or from third party suppliers. The same applies to wastewater management and treatment.

The Standard is intended to be applicable to any type and size of business in any location. The current guidance to the Standard is general for all sectors and regions. Sector-specific and regional guidance are foreseen for future development, and subject to need and demand.

Each organization should apply water stewardship to a 'physical scope' extending beyond the site's boundaries for data collection, stakeholder engagement and actions. The physical scope should be based on a combination of water-related catchment(s), stakeholder interests and regulatory landscape.

Where two or more small sites (such as small businesses or farms) are physically close to each other and where they share characteristics such as catchment and have similar water-related interests and/or challenges, they are encouraged to consider group implementation, which is permitted under the AWS certification scheme. This will enable them to share knowledge and resources and to more effectively collaborate in collective action.

## NECESSARY ACTIONS

To be in conformance with the AWS Standard, users are expected to carry out the criteria, with actions noted in the indicators, as evidence of fulfilment. These actions are noted in italics in the Standard and are defined below, as taken from the Glossary of Terms on page 22.

**Identified** Having some form of evidence (paper, electronic, or other) of conformance. Information presented shall be at a frequency, level of accuracy and over a sufficient time period to enable meaningful conclusions to be reached in relation to the indicator. This includes having a documented process(es) to identify and document the attributes listed.

**Mapped** Maps should preferably be in a digital format and be of a quality that enables an external party to identify the location, scale and physical properties of the attributes listed. A physical diagram could be accepted when deemed better fit for purpose than a map.

**Quantified** Numerical information presented shall be at a frequency, level of accuracy and over a sufficient time period to enable meaningful conclusions to be reached in relation to the indicator. This includes having a documented process to quantify (i.e., numerically) and document the attributes listed.

**Evaluated** Having a documented and replicable process applied to monitor the implementation of the plan and related commitments and to make informed changes to the plan and its implementation.

**Implemented** A process, procedure, or plan is carried out in order to achieve the intended result.

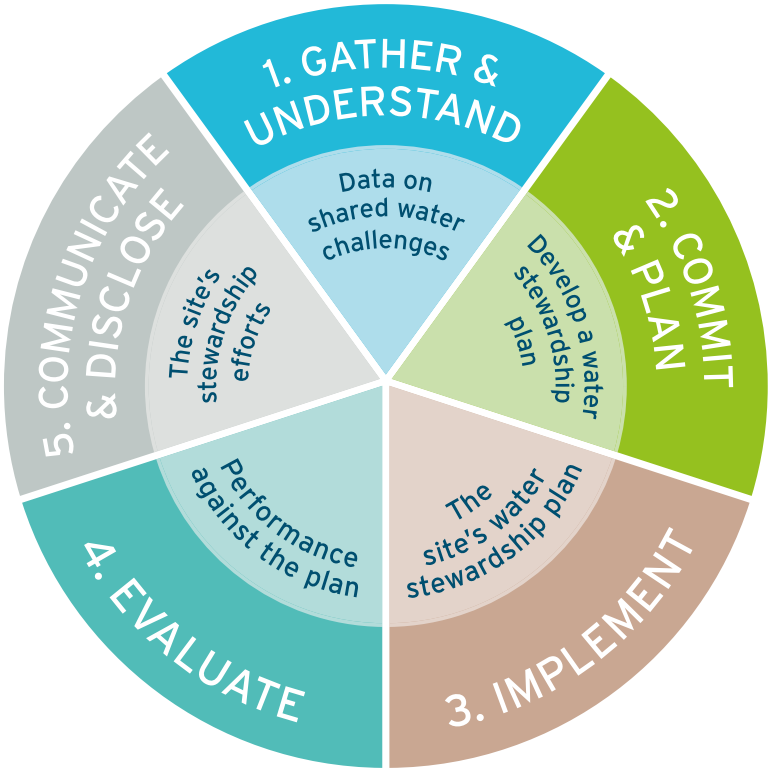
**Disclosed** Making a document available to relevant stakeholders and in some cases, publicly available or publicizing its availability.

# STRUCTURE OF THE AWS INTERNATIONAL WATER STEWARDSHIP STANDARD

## THE AWS STANDARD FRAMEWORK IS BUILT AROUND FIVE STEPS:

1. GATHER AND UNDERSTAND
2. COMMIT AND PLAN
3. IMPLEMENT
4. EVALUATE
5. COMMUNICATE AND DISCLOSE

Each step consists of a number of criteria to be addressed, each criterion having one or more indicators for compliance. There are 'core' indicators, representing the minimum requirement, and 'advanced' indicators, to achieve higher levels of water stewardship status and to promote continual improvement. The steps are not required to be followed in strict order and although generally the steps are order-dependent, actions associated with specific criteria and indicators may occur in parallel.




## IMPLEMENTATION OF THE STANDARD IS INTENDED TO ACHIEVE FIVE MAIN OUTCOMES FOR THE SITE AND ITS DEFINED PHYSICAL SCOPE:

- GOOD WATER GOVERNANCE
- SUSTAINABLE WATER BALANCE
- GOOD WATER QUALITY STATUS
- IMPORTANT WATER-RELATED AREAS
- SAFE WATER, SANITATION AND HYGIENE FOR ALL (WASH)

Each criterion in the Standard has the associated symbol or symbols representing the outcome to which fulfilment of the criterion will contribute.

## COLLECTIVE ACTION

The AWS Standard outcomes cannot typically be fully achieved for a catchment by a single organization. This is especially the case for small organizations. Therefore, an important principal of good water stewardship is collective action within a catchment, inclusive of the water steward and its relevant stakeholders. Collective action should support and contribute to existing catchment initiatives, and not replace or compete with them, so long as they align with the objectives and outcomes of the AWS Standard. Group Certification is available to organizations who implement as a group.

## CONTINUAL IMPROVEMENT

The Standard is intended to promote continual improvement such that performance improves over time. In some cases, early actions may be basic whereas more advanced sites or those with more mature stewardship systems may be implementing sectoral or regional best practices for some activities or targets. Sites are required to gather and understand information about best practices for use in establishing their plan. In general, Best Practice (see Glossary of Terms on page 22) is required to achieve Advanced Indicators. This creates a mechanism for Continual Improvement and a driver for sites to achieve Advanced Level Water Stewardship over time. Advanced Indicators also tend to express requirements at the catchment level, which often need collective action in order to achieve the desired Outcome.

## CORE AND ADVANCED LEVEL WATER STEWARDSHIP: CERTIFIED, GOLD CERTIFIED, PLATINUM CERTIFIED

There are three levels of AWS Standard certification that a site may achieve: Core, Gold and Platinum. All core criteria must be met as a minimum requirement for certification. Additional points are awarded for performance against the advanced criteria. It is anticipated that over time, a site will adopt these advanced actions in the spirit of continual improvement. The greater the number of points achieved the higher the level of water stewardship performance and AWS certification. The points required for each certification level are all Core Indicators + Advanced Indicator points as follows:

**AWS Core: 0 – 39 points**
**AWS Gold: 40 – 79 points**
**AWS Platinum: 80 or more points**

In some cases the indicators have changed from V1.0 to V2.0, so the points per individual indicator have been reallocated from V1.0 to V2.0. AWS has strived to maintain balance of weighting of points, but we will gather feedback from users during the transition period between continued use of V1.0 and full adoption of V2.0 to determine if reallocations are appropriate. Some indicator scores show a range of possible points reflecting the degree of effort and accomplishment for the indicator. It is at the discretion of the Conformity Assessment Body, in consultation with the site, how many points to allocate towards the indicator score. The current scoring table is available at www.a4ws.org

## COMMON BEHAVIOURS OF SITES SUCCESSFULLY APPLYING THE AWS STANDARD

Achieving certification to the AWS Standard is a mark of a site having met the global benchmark for water stewardship. Customers, consumers, agencies, NGO's and civil society organizations all want to know that major water users are being responsible with their water. Confirmation of compliance through certification sends a strong message of commitment to responsible water stewardship.

Becoming a water steward and reaching certification is a journey. A common first step towards individual sites applying the AWS Standard is that the parent organization joins AWS as a Member. Through membership they gain greater access to the range of supporting knowledge and services that are available from AWS and our partners and learn from the wider community of water stewards that make up the Alliance for Water Stewardship. Another common feature of organizations with certifying sites is that key staff take part in training sessions on the AWS Standard organised by AWS or by an AWS Accredited Trainer. Through training implementers develop a keener sense of what will be required from sites and site owners and are able to network and build relationships with other sites and service providers pursuing AWS in the same region. The final factor that unites sites efficiently and effectively applying the AWS Standard is that where required they draw expert support from AWS Accredited or AWS Credentialed Service Providers and they utilise AWS developed and endorsed data collection tools and methods. Details on all of these factors can be accessed via discussion with your local AWS Office, contactable via info@a4ws.org

# STEP 1:
# GATHER AND UNDERSTAND

## GATHER DATA TO UNDERSTAND SHARED WATER CHALLENGES AND WATER RISKS, IMPACTS AND OPPORTUNITIES

**Intent:** To ensure that the site gathers data on its water use and its catchment context and that the site uses these data to understand its shared water challenges as well as its contributions (both positive and negative) to these challenges, water risks, impacts, and opportunities. This information also informs the development of the site's water stewardship strategy and plan (Step 2) and guides the actions (Step 3) necessary to fulfil the site's commitments.

# STEP 1: GATHER AND UNDERSTAND

| | CRITERIA | | INDICATORS |
|---|---|---|---|
| 1.1 | Gather information to define the site's physical scope for water stewardship purposes, including: its operational boundaries; the water sources from which the site draws; the locations to which the site returns its discharges; and the catchment(s) that the site affect(s) and upon which it is reliant. | 1.1.1 | The physical scope of the site shall be *mapped*, considering the regulatory landscape and zone of stakeholder interests, including:<br>- Site boundaries;<br>- Water-related infrastructure, including piping network, owned or managed by the site or its parent organization;<br>- Any water sources providing water to the site that are owned or managed by the site or its parent organization;<br>- Water service provider (if applicable) and its ultimate water source;<br>- Discharge points and waste water service provider (if applicable) and ultimate receiving water body or bodies;<br>- Catchment(s) that the site affect(s) and is reliant upon for water. |
| 1.2 | Understand relevant stakeholders, their water-related challenges, and the site's ability to influence beyond its boundaries. | 1.2.1 | Stakeholders and their water-related challenges shall be *identified*. The process used for stakeholder identification shall be *identified*. This process shall:<br>- Inclusively cover all relevant stakeholder groups including vulnerable, women, minority, and Indigenous people;<br>- Consider the physical scope identified, including stakeholders, representative of the site's ultimate water source and ultimate receiving water body or bodies;<br>- Provide evidence of stakeholder consultation on water-related interests and challenges;<br>- Note that the ability and/or willingness of stakeholders to participate may vary across the relevant stakeholder groups;<br>- Identify the degree of stakeholder engagement based on their level of interest and influence. |
| | | 1.2.2 | Current and potential degree of influence between site and stakeholder shall be *identified*, within the catchment and considering the site's ultimate water source and ultimate receiving water body for wastewater. |
| 1.3 | Gather water-related data for the site, including: water balance; water quality, Important Water-Related Areas, water governance, WASH; water-related costs, revenues, and shared value creation. | 1.3.1 | Existing water-related incident response plans shall be *identified*. |
| | | 1.3.2 | Site water balance, including inflows, losses, storage, and outflows shall be *identified* and *mapped*. |
| | | 1.3.3 | Site water balance, inflows, losses, storage, and outflows, including indication of annual variance in water usage rates, shall be *quantified*. Where there is a water-related challenge that would be a threat to good water balance for people or environment, an indication of annual high and low variances shall be *quantified*. |
| | | 1.3.4 | Water quality of the site's water source(s), provided waters, effluent and receiving water bodies shall be *quantified*. Where there is a water-related challenge that would be a threat to good water quality status for people or environment, an indication of annual, and where appropriate, seasonal, high and low variances shall be *quantified*. |
| | | 1.3.5 | Potential sources of pollution shall be *identified* and if applicable, *mapped*, including chemicals used or stored on site. |
| | | 1.3.6 | On-site Important Water-Related Areas shall be *identified* and *mapped*, including a description of their status including Indigenous cultural values. |
| | | 1.3.7 | Annual water-related costs, revenues, and a description or quantification of the social, cultural, environmental, or economic water-related value generated by the site shall be *identified* and used to inform the evaluation of the plan in 4.1.2. |
| | | 1.3.8 | Levels of access and adequacy of WASH at the site shall be *identified*. |

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| 1.4 | Gather data on the site's indirect water use, including: its primary inputs; the water use embedded in the production of those primary inputs the status of the waters at the origin of the inputs (where they can be *identified*); and water used in out-sourced water-related services. | 1.4.1 | The embedded water use of primary inputs, including quantity, quality and level of water risk within the site's catchment, shall be *identified*. |
| | | 1.4.2 | The embedded water use of outsourced services shall be *identified*, and where those services originate within the site's catchment, *quantified*. |
| | | 1.4.3 | Advanced Indicator<br>The embedded water use of primary inputs in catchment(s) of origin shall be *quantified*. |
| 1.5 | Gather water-related data for the catchment, including: water governance, water balance, water quality, Important Water-Related Areas, infrastructure, and WASH | 1.5.1 | Water governance initiatives shall be *identified*, including catchment plan(s), water-related public policies, major publicly-led initiatives under way, and relevant goals to help inform site of possible opportunities for water stewardship collective action. |
| | | 1.5.2 | Applicable water-related legal and regulatory requirements shall be *identified*, including legally-defined and/or stakeholder-verified customary water rights. |
| | | 1.5.3 | The catchment water-balance, and where applicable, scarcity, shall be *quantified*, including indication of annual, and where appropriate, seasonal, variance. |
| | | 1.5.4 | Water quality, including physical, chemical, and biological status, of the catchment shall be *identified*, and where possible, *quantified*. Where there is a water-related challenge that would be a threat to good water quality status for people or environment, an indication of annual, and where appropriate, seasonal, high and low variances shall be *identified*. |
| | | 1.5.5 | Important Water-Related Areas shall be *identified*, and where appropriate, *mapped*, and their status assessed including any threats to people or the natural environment, using scientific information and through stakeholder engagement. |
| | | 1.5.6 | Existing and planned water-related infrastructure shall be *identified*, including condition and potential exposure to extreme events. |
| | | 1.5.7 | The adequacy of available WASH services within the catchment shall be *identified*. |
| | | 1.5.8 | Advanced Indicator<br>Efforts by the site to support and undertake catchment level water-related data collection shall be *identified*. |
| | | 1.5.9 | Advanced Indicator<br>The adequacy of WASH provision within the catchments of origin of primary inputs shall be *identified*. |
| 1.6 | Understand current and future shared water challenges in the catchment, by linking the water challenges *identified* by stakeholders with the site's water challenges. | 1.6.1 | Shared water challenges shall be *identified* and prioritized from the information gathered. |
| | | 1.6.2 | Initiatives to address shared water challenges shall be *identified*. |
| | | 1.6.3 | Advanced Indicator<br>Future water issues shall be *identified*, including anticipated impacts and trends |
| | | 1.6.4 | Advanced Indicator<br>Potential water-related social impacts from the site shall be *identified*, resulting in a social impact assessment with a particular focus on water. |

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| 1.7  | Understand the site's water risks and opportunities: Assess and prioritize the water risks and opportunities affecting the site based upon the status of the site, existing risk management plans and/or the issues and future risk trends identified in 1.6. | 1.7.1 | Water risks faced by the site shall be *identified*, and prioritized, including likelihood and severity of impact within a given timeframe, potential costs and business impact. |
| | | 1.7.2 | Water-related opportunities shall be *identified*, including how the site may participate, assessment and prioritization of potential savings, and business opportunities. |
| 1.8  | Understand best practice towards achieving AWS outcomes: Determining sectoral best practices having a local/catchment, regional, or national relevance. | 1.8.1 | Relevant catchment best practice for water governance shall be *identified*. |
| | | 1.8.2 | Relevant sector and/or catchment best practice for water balance (either through water efficiency or less total water use) shall be *identified*. |
| | | 1.8.3 | Relevant sector and/or catchment best practice for water quality shall be *identified*, including rationale for data source. |
| | | 1.8.4 | Relevant catchment best practice for site maintenance of Important Water-Related Areas shall be *identified*. |
| | | 1.8.5 | Relevant sector and/or catchment best practice for site provision of equitable and adequate WASH services shall be *identified*. |

# STEP 2:
# COMMIT AND PLAN

## COMMIT TO BE A RESPONSIBLE WATER STEWARD AND DEVELOP A WATER STEWARDSHIP PLAN

**Intent:** To ensure there is sufficient leadership support, site authority, and allocated resources for the site to implement the AWS Standard. It focuses on how a site will act on shared water challenges and improve its performance and the status of its catchment in terms of the AWS water stewardship outcomes. Step 2 links the information gathered in Step 1 to the actions implemented in Step 3, by describing who will do what and when.

# STEP 2: COMMIT AND PLAN

| | CRITERIA | | INDICATORS |
|---|---|---|---|
| 2.1 | Commit to water stewardship by having the senior-most manager in charge of water at the site, or if necessary, a suitable individual within the organization head office, sign and publicly disclose a commitment to water stewardship, the implementation of the AWS Standard and achieving its five outcomes, and the allocation of required resources. | 2.1.1 | A signed and publicly disclosed site statement OR organizational document shall be *identified*. The statement or document shall include the following commitments:<br>- That the site will implement and disclose progress on water stewardship program(s) to achieve improvements in AWS water stewardship outcomes<br>- That the site implementation will be aligned to and in support of existing catchment sustainability plans<br>- That the site's stakeholders will be engaged in an open and transparent way<br>- That the site will allocate resources to implement the Standard. |
| | | 2.1.2 | Advanced Indicator<br>A statement that explicitly covers all requirements set out in Indicator 2.1.1 and is signed by the organization's senior-most executive or governance body and publicly disclosed shall be *identified*. |
| 2.2 | Develop and document a process to achieve and maintain legal and regulatory compliance. | 2.2.1 | The system to maintain compliance obligations for water and wastewater management shall be *identified*, including:<br>- Identification of responsible persons/positions within facility organizational structure<br>- Process for submissions to regulatory agencies. |
| 2.3 | Create a water stewardship strategy and plan including addressing risks (to and from the site), shared catchment water challenges, and opportunities. | 2.3.1 | A water stewardship strategy shall be *identified* that defines the overarching mission, vision, and goals of the organization towards good water stewardship in line with this AWS Standard. |
| | | 2.3.2 | A water stewardship plan shall be *identified*, including for each target:<br>- How it will be measured and monitored<br>- Actions to achieve and maintain (or exceed) it<br>- Planned timeframes to achieve it<br>- Financial budgets allocated for actions<br>- Positions of persons responsible for actions and achieving targets<br>- Where available, note the link between each target and the achievement of best practice to help address shared water challenges and the AWS outcomes. |
| | | 2.3.3 | Advanced Indicator<br>The site's partnership/water stewardship activities with other sites within the same catchment (which may or may not be under the same organisational ownership) shall be *identified* and described. |
| | | 2.3.4 | Advanced Indicator<br>The site's partnership/water stewardship activities with other sites in another catchment(s) (either under same corporate structure or with another corporate site) shall be *identified*. |
| | | 2.3.5 | Advanced Indicator<br>Stakeholder consensus shall be sought on the site's water stewardship plan. Consensus should be achieved on at least one target. A list of targets that have consensus and in which stakeholders are involved shall be *identified*. |
| 2.4 | Demonstrate the site's responsiveness and resilience to respond to water risks | 2.4.1 | A plan to mitigate or adapt to identified water risks developed in co-ordination with relevant public-sector and infrastructure agencies shall be *identified*. |
| | | 2.4.2 | Advanced Indicator<br>A plan to mitigate or adapt to water risks associated with climate change projections developed in co-ordination with relevant public-sector and infrastructure agencies shall be *identified*. |

# STEP 3: IMPLEMENT

## IMPLEMENT THE SITE'S STEWARDSHIP PLAN AND IMPROVE IMPACTS

**Intent:** To ensure that the site is implementing the plan outlined in Step 2, mitigating risks and driving actual improvements in performance.

# STEP 3: IMPLEMENT

| | CRITERIA | | INDICATORS |
|---|---|---|---|
| 3.1 | Implement plan to participate positively in catchment governance. | 3.1.1 | Evidence that the site has supported good catchment governance shall be *identified*. |
| | | 3.1.2 | Measures *identified* to respect the water rights of others including Indigenous peoples, that are not part of 3.2 shall be *implemented*. |
| | | 3.1.3 | Advanced Indicator<br>Evidence of improvements in water governance capacity from a site-selected baseline date shall be *identified*. |
| | | 3.1.4 | Advanced Indicator<br>Evidence from a representative range of stakeholders showing consensus that the site is seen as positively contributing to the good water governance of the catchment shall be *identified*. |
| 3.2 | Implement system to comply with water-related legal and regulatory requirements and respect water rights. | 3.2.1 | A process to verify full legal and regulatory compliance shall be *implemented*. |
| | | 3.2.2 | Where water rights are part of legal and regulatory requirements, measures *identified* to respect the water rights of others including Indigenous peoples, shall be *implemented*. |
| 3.3 | Implement plan to achieve site water balance targets. | 3.3.1 | Status of progress towards meeting water balance targets set in the water stewardship plan shall be *identified*. |
| | | 3.3.2 | Where water scarcity is a shared water challenge, annual targets to improve the site's water use efficiency, or if practical and applicable, reduce volumetric total use shall be *implemented*. |
| | | 3.3.3 | Legally-binding documentation, if applicable, for the re-allocation of water to social, cultural or environmental needs shall be *identified*. |
| | | 3.3.4 | Advanced Indicator<br>The total volume of water voluntarily re-allocated (from site water savings) for social, cultural and environmental needs shall be *quantified*. |
| 3.4 | Implement plan to achieve site water quality targets. | 3.4.1 | Status of progress towards meeting water quality targets set in the water stewardship plan shall be *identified*. |
| | | 3.4.2 | Where water quality is a shared water challenge, continual improvement to achieve best practice for the site's effluent shall be *identified* and where applicable, *quantified*. |
| 3.5 | Implement plan to maintain or improve the site's and/or catchment's Important Water-Related Areas. | 3.5.1 | Practices set in the water stewardship plan to maintain and/or enhance the site's Important Water-Related Areas shall be *implemented*. |
| | | 3.5.2 | Advanced Indicator<br>Evidence of completed restoration of non-functioning or severely degraded Important Water-Related Areas including where appropriate cultural values from a site-selected baseline date shall be *identified*. Restored areas may be outside of the site, but within the catchment. |
| | | 3.5.3 | Advanced Indicator<br>Evidence from a representative range of stakeholders showing consensus that the site is seen as positively contributing to the healthy status of Important Water-Related Areas in the catchment shall be *identified*. |

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| 3.6  | Implement plan to provide access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers at all premises under the site's control. | 3.6.1 | Evidence of the site's provision of adequate access to safe drinking water, effective sanitation, and protective hygiene (WASH) for all workers onsite shall be *identified* and where applicable, *quantified*. |
| | | 3.6.2 | Evidence that the site is not impinging on the human right to safe water and sanitation of communities through their operations, and that traditional access rights for Indigenous and local communities are being respected, and that remedial actions are in place where this is not the case, and that these are effective. |
| | | 3.6.3 | Advanced Indicator<br>A list of actions taken to support the provision to stakeholders in the catchment of access to safe drinking water, adequate sanitation and hygiene awareness shall be *identified*. |
| | | 3.6.4 | Advanced Indicator<br>In catchments where WASH has been *identified* as a shared water challenge, evidence of efforts taken with relevant public-sector agencies to share information and to advocate for change to address access to safe drinking water and sanitation shall be *identified*. |
| 3.7  | Implement plan to maintain or improve indirect water use within the catchment. | 3.7.1 | Evidence that indirect water use targets set in the water stewardship plan, as applicable, have been met shall be *quantified*. |
| | | 3.7.2 | Evidence of engagement with suppliers and service providers, as well as, when applicable, actions they have taken in the catchment as a result of the site's engagement related to indirect water use, shall be *identified*. |
| | | 3.7.3 | Advanced Indicator<br>Actions taken to address water related risks and challenges related to indirect water use outside the catchment shall be documented and evaluated. |
| 3.8  | Implement plan to engage with and notify the owners of any shared water-related infrastructure of any concerns the site may have. | 3.8.1 | Evidence of engagement, and the key messages relayed with confirmation of receipt, shall be *identified*. |
| 3.9  | Implement actions to achieve best practice towards AWS outcomes: continually improve towards achieving sectoral best practice having a local/catchment, regional, or national relevance. | 3.9.1 | Actions towards achieving best practice, related to water governance, as applicable, shall be *implemented*. |
| | | 3.9.2 | Actions towards achieving best practice, related to targets in terms of water balance shall be *implemented*. |
| | | 3.9.3 | Actions towards achieving best practice, related to targets in terms of water quality shall be *implemented*. |
| | | 3.9.4 | Actions towards achieving best practice, related to targets in terms of the site's maintenance of Important Water-Related Areas shall be *implemented*. |
| | | 3.9.5 | Actions towards achieving best practice related to targets in terms of WASH shall be *implemented*. |
| | | 3.9.6 | Advanced Indicator<br>Achievement of identified best practice related to targets in terms of good water governance shall be *quantified*. |
| | | 3.9.7 | Advanced Indicator<br>Achievement of identified best practice related to targets in terms of sustainable water balance shall be *quantified*. |
| | | 3.9.8 | Advanced Indicator<br>Achievement of identified best practices related to targets in terms of water quality shall be *quantified*. |

| | | | |
|---|---|---|---|
| 3.9 (continued) | | 3.9.9 | Advanced Indicator<br>Achievement of identified best practices related to targets in terms of the site's maintenance of Important Water-Related Areas have been *implemented*. |
| | | 3.9.10 | Advanced Indicator<br>Achievement of identified best practice related to targets in terms of WASH shall be *quantified*. |
| | | 3.9.11 | Advanced Indicator<br>A list of efforts to spread best practices shall be *identified*. |
| | | 3.9.12 | Advanced Indicator<br>A list of collective action efforts, including the organizations involved, positions of responsible persons of other entities involved, and a description of the role played by the site shall be *identified*. |
| | | 3.9.13 | Advanced Indicator<br>Evidence of the *quantified* improvement that has resulted from the collective action relative to a site-selected baseline date shall be *identified* and evidence from an appropriate range of stakeholders linked to the collective action (including both those implementing the action and those affected by the action) that the site is materially and positively contributing to the achievement of the collective action shall be *identified*. |

# STEP 4: EVALUATE

## EVALUATE THE SITE'S PERFORMANCE

**Intent:** To review a site's performance against the actions taken in Step 3, learn from the results – both intended and unintended – and inform the next iteration of the site's water stewardship plan. This evaluation shall occur at least annually, but sites should consider more frequent evaluations.

# STEP 4: EVALUATE

| | CRITERIA | | INDICATORS |
|---|---|---|---|
| 4.1 | Evaluate the site's performance in light of its actions and targets from its water stewardship plan and demonstrate its contribution to achieving water stewardship outcomes. | 4.1.1 | Performance against targets in the site's water stewardship plan and the contribution to achieving water stewardship outcomes shall be *evaluated*. |
| | | 4.1.2 | Value creation resulting from the water stewardship plan shall be *evaluated*. |
| | | 4.1.3 | The shared value benefits in the catchment shall be *identified* and where applicable, *quantified*. |
| | | 4.1.4 | Advanced Indicator<br>A governance or executive-level review, including discussion of shared water challenges, water risks, and opportunities, and any water-related cost savings or benefits realized, and any relevant incidents shall be *identified*. |
| 4.2 | Evaluate the impacts of water-related emergency incidents (including extreme events), if any occurred, and determine the effectiveness of corrective and preventative measures. | 4.2.1 | A written annual review and (where appropriate) root-cause analysis of the year's emergency incident(s) shall be prepared and the site's response to the incident(s) shall be *evaluated* and proposed preventative and corrective actions and mitigations against future incidents shall be *identified*. |
| 4.3 | Evaluate stakeholders' consultation feedback regarding the site's water stewardship performance, including the effectiveness of the site's engagement process. | 4.3.1 | Consultation efforts with stakeholders on the site's water stewardship performance shall be *identified*. |
| | | 4.3.2 | Advanced Indicator<br>The site's efforts to address shared water challenges shall be *evaluated* by stakeholders. This shall include stakeholder reviewing of the site's efforts across all five outcome areas, and their suggestions for continual improvement. |
| 4.4 | Evaluate and update the site's water stewardship plan, incorporating the information obtained from the evaluation process in the context of continual improvement. | 4.4.1 | The site's water stewardship plan shall be modified and adapted to incorporate any relevant information and lessons learned from the evaluations in this step and these changes shall be *identified*. |

# STEP 5:
# COMMUNICATE & DISCLOSE

## COMMUNICATE ABOUT WATER STEWARDSHIP AND DISCLOSE THE SITE'S STEWARDSHIP EFFORTS

**Intent:** To encourage transparency and accountability through communication of performance relative to commitments, policies, and plans. The disclosure of relevant information allows others to make informed opinions on a site's operations and tailor their involvement to suit.

# STEP 5: COMMUNICATE & DISCLOSE

| | CRITERIA | | INDICATORS |
|---|---|---|---|
| 5.1 | Disclose water-related internal governance of the site's management, including the positions of those accountable for legal compliance with water-related local laws and regulations. | 5.1.1 | The site's water-related internal governance, including positions of those accountable for compliance with water-related laws and regulations shall be *disclosed*. |
| 5.2 | Communicate the water stewardship plan with relevant stakeholders. | 5.2.1 | The water stewardship plan, including how the water stewardship plan contributes to AWS Standard outcomes, shall be communicated to relevant stakeholders. |
| 5.3 | Disclose annual site water stewardship summary, including the relevant information about the site's annual water stewardship performance and results against the site's targets. | 5.3.1 | A summary of the site's water stewardship performance, including quantified performance against targets, shall be *disclosed* annually at a minimum. |
| | | 5.3.2 | Advanced Indicator<br>The site's efforts to implement the AWS Standard shall be *disclosed* in the organization's annual report. |
| | | 5.3.3 | Advanced Indicator<br>Benefits to the site and stakeholders from implementation of the AWS Standard shall be *quantified* in the organization's annual report. |
| 5.4 | Disclose efforts to collectively address shared water challenges, including: associated efforts to address the challenges; engagement with stakeholders; and co-ordination with public-sector agencies. | 5.4.1 | The site's shared water-related challenges and efforts made to address these challenges shall be *disclosed*. |
| | | 5.4.2 | Efforts made by the site to engage stakeholders and coordinate and support public-sector agencies shall be *identified*. |
| 5.5 | Communicate transparency in water-related compliance: make any site water-related compliance violations available upon request as well as any corrective actions the site has taken to prevent future occurrences. | 5.5.1 | Any site water-related compliance violations and associated corrections shall be *disclosed*. |
| | | 5.5.2 | Necessary corrective actions taken by the site to prevent future occurrences shall be *disclosed* if applicable. |
| | | 5.5.3 | Any site water-related violation that may pose significant risk and threat to human or ecosystem health shall be immediately communicated to relevant public agencies and *disclosed*. |

# GLOSSARY OF TERMS

**AQUIFER.** Geological unit containing groundwater. It must have sufficient porosity to hold water and sufficient permeability to allow easy flow. Porosity is created by the space between grains of rock, and by cracks and fissures. Aquifers occur on many scales, ranging from small and local units to 100s of square kilometres. Thickness ranges from one metre to 100s of metres. A water table (or unconfined) aquifer lies just below the ground surface, and is vulnerable to pollution. A confined aquifer lies below an impermeable rock layer (such as clay) which helps protect it from surface pollution.

**ALLOCATION.** The quantity of water allowed to be withdrawn from a water source under the conditions of a permit or license. Volume limits are defined for a single or multiple time intervals. For example, cubic metres per year (m3/y), cubic metres per day (m3/d) or litres per second (l/s). Conditions may be dependent on season or water scarcity status.

**BASELINE.** An initial set of observations or data used for comparison of future status so as to observe changes (positive or negative). The baseline may be set at the current status or for a time in the past.

**BEST PRACTICE.** Best practice is commonly new or innovative practice compared to standard practice but is not required to be. In some cases, a standard and established practice may be the best. Not all issues or challenges have well defined, globally agreed to practices which all agree are "best practices". Best practices can be defined by a variety of methods such as regulatory, scientific, and stakeholder input. One type of best practice is known as Best Available Technology and is defined as a method, technique or procedure that has been shown by research and experience to produce optimal results, and that is established or proposed as being suitable for widespread adoption.

**BOREHOLE.** A vertical below-ground installation to abstract groundwater. It is drilled (or bored) and lined with metal or plastic tubes to keep it open, and to protect against surface/near surface pollution. At depth, the tubes are slotted or filtered to allow water in but to prevent ingress of silt, sand or rock particles. In hard consolidated rock, the intake sections may be unlined. Borehole diameter is typically 10 to 30 cm, and depths range from a few metres to 100s of metres, with most less than 100 m. Colloquially, they are often called a well or water well (see water well). In South Asia, they are called tubewell. Water is usually abstracted with an electrical submersible pump installed some metres below the water level with a pipe connection to the surface.

**CATCHMENT.** The geographical zone in which water is captured, flows through and eventually discharges at one or more points. The concept includes both surface water catchment and groundwater catchment. A surface water catchment is defined by the area of land from which all precipitation received flows through a sequence of streams and rivers towards a single river mouth, as a tributary to a larger river, or to the sea. A groundwater catchment is defined by geological structure of an aquifer and groundwater flow paths. It is replenished by water that infiltrates from the surface. It has vertical thickness (from a few metres to 100s of metres) as well as area. Depending on local conditions, surface and groundwater catchments may be physically separate or interconnected. "Catchment of origin" refers to a catchment, distinct from the site's catchment(s), where a product or service is manufactured or sourced. It may be anywhere from an adjacent catchment to the other side of the world. Alternative terms are watershed, basin and river basin. See Guidance on 'Catchments' for more detail.

**DISCHARGE.** Water-related discharge from a site, including drainage, wastewater (effluent), used cooling water and irrigation surplus. The quality of discharged waters may range from good to polluted, depending on it origin, its use, and treatments applied.

**DISCLOSED.** Making a document available to relevant stakeholders and in some cases, publicly available or publicizing its availability.

**DISCLOSURE.** Making data or information available to external stakeholders. These may be the general public or specific stakeholders such as regulators, neighbours, customers or civil society representatives. The disclosure should be in a form that is comprehensible and accessible to the target stakeholders in terms of format, detail, terminology and language. Examples include press release, sustainability reports, company website or sending directly to target stakeholders (via letter or email).

**EFFICIENCY.** Water efficiency is the concept of using less net water for an equivalent purpose or volume of production. For example, using less water to produce the same weight of final product (measured in l/kg or m3/kg produced). It may not result in using less total water if the volume of product is increasing. Methods to improve water efficiency include: technology (eg. drip irrigation), leakage reduction, re-use and recycling of wastewater.

**EFFLUENT.** Water or wastewater discharged from a site after being used. It is a more specific term than discharge (ie., not including drainage or runoff). The quality of effluent may range from good to polluted, depending on it origin, its use, and treatments applied.

**EMBEDDED WATER.** Water that was used in the production or creation of an item, but not contained within it. For a crop, it is the water it needed to grow (irrigated or rain-fed), taken up by its roots and lost via transpiration, and is usually 100s of times more than the water physically retained within the crop. It may also include water used to wash, process and transport it. For a manufactured item (eg. a car, computer), it is the water used during its manufacture. For clothing, it includes the water to create the raw material (eg. cotton or wool) as well as that used in manufacturing. Alternative terms are 'virtual water' and 'water footprint'. There are a range of methods and approaches to evaluating embedded water. Some include total water use, others only net water use. Some include the principal manufacture, others include the complete supply chain (eg. mining of raw materials). AWS does not specify a method.

**EVALUATED.** Having a documented and replicable process applied to monitor the implementation of the plan and related commitments and to make informed changes to the plan and its implementation.

**FOSSIL WATER.** Groundwater that infiltrated an aquifer thousands of years ago, often under wetter climatic conditions than the present (for its location), and which has been stored underground since that time and is subject to very low or near zero rates of modern recharge. Fossil water is a non-renewable source of water.

**GOVERNANCE.** See water governance

**GROUNDWATER.** Water below the surface of the Earth stored in pore spaces and fractures within rock or layers of sand and gravel (aquifers). In water resources management the term more specifically applies to water that can be extracted at a viable rate, quantity and quality for human use (with or without treatment). Saline water or water contained in rocks of very low permeability is not conventionally considered groundwater.

**IDENTIFIED.** Having some form of evidence (paper, electronic, or other) of conformance. Information presented shall be at a frequency, level of accuracy and over a sufficient time period to enable meaningful conclusions to be reached in relation to the indicator. This includes having a documented process(es) to identify and document the attributes listed.

**IMPACT.** There are many types of impact relevant to water stewardship. They may be physical, regulatory, financial, social, or reputational, and may be positive or negative. Of relevance are both impacts to the site from external influences, and impacts from the site to external stakeholders and environment. Physical impacts include changes in water level, water flows and pollution. The first step is to identify an actual or potential impact. Whether an impact is of concern depends on its scale and who or what is affected. For example, pumping a borehole may lower the water level in a neighbour's borehole. A water level drop of one metre or more in the neighbour's borehole would normally be of concern, whereas a few millimetres, probably not.

**IMPLEMENTED.** A process, procedure, or plan is carried out in order to achieve the intended result.

**IMPORTANT WATER-RELATED AREA (IWRA).** An area or feature of high value to humans or nature from an environmental, community or cultural perspective. In addition to formally recognized conservation areas, it includes such features as water wells and springs used for drinking water and features of cultural significance. It is similar to the High Conservation Value (HCV) concept, but more specifically focused on water. More detail is given in the IWRA section of the main Guidance.

**INDIRECT WATER USE.** Water used in a site's supply chain representing that used in the manufacturing and provision of all products and services, excluding water used on site. In effect, it is the sum of 'embedded water' of all products and services.

**INFRASTRUCTURE.** Includes all manmade equipment and infrastructure for the abstraction, delivery, storage, treatment and provision of water supply, and for the collection, treatment and discharge of wastewater. It includes boreholes, surface water intakes, pipes, canals, control systems, water tanks and water treatment systems. It may include wetland treatment systems for wastewater. For municipal supply, it includes the distribution system.

**MAPPED.** Maps should preferably be in a digital format and be of a quality that enables an external party to identify the location scale and physical properties of the attributes listed. A physical diagram could be accepted when deemed better fit for purpose than a map.

**MONITORED.** Measurement of data or status on a regular or continuous basis with the intent of detecting change (or absence of change), usually from a baseline. This can apply to physical aspects such as water level, water flow and water quality parameters, or to qualitative aspects such as stakeholder views and policy development.

**OUTCOME.** For the Standard, this term applies specifically to the five primary aims to be achieved by implementors, both individually and collectively: (1) Good water quality status, (2) Good water governance, (3) Sustainable water balance (4) Healthy status of Important Water-Related Areas (IWRA) and (5) WASH.

**PHYSICAL SCOPE.** The land area relevant to the site's water stewardship actions and engagement. It should incorporate the relevant catchment(s) but may extend to relevant political or administrative boundaries. It is typically centered on the site, but may include separate areas where the origin of water supply is more distant.

**PRIMARY INPUT.** A larger component of materials, ingredients or services used at the site to produce its principal outputs (products or services). It does not include supplies for 'one-off' constructions or services such as for infrastructure or buildings.

**QUANTIFIED.** Numerical information presented shall be at a frequency, level of accuracy and over a sufficient time period to enable meaningful conclusions to be reached in relation to the indicator. This includes having a documented process to quantify (i.e., numerically) and document the attributes listed.

**RECEIVING WATER BODY.** The surface water or groundwater body that ultimately receives a site's discharge of water or wastewater.

**SHARED WATER CHALLENGE.** A water-related issue, concern or threat shared by the site and one or more stakeholders within the catchment(s). Examples include physical water scarcity, deteriorating water quality and regulatory restrictions on water allocation.

**SITE.** For the AWS Standard, the site is the physical area over which the implementing organization owns or manages land and carries out its principal activities. In most cases it is a contiguous area of land but may also include physically separated but nearby areas (especially if in the same catchment). For a factory, the 'site' is typically represented by the fenced area encompassing all its buildings, parking and storage areas. For farming, it encompasses its fields, buildings and storage areas. Where the organization operates its own water sources and/or wastewater plant, these should be considered part of the 'site'. For example, for a bottled water factory that operates a physically separate water source (eg. spring or borehole), this should be considered part of the 'site'. For Group Certification, each organization should define its own site, except where they share land or facilities with other group members.

**STAKEHOLDER.** Any organization, group or individual that has some interest or 'stake' in the implementing organization's activities, and that can affect or be affected by them. The four main categories of stakeholder are: (1) Those who impact on the organization; (2) Those on whom the organization has (or is perceived to have) an impact; (3) Those who have a common interest; (4) Neutral - those with no specific link, but with whom it is relevant to inform. Of most relevance to water stewardship are stakeholders associated with water use and dependency, but engagement should not be limited to these. See guidance on 'Stakeholder Engagement' for more detail

**SUPPLY CHAIN.** The network of all suppliers and their activities that contribute to providing all materials, ingredients and services to the site to support its normal production and operational activities. The chain starts from the provider of raw materials (eg. mines) or ingredients (eg. farms), through every intermediate supplier to delivery at the site (from its direct suppliers). It includes intermediate processing and production of goods, packaging and transportation.

**WASH.** Acronym for Water, Sanitation and Hygiene. It is used in the international development sector to refer to the combined area of effort to address basic human water needs and rights related to access to safe and sufficient water for drinking, food preparation and washing. It also includes the provision of good washing and toilet facilities and the principal of hygiene education to combat the spread of water-related illnesses and disease.

**WASTEWATER.** Used water of reduced quality discharged from a site. It is usually contaminated in its raw state, but should be treated, either on site, or delivered (by pipe or truck) to an authorised wastewater treatment facility. Treated wastewater should be legally compliant and of a high enough quality to present no risk to the receiving water body (or land where applicable). Safe or treated wastewater may be re-used on site, or by other users to reduce original water demand and/or wastewater discharge volumes. Examples of re-use include irrigation of gardens or crops, washing vehicles and other uses not demanding high quality water.

**WATER BALANCE.** An assessment of all water flows and storage volumes of an entity. In the Standard, it is required to be applied to the site, and separately for the catchment. The assessment should measure all water inflows, throughflows, outflows, water storage volume and changes in storage. The first step is to identify and map each component, and then to quantify it. These are combined into the water balance equation, which should balance (at least approximately): {water outflow} = {water inflow} + {change in storage}. Sustainable water balance is the condition whereby ongoing water use in the catchment has no long-term negative impact on the natural environment and legitimate water users. It is typically assessed on an annual timescale. For a sustainable balance, total net water abstractions do not exceed natural replenishment of water bodies, while also ensuring water bodies maintain viable flows and water levels to sustain themselves, and the species that depend on them, in a healthy condition. A condition where outflows are consistently larger than inflows is a non-sustainable water balance.

**WATER BODY.** A large physical entity of water, from which many water sources may abstract water. For surface water, this includes rivers, lakes, canals and reservoirs. For groundwater, it is the aquifer.

**WATER GOVERNANCE.** Water governance encompasses all aspects of how water is managed by governments, regulators, suppliers and users. It includes water resources management, protection, allocation, monitoring, quality control, treatment, regulation, policy and distribution. Good water governance ensures responsible sharing of water resources in the interests of users and the natural environment in line with the principles of water stewardship.

**WATER QUALITY.** The quality of a natural water body in terms of physical, chemical and biological parameters. The relevant quality standards are defined by national or local regulation and guidelines. Where these are absent, then international standards and guidelines should be applied. Good water quality status is where it meets the requirements of native flora and fauna, and for human needs where applicable. The status is not required to be pristine (ie. contaminant free) or of drinking water quality (which would be classed as high water quality status).

**WATER SCARCITY.** The lack of sufficient available water resources to meet the demands of water usage within a region for environmental and human needs. Physical water scarcity is when there is insufficient water in natural water bodies. It may be a natural condition (eg. in arid regions), or may result from excessive water abstractions for human uses. Economic water scarcity is when there is insufficient supply to humans when water is naturally abundant. It is a result of under investment in water supply infrastructure, whether due to poverty or mismanagement.

A common method to measure water scarcity status for countries or regions is to compare total annual renewable water resources with population. When there is less than 1,000 m3 per person per year, a country/region is classed as experiencing 'water scarcity', and for below 500 m3 per person per year, 'absolute water scarcity'. http://www.un.org/waterforlifedecade/scarcity.shtml This method may not be sufficient for catchment level assessment, for which more detailed local data should be used.

**WATER SOURCE.** The physical structure from which a water supply is abstracted from a water body. For groundwater, it may be a natural spring, a borehole or water well. For surface water, it is a 'water intake'. It can also include the immediate surrounding zone of the main water body, in effect, the zone that feeds the point of abstraction. It may apply to multiple abstraction points where they are associated, for example, a wellfield.

**WATER USE.** Water used by the site for any purpose. It is important to distinguish the different concepts of total and net water use. Total water use (or total water withdrawal) is the total amount of incoming water supply. However, a proportion of this water is usually returned to the local or regional water cycle. Water may be returned as irrigation losses or where wastewater is treated to a high quality and returned to a nearby water body. This can offset some of the impact of the original water abstractions. Net water use is the amount that is not returned locally. Losses may be from evapotranspiration (in agriculture), evaporative losses from cooling systems or reservoirs, or water that leaves a manufacturing site in finished product. Net water use is the most important for considering impacts within the catchment, and often significantly less than total use.

## ADDITIONAL USEFUL TERMS

**EVAPOTRANSPIRATION.** Water losses combining two processes: evaporation and transpiration. Evaporation is where water evaporates to the atmosphere from open water and soil. Transpiration is the process by which plants absorb water from the soil via their roots, and allow it vaporize from its leaves. Because the two processes occur together on vegetated ground, it is convenient to combine them in one term.

**SPRING.** A point where groundwater naturally flows out at the surface. Many springs benefit from the higher level of protection from pollution that groundwater has compared to surface water. However, those from shallow aquifers are more vulnerable.

**SURFACE WATER INTAKE.** An installation for drawing water from a surface water body. A basic intake may be just a pipe and pump placed in the water with little consideration of water quality (for example, for a small farmer abstracting water for irrigation). More sophisticated designs, especially for public water supply, have filters to remove debris and sediment (before entering more advanced treatment). Some extract low down in the water body, where water is cleaner and clearer. Because surface water is vulnerable to rapidly moving pollution, many have monitoring and alarm systems for protection.

**WATER WELL.** A manmade excavation to access groundwater. Traditionally hand dug, they are usually lined with brick or other material to prevent their collapse. They are typically one to two metres in diameter, and one to a few metres deep (enough to reach below the water table). Water is lifted by bucket or a pump (hand operated or mechanical). 'Water well' is often used generically to include boreholes (see borehole).

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