AWS STANDARD VERSION 2.0 GUIDANCE

22.03.2019

ALLIANCE FOR WATER STEWARDSHIP

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INTRODUCTION TO GUIDANCE

This document provides guidance to implementers of the AWS International Water Stewardship Standard V2.0 (AWS Standard). This document (Guidance) is structured around each of the five steps in the AWS Standard. General guidance is provided for each step with additional details, examples and references for the specific criteria and indicators provided as necessary. Additional guidance on specific topics is also included.

The Guidance was developed by members of the AWS Technical Committee based on the new version of the Standard (version 2.0), input from members and stakeholders, and material from the version 1.0 guidance that is still applicable. Unlike with version 1.0, the guidance for version 2.0 is a separate document that will be in ongoing updating and revision. Lessons learned, and experiences gained during use of version 2.0 will be used to update the general guidance. For more details on the process used to develop the AWS Standard, visit the AWS website: www.a4ws.org.

The Guidance has two primary purposes:

(1) **To help the implementer** gain a better understanding of how to implement the AWS Standard. It provides detailed guidance on how to interpret the various criteria and indicators listed in the Standard; provides examples of actions to assist in compliance; and provides additional references that can guide sites if more detailed information is required.

(2) **To help auditors** ensure consistency and rigour in the interpretation and application of the AWS Standard and thereby maintain consistency between sites. The Guidance by itself is not intended to serve as the basis for certification. Rather, in combination with the AWS Certification Scheme and auditor training, it is a key reference document intended to help auditors interpret the Standard in a consistent manner.

The Guidance is not a textbook or primer on specific topics or disciplines. The implementer should not depend on this Guidance to learn or master specific principles or subjects as it does not provide that level of detail. The user may obtain additional expertise on specific topics via other experts or reference documents.

Two important notes:

(A) **The Guidance is designed to supplement the Standard and is not intended as a stand-alone document.** AWS recognizes that this current document is time-limited and not comprehensive. Therefore, like the AWS Standard, the Guidance will undergo periodic review and updating to reflect experience and current best practice.

(B) **It is anticipated that through time, the Guidance will be expanded to include both regional and sectoral supplements.** Some topical guidance is included in this version as special sections at the end. Until such time, AWS will seek to generate and make available specific regional and sectoral supplements. For more details on whether such a regional or sectoral supplement exists for your region/sector, please visit the AWS website: www.a4ws.org.

OVERARCHING GUIDANCE

Members of AWS unite behind the 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.

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 Theory of Change argues that if a series of inputs is combined with a set of good water stewardship practices (or actions), then improved outcomes in water governance, water balance, water quality, Important Water-Related Areas, and Water, Sanitation and Hygiene (WASH) will provide social, environmental and economic benefits (or impacts) to various stakeholders. This change model underpins the logic of the AWS Standard and the impacts monitoring system.

As noted above, the Standard has five outcomes. The intent of these outcomes is to act as fundamental "pillars" of water stewardship – or themes that run through all water stewardship efforts. They represent fundamental aspects of water: how humans are responsible and accountable for water (governance); the quantities and timing of water (water balance); the properties of the water (water quality); the spatial aspects of areas that may or may not contain water at a given time, but that are critical to maintaining the human-derived benefits of water including the ecosystem services from such areas (Important Water-Related Areas), and the provision of safe water, sanitation, and hygiene for all.

While the Standard is structured around 5 steps, it is important to note that a site need not follow the order laid out in the Standard. Indeed, the Standard is intended to be iterative and non-linear, meaning that a site may need to jump between steps and is expected to repeat many (if not most) of them through time. Certification is only determined by conformance with the criteria and indicators, not the process followed. In other words, a site may implement any given criterion within a step and then jump to another criterion (and step) if it wishes.

Several areas of the Standard require knowledge that may be beyond that of a given site. In these instances, sites are encouraged to speak to AWS for suggested partners who can assist with specific, technical work if necessary. In all cases, AWS will endeavour to connect sites to service providers and assist in identifying opportunities for collaboration.

Wherever possible, examples of tools, initiatives and other resources have been provided in the Guidance. These are not meant to be exclusive or comprehensive, but rather illustrative of the types of efforts that are in keeping with the intent of the given criterion. It is AWS's hope that these examples will be built out through time and updated as initiatives emerge and evolve.

Note for multi-site corporations/water service providers: Since the Standard is site-focused, AWS encourages companies or water service providers with multiple sites to perform a water risk analysis for all their sites before selecting specific sites at which to implement the Standard. This water risk "portfolio review" will allow an implementer to be much more strategic in the application of the

Standard. AWS would suggest exploring emergent approaches to water risk assessments but does not specify any one tool as proprietary. Where multiple sites are co-located within a catchment, group certification may also be a possibility.

Generally speaking, advanced-level criteria are mostly mutually exclusive. However, any effort that happens to qualify for multiple advanced-level criteria can be credited for only one criterion. In other words, if an action had been undertaken and it met the requirements for three different advanced-level criteria, only one criterion's points would be gained.

NOTE on water data availability and certification: AWS recognizes that there are many parts of the planet where water data are not readily available. Accordingly, if data are not available for a given criterion in the Standard, evidence documenting the reasonable effort undertaken by the site to procure the data may be used as a proxy. The acceptability of this alternate indicator data is ultimately at the discretion of the auditor.

Furthermore, it should be noted that data for indicator requirements need not be directly gathered or re-gathered. Rather, the Standard requires that data can be accessed, and thus, if gathered through other efforts, providing a location where it may be accessed will suffice. More details on certification may be found in the AWS Certification Requirements Procedure.

The Standard was designed around the management system concept of Plan-Do-Check-Act. Hence the five steps reflect these concepts. Secondly, the Standard is built on the foundation of continual improvement, so the user's water stewardship system and actions are expected to lead to improvement but to also constantly check itself to ensure problems are corrected and aspects evolve to build upon work to date. Finally, the Standard has both process requirements - defining how the organization does things, and performance requirements - that specifically call for improvements in the impacts from these actions.

STEP 1: GATHER AND UNDERSTAND

GENERAL GUIDANCE FOR STEP 1

Gathering data. The organization is not required to physically collect all data itself but may also use existing data and information from other sources and studies. The organization is usually best able to collect data from its own site, but for the surrounding catchment, there are often other sources available. Because data gathering can be expensive or not logistically practical, AWS recognizes costs should be realistic, but the organization should show it has made reasonable efforts to obtain sufficient data for a reliable water stewardship assessment.

Data availability and sources. The availability of publicly accessible data and information on water varies enormously across the world. In developed countries, it is commonly comprehensive. For example, most countries in Europe have detailed geological maps and publicly-funded databases with detailed information (geographically and over time) of such subjects as geology, surface water bodies, aquifers, water quality, flows and their variability, climate, water withdrawals, and water resources availability. This information may be in the form of reports, maps or databases, on or offline. In addition, there are many thousands of academic studies available on water resources, mostly available online, and for free or for a reasonable fee.

In developing countries, in contrast, there may be relatively little information, especially in more remote and less densely populated areas. However, an expert can still learn much from studying maps, geology, satellite photography, a field visit, and by directly collecting data (for example, water samples for analyses). Where relevant data cannot be identified, the organization should show it has made a reasonable and proportionate effort to do so.

The value of experts. Experts with local experience will have valuable knowledge and will also know where, or to whom, to go for additional information and data. Water resources experts will have experience in 'on-the-ground' assessment to understand the catchment, local water issues, land use impacts and Important Water Related Areas.

Where to start. The organization should first refer to studies or information it may already have from activities related to water supply, wastewater, environmental compliance, and sustainability reporting. A site with its own groundwater sources (boreholes) will usually already have studies and data related to its water sources and catchment.

Timescales for data measurement. Water use information needs to be considered on a number of different timescales. A yearly timescale is relevant for a gross water balance of the site and catchment. Longer timescales of years are relevant for understanding long term trends, such as gradual changes in water quality and water availability. Periods of weeks or months are relevant for seasonal variability. For example, a catchment may be naturally water abundant for part of the year, but water scarce at other times, due to seasonality of rainfall or snowmelt. For water abstraction points, it is more typical to measure in much shorter timescales such as cubic meters per day (m^3/d), or liters per second (L/s).

1.1 GATHER INFORMATION TO DEFINE THE SITE'S PHYSICAL SCOPE FOR WATER STEWARDSHIP PURPOSES

1.1.1 Defining the physical scope is fundamental to the water stewardship process. It defines where to collect data, where to assess risk and the geographical scope for stakeholder engagement. The physical scope is a different concept than catchment, but they overlap. The glossary definition is:

> **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 if the origin of water supply is more distant.*

A catchment (surface or groundwater) is defined by geography, hydrology, and geology. However, a site often needs to be more flexible in defining the area (or scope) to which it should apply the principles of water stewardship. Examples of where the appropriate physical scope may differ from the catchment are:

- A site relies wholly on municipal water and wastewater services whereby the water sources and wastewater destination are in separate catchments to the site. The site still needs to define a local area around it for engagement and actions.
- The water catchment is disproportionately large compared to the size of the site and its normal activities. In this case, the physical scope may be smaller than the catchment.
- The water catchment is small, but the site has a size and public profile that justifies extending its scope for water stewardship to a wider political boundary. In such a case, it is important to be aware that for stakeholders the true water catchment may have limited relevance.

The **site's boundaries** are the boundaries of land owned or leased by the organization, which may or may not be contiguous.

Water sources owned or managed by the organization (private water sources), are typically surface water intakes, or boreholes for groundwater. Individual water sources are potentially the most vulnerable aspect of a site's water supply security. Each water source should be known in terms of its location, design, age, condition and risks.

- For **surface water**, the source is typically a 'water intake' structure installed on and in the water body, with pumps and filters (to prevent uptake of debris, fish, vegetation, etc.). The type of risks to be assessed and mitigated include: low flow or low water level; freezing; turbidity; vulnerability to pollution from spills in the water body; presence of polluting activities upstream on a river. Surface water sources are particularly vulnerable to pollution which can move very rapidly in open water, especially in flowing rivers. Compared to groundwater sources, the condition of a surface water source is relatively easy to see and assess.
- For **groundwater**, the source is typically a borehole (also called a water well, or a tubewell). Many boreholes in use today are decades old. If not properly maintained, their performance will deteriorate through corrosion, clogging and potentially collapse. Even when well maintained, they may eventually need to be replaced. Additional risks to be assessed and

mitigated include: contamination from pollution of the aquifer; contamination from spillages at the surface (for example, by flood waters); and falling water levels due to abstraction by others or drought. For boreholes, the site should have documentation to include: borehole design, protection measures, monitoring program and maintenance program. See additional guidance on groundwater (pending).

For **water service providers**, identify who they are and the main water bodies from which they abstract water (for example, a named river or aquifer). Identification of individual abstraction points is not required. Some suppliers may be reluctant to share information based on security and confidentiality. In this case, the organization should show it has requested information and explain why it could not receive it.

Discharge points are where the organization discharges water or wastewater (treated or untreated) directly into the environment. The discharge points should be identified and mapped. For **wastewater service providers**, identify who they are, the ultimate destination of their discharges (for example, a receiving water body), and level of treatment (none, primary, secondary or tertiary).

The **catchment** relevant to the site's water and wastewater may be surface water-based, groundwater-based or a combination of both. See the 'Catchments' section for detail on how catchments are defined and mapped. Mapping a catchment may require specialist expertise, especially for groundwater.

1.2 UNDERSTAND RELEVANT STAKEHOLDERS

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. The section of this Guidance on stakeholders provides more detailed guidance on how to identify categorize and communicate with stakeholders.

1.2.1 A recommended approach is to create and maintain a table or database listing each stakeholder along with the additional information requested. Pay particular attention to traditionally disadvantaged and potentially less-vocal groups, such as indigenous communities, women, children and the elderly.

Water related challenges of concern to stakeholders may be those related to the site's activities (such as water use and wastewater management), or to more general catchment level influences, such as water scarcity, pollution, flood risk, infrastructure or regulation. The site should identify the water related challenges of stakeholders as a part of the stakeholder engagement process. The type of challenges can vary greatly, depending on geography, climate, and the nature and activities of the stakeholder. Some examples include:

- Unable to obtain sufficient water for their needs, due to physical or regulatory limitations (relevant to the WASH outcome)
- Water quality concerns

- Water and/or wastewater prices
- Increasing risk of drought and water scarcity
- Water quality concerns in popular fishing areas (whether for food or sport)
- Concern for bathing water quality (in outdoor natural water bodies)
- Flood risk

The scale of water challenges in a catchment can range from minimal to highly significant depending on local circumstances. In a developed region with universal provision of safe drinking water and sanitation, the challenges may be very limited. In a region with low rates of water and sanitation provision and/or subject to regular droughts, the challenges can be widespread and significant.

1.2.2 The organization should make a judgement on its potential to influence water stewardship in the catchment. This may be partly based on the findings of the stakeholder engagement process. Factors affecting influence include:

- The economic or physical size and number of employees compared to other organizations in the catchment. A large high-profile organization will have more potential to influence then a small anonymous one.
- The density of similar organizations within the catchment. One small employer out of many may have relatively little influence compared to a major employer in the catchment.

The potential to influence can depend on the political culture of the region and how open it is to private organizations taking a proactive role in policy development, water governance or actions outside its own boundaries. For each stakeholder, the site will have a different potential to influence them, depending on their roles, interests and relationship. Methods of influence include:

- Partner: Work together as equal partners to address a common water challenge.
- Involve: Where the site takes a lead on an initiative and involves other organizations or groups with a common interest.
- Consult: Actively meet or discuss proposed actions.
- Inform: Let stakeholders know what you are doing, allowing them to respond if they have questions or concerns. Communication may be, for example, by letter, email, posters, mailbox pamphlet or newspaper announcement.

Figures 1 and 2 provide a diagrammatical reflection of how stakeholders' power, interest, influence, and engagement relate. These diagrams are useful to characterize stakeholders identified in this criterion.

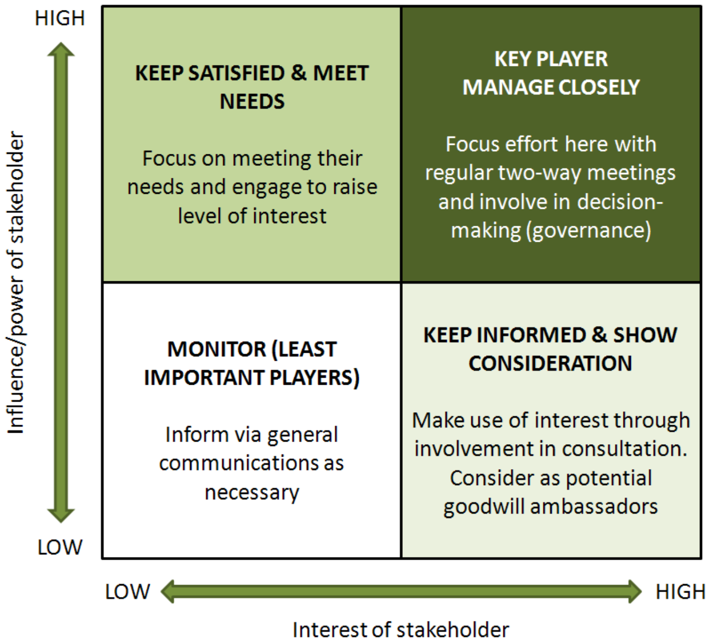

Figure 1: Stakeholder power, interest and engagement matrix

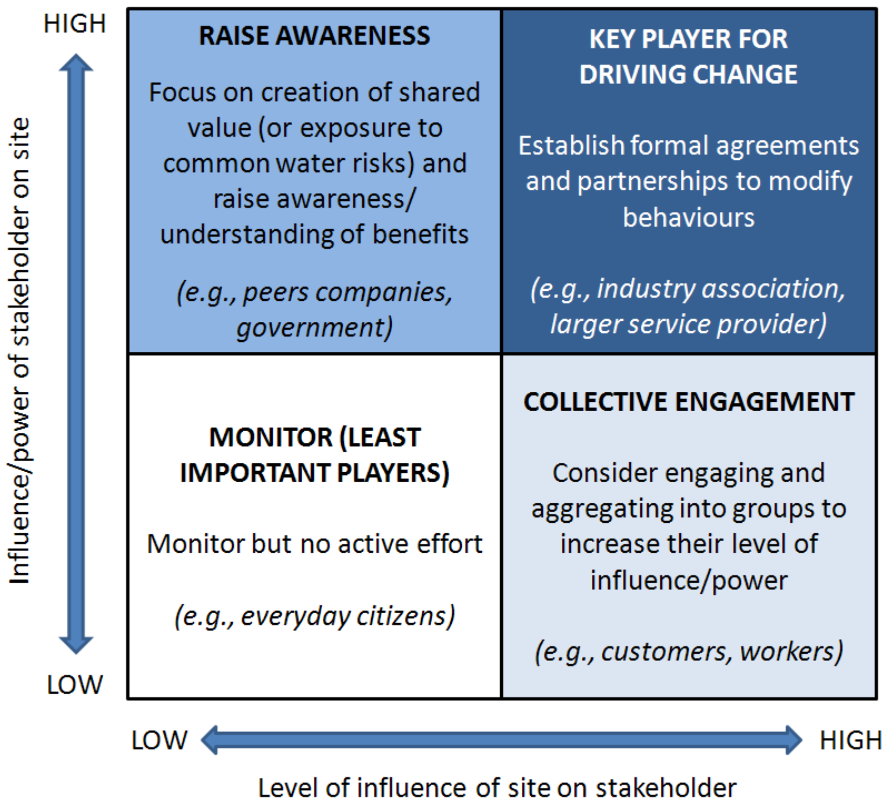

Figure 2: Stakeholder influence and engagement matrix

1.3 GATHER WATER-RELATED DATA FOR THE SITE

1.3.1 The organization needs to be aware of water-related emergencies and be prepared to react to them. This indicator requires the site to identify any existing emergency-response plan it has (if any) that addresses water-related risks and events. It may be part of a general incident response plan or may be specifically for water-related events.

1.3.2 The water balance is an assessment of water inflows, throughflows and outflows, onsite water storage and changes in storage. The first step is to identify each main flow and water storage component on site, and to map it on either a scaled map of the site or schematically.

- Typical water inflows include: Incoming water supply, onsite rainfall, water in incoming products (e.g. water within fruit and vegetables can be a significant component in food factories)
- Typical outflows include: Wastewater, run-off (e.g. from drainage areas or washing facilities), leakage, evaporation, and water embedded in manufactured product (e.g. beverages)
- Typical water storage components include: Water storage facilities (open reservoirs, closed tanks), fire-fighting water tanks, water contained in pipework (if significant), and water in products stored on site

1.3.3 The water balance equation must balance (at least approximately), and so is useful for verifying that water volumes and flows are reliably measured and accounted for. For example, if measured outflow seems too small compared to inflows, it can be an indicator of unaccounted for leakage or evaporation, unless the difference can be accounted for as consumptive water use.

The water balance equation:

(Water outflow) = (Water inflow) + (Change in storage volume)

A basic water balance is commonly done on a one-year timescale. It may also be appropriate to calculate it for shorter timescales: seasonally, monthly, weekly or daily. A monthly timescale can be appropriate when there are significant seasonal variations in water use or availability. Weekly or daily timescales are appropriate when there is significant short-term variability in how water is used operationally.

Some water flows, or volumes may be very easy to measure, such as with flow meters or known water tank volumes. Others may have to be estimated. For example, leakage, evaporation and run-off cannot usually be measured directly.

Annual variance in water usage rates refers to the importance of understanding the variability of water demand through the year and how it correlates with availability. The site needs to know whether water availability and system flexibility are sufficient to meet peak demands. For example, irrigation rates are often higher in the driest times of the year. Some manufacturing operations have strong seasonal variability. For example, drinks production is often higher in warmer times of the year when consumer demand is higher. A site needs to know whether the water supply system, for example a municipal network, reservoir or aquifer, can meet its higher demand rates without negative impacts on the natural environment or other water users. Where there is an impact, or high risk of impact (water-related challenge), then the high and low variances (peak/low availability and peak/low demand), should be quantified.

To do this, the site should monitor its water usage rates through the year (ideally over a number of years) and identify and quantify its highest and lowest rates. It should also understand what the available supply rates are across the year. How to do this depends on the type of water supply:

- For a municipal supply, the supplier can advise at what extraction rates the site can draw water, which may be constant through the year or variable.
- For a private water supply, the rate may be limited by the physical capacity of the water source or by permit conditions. The water body (surface water or aquifer) may have less availability at certain times of year, due to lower water levels or flows, which in turn may be due to seasonal weather conditions or increased demand by other water users.

A condition where peak demand matches availability is a risk. The ideal situation is to have a buffer between availability and peak demand to reduce the risk of a limitation in supply and other negative impacts.

1.3.4 Water quality information is important for understanding risks to and from the organization, as well as showing whether the organization's wastewater has a negative impact. The site should maintain records of the quality of all incoming water supplies, outgoing effluent (after treatment where applicable) and of water bodies that receive the effluent.

For its own water sources and wastewater discharges, the organization will usually collect its own samples on a regular basis for laboratory analyses. External service providers can usually provide water quality data. If not already publicly available, the organization should request it. Note that the provider may claim that any information not legally required to be disclosed is confidential.

Water and wastewater quality data should be used to verify compliance.

Where a water quality-related challenge is identified (e.g. water quality exceeds or is close to a regulatory or other accepted quality limit), the site should quantify how the quality compares to limits (for relevant parameters) and clearly identify breaches and trends of concern. For example, a drinking water parameter may be within compliance, but gradually increasing over time, indicating future non-compliance and risk.

1.3.5 The organization has a responsibility (usually legal, but also ethical) to avoid causing pollution of the natural environment, including water bodies. It is recommended to use an expert to identify actual and potential pollution sources, and the risks they present. In the context of water stewardship, it is especially important to identify pollution sources that present a risk to water bodies and water abstraction points. Examples of pollution sources include:

- Point sources: chemical storage area, waste disposal facilities, leaks of oil or chemicals, maintenance facilities (where oils and chemicals are used), electrical transformers (a potential source of oils and PCBs), livestock facilities (where animal waste may concentrate)
- Non-point sources: site drainage channels, runoff from the use of agricultural chemicals on land (e.g. fertilizers, pesticides), and stormwater runoff.

Examples of water bodies at risk include:

- Water table aquifers, without natural protective cover (e.g. overlying low permeability layer), to which surface pollution can rapidly infiltrate
- Water supply boreholes which abstract from 'at risk' aquifers
- Surface water bodies which can receive site run-off, drainage discharge (from drains, etc.) or wastewater discharges. Note that storms and flood events may transport pollution farther than normally expected.

It is recommended to tabulate and map pollution sources, their nature and their risk, along with vulnerable water bodies.

1.3.6 Important Water Related Areas (IWRAs) are defined in the Glossary and a special subject section. Each onsite IWRA feature should be listed, with a description of what it is, its status (including indigenous cultural value if applicable) and any water-related risks. Regarding status, it should be reported whether it is in good, poor, deteriorating or improving condition. Specific concerns, such as 'polluted' or 'drying' should be noted. Photographs of its original and current condition and any other monitoring of changing condition would be valuable. As such assessments can be subjective, the site should consider consulting with appropriate experts or stakeholders, such as local conservations NGOs. This will strengthen the credibility of assessment and may be the only true way to understand why an area is important.

1.3.7 The site needs to demonstrate it is aware of the costs associated with developing its water stewardship studies and plans, and declare it has the resources. Generally speaking, costs can be for such items as: payment for experts, data collection, technical studies, new or replacement infrastructure, risk mitigation actions, stakeholder engagement activities, external communications and staff training. These should include both 'one-time' actions or events, implementation costs, and for ongoing monitoring, maintenance and management.

A site is less likely to generate water-related revenues, but it should identify them where relevant. Examples could include selling treated wastewater for reuse such as aquifer replenishment or irrigation.

The financial benefits of outcomes should be considered. For example, improved water efficiency will result in some costs savings, such as from lowered water supply fees based on less volume used or reduced energy costs (for pumping boreholes).

Where costs are confidential (perhaps for commercial reasons), they need not be declared publicly (beyond the auditing process).

Evaluating the water-related value generated by the site to the benefit of the catchment may not be easy or even possible. Often it may be only possible to give a qualitative assessment.

Examples include:

- Improving water quality of a water body through improved wastewater treatment;

- Helping to improve an IWRA feature and providing benefits to nature and communities (e.g. for recreation and wellbeing).

Some organizations may invest in a specific benefit such as installing a public water supply or water treatment system, or for the remediation of a polluted water body.

More examples of site water-related costs, revenues and shared value creation include:

- Gathering cost information will help the site prioritize and conduct the financial analyses to determine costs and benefits.
- Water-related costs are often broader than initially perceived; they include more than just procurement of water and treatment of water.
- Water-related costs should be considered more holistically, and may include:
  - Total amount spent to procure water
  - Total amount spent to ensure that water is treated
  - Total amount spent to perform secondary or tertiary treatment (either inflows or outflows)
  - Total amount spent on energy for the movement of water
  - Total amount spent on energy for the heating and cooling of water
  - Cash payments made outside the organization for water-related materials, product components, facilities and services purchased. This includes water-related property rental, license fees, facilitation payments, royalties, payments for contract workers, employee training costs (where outside trainers are used) and employee protective clothing.
  - Total payroll for water-related staff
  - Payments to providers of capital for water-related projects (e.g. infrastructure)
  - Total amount spent on water-related infrastructure
  - Payments to government for water-related matters (e.g. permits or water-related property taxes)
  - Community investment costs (i.e., voluntary donations and investments in the catchment where the target beneficiaries are external to the site; e.g. charities, community infrastructure, social programmes)
  - Water-related fines or penalties
  - Total cost of managing water-related stakeholder challenges (including litigation where applicable)
  - Total water-related costs
- Water-related revenues may include:
  - Total amount received from net sales of water-related goods
  - Total amount received from net sales of water-related services
  - Total amount received from net sales of water-related assets (e.g., property, infrastructure, equipment) and intangibles (e.g. IP, designs, brand rights)
  - Water-related ecosystem services provided from on-site natural infrastructure (Note: this can also be considered an asset)
- Shared value creation:
  - While the term "creating shared value" has received considerable attention in recent years, the concept of generating positive benefits for those outside of a company/entity is far from new. As considered within Criterion 1.3, this aspect of the Standard relates

to the site's creation of economic value, social value or environmental value that benefits stakeholders outside of the site.
- It is generally difficult (if not impossible) to separate value creation from water-related value creation since the site requires water to operate. As such, the shared value creation is broadly defined rather than restricted to water-related contributions.
- Examples of each of these different areas include:
    - **Economic value:** workers' jobs and wages, payments to government (as noted above under "costs"), payments to others through operating costs, and community investments (see above under "water-related costs");
    - **Social value:** improved health (water-related), improved education (water-related), improved civic engagement in catchment governance processes and improved water recreational opportunities;
    - **Environmental value:** improved freshwater or wetland habitat health, lowered pollution emissions and healthier freshwater species; generally includes the array of water-related ecosystem services.
- While it is not required, sites are encouraged to record how they calculated the shared value creation.
- Sites are free to use whatever metrics they feel are appropriate so long as they capture the intent of *water-related value generated by the site for others.*

1.4 GATHER DATA ON THE SITE'S INDIRECT WATER USE

Indirect water use is the water used within an organization's supply chain. That is, the water used in the creation, processing and transportation of goods and services supplied to the organization. The Standard recognizes that some sources of good and services are outside of the site but within the site's catchment. It also recognizes that some of these primary inputs come from catchments other than the site's, and these could be at some distance from the site. To account for the increased complexity in dealing with this distinction, for example degrees of influence, control, and level of understanding, the indicators for the site catchment are core, but for other catchments, they are advanced, as depicted in indicators 1.4.1, 1.4.2, and 1.4.3.

There are two principle reasons to assess indirect water use. First, it will help an organization to understand associated risks to its own business or activities. For example, severe drought may impact on the availability or cost of an essential food ingredient. Second, it is an opportunity for the organization to influence the water stewardship approach of its more important suppliers.

It is important to stress at the beginning that this criterion **does not involve mapping one's complete supply chain**. AWS recognizes that mapping one's supply chain is a complex, costly and time-consuming exercise, which, despite bringing beneficial insights, is beyond the capacity of many sites. Furthermore, AWS recognizes that for many sites (especially small and medium-sized enterprises), their ability to influence suppliers may be limited.

Rather, due to the above, this criterion is about beginning to understand the importance of indirect water use by sites and giving the site some degree of understanding of its reliance upon water (both quantity and quality) from other locations. The expectation is that once a site has begun to understand the importance of its reliance upon water in its supply chain, it can take action if necessary and/or steadily increase this understanding through time.

Despite the challenges, indirect water use is a very important part of water stewardship. Developing an understanding of indirect water use is something that is increasingly recognized as good practice, and there have been increasing efforts put into how to measure water use within the supply chain. Different sites will have a greater or lesser degree of reliance upon indirect water for their operations, and this should be considered when determining the level of expectation around continual improvement. Sites that mainly rely upon direct water consumption for their operations and whose focus is the production of primary inputs (i.e. natural resource sectors who derive their revenues from the extraction of environmental goods – e.g. agriculture, mining, forestry, oil and gas) are likely to require less attention and a less sophisticated understanding of their indirect water use (since it is less- or non-material to their operations).

Sites that mainly rely upon input products for their operations and whose focus is on the modification/improvement of goods and services based upon primary products (i.e. sectors who derive their revenues from converting primary inputs into added value goods and services – e.g. manufacturing, processing, services) are likely to require more attention and a more sophisticated understanding of their indirect water use (since it is more or highly material to their operations). Sites that have agriculture products produced elsewhere in their supply chains are particularly sensitive to indirect water use.

As an initial step in understanding indirect water use, this criterion requires the site to gather information on **primary inputs** and **estimated origins**, as well as outsourced water use. Primary inputs are the main commodities (goods) and services (including energy, water, etc.) that go into the goods or services created by the site.

Primary inputs are the materially important product(s) or service(s) that a site consumes to generate the product(s) or service(s) it provides as its primary function. These can be thought of as the “main ingredients” that a site needs to run (e.g. aluminium, sugar (cane), CO_2, water and oranges, as well as an outsourced “cleaning service” for a site producing a canned, orange drink with bubbles). Note: primary inputs do not include infrastructure.

Generally, primary inputs should include any externally procured goods or services that account for over 5 per cent of the total weight of the goods generated, or 5 per cent of the costs of a site. For example, lumber, energy and water likely would be some of the primary inputs for a pulp and paper facility. Aggregate, energy and water likely would be the primary inputs for a mineral smelter. Fertilizer, seeds and water likely would be the primary inputs for a vegetable grower.

Note: In the case that there is an input that does not meet this generic threshold (e.g. it is only 3 per cent by cost) but is significant in its water use these should be included (if known). Through time, a site should work to make these determinations and distinctions to fully understand risk exposure through indirect water use.

Where products derive from commodity markets, this will be accepted as an end point that need not be traced back further. In such cases, global indirect water use numbers should still be used and through time, sourcing should be determined and/or estimated.

Where products are compound (e.g. an electronic circuit board with various plastic and metal components) and difficult/impossible to determine a simple indirect water use calculation, the origin should still be noted to determine if the product is being manufactured in a water stressed catchment.

The term "origin" is used in the criterion to provide sites with flexibility to identify the highest resolution of geographical data available from country down to catchment. Ideally, the smaller the area of the origin identified, the better. To conform with this criterion, the site must:

- Provide a list of primary inputs (or all material inputs) with their associated annual (or better) water use and origin (country/region/catchment – as appropriate) as well as the origin's level of water stress;
- Provide a list of outsourced services that consume water or affect water quality and:
  (A) If possible, obtain the water volume used by the outsourced service(s) (Mm3 or m3 per year or better);
  (B) Estimate your percentage of their business and extrapolate a value;
  (C) Repeat (A) and (B) for water quality, focusing on water quality parameters of concern.

To conduct a simple indirect water use calculation:

- Gather a list of primary input commodities ("primary inputs" are defined above and in Appendix A: Glossary).
- For each commodity/input, list its total annual consumption (in kg, t, L, ML, or unit as appropriate) and its country/region/catchment of origin.
- Look up the water use through existing calculations. The site is not expected to generate new data, but rather draw upon existing data.
- Multiply the annual consumption amounts against the appropriate commodity/source region water footprint values to get an estimate of total footprint.
- Using readily available data (e.g. WRI's Aqueduct Tool, WWF Water Risk Filter), review source locations to determine whether any water concerns are present in the basins being sourced (e.g. is the water use sustainable, or are the basins stressed?). Note any products/source areas of concern combinations that should be considered. These are the commodities that may experience price volatility or availability interruptions; therefore, consider alternative sourcing options and consider building into contingency planning.

Where data do not exist (per the above methodology), which is likely the case for composite inputs, the site is not expected to generate primary data. However, it still expected to note the country/region/catchment of origin and whether the area experiences water risks (per the last step in the above methodology). The preference is to link the primary input to a catchment and note (and understand) that catchment's water stress.

It should be noted that several well-recognized methodologies have emerged in recent years to measure indirect water use, most notably ISO 14046 Water Footprint Life Cycle Analysis methodology.

Outsourced services that consume water are typically processes that are required for the ongoing operations of the site. This is often, but not always, connected to cleaning services but may also relate to sanitation services or other water-related services.

Note: It is important to stress that for sites that rely upon indirect water, this criterion is based upon the premise of continual improvement. Through time, those sites that rely upon indirect water use are encouraged to undertake more comprehensive evaluations. This is a particularly important aspect of this criterion since the initial "primary inputs" identified may not be the most water-intensive/impactful products used by the site. Some low-volume products can have a very large water footprint (e.g. many animal products).

Continual improvement should come in the form of an ever-improving understanding of the sources of indirect water use, including being able to identify the most material inputs (from a water perspective), better understanding the status of the source catchments, and improving the temporal and spatial resolution of the site's understanding.

1.4.1 Examples of indirect water use in primary inputs include the water used to grow food ingredients; in the manufacturing of purchased goods, such as packaging, machinery and parts; in mineral extraction.

1.4.2 Examples of indirect water use in services include offsite laundry services and offsite vehicle washing.

For indicators 1.4.1 and 1.4.2, at a minimum, the organization should identify its primary inputs and services and undertake an assessment to understand for each one, the following (as far as reasonably feasible), ideally in a table. This is most important for goods and services that originate from within the same catchment as the implementing organization:

- Annual water use (for the proportion of the goods the organization receives),
- Principal origin of goods (country, region, catchment),
- Where water is used,
- For what water is used,
- Water intensity for the goods/services,
- For goods/services originating from the same catchment, the origin of the water (e.g. the water body).

It is important to distinguish total water withdrawal from net water use (consumptive water use), the most relevant component. For example, electricity production may use large volumes of water for cooling, but most of this is returned to the local water cycle, with relatively little net impact.

The organization should show it has made a reasonable effort to gather the information, principally for goods/services sourced from within the site's catchment. The organization is not expected to undertake original studies or measurements, but to seek existing information. Sources of information may include:

- The supplier of the goods or services (who may already have undertaken an assessment of its own water use)
- Water management agencies (e.g. water regulators), who may already have good knowledge on the water users in the region or catchment.
- Sector or commodity-specific studies on water use. For example, 'water footprint' studies or studies on water use by relevant industry sectors
- An assessment of water-related risk presented by indirect water use within the catchment should be undertaken.

1.4.3 Primary inputs should include any externally sourced goods or services that account for over 5 percent of the total weight of goods produced by the site, or that represent over 5 percent of the costs. An input below this criterion, but still dependent on significant water use, should be included as a primary input.

1.5 GATHER WATER RELATED DATA FOR THE CATCHMENT

Criterion 1.5 is similar in approach to 1.3, but instead is looking beyond the site, into the site's catchment, and where noted, to the catchments of origin of the primary inputs. The Standard recognizes that moving beyond the site into the catchment introduces increased complexity and level of effort.

1.5.1 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.

Where water governance programs already exist for a catchment or region, it is important to be familiar with them and to work with them. Where catchment water governance is poor, the organization has more responsibility and potential to influence its improvement.

Developed countries typically have advanced and comprehensive water governance programs, including policy, regulation, enforcement and awareness raising programs. These usually consider the interests of the natural environment and of the demand for public water supply - for homes, industry and agriculture. Often, the interests of nature and humans are integrated, but sometimes not. For example, a regulatory agency whose main purpose is to protect the natural environment may conflict with another whose priority is to maximize the availability of water supplies for economic growth.

In developing countries, water governance programs may be limited. Very often, political priority is given to water supply first and foremost for human consumption, then to support communities and economic growth, such as for agriculture and industry, with lower priority for the natural environment.

For most countries, water management responsibilities are separated into logical and manageable geographic areas, which may be based on river basins, geology, or political boundaries.

More advanced water governance programs may already include a component of stakeholder engagement. For example, this is a principle for catchment water management under the European Union's Water Framework Directive, which requires that representatives of all stakeholder groups (nature, people, industry, agriculture) be consulted and their interests considered.

The site should research the initiatives, plans, policies and goals relevant to its catchment. A starting point is the water-related organizations with which the site already has contact, such as a municipal water supplier or water resources regulator. An external expert with local knowledge may be able to provide relatively fast and complete advice on the governance status and policies of the region.

The site should document its findings, the relevant organizations, documents, important plans and policies. Where possible, the site should obtain copies of relevant documents such as catchment management plans.

The site should understand the potential impact of plans and policies on its own operations. Examples of policies with impacts are:

- The water resources of the catchment are judged to be over-allocated. There is a policy to reduce or withdraw some allocations to bring the catchment back into balance.
- There is a plan to significantly increase municipal water supply charges in order to encourage efficiency and raise funds for essential renovation and upgrades of the water supply infrastructure
- There is a plan to apply stricter limits on the quality of wastewater received by municipal treatment plants, so some businesses will have to install their own pre-treatment facility.
- Plans to increase public investment in water supply will reduce the occurrence of supply interruptions, thus creating a beneficial impact

1.5.2 Water-related legal and regulatory requirements include:

- Drinking water quality
- Drinking water pricing
- Water abstraction (applicable to investigation, development and abstraction from private water sources)
- Requirements to provide water and sanitary facilities for workers
- Wastewater discharge standards
- Environmental regulations to protect water bodies and conservation areas from pollution

It is important to include any licenses or permits with regulatory conditions for the site (such as permitted water abstraction rates and wastewater discharge quality).

1.5.3 **The water balance of a catchment** is an assessment of water inflows, throughflows and outflows, and water storage within the water body. It is a similar principle to a site water balance (1.3.2), but on a much larger scale, and likely more complex. This equation must balance (at least approximately), and so is useful for verifying that water volumes and flows are reliably measured and accounted. The assessment will help to identify when there is increasing **water scarcity**. This will occur when outflows are consistently larger than inflows, so that water storage and availability in the catchment gradually decrease over time.

A water balance is defined in a basic equation:

(Water outflow) = (Water inflow) + (Change in storage volume)

A catchment water balance is most commonly done on a one-year timescale. It may also be appropriate to calculate it for shorter timescales, if there is significant seasonal variability in availability and/or demand.

Surface water catchment water balance parameters:

- Typical water inflows:
    - Precipitation (rain or snow) – the principal input for most catchments, and often the only significant input
    - Flow from irrigation canals or other conveyances bringing water from other catchments
    - Flow from a river. (A standard river basin catchment includes the river's source and tributaries. However, river inflow is relevant when the organization's defined physical scope is only a sub-section of a large river basin).

- Typical outflows:
    - Where the main river leaves the catchment (to a downstream catchment or the sea)
    - Water abstractions
    - Evaporation from open water bodies
    - Losses from the river bed as recharge to groundwater

- Storage components
    - The volume of water in the river, lake or reservoir. Where there is flow (rivers and most lakes), it is the volume at a moment in time, not the volume that flows through it.

Groundwater catchment water balance parameters:

- Typical inflows
    - For a water table aquifer, infiltration of precipitation across most of the catchment
    - For non-water table aquifers (confined aquifer), infiltration of precipitation at the recharge zone (the limited zone where the geological unit that forms the aquifer is at or near the land surface)
    - Downward or horizontal infiltration from surface water bodies
    - Subsurface flow from one aquifer to another
- Typical outflows
    - Water abstractions from wells and boreholes
    - Natural outflows to springs
    - Sub-surface flow to other aquifers or to sea
    - Effluent flow to river beds (to ensure baseflow during long periods without rain)
    - Up-flow to groundwater discharge zones (creating, for example, salt pans in desert areas)
- Storage components
    - The total volume of water stored in the pores and fractures in the rock. To calculate, the volume of saturated rock is multiplied it by its porosity (the percentage of open pore space to solid rock). For water table aquifers, the water volume will change as the water table level fluctuates.
    - Some geological units contain large cave systems (known as karstic aquifers) which may contain large volumes of water, behaving more like underground rivers.

Other water balance considerations:

- Combining surface water and groundwater
    - Depending on local conditions, geology and how water is used, a catchment water balance could be based on surface water only, or groundwater only. However, in many cases, it is necessary to combine the two where there is significant surface-groundwater interaction (See 'Catchments' section) or when a site uses, or interacts with, both surface and groundwater.

- Fossil water aquifers. Some aquifers contain fresh water originating from recharge over geologic timescales. These are common in what are now arid areas, such as North Africa and the Middle East. During the last ice age, these regions had much wetter climates. The water contained in such aquifers is considered 'fossil water'. When abstracted, it will not be replenished under present day conditions or within human timescales. Therefore, if water is abstracted, there will be minimal, if any inflows, to balance it, and storage will gradually decline, making this type of source functionally "non-renewable". See the special subject guidance on 'Fossil water and desalination water' (pending).

Water balance considerations for agriculture:

- Soil water. For arable agriculture, a significant component of water storage is in the soil, and therefore needs to be included in the catchment water balance. Non-irrigated crops obtain 100% of their water requirements from soil water. Water from precipitation, run-off (and irrigation when applied) infiltrates the soil where it is absorbed and stored between the soil particles. Not all precipitation is absorbed by the soil. Some of it continues downwards to recharge underlying groundwater. Some larger plants, such as trees may have roots that extend deep enough to tap water from an underlying aquifer.
- Evapotranspiration. Water losses from arable fields consist of transpiration (where water absorbed by the plant eventually transpires from the leaf surfaces), and evaporation, direct from the soil surface, especially in hot dry conditions. Together these are termed 'evapotranspiration' and form a significant component of water outflow in agriculture.

1.5.4 Knowledge of catchment water quality helps an organization to understand any risks it may face, and its own potential to impact on catchment water quality.

Potential risks to the organization are most important where it has its own water sources. For example, an increasing level of salinity or of a specific parameter, such as nitrate, may eventually impact the organization's water quality compliance (e.g. for drinking water or food processing). It could also mean the organization must introduce or increase investment in water treatment.

Where an organization is applying chemicals to land (e.g. in agriculture) or has its own wastewater discharge facility, it has the potential to contribute to water quality concerns in the catchment. For example, elevated nitrate (N) and phosphate (P) concentrations in groundwater and surface water are often the result of fertilizer use. High N and P in surface water (from run-off or groundwater out-seepage) can cause eutrophication, whereby the N and P promote excessive growth of algae, leading to oxygen deprivation for native species.

Water abstractions can also impact on aquifer water quality. For example, high rates of pumping can cause saline water to be pulled into an aquifer along coastal areas (saline intrusion), or 'up-coning' of deep saline water from the lower levels of some aquifers.

An initial assessment of catchment water quality will help define a baseline, but also help identify whether the organization may already be contributing to problems.

Water quality data for the catchment may be obtained from various sources. There may already be comprehensive data available, for example from regulators, environment agencies and academic studies. Other stakeholders may also have data to share. Where existing data are limited, the organization should consider collecting its own samples for analysis from a relevant range of locations across the catchment (usually with the support of an expert).

The organization should report on its findings and review the potential risks to and from it. Where appropriate, corresponding actions should be included in the water stewardship plan.

1.5.5 Research should be undertaken to identify Important Water Related Areas (IWRA) and features within the catchment and to define their value. Methods for identifying IWRAs include:

- Existing knowledge
- Consultation with relevant stakeholders, such as environment agencies, conservation NGOs, wildlife groups, fishing clubs, landowners.
- For IWRAs with cultural value, consultation with community and Indigenous peoples' representatives
- Review of maps, both standard geographical maps and specialist maps, such as maps of recognized conservation sites.

Identified IWRAs should be listed, with a description of what they are, their value (environmental, community, cultural), their status and any water-related risks. It is recommended to note them on a catchment map.

Regarding status, it should be reported whether they are in good, poor, deteriorating or improving condition. Specific concerns, such as 'polluted' or 'drying up' should be mentioned.

If feasible, each IWRA should be visited and its current status recorded, for example with a brief description and/or photographs. This establishes a baseline against which to measure change. This is especially important if there is any possibility that the organization could have (or be accused of having) an impact on the IWRA.

See the IWRA specific guidance in this document for more detail.

1.5.6 For organizations relying on municipal water supply, the status of the infrastructure may be a critical risk. If the organization uses only private water sources, the status of catchment infrastructure (for water and wastewater) remains relevant to understanding the water challenges of stakeholders.

The organization is not expected to undertake a detailed study of public supply infrastructure. Instead, it should develop an understanding of the general scale and condition of infrastructure in the catchment. This can usually be achieved through publicly available information and/or consultation with authorities and/or water supply bodies.

Important measures are the percentage of the catchment population with access to safe and sufficient drinking water, and the percentage connected to wastewater collection and treatment services.

In many locations, public water and wastewater infrastructure is decades old, built with obsolete materials and methods, and subject to leaks and failure. It is highly costly to repair and replace. For this reason, many governments and authorities cannot afford a comprehensive upgrade and instead aim to invest just enough to keep ahead of the worst failings. It is important to recognize and acknowledge this limitation.

It is important to be aware if infrastructure is in a particularly poor condition with limited plans for improvement. In this case, a business reliant on public supply will be at increasing risk of supply interruptions and limitations, and at greater risk of contaminated supply.

The most useful information will likely be available from water management and public water supply and wastewater agencies, for whom ownership, maintenance and infrastructure upgrade planning will be part of their responsibilities. Some authorities or supply agencies may be reluctant to share information that could expose weaknesses or problems.

At a minimum, the site should provide a summary of the extent of water infrastructure, its general age and condition and percentage of catchment population served. It should report on any regular problems, on risks and include an overview of policies for upgrade (for example, to meet growing demand) or risk mitigation (for example from extreme events, such as drought). Where information cannot be obtained, an absence of information can present a risk.

1.5.7 This indicator has some overlap with 1.5.6. The organization should identify the percentage of the catchment population with access to good water and wastewater services. It is not required to do its own research, but can usually get the information from other sources, such as government agencies or NGOs.

In developed countries, it is usual for nearly 100% of the population to have access to adequate WASH facilities. In developing countries or in remote areas, provision may be very limited. An absence of municipal infrastructure does not necessarily mean WASH provision is poor, as individual properties may have their own reliable and safe water supply and sanitation systems.

There remain many parts of the world where WASH provision is poor, perhaps due to poverty or poor governance and government investment.

See the WASH guidance for more information (pending).

1.5.8 An organization will normally collect water-related data onsite, especially if it operates its own water sources and/or wastewater treatment facilities. As part of conforming to the Standard, the site will also likely collect data beyond its boundaries related to monitoring risk to itself, or its impacts to others. This may include:

- Sampling water quality upstream of its water sources (surface or groundwater)
- Sampling water quality downstream of a wastewater discharge point
- Measuring water levels in offsite monitoring wells in order to monitor the impact of the site's groundwater abstractions.

Data collection may be linked to regulatory requirements or permit conditions, or they may be voluntary as part of a risk management program.

Joint data collection consists of the mutual sharing of water-related data collected by the site with authorities, other water users or researchers and is encouraged to help others in the catchment on their water stewardship efforts.

1.5.9 The same approach and guidance applies as for indicator 1.5.7 but for catchments of origin of primary inputs that are not the same as the site's catchment. This indicator is advanced whereas 1.5.7 is core in recognition of the aforementioned complexities of not being in the site's catchment.

1.6 UNDERSTAND CURRENT AND FUTURE SHARED WATER CHALLENGES IN THE CATCHMENT

Shared water challenges are those shared by the site and one or more of its relevant stakeholders (as should be identified in Indicator 1.1). Shared challenges provide an opportunity for collective action in the catchment and to guide the water stewardship plan.

1.6.1 The identified shared challenges should be listed and prioritized in terms of their significance and urgency. Recommendations are not given on how to prioritize due to the very large number of possible circumstances, but reasonable judgements should be made, with justification. For example:

- A concern for complete loss of water supply is more significant than concern for a 10% rise in water charges
- Occasional interruption of water supply experienced now, is more urgent than concern for reduced supply in the future.

Where shared water challenges are identified, it is important to understand their cause, in order to accurately prioritize, to develop appropriate mitigation actions, and to know whether collective action is appropriate. For example:

- What is the cause of a decline in water levels in a borehole? It could be due to (i) high extraction by nearby users, (ii) a general decline in water levels across the catchment, or (iii) because the borehole is becoming clogged. The first two can be addressed by collective action, the third, not as likely.

As a starting point, it is important to first be aware of any existing public sector efforts or plans to address them so as to avoid duplication or conflicting actions.

1.6.2 Initiatives should be related to and consistent with the findings of 1.6.1.

1.6.3 Predicting future issues is difficult and introduces uncertainties. However, there are factors which can point to potential concerns in the future. This first requires an assessment of existing trends that could impact on water resources, examples include:

- Growing population
- Increasing development of water-using industry or agriculture
- Increasing water demand by existing population, industry or agriculture
- Observed climate trends (e.g. reduced rainfall or higher temperatures)
- Worsening water quality of important water bodies
- Deteriorating condition of water-related infrastructure

Experts and expert information sources can advise on projected trends not yet observable.

Once trends and projected future issues are identified, a review should be undertaken of the impacts these may have on the organization, catchment population and natural environment.

1.6.4 The development of a Social Impact Assessment (SIA) or Environmental and Social Impact Assessment (ESIA) may be a mandatory component of the site's authorisation for development and operation. Where this is not mandatory, or where it does not address water impacts, then an additional assessment of water-related social impacts is valuable and will help a site to better understand the risks it presents to others, and their mitigation.

Examples of water-related social impacts, which may be positive or negative, include:

- The site's water use is restricting the availability of water to local communities and/or small farmers
- The site's wastewater discharge presents a water quality risk to downstream water users
- The site's irrigation activities have a positive impact on nearby farmers, whereby excess water is helping to wet their soils and recharge aquifers
- The site's proactive programmes on data collection and addressing shared challenges are providing a net benefit to the community
- Impacting cultural or community value

The site should undertake an assessment of its impacts (positive and negative) and plan action as appropriate. For negative impacts, it should develop a plan to remove or mitigate them. For positive impacts, it may wish to communicate this with stakeholders, for both reputation and to set a good example to others.

The site should provide documentation on its assessment and associated plans.

1.7 UNDERSTAND THE SITE'S WATER RISKS AND OPPORTUNITIES

Understanding water risks to the site is one of the most important parts of the business case for water stewardship.

By understanding the risks, and then acting to remove, reduce or mitigate them, a site will help protect itself from unexpected costs and impacts. It is also important for ensuring business continuity and protecting the employment of site workers.

The findings of this criterion will be mostly based on the information gathering and research of the previous criteria in Step 1. Also, criteria 1.6 and 1.7 are related and are somewhat iterative. In other words, understanding risks and opportunities can inform water-related challenges, and identifying challenges informs about risks and opportunities.

1.7.1 There are three main types of risk to an organization: physical, regulatory and reputational. Given the complex and diverse nature of risk, it is recommended to seek expert support.

Examples of water-related risk include:

Physical risks for municipal supply

- Sudden infrastructure failure, such as breaks or leaks, leading to interruption of supply
- Increasing charges

- Contamination outbreak in supply (e.g. from pollution in reservoir, or leaky pipework)
- Regular supply interruptions (more common in developing countries with under-investment in water infrastructure)
- Vulnerability to extreme natural events (e.g. earthquake, freezing pipes and breakages due to extreme cold)
- Drought restrictions

Physical risks for private supply

- Failed water sources, through poor condition and poor maintenance
- Restrictions on permitted abstractions during dry seasons or drought
- Pollution of the main water body (surface water or aquifer)
- Direct contamination of water source
- Failure of water treatment system

Regulatory risks

- Breaching conditions of abstraction permits, such as over-abstraction
- Causing pollution of water bodies
- Failing quality conditions of wastewater discharge permit

Reputational risks

- Public awareness of any regulatory breach
- Real or perceived cause of negative impacts on other water users and/or the natural water environment
- Perception that the site uses too much water adversely impacts the “social license to operate”

1.7.2 Water stewardship is intended to be positive and constructive. It is equally as important to identify and benefit from opportunities as it is about mitigating risks. Examples of water-related opportunities include:

- Reducing water-related risk boosts the sustainability of the business, protects jobs, and increases the confidence of customers and investors, which can improve market share and position.
- Reducing water use will probably provide costs savings (although these may not be significant due to the typically low cost of water supply and abstraction permits). For irrigated agriculture, the greater cost savings is often in the energy used for pumping.
- Addressing shared water challenges will help achieve long term security of water needs for the site and its stakeholders across the catchment and enhance stakeholder relationships.
- Pre-treatment of wastewater by a factory may save on municipal charges and provide cleaner wastewater that can be re-purposed.
- A site with its own wastewater treatment system could potentially sell the service to other nearby industries.

Any positive impacts in the catchment and with stakeholders will likely create positive reputational benefits.

1.8 UNDERSTAND BEST PRACTICE TOWARDS ACHIEVING AWS OUTCOMES

The topic of best practices can be confusing and contentious. For this Standard, it is recognized that to be globally applicable to all sectors and types of organizations, there must be flexibility and allowances for what constitutes best practice. As defined in the Glossary, this Standard defines best practices as a range of possibilities.

A best practice can be new or innovative compared to standard practice but is not required to be. In some cases, a standard and established practice may be the best practice. Not all issues or challenges have well defined, globally agreed to practices which all interested parties would agree are "best practices". Therefore, best practices can be situation-specific and defined by a variety of methods such as regulatory, scientific, and stakeholder input. A subset of best practice is known as "Best Available Technology" which means 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.

1.8.1 Examples of best practice in water governance:

- A comprehensive water stewardship plan that is routinely reviewed and updated
- Designating responsibility for water stewardship to senior staff
- Training of all employees on the principles of water stewardship and how they can incorporate them within their daily tasks and responsibilities
- Engaging with peer organizations and stakeholders to promote water stewardship
- Demonstrating your support for good water governance and stewardship with appropriate authorities
- Communicating on your own water stewardship to set a leading example to others

1.8.2 Many industry sectors now have guidance on how to improve water balance through efficiency, management, and net reduction of consumptive use. The organization should research what guidance is available for its sector.

There is a difference between water efficiency and reduced net consumptive use. The Standard allows for water balance concerns to be dealt with via efficiency improvement. However, the long-term expectation, especially in place where water scarcity is shared challenge, is to reduce the total volume of water used. Where this reduction is not possible or practical, improvements in efficiency result in less water used per unit of production or some other applicable metric. This is particularly important in situations where a site is expanding or adding product lines and without improvements in efficiency, it would consume even more water than it currently does.

One attractive best practice is for sites to develop projects where they replenish water elsewhere in the catchment to offset site water consumption. This allows for the site operations to use the volume it needs, but overall the site is still improving the catchment water balance. Such projects need not be related to site operations. For example, a site can work with other groups in the catchment on a project such as stormwater capture or municipal water reuse. It is highly recommended that sites consider such catchment replenishment projects before determining there is no option other than efficiency improvements to address water balance concerns.

Examples of best practice for water efficiency:

- Undertake a detailed study on how water is used in the organization, when and what for (as an extension of the water balance assessment of 1.3.2). This will help to prioritize where to focus water efficiency efforts or installation of water efficient technology.
- Train workers on how to improve efficiency in the work they do, and on basic daily activities, such as switching off taps.
- Undertake a leak detection and measurement assessment, followed up by actions to reduce leaks.
- Install water efficient fittings, for example for toilets, wash rooms, equipment washing facilities, etc.
- For irrigation, improve scheduling (such as not to irrigate at times of rainfall, and match to soil and crop needs) and install water efficient systems, such as drip technology.
- Switch to types or species of crop that require less water for healthy growth, and are suitable for the region's climate.

1.8.3 Water quality can be applicable to incoming water, but also to outgoing wastewater. Examples of best practice on water quality include:

- Match water quality to its intended purpose. For example, some industrial uses do not require drinking water quality water. Using a lower quality water can reserve higher quality water for essential purposes, and can result in savings on water treatment costs, and associated chemicals and energy requirements.
- In agriculture, select crops may be suited to the available water supply without the need for treatment. For example, some crops can tolerate mildly brackish water (for example, 2000 mg/l of dissolved solids).
- Use wetland treatment systems to fully or partially treat wastewater. This can have a range of benefits, including reducing energy use, and creating a benefit for species diversity and attractive green/blue spaces.
- Apply a 'water safety plan' approach to protect high quality water bodies and aquifers. This means using appropriate land management practices to protect water bodies from pollution in the first place, so ultimate water users (e.g. water service providers) can rely less on water treatments.

1.8.4 This indicator applies to both onsite and offsite (but within site catchment) IWRAs. It is possible the best practice for an onsite IWRA will differ from an IWRA that is outside of the site.

For IWRAs, best practice is highly dependent on what it is. Examples include:

- For a surface water IWRA adjacent to agriculture, establish buffer strips between fields and the feature, so as to protect it from polluting run-off.
- Establish wetland treatment systems to protect an IWRA from the run-off from roads and parking areas.
- Establish a regular monitoring program to observe any changes to or impacts on an IWRA.
- Install a monitoring borehole between the operational site and IWRA as an 'early warning' approach to detect any influences from the site (e.g. on water levels or quality) that could impact the IWRA.
- Support a project (either directly or via an NGO) to restore and improve an IWRA that has suffered in the past.
- Support public communication initiatives (such as sign boards) to raise awareness of an IWRA and discourage actions by others that could damage it.

1.8.5 This indicator relates to the catchment, which includes the site. However, provision of WASH is a core indicator for onsite, and advanced for offsite efforts. Therefore, offsite best practices would apply only if the implementer opts to conform to the advanced level (as addressed in 3.6 and 3.9).

The significance of this indicator is dependent of the findings of 1.5.7 (the adequacy of available WASH services within the catchment).

In a developed country with very high rates for the provision of water supply and wastewater services, there may be little scope to provide any additional initiatives or benefits.

Examples of best practice for on-site WASH provision:

- Provision of sufficient supplies of safe drinking water for all workers, considering increased needs in hot weather.
- Provision of sufficient and high standard facilities for toilets and washrooms for men and women, and any other relevant needs, such as for disabilities, age and religion.
- Provision of showers for workers who may not have adequate provision in their own homes.
- Provide training for workers and their families on good hygiene practices, within their community if appropriate.

STEP 2: COMMIT AND PLAN

GENERAL GUIDANCE FOR STEP 2

A commitment by senior management is essential to ensuring an organization has the motivation for water stewardship and has the intention to provide the investments, in time, money and human resources to commence, complete and continue the water stewardship journey. External disclosure will help to ensure that the organization remains committed, in part to protect its reputation and credibility. Internal disclosure will help establish water stewardship within the organization's culture and send a message to all workers on its importance.

The water stewardship journey will typically take a number of years to achieve full conformance and/or certification. Once achieved, it should remain a long-term activity and commitment. This means planning is essential to prepare for the necessary financial and time commitments. The first aspect is to plan for implementing water stewardship. The second and longer-term aspect is to create a more permanent Water Stewardship Plan, but one that will develop and evolve over time.

2.2 COMMIT TO WATER STEWARDSHIP

2.1.1 The person signing the commitment should be someone in a position to grant and guarantee the necessary human and financial resources to achieve the organization's status as a water steward, and to maintain it in the long term, including the principle of continuous improvement.

In the event that the individual is replaced by another in the same or similar position of responsibility, the new person should reconfirm their commitment by also signing.

2.1.2 Commitment from the senior executive, with public disclosure, further increases the credibility of the commitment, and helps to lock it in as part of the long-term corporate strategy.

2.2 DEVELOP AND DOCUMENT A PROCESS TO ACHIEVE AND MAINTAIN LEGAL AND REGULATORY COMPLIANCE

2.2.1 The requirement to gather knowledge on water-related legal and regulatory requirements is addressed in Indicator 1.5.2.

The site should demonstrate its processes and procedures for itemizing relevant regulations, summarizing the compliance requirements and obligations, details of how to comply, and having a record of submissions to the relevant agencies. The system should also record any non-compliance warnings or events, including fines, and report on corrective actions. Where a documentation system already exists, this may be referenced. With regard to the responsible person, this should refer to the job title as the individual may change.

Regulators will define the information they require to different levels of detail. Some may be detailed and specific, for example, specifying precise water quality parameters to report or with reference to relevant water quality regulations. Others may be more flexible, for example requiring a report on 'water quality' or requiring a demonstration that water is potable. In this case, the organization should reference appropriate standards, whether local, national or accepted international standards, such as the WHO Drinking Water Guidelines.

Similar principles apply to other compliance requirements, such as water withdrawal limits and wastewater discharge standards.

2.3 CREATE A WATER STEWARDSHIP STRATEGY AND PLAN

In creating the plan, the organization is expected to use the information gathered in Step 1 and supported by the leadership commitment and provision of resources called for in 2.1, to lay out a plan to achieve goals towards addressing the challenges, and risks, and opportunities identified.

2.3.1 and 2.3.2 The difference between strategy and plan is the degree of detail. The strategy tends to be the vision and mission around stewardship, with some high-level overarching goals. The plan then details the targets associated with goals, and specifics as defined in the Standard. The two are distinct documents, but can be combined.

The water stewardship plan should address identified risks and opportunities and include due consideration of the five AWS Outcomes. With regard to risk, there are three general categories of water-related risk to consider:

1. Risks to the site and its water supply
2. Risks from the site to other water users and the natural environment
3. Risks related to shared water challenges (which may overlap with the first two categories)

The risks and shared challenges should have been identified under Step 1: Gather & understand.

2.3.2 Actions should align with the following principles:

- Linked to targets or objectives that are SMART: Specific, Measurable, Achievable, Realistic, and Time-based

- The scope and cost should be appropriate and proportionate to the urgency and level of risk
- Define who is accountable for what. An ARCI approach to defining roles is recommended, which identifies who is: Accountable, Responsible, Consulted and Informed. Positions rather than names are appropriate, given that individuals may change.

There are two principal categories of action:

- Immediate action to address an urgent problem or high risk or to capitalize on an opportunity
- Long-term action to provide ongoing protection against risk or achieve an improvement of status via opportunities over time

One convenient way to summarize the plan is to use a tabular form, with supporting documentation as appropriate. However documented, it should cover: target; measurement and monitoring method; actions; timeframe; budget; and responsible persons.

2.3.3 The organization is encouraged to promote increased uptake of AWS through partnership with other sites that may or may not be the same company or organization. This may include shared collective action in the context of being in a common catchment. If there is no case for collective action (for example, due to using different water bodies for supply), then multiple organizations may promote AWS principles through demonstrating a common approach and shared communication.

2.3.4 For sites in separate catchments, whether or not of the same organization, there is less likelihood of opportunities for partnership on shared challenges. However, the organization can still help promote AWS principles and practice through demonstrating a common approach with others, with shared messages and communication.

2.3.5 To show it has sought consensus, the organization should report on how it has engaged with relevant stakeholders and communicated its water stewardship plan to them. It should also show, where relevant, that the plan has considered the interests and concerns of stakeholders. Typically, consultation will be undertaken within the context of stakeholder engagement (See Guidance section on Stakeholder Engagement).

2.4 DEMONSTRATE THE SITE'S RESPONSIVENESS AND RESILIENCE TO RESPOND TO WATER RISKS

A major part of the plan defined in Step 2 is how the site will take actions. However, the plan must also explain how the site is ready to respond to issues as appropriate.

2.4.1 This indicator is unique and additional to what is required in 1.7. This indicator applies mainly to how the site will plan to address external risks outside of the site's direct control or responsibility, and particularly for those risks associated with dependence on public infrastructure. Also, this indicator acknowledges that not all risks are associated with "emergencies". For example, risks with this indicator include:

- For municipal water supply, risks to the distribution infrastructure
- Flood risk due to sea level rise or seasonal variations
- For private water sources, risk to the surface water body or aquifer from which they abstract. This may be water levels, flows, pollution events or decreasing water quality trends

Risk mitigation refers to reducing the likelihood of an event occurring or reducing exposure to it. Risk adaption assumes mitigation is not feasible and that the site must be better prepared for the impacts.

Engagement with public sector and infrastructure agencies can be an effective means to identify such risks. Very often, they will already have undertaken risk assessments to support their own business management, but they may not have openly communicated them. This engagement can also help make the agency more aware of the site's own needs and concerns regarding its water and wastewater services. For example:

- A food factory requires soft water for its processing and will install water softening treatment (at a cost) if the incoming municipal supply is hard. Initial water quality monitoring shows the incoming water is sometimes soft and other times hard, depending on the whether the supplier draws from a surface water (soft) or groundwater body (hard). The factory reaches agreement to receive only soft water so as to avoid additional internal treatment costs.
- A factory can learn from its water supplier, what is the risk of supply failure. In the event of a major pipe failure, how well is the supplier prepared to detect and repair the failure quickly and what mitigation does it have, such as an alternative delivery route? Where an organization is not satisfied with the level of risk, its options can include building larger water storage tanks (for a reserve in the event of supply failure) or developing its only private water sources as back-up.
- Where a pollution spill is identified as a risk, the site can install monitoring and warning systems.
- Where increasing water scarcity is identified as a risk, the site can adapt through increasing water efficiency, identifying alternative water sources or transferring a proportion of its production to other lower risk sites.

The information for this indicator can be combined with that of 1.7 and be a component of the Water Stewardship Plan.

2.4.2 Climate scientists project that climate change is increasing or will increase water-related risks. The type and level of projected change varies from place to place, often with a high level of uncertainty. Impacts may be linked to too much or too little water, such as increased flood risk or less rainfall. Projections suggest that such events will become more frequent and potentially more intense. This means water-related infrastructure at the site, and within the catchment, could be at greater risk than currently designed for. The site and catchment may also become more vulnerable to water scarcity.

Given the complexities and uncertainties around climate change projections, the organization should undertake its assessment in coordination with relevant public-sector agencies, and other expert sources.

The outcome of the assessment may be incorporated into the original water stewardship plan or be provided as an addendum. In any case, risk management actions and emergency response plans should be adapted accordingly.

STEP 3: IMPLEMENT

GENERAL GUIDANCE TO STEP 3

Step 3 is the part where the organization implements the plan they developed in Step 2, using the information gathered in Step 1. The Criteria and Indicators associated with this Step focus on demonstrating that the plan is being implemented effectively. The actual site and catchment impact resulting from the plan implementation is addressed in Step 4: Evaluate. This distinction is important because even a well implemented plan may still not result in the desired improvement in the catchment. This would not necessarily be due to poor implementation, but instead may due to a misunderstanding of information gathered or an issue due to missing information. The Guidance provides examples below of what the site could implement and document to demonstrate conformance with the criteria. However, the specific actions will be in line with what was planned in Step 2.

When the plan is properly implemented as demonstrated by Step 3, but the impact results noted in Step 4 are not as desired, the site needs to assess the plan in the spirit of continual improvement to address the discrepancy.

The organization should provide appropriate evidence that it is implementing its water stewardship plan as defined in Step 2. Documentation may be in paper or electronic form according to the organization's own convention, provided these are accessible to auditors.

The key to effective implementation is clear instructions, processes, and procedures; clearly defined roles and responsibilities; robust training and awareness; and effective monitoring and measurement.

3.1 IMPLEMENT PLAN TO PARTICIPATE POSITIVELY IN CATCHMENT GOVERNANCE

3.1.1 The organization should describe how it has supported or contributed to good catchment governance. For example, it may have engaged with relevant authorities to express its support for improved water governance and water management policies.

3.1.2 This indicator refers to water rights not already covered by legal and regulatory mechanisms as captured in 3.2.2. Information on such rights may come from local governance groups or other stakeholders. Recognizing that some rights are not in such requirements, but are still relevant, they are captured in this indicator regarding governance.

Additional guidance on the respect of human rights is given in the UN Guidance Principles on Business and Human Rights (2011), however it is important to note that the scope of the AWS Standard is focused on water-related rights.

Where stakeholders have rights to the water resource, such as some local communities and indigenous peoples with traditional rights, their informed consent must be given in order to use the resource. Where these rights are not formally recognized by a government regulator, there remains a duty to identify and respect them where they exist. Engaging with such communities requires a long-term commitment to achieve meaningful dialogue and build trust between parties.

3.1.3 The organization should report on how it has improved its internal water governance capacity, for example, through giving greater responsibility and time to water stewardship for existing employees and/or appointing additional dedicated staff.

In addition to its water stewardship plan and records (as required for the AWS Standard), it may also have created additional internal policies, guidance and standards documents.

3.1.4 To show it has sought consensus, the organization should report on how it has engaged with relevant stakeholders and communicated its water governance approach and initiatives. Where relevant, the site should show where its approach has considered the interests and concerns of stakeholders. Typically, consultation will be undertaken within the context of stakeholder engagement (See Guidance section on Stakeholder Engagement).

3.2 IMPLEMENT SYSTEM TO COMPLY WITH WATER-RELATED LEGAL AND REGULATORY REQUIREMENTS AND RESPECT WATER RIGHTS

Knowledge of regulatory and water rights is addressed in Indicator 1.5.2.

3.2.1 The organization should provide, or reference, the documentation demonstrating legal compliance and provide documentation of any violations or corrective actions taken to address violations. Documentation may be in the form of authorizations, auditor records, compliance submissions, etc. Sites may reference documentation already gathered by regulatory bodies where appropriate, provided they are accessible to the auditor for verification.

3.2.2 See guidance for 3.1.2. The difference between 3.1.2 and 3.2.2 is that 3.2.2 specifically refers to rights captured in legal and regulatory requirements. .

3.3 IMPLEMENT PLAN TO ACHIEVE SITE WATER BALANCE TARGETS

3.3.1 and 3.3.2 For targets defined in Step 2, the organization should show what the targets are and how it has progressed towards them in a format that is clear and appropriate. This would include results from catchment water replenishment projects.

3.3.3 Where the organization re-allocates water savings for external benefits or uses, then it should demonstrate this action is legally compliant and has appropriate regulatory approval, where applicable.

An organization may make such re-allocations where water savings are beyond what is required to achieve a sustainable water balance. Re-allocations may benefit environmental and social needs in the catchment. Legal compliance is required to ensure approval and to avoid liabilities. This is particularly important for water supplied for human use, but also for water bodies containing important biodiversity, for which water quality is critical. There should also be confidence that re-allocated water does not create a risk of flooding, erosion or other damage. Whatever the purpose, the organization must be confident the water quality is safe and compliant for the intended use and should include water treatment if necessary to achieve this.

Examples include:

- Transferring saved water to a sensitive IWRA, such as a biologically important wetland
- Providing a drinking water supply to a small local community
- Providing irrigation water to subsistence farmers
- Aquifer recharge

3.3.4 In some cases, the site may not be legally compelled to re-allocate saved water, but may wish to do so for social, cultural, or environmental needs. The organization may use any method of quantification it considers appropriate.

3.4 IMPLEMENT PLAN TO ACHIEVE SITE WATER QUALITY TARGETS

For targets defined in Step 2, the organization should show what the targets are and how it has progressed towards them in a format that is clear and appropriate.

3.4.1 For each water quality target, the evidence should show: the water body or feature it applies to, the target water quality and planned timescale to achieve it. The organization should show how it is progressing against this plan. Where it is not progressing at the planned rate, the organization should provide an explanation of why it thinks it is not achieving this, and appropriate corrective action to do so.

3.4.2 As a minimum, effluent quality must be legally compliant. Best practice will mean ensuring it is of the highest quality feasible (beyond compliance), especially for regions where wastewater regulations are weak or non-existent. Where water quality is a shared challenge, then the quality concern should be identified (e.g. elevated levels of a particular chemical) and this taken into account in treatment and discharge location.

3.5 IMPLEMENT PLAN TO MAINTAIN OR IMPROVE THE SITE'S AND/OR CATCHMENT'S IMPORTANT WATER RELATED AREAS

3.5.1 The plan is defined according to Criterion 2.3. Where no IWRAs are identified, no action is required.

Because of possible unique situations where the best that can be done is to prevent further degradation, maintaining the IWRA may be the only suitable solution for this requirement, however this should be considered a last resort.

Where an IWRA is to be restored or improved, the organization should have a record of its status prior to interventions. Depending on what the feature is, this may include a biodiversity study, water level and/or flow data, water quality data, etc. This then forms the benchmark against which to monitor improvements. If the target is to conserve (assuming it is already in good status), then similar information can be used to demonstrate it remains in a good condition, and to highlight any negative changes in its condition – which of course, will require corrective action. Photographs and videos can also be valuable in showing condition and change.

3.5.2 The same guidance applies as for 3.5.1, except this advanced indicator requires completed restoration.

3.5.3 The organization should show it has informed relevant stakeholders of its work on IWRAs and has requested feedback from them, which will ideally confirm their support. Where stakeholders have raised any objections or concerns, these should be recorded and considered as appropriate. In recognition the site cannot insist on feedback, as a minimum, it should show it has invited it.

An example of an objection to restoration of an IWRA:

- Restoring a wetland will result in raising water levels by an unacceptable amount This will also raise surrounding groundwater levels which creates a risk of flooding in the basements of nearby properties.

3.6 IMPLEMENT PLAN TO PROVIDE ACCESS TO SAFE DRINKING WATER, EFFECTIVE SANITATION AND PROTECTIVE HYGIENE (WASH) FOR ALL WORKERS

3.6.1 Provide a description of the status and any additional provision made to ensure all workers have access to WASH and that it takes equitable account of gender needs, and any other special needs. This includes toilets, washing facilities, hygienic areas for food and drink consumption, and potentially showers.

3.6.2 Examples of where an organization could impinge on the human right to safe water and sanitation of communities:

- Negative impacts on community water supplies such as pollution or excessive abstractions
- Land developments or exclusions that prevent indigenous peoples from freely accessing their traditional water sources

3.6.3 Report on any actions and investments by the organization to provide and improve WASH facilities in the community. This indicator is intended to capture efforts by the site directly to improve WASH provision beyond the site boundaries. Examples include:

- Providing publicly accessible drinking water access (e.g. tap, fountain) outside the site boundary diverted from the site's own water supply. This is a valuable benefit in locations where municipal water supply is limited or non-existent.
- Installing water sources, treatment and drinking water access and/or wastewater treatment facilities in local communities

3.6.4 Where local communities have poor access to WASH, there can be significant potential for an organization to support and provide new facilities, whether independently, with peer organizations or the authorities. Where local communities are a source of employees, such provision can help improve the health and wellbeing directly of its own workers and their families. This indicator calls for the site to share information and advocate for change, and there is no expectation that the site is required to construct and maintain infrastructure to provide WASH in the catchment outside of the site.

3.7 IMPLEMENT PLAN TO MAINTAIN OR IMPROVE INDIRECT WATER USE WITHIN THE CATCHMENT

3.7.1 Options for reducing indirect water use include:

- Switch to a different service or product supplier that is known to use less water to provide the same level, quantity, and quality of primary inputs.
- Engage with existing suppliers to encourage them to improve their practices.

It is important to ensure that choices about switching suppliers are based on measurable water use data and not on theory or modelling. For example, water footprint assessments are a means to raise awareness about how much water is typically used for a product or food item but may be unreliable for a specific case. A water footprint assessment of how much water is used to grow a certain crop in a certain region of the world relies on general data for that region and does not take account of water efficiency practice on individual farms. Any choices that can have an economic impact on a supplier should be based on verifiable data.

3.7.2 Achieving a reduction in indirect water use will often require engagement with suppliers to understand how they use water, and encouragement for them to modify their practices so as to make savings. Suppliers may do this directly, or they may rely on support from the organization.

In fact, many of the actions the organization applies itself as a water steward could be relevant. Once the organization has achieved good water stewardship status, it is in a stronger position to advise its suppliers, and demonstrate to them the advantages and benefits, such as reduction of risks and costs.

3.7.3 This indicator covers potentially a very wide range of issues and actions. Examples include:

- Supporting efficient irrigation projects for crops in a site's supply chain
- Supporting actions to reduce water pollution originating from the production of an item in the supply chain. For example, leather tanning is known to be a significant source of water pollution.
- Support the sourcing of 'thirsty' crops from water abundant regions rather than arid regions

3.8 IMPLEMENT PLAN TO ENGAGE WITH AND NOTIFY THE OWNERS OF ANY SHARED WATER-RELATED INFRASTRUCTURE

3.8.1 The intent of the engagement is to address common risks, in part as defined in 2.4.

3.9 IMPLEMENT ACTIONS TO ACHIEVE BEST PRACTICE TOWARDS AWS OUTCOMES

This criterion regards the progress towards implementing and achieving best practices. In the spirit of continual improvement, core indicators 3.9.1 to 3.9.5 address actions towards achieving best practice implementation, realizing there will be some elapsed time before full implementation is realized. This is to avoid the site being considered non-conformant with the Standard in that time period.

Indicators 3.9.6 to 3.9.10 are advanced and provide additional credit for achieving full implementation of the selected best practice.

Examples of best practice for each of these subject areas are given for indicators 1.8.1 to 1.8.5.

3.9.11 is intended to document the effort that the site has undertaken to promote best practices uptake by others beyond the site.

3.9.12 Where targets and best practices require or would benefit from collective action, this indicator captures the actions and involved participants necessary to achieve effective implementation.

3.9.13 This indicator then assesses the improvement, as validated by involved stakeholders, resulting from the collective action effort. For example, if an improvement action on an IWRA was taken through collective action, the site would have quantified evidence of the positive impact to the IWRA and also evidence from stakeholders that the site did indeed play a role in the collective action.

STEP 4: EVALUATE

GENERAL GUIDANCE FOR STEP 4

It is important for a water steward to periodically review its performance and progress. This includes assessing its contributions and benefits to water management, as well as how risk exposure has changed for the organization and its stakeholders. Evaluation forms the basis of determining which new actions or approaches are required and what they should be. This may require an update to the water stewardship and incident response plans from time-to-time and will support the principle of continuous improvement.

Criteria and Indicators in Step 4 differ from those in Step 3 because in this step, we are evaluating the resulting impact from the site's plan on the site itself as well as its catchment, and where applicable, the primary inputs catchments of origin.

4.1 EVALUATE THE SITE'S PERFORMANCE

4.1.1 The organization should list the targets for action and improvement from its water stewardship plan, and report on to what extent they are being, or have been met. It should also report on how it has contributed to achieving the five AWS Outcomes.

4.1.2 The organization should provide a financial water cost-benefit component and report on its financial investment in water stewardship, and any savings that result. The ideal may be to achieve a net saving. However, this should not be the only target. There may be a net cost to the benefit of reducing risk (and avoiding unexpected higher costs), to achieving longer term water security, and achieving a wider benefit for stakeholders and the natural environment. Value creation might not be a direct financial benefit, but it can be in the context of reducing water-related risk (to the site itself and others), and of improving natural capital and ecosystem services.

This financial evaluation should include costs, cost savings and/or value creation that relates to the water stewardship actions. Such financial evaluations will help justify the measures that are taken and provide a so-called business case for the water stewardship efforts that have been undertaken.

4.1.3 Where identified, the organization should report on the value benefit to others in the catchment, preferably with quantified contributions. This may be financial benefit, but it may also be a value benefit such as improved natural capital and ecosystem services. The benefit may also be improved long term water security across the catchment and reduced risks.

4.1.4 The organization should undertake and report on a senior management or executive level review of its water stewardship policies and plan. This should be by senior managers (perhaps at board level) who are not involved in day-to-day water management or stewardship.

The executive team is the senior-most individuals within the organization. The preference is that this review occurs with the chief executive officer (or equivalent), chief financial officer (or equivalent) or chief operations officer (or equivalent). In all cases, however, a relevant member of the executive team should be the one to perform the review.

Alternatively, the overarching governance body, typically a board (or equivalent), may perform the review. If no board exists, the equivalent governance body should be consulted (e.g. trustee council). AWS encourages the site to engage in a comprehensive discussion of water stewardship efforts, but at a minimum the following should be discussed:

- Shared water challenges (as identified in 2.6 and confirmed in 5.3 and 5.4)
- Water risks (as identified in 2.7 and confirmed in 5.1)
- Water-related opportunities, cost savings and benefits (as identified in 2.6 or 2.7 and confirmed in 5.1)
- And, if relevant, material water-related incidents or extreme events

The site should provide a copy of the agenda from the meeting at which the site's water stewardship efforts (including shared water challenges, water risks and opportunities, any water-related cost savings or benefits realized, and material incidents) were discussed. Accordingly, an agenda with such components, along with a list of those in attendance, is necessary. The review should be an annually written document that addresses items raised for concern in terms of performance.

4.2 EVALUATE THE IMPACTS OF WATER-RELATED EMERGENCY INCIDENTS

4.2.1 The organization should report at least annually on any significant or emergency water-related events, its response, actions and outcome. It should aim to understand the cause of events, and where appropriate, implement new actions or modify its water stewardship plan. This includes events that impact on the organization and events arising from the organization or its site that impact on others in the catchment. Such a review may be performed as part of a larger review (of all emergency incidents), so long as the water-related aspects are identified and documented as above.

Incidents can include environmentally based emergencies (which may or may not be extreme events, and may or may not be anthropogenic):

- Floods – mild to severe – that may affect the flow regime and infrastructure capabilities, including storm water management
- Natural disasters that have disrupted the water infrastructure (e.g. tornado, hurricane, earthquake)
- Droughts that have seriously affected water availability and concentrations of contaminants in effluent
- Environmental shifts in water quality (e.g. algal blooms)
- Freshwater invasive species

Incidents may also include accidental or other external situations:

- Contaminant spills or leakages that require abatement
- Structural failures of equipment
- Political conflicts (e.g. war)
- Human error
- Vandalism/terrorism

Extreme events, including those from neighbouring catchments, that have occurred in the past 10-20 years should also be considered relevant as they may indicate potential future climate-related water risk for the site. Extreme weather events and extreme climate events are most easily noted through media stories but may also be found through academic research, which sometimes compiles such information. Public sector agencies may, in certain jurisdictions, offer resources in terms of both tracking such events and evaluating their impacts and risks. Lastly, non-governmental organizations also have tools and often generate reports that speak to the trends in a given location. All these groups should be explored to see whether extreme event information is available for evaluation.

The site should prepare a written annual review of the year's emergency incident(s) with particular attention to the site's response to the incident(s). Any proposed measures to mitigate against future incidents should be included in Criterion 5.4. The site must either provide the previous and updated copies of the water stewardship and incident response plans or highlight the changes made to the water stewardship and incident response plans.

4.3 EVALUATE STAKEHOLDERS' CONSULTATION FEEDBACK

Stakeholders are an important source of feedback and can often provide sites with advanced warning of concerns before they manifest as more serious risks. As a result, stakeholder consultation on performance not only gives an "early warning system" if there are potential water-related conflicts emerging, but also helps build trust and relationships in the cases where conflict does arise. Furthermore, stakeholder feedback on performance may in fact lead to insight and enhancement of operations, as well as ideas for collaboration and mutual benefits.

Thus, there is a variety of potential forms of communication and feedback. This could be through physical meetings, letters, brochures, or electronic communication. The organization should report on the communications undertaken, and to which stakeholders and interest groups. As much as feasible, it should also report on feedback (considering any legal data sharing and confidentiality issues). AWS recognizes the organization cannot insist on feedback from its stakeholders. Where feedback is difficult to gain, the organization should show an absence of serious objections and that the interests of vulnerable stakeholders are not negatively impacted.

4.3.1 The organization should report on its consultation efforts, the means of communication, and any feedback. The site must engage stakeholders at least once every year to review its water stewardship performance and provide written commentary from identified stakeholders on the site's performance. This consultation is a good opportunity to confirm shared water challenges and Important Water-Related Areas in the catchment. The form of the consultation should be appropriate for the local context and the stakeholders engaged but does not need to be conducted in person. Note that this may be a rather "informal" consultation. More elaborate and formal engagements are recognized as well. This is also a chance to further gather input for the renewed water stewardship plan.

4.3.2 Because stakeholder engagement is important to effective and successful implementation of the Standard, this advanced indicator provides an opportunity for the site to assess how it is perceived in addressing shared water challenges. The natural space for stakeholder consultation centres around the issue of shared water challenges since, by definition, this is of interest to all parties. However, stakeholder consultation need not, and should not, be restricted to this aspect. While proprietary and/or sensitive water-related data may be kept confidential, sites are asked to consult stakeholders on the full array of the site's water-related performance. This indicator is dependent on identifying stakeholders who are interested and willing to review the site's actions and provide constructive feedback.

4.4 EVALUATE AND UPDATE THE SITE'S WATER STEWARDSHIP PLAN

4.4.1 Continual improvement is a fundamental tenet of the AWS Sandard, and criteria 4.4 provides for the mechanism to ensure the plan is evaluated and updated periodically to ensure it is current and progressing positively. The site water stewardship plan requires that data be regularly collected, monitored and evaluated. On an annual basis, at a minimum, this data should be comprehensively reviewed and evaluated to determine whether:

- The plan is delivering on the intended targets;
- The data points are the right data points to be collected;
- Context information has changed;
- Any lessons learned/areas for improvement are noted;
- Successful strategies and/or best management practices have emerged/been implemented;
- Stakeholder engagement efforts have been well-received (including transparency);
- Water risks have changed since the last evaluation (the last time Criterion 2.7 was evaluated);
- Efforts have been effective and efficient in terms of costs/benefits (financially, socially, economically and environmentally to the site or the catchment).

This will be a combination of quantitative and qualitative analysis, and include:

- Lessons learned from implementing the plan
- Whether circumstances have changed or affected performance
- A review of regulatory changes and enforcement
- Areas of strong/weak performance
- Changes in water risks and the catchment context
- Whether water stewardship efforts are being effective in mitigating water risks, decreasing shared water challenges or creating value

Modifications to the water stewardship plan may be influenced by a range of reasons, of which the following are examples:

- A target was achieved, so an action can be stopped or reduced in scope
- A target was not achieved (or at too slow a pace), so new or modified actions may need to be implemented to improve on this.
- Stakeholders objected to an action or its outcome
- An action did not have the expected consequence or impact
- An action caused an unexpected unwanted impact
- An action proved to be disproportionately costly
- There has been a change in regulation

This criterion pulls together the various evaluations conducted throughout Step 4 to update the primary plans developed in Step 2. Put another way, it ensures that the site revises its plans created in Step 2 with an evaluation (Step 4) of the data gathered in Step 1 and implemented in Step 3. This is the "check" part of a "plan, do, check, act" continuous improvement loop. As such, the site should revisit Step 1 to review the initial risk assessment performed there and evaluate changes.

STEP 5: COMMUNICATE AND DISCLOSE

GENERAL GUIDANCE FOR STEP 5

Communication of positive and negative results is an important aspect of responsible stewardship. It provides the basis for continual improvement through learning and sharing. It helps build trust and stronger relationships and allows others to better evaluate (and therefore contribute to) an organization's water-related efforts. Communication encompasses a broad array of different means of interaction and is intended as such within the Standard.

In recent years, the concept of disclosure (beyond financial reporting) has gained increasing traction in the sustainability/corporate social responsibility sphere. Disclosure involves a formal provision of information in a format appropriate and comprehensible to the intended audience. This includes being in a local language where relevant.

Disclosure may include broad public accessibility, such as via a company website or sustainability report, but is not limited to these options. Examples of acceptable disclosure formats include:

- Community notice board
- Company website
- Annual sustainability report
- Responses to publicly accessible sustainability surveys (e.g. CDP-Water)

Disclosure (in accordance with this step) may start at the beginning of the water stewardship journey and continue in parallel with the development of water stewardship and need not wait until most actions are complete.

A challenging aspect of disclosure is the concept of "publicly" disclosed. What degree of disclosure constitutes "public" varies across the globe and across sectors. It is not possible to define exactly what is meant by public, and at what level disclosure becomes more problematic than beneficial. It is expected that at a minimum disclosure is to relevant stakeholders and any regulatory agencies as required. The site should also make information as public as practical and possible (see below).

AWS Standard disclosure is conceived in the spirit of the CEO Water Mandate (https://ceowatermandate.org/) on corporate water disclosure, of CDP-Water corporate disclosure program (www.cdp.net/en/water) and the Global Reporting Initiative (GRI) Standard on sustainability reporting (www.globalreporting.org).

5.1 DISCLOSE WATER-RELATED INTERNAL GOVERNANCE OF THE SITE'S MANAGEMENT

5.1.1 Water-related governance is ultimately focused on responsibility and accountability of water-related matters at the site. It is about having a clear line of authority in order to ensure that preventative measures are in place, as well as immediate corrective actions when things go wrong.

The governance disclosure effort needs to be publicly accessible in a suitable format for the target audience(s). The disclosure should:

- Provide a summary of how water-related issues at the site are governed at the site level. This can be a general overview of the management systems in place

- Note positions accountable for compliance with water-related laws and regulations, and note if this is a committee
- Indicate the hierarchy between those accountable for water and the senior-most leadership at the site level (CEO or equivalent) or the board

In cases where sites are part of a larger organization's disclosure efforts, the larger corporate disclosure must indicate that site-level water-related governance is available upon request. If not, a separate site-specific report needs to be generated and made available to both verifiers and the target audience(s).

The format of disclosure is at the discretion of the site but should be appropriate for interested parties (e.g. possibly a presentation to community members, website content for civil society groups, annual sustainability report for investors).

5.2 COMMUNICATE THE WATER STEWARDSHIP PLAN WITH RELEVANT STAKEHOLDERS

5.2.1 Communication should be of a level of detail, language and format most relevant to each relevant stakeholder group.

5.3 DISCLOSE ANNUAL SITE WATER STEWARDSHIP SUMMARY

5.3.1 Disclosure should be in a format that is clear and comprehensible to the intended audience. This aspect of disclosure should be a summary of the results (and/or efforts) the site has achieved in addressing its water-related challenges. Moreover, it should include the site's water-related targets, as well as a reference to the site's commitment.

The disclosure of water stewardship performance needs to be accessible in a suitable format for the target audience(s) with results that pertain to material issues for the target audience;

The site need not report all results from its water stewardship plan (as detailed in 3.2) but must include all results that are material to the concerns of the target audience(s). Sites are encouraged, but not required, to report as many results as possible and also speak to results that relate to site water risks and opportunities (e.g. creation or restoration of water-related assets such as natural and built water infrastructure).

Sites are encouraged to discuss any of the challenges and opportunities that arose in the context of their efforts to affect change. This helps provide an understanding of the enabling conditions and impediments to achieving the proposed targets. Where significant impacts have been achieved, these should be highlighted by the site.

In cases where sites are part of a larger organization's disclosure efforts, the larger corporate disclosure still should speak to plans at the site level. If not, a separate site-specific report needs to be generated and made available to both verifiers and interested parties.

The format of making the site's performance results available is at the discretion of the site but should be appropriate for interested parties (i.e. in local languages and a format that can be understood). This could include formats such as a community notice board, the site's website, annual sustainability report for investors, etc.

5.3.2 Annual reports represent a key organizational communication vehicle and are typically published both online and in print. As Sustainability or Corporate Social Responsibility reports are sometimes separate, these are acceptable as well, though AWS encourages water stewardship issues (along with other sustainability issues) to be incorporated into the main annual report via integrated reporting. The report, with page number, must explicitly reference AWS including explicitly mentioning one or more sites undertaking the AWS Standard, and contain any broader AWS commitments (if applicable).

5.3.3 See 5.3.2 and in this case also include specific benefits from implementation.

5.4 DISCLOSE EFFORTS TO COLLECTIVE ADDRESS SHARED WATER CHALLENGES

5.4.1 Shared water challenges are identified, and should be drawn from, Criterion 1.6. The site must:

- List all shared water challenges
- Describe actions/efforts undertaken to address shared water challenges
- Discuss stakeholder engagement efforts, with an emphasis on engagement directed toward shared water challenges
- Actively disclose this information to target audience(s) and actively communicate this information to interested stakeholders in a suitable format(s).

5.4.2 In addition to formal disclosure, sites are required to communicate efforts to address shared water challenges to relevant stakeholders in a manner that is both active and accessible. This means that the site should not be passive (i.e. requiring that stakeholders come to them) but instead should undertake efforts to provide such information to interested stakeholders. See details on stakeholder engagement at the beginning of the Guidance for more details.

The format of making the shared water challenges and responses available is at the discretion of the site but should be appropriate for interested parties (i.e. in local languages and in a format that can be understood). This could include formats such as a community notice board, the site's website, annual sustainability report for investors, etc.

5.5 COMMUNICATE TRANSPARENCY IN WATER-RELATED COMPLIANCE

5.5.1 A summary of compliance may be provided, but any and all significant water-related violations must be made available. It is helpful to provide the context for such violations to allow others to understand why/how they occurred and how they might be prevented in the future. A site also may report in this section that it has gone "above and beyond" compliance through the completion of the AWS Standard.

AWS does recognize that in certain contexts, actively communicating such violations could cause undue attention and therefore heighten reputational water risks. Accordingly, this criterion does not require active communication of compliance violations. However, in all cases, sites should provide the relevant information to any stakeholder requesting the information. The fact that such information is available will be made known through the site's AWS-certified status.

The format of making the compliance violation available is at the discretion of the site but should be appropriate for interested parties (i.e. in local languages and in a format that can be understood). This could include formats such as a community notice board, violations noted on the site's website, annual sustainability report for investors, and others.

5.5.2 The site needs to also disclose what corrective actions it took to address the items raised in 5.5.1.

5.5.3 “Significant” water-related violations are any that heavily (materially) affect the company’s finances, the freshwater ecosystems surrounding the site, or local people’s use and enjoyment of fresh water. For example, a large number of complaints by stakeholders would indicate a “significant” water-related violation; a large fine for a water-related compliance violation also would be significant.

In cases where there is an immediate threat to local stakeholders, including ecosystems, note that the site must notify the relevant public sector agencies of the violation immediately. Sites found delaying in such instances will not be eligible for certification.

GUIDANCE ON SPECIAL SUBJECT: CATCHMENTS

Knowing the organization's catchment is critical to effective water stewardship

The aim of this guidance on catchments is to explain what they are, that surface water and groundwater catchments are different, and to provide a general explanation of how they are defined. It is not intended to be a textbook guide on how a site should define its own catchment. This is a specialist skill highly dependent on local conditions. Some organizations may have sufficient internal expertise, but very often, an organization will need specialist support. Some agencies, especially in more developed countries, can provide maps of defined catchments. These are a good starting point, but they may not automatically be suitable for a site's water stewardship approach. They are more often based on surface water catchments only, and whether surface- or groundwater-based, they are often of a larger size than is relevant for a single site, especially for smaller water users. (See Box on 'How a site can identify its catchment(s).')

Incomplete or incorrect knowledge of the catchment:

- May result in important risks being missed - to the organization, or from the organization to others
- May result in failure to identify critical stakeholders
- May result in focusing disproportionate cost and effort on the 'wrong' geography and/or stakeholders, or too large a geographical area

A catchment is not the same concept as Physical Scope, but it is an important component of it. However, the two may have the same boundary. Glossary definition:

> 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*.

The site's catchment is the physical zone around the site which provides its water supply (upstream) and where its run-off and wastewater go (downstream). The site's water supply – quantity and/or quality – may be impacted by what happens upstream, and its actions may have an impact downstream, including on other water users and the natural environment.

Examples of upstream impacts:

- Pollution from industry or agriculture contaminates the water supply
- High rates of water use by others reduces the water available to the site
- Heavy rainfall causes flooding of the site

Examples of downstream impacts:

- High volumes of water use reduce what is available to others
- Untreated wastewater from the site contaminates natural water bodies or the water supply of others
- Removal of vegetation from the site property increases run-off rates after heavy rain, increasing flood risk to downstream properties

Surface water and groundwater catchments are defined differently. A water supply originates from either **surface water** or **groundwater**. Surface and groundwater catchments differ in their boundaries and characteristics. A minimum level of expertise is required to reliably define the catchment, especially for groundwater.

Surface water catchment

A surface water catchment is defined by the topography of the land. The boundary is the line of highest ground around a river basin, defined from topographical maps or satellite studies. The boundary is easy to define where river basins are separated by mountain ranges or hills, but more difficult in flatter landscapes. The boundary of a surface water catchment is fixed in time (except over geological time scales).

All precipitation (rain or snow) falling within the boundary flows down slope towards the principal water body, as run-off and along its tributary streams and rivers. A proportion is lost to evaporation and take-up by plants (collectively evapotranspiration), infiltration to the ground and to water users. In arid climates, evaporation is sufficiently high that very little or no surface water remains (although groundwater may still be significant). Where there are significant human interventions, such as canals, water flows may be significantly modified, and include transfers between catchments. Water may enter or leave the catchment embedded in products or services.

Surface water is replenished from direct precipitation, run-off and out-seepage of groundwater.

Groundwater catchment

Groundwater is stored in, and moves through, permeable geological layers known as aquifers via interconnected voids or pore spaces (its porosity).

Some groundwater catchment boundaries are fixed (by a geological boundary) and some movable. A movable boundary is defined by a 'groundwater divide' whose position can move due to seasonal effects or the impact of water abstractions.

Groundwater is replenished by infiltration of rainwater and surface water in 'recharge zones' where the aquifer is exposed at or near the surface below overlying permeable soil and rock. Groundwater naturally discharges to surface water (for example through river beds) or the sea.

Very often, large water supply boreholes (especially for public supply) already have their catchment zones defined and may also include designated source protection zones (SPZ). For example, the Environment Agency of England & Wales defines a three-stage SPZ: Inner Zone 1 represents a 50-day travel time for water flow to the borehole where surface and sub-surface polluting activities are prohibited. Intermediate Zone 2 represents a 400-day travel time which restricts sub-surface activities and limits surface activities. Outer Zone 3 represents the whole catchment from which groundwater flows to the borehole and for which potentially polluting activities are monitored.

Interconnection of surface water and groundwater

Depending on the geological conditions, there may be strong interconnection between surface water and groundwater, partial interconnection, or complete separation.

Understanding the level of interconnection is essential to understanding the physical scope and water-related risks. Where there is strong interconnection, impacts on surface water can also affect groundwater, and vice versa. There are also situations where there is *partial* interaction, for example, when a near surface and deep aquifer are separated by a semi-permeable geological layer. Where interconnection is significant, the defined physical scope should include both surface and groundwater catchments.

Box

When the catchment of relevance may be far from the site.

When the site's water supply is provided by a third party, such as municipal supplier, it may be piped to the point of use over many kilometers, potentially from a physically separate catchment. The concept also applies to 'downstream' when wastewater is piped to a distant wastewater facility. In these cases, the water supplier or wastewater utility are key stakeholders. The organization should understand how *they* manage and mitigate water risk.

Box

Watershed and catchment terminology

This box helps to clarify some of the different terminology conventions which can cause confusion.

Surface catchment area

Term	Where used	Comment
Surface water catchment	AWS, others	
Watershed	US English (and others)	
River catchment	UK English (and others)	
River basin	General	Also 'drainage basin'

The boundary

Term	Where used	Comment
Catchment boundary	AWS, others	
Divide	US English (and others)	

Watershed	UK English (and others)	Less commonly used due to confusion with US meaning
River basin boundary	General	
Groundwater divide	General	Flow boundary internal to a geological unit.

Defining the Site's Catchment

All sites must define their catchment(s) and should include both the catchment in which their site is located and those catchments their site is reliant upon for water sources. The guidance on delineating a catchment is as follows: it is the smallest catchment that contains the upstream land area or aquifer body contributing to its source(s) and that contains the downstream areas affected by the site's water withdrawals or effluent. When a site is sourcing water from multiple sources – either surface or groundwater or both – different catchments for each source will need to be identified.

Note that catchments, as defined by AWS, may extend into water bodies if such water bodies are employed as source areas or are receiving water bodies. For example, if a site is located beside a lake and both withdraws and discharges effluent to the lake, the affected area of the lake should be included in the catchment.

The distance downstream that a site is responsible for can reasonably be determined by the distance at which the site's actions can still be determined from baseline conditions. In other words, at a given location, if a discharged effluent from a site is detectable above baseline levels, then that location is within the site's catchment. Similarly, in terms of water withdrawals, if the amount withdrawn affects downstream users at a given location (both human and other species) either through the total volume or the timing of water withdrawal, then that location is within the site's catchment.

The limits of detectable influence downstream or down-gradient from a point of origin (water withdrawal or wastewater discharge points) can be determined in one of three suggested ways:

- In the best-case approach, the limits of detectable influence can be identified using a hydrologic simulation model. This can be a time-consuming and expensive exercise, but it provides the most technically credible and defensible means for delineating where a site's influence begins and ends. This level of technical analysis might be warranted once a site determines that significant ecological or social impacts exist or can be expected (Step 4 below).
- A next-best approach is to apply some default "general rules". For example, one might conservatively assume that water consumption or water quality effects (depending on magnitude of use/impact) in small rivers (<10 m^3/s annual average flow) might extend for as much as 50km downstream, or until the small river is joined by a larger river (>10 m^3/s). For larger rivers, the area of influence could be assumed to extend for 100km downstream. For aquifers, the area of influence could be assumed to extend to a radius of 50km from the point of extraction or wastewater discharge. Such rules of thumb will be discussed during stakeholder outreach to see whether reasonable guides can be developed.

- A least-desirable approach is to use pre-set watershed or river basin boundaries, such as standardized watersheds or river basins mapped by government agencies or research institutions. If the predetermined watershed boundaries are considerably larger than the site's actual area of influence, any estimation of the site's influence or impacts will be diminished. If this approach is applied, the smallest-possible watershed containing the site's points of water extraction or return/discharge should be used.

These methods, in general, will generate a conservative estimate for the catchment (i.e. an estimate that would include all major impacts that need to be considered. Regardless of the method chosen, the catchment identified must be reasonably justified by the site, and ultimately what constitutes a "sufficiently large" catchment should be determined by affected stakeholders.

Another method of thinking about catchment would be to think about the following: if a water-related incident (drought, flood, spill, etc.) were to occur in a given location upstream or downstream, would it materially affect your operations?

Generally, water-abundant areas, or sites in close proximity to water sources, will likely have smaller catchments, while the opposite will be true in water-scarce areas. Furthermore, sites with a large amount of water use/discharge may have larger catchments, while smaller sites may have smaller catchments. For transboundary water sources, the site may have more than one catchment. If the site is reliant upon water from more than one catchment, all such catchments should be included in the "catchment" scope.

To know how to best define its catchment, the site needs to understand certain terms:

Site's water sources

- Water sources include both the immediate or proximate water sources from which the site is drawing directly and the ultimate water source. In other words, for sites that are drawing directly from a water body (for example a lake, river, stream, groundwater well) this would be their only water source. However, in cases where a site was drawing its water from a water service provider, the water service provider AND its water source (i.e., the water source that the water service provider is drawing from) would be required. For example, if a site sources its water from a local utility, then the site would be responsible for listing the name of that utility AND finding out which water source(s) the utility employs for its water. Water sources can be fresh, brackish or salty. They can also be greywater (including recycled or polluted waters).
- If water derives from a variety of sources, the actual (or estimated) percentage of water by source should be indicated. For example, 75 per cent from Lake A, 15 per cent from River B and 10 per cent from Aquifer C. If such data cannot be obtained, the site should document the request and refusal from the relevant parties.
- Water sources should be referred to by their nationally recognized official names.
- The full range of water sources includes water service providers (including water utilities), groundwater, lakes/ponds, streams/creeks, rivers, wetlands, snow, glaciers and any form of captured precipitation, including dew and seawater or other brackish forms of water.

- National and sub-national topographic survey maps should provide a site with source locations.

Site's receiving water bodies:

- The same process for identifying source water bodies applies to identifying receiving water bodies. It is insufficient to only indicate that the discharge is received by a water service provider. The site must also determine where the water service provider returns the water to the environment and note this receiving water body.

The scale of catchments - what size is relevant to a given site?

For effective water stewardship, the defined catchment scale and boundary must be relevant to the site's situation. For too small a catchment, important risks and stakeholders can be missed. For too large a catchment, there is a possibility of investing disproportionate effort and costs on low or negligible risks or non-relevant stakeholders.

Catchments range from a few square kilometers to many thousands. Aquifers range in thickness from a few meters to hundreds of meters. For a catchment that is very large, a site may need to identify a smaller portion (sub-catchment) that is relevant to its own scale of water use and discharges. However, it is important to remember that a major event in the main basin, such as a drought or large pollution spill, could still impact the site water supply.

The starting point for the organization should be to identify the complete catchment. In many cases, however, this will be an unrealistically large area for the site to work with. For example, the Mississippi River Basin, which covers approximately half of the area of the United States, is far too large a catchment for any individual site. This can also be true for much smaller river basins, and for large aquifers. In such cases, the site can define a more appropriate sub-catchment, justifying the reasons for doing so.

Box

Getting help to identify the catchment(s)

Defining a catchment requires specialist knowledge and expertise. Larger organizations may employ a hydrogeologist. For small organizations or farmers, this may seem a disproportionate expense. Other sources include:

- Water management agencies.
    - Very often they will have already mapped the main catchments, especially surface water catchments (river basins).
    - They may also have mapped the main aquifers, but this is less common.
    - Their mapping is commonly at a large scale. A site's effective catchment may be a sub-catchment to the main one, which will still need some specialist expertise to define.

- Nearby universities. Depending on whether their subjects include water resources and geology, they may have information or maps of value. They may be able to provide some expert advice at a competitive fee.
- Environmental consultancies. Very often, they will have water experts, and may be willing to support smaller organizations. Consultancy companies may seem expensive to small organizations or farmers, but individual freelance experts may be more competitive.
- Environmental NGOs.

Box

Catchment – key messages

- An accurate definition is critical for effective and optimal water stewardship
- Knowing the catchment(s) is relevant to assessing risks to the site and risks from the site to others
- Surface water and groundwater catchments are defined differently
- A surface water catchment (or river basin) is defined by surface topography and is fixed
- A groundwater catchment is defined by geology (fixed) and groundwater flow paths (which may change over time)
- Depending on the condition, a surface and groundwater catchment may be strongly interconnected, partially interconnected or wholly separate
- Where the geographical catchment is very large, it can be appropriate to define a small part (sub-catchment) as representative of the site's effective catchment
- For a site with its own private water sources and/or wastewater treatment facility, then the catchment(s) is specific to these. In some cases, the water sources and their catchment may be physically separate to the site.
- Where a site relies on an external service provider for water supply and/or wastewater management, then the relevant catchment(s) should include that/those of the service provider

GUIDANCE SPECIAL SUBJECT: IMPORTANT WATER-RELATED AREAS (IWRA)

This document covers the following:
1. Definition of IWRA
2. The role and relevance of IWRAs within the AWS Standard
3. How to identify IWRAs
4. How to assess the status of an IWRA
5. How to assess impacts on, or risks to IWRAs
6. Actions to address impacts and risks

1. Definition of IWRA

Glossary:

> *The specific water-related areas of a catchment that, if impaired or lost, would adversely impact the environmental, social, cultural or economic benefits derived from the catchment in a significant or disproportionate manner. Important Water-Related Areas are deemed "important" either by local stakeholders or by key stakeholders at regional or international levels. Important Water-Related Areas include areas that are legally protected or under a conservation agreement; areas that have been identified by local or indigenous communities as having significance for cultural, spiritual, religious or recreational values; and areas that are recognized as providing important ecosystem services, such as riparian areas, vernal pools critical for breeding of important aquatic species, aquifer recharge zones, wetlands that provide purification services, etc. A High Conservation Value Area (HCVA) is one form of Important Water- Related Area.*

The term IWRA is not restricted to 'areas', but also applies to point features, such as a spring or water well.

The term 'important' can be subjective. For some features, it is clear they are important, for example, a public water supply borehole or a protected wetland. For others, it can depend on local tradition or the views of stakeholders, including indigenous peoples. A feature need not have an official designation to be considered 'important' to the local community. They should be identified through appropriate research and consultation.

The term 'water-related' includes not only water bodies, but encompasses areas or features that are linked to, or dependent on water for their condition and protection. This includes wetlands, marshland, riverbanks, riparian areas and floodplains. It may include an area that is dry for much of the year, but which depends on periodic flooding to support its ecosystem. However, the assumption is there will always be a link to water.

There are four main categories of IWRA: environmental, social, cultural, and economic, as explained below. Many features cover more than one of these categories. For example, a spring may have both cultural importance, and economic importance as a drinking water supply. A wetland of environmental importance may also have an important role in filtering out agricultural pollution.

The concept of High Conservation Values represents an advanced approach to defining and categorizing important conservation features (www.hcvnetwork.com). Brown et al. (2013) includes a special annex on 'HCVs in freshwater systems', representing additional guidance.

Environmental importance
The environmental importance of IWRAs includes natural features supporting landscapes and ecosystems. In addition to their aesthetic value, they are essential for supporting aquatic wildlife and species on their boundaries. They may be essential breeding grounds for birds, and they are often a source of water and food for birds and other passing or temporarily resident wildlife. An IWRA may be important for providing water volumes, protecting water quality or both.

Examples include:

- Water features: river, stream, spring, waterfall, lake, pond
- Wetlands (which are often a mix of open water and land with shallow water table)
- Recharge zones for aquifers
- Designated conservation sites (international, national, regional or local)
- Special or unusual features such as peatlands and karstic systems (cave systems created by water erosion and dissolution over geological timescales)

Community importance
IWRAs provide sites, resources and features essential to meeting basic needs. Examples include water sources for drinking water (e.g. hand-dug wells, boreholes, springs, surface water bodies used for that purpose); and freshwater animal or plant populations relied on by communities for food or other benefits.

Cultural importance
Water-related features may have important cultural, religious or spiritual value to the community or indigenous peoples. These are features that, more than any other, will require effective stakeholder and community engagement to help with identification. Examples include waterfalls, springs or lakes of special cultural significance; or mineral water springs.

Economic importance
Water is essential for economic development and stability, for general drinking water supply, for industry and for agricultural irrigation. Any water feature providing a direct supply is clearly of economic importance.

There is also economic value in the ecosystem services that water features supply. This can include climate regulation (e.g. humidity and air-cooling effects), flood alleviation, supporting pollinating insects and supporting fish stocks for food.

2. The role and relevance of IWRAs within the AWS Standard
One of the five intended Outcomes of the AWS Standard is to achieve the 'healthy status of IWRAs,' as stated in the Introduction and Theory of Change.

The organization is required to identify IWRA features on the site (Indicator 1.3.6) and in the catchment (Indicator 1.5.5). It should also identify best practices for maintenance of on-site IWRAs (Indicator 1.8.4), and report on implementation (criterion 3.5, indicators 3.9.4 and 3.9.9).

For on-site IWRA features, the organization is required to restore them (where degraded) and to maintain or improve them (Criterion 3.5), regardless of whether a feature is impacted by the site's water use or wastewater management

For off-site IWRAs in the catchment, the organization should understand whether its own water use or wastewater discharge, or any other of its activities, have an impact on, or present a risk to the IWRA. A feature could also present a risk or impact to the site or its water source. This may require an assessment by an expert. For example, the site's water abstractions may have an impact on water levels or flows at the IWRA feature; or pollution from the site may impact on the IWRAs water quality.

Catchment IWRA features may fall within the scope of shared water challenges, for which collective action may be agreed to restore or protect the feature.

3. How to identify IWRAs

Identifying all IWRAs will usually require a combination of methods, combining original research and stakeholder engagement. Suitable methods and information sources include:

- Published maps of recognized conservation sites and legally protected features
- General maps and satellite imagery
- Regulatory and environmental agencies and water service providers
- Consultation with stakeholders, such as landowners, businesses and farms for their views on important water-related features (including their own water sources)
- Conservation groups and NGOs
- Consultation with community representatives on features of cultural value. (Note that a feature could be of value to a community not physically located in the catchment)

The site should list all identified features along with their principal category/ies (environmental, community, cultural, economic), a short description, and why and to whom they are important. Where a feature is identified by stakeholders but concluded to be of insufficient status to be an IWRA, the organization should provide a justification.

4. Assessing the status of an IWRA

The Standard requires a description of the status of each IWRA (indicators 1.3.6 and 1.5.5, advanced indicator 3.5.3). The status is a measure of the current condition relative to a normal or healthy status. The current status of an IWRA may be described in qualitative or quantitative terms. The general idea is to gain a sense of whether the area is in good condition, heavily impaired or somewhere between. One approach could use the following 0 to 5 scale represents practical guidance:

0. Lost or beyond a financially feasible restoration
1. Severely degraded and will require considerable restoration
2. Somewhat degraded and will require some restoration
3. Acceptable condition but would benefit from improvement
4. Good condition requiring little work apart from protection
5. Excellent condition and protected requiring no work (beyond, perhaps, ongoing maintenance and monitoring

Understanding the condition and status is important because for some cases, especially those rated 0 or 1, the only practical solution may be to maintain the IWRA by not allowing it to further degrade. The standard recognizes that maintaining an IWRA is acceptable for the criterion.

5. How to assess the potential impact on, or risk to IWRAs from the organization

Understanding where the organization has an existing physical impact or presents a physical risk to an IWRA is of greatest importance. However, it is also important to recognize that even if an absence of physical risk can be determined, there may still be a reputational risk based on a perception by stakeholders.

Understanding physical impacts and risks should start with a conceptual model of the water environment across the catchment. This is a visualization of the landscape and physical structure, and of how water flows through it and where it is stored. It should not be confused with a computer model, although computer modelling may be used to develop and assess it. The conceptual model may consist of maps and cross-sections or a 3-dimensional schematic.

The conceptual model should identify all relevant water bodies including aquifers, water sources and all other IWRAs, and include an understanding of how they are connected, or not connected, from a water and hydrological perspective.

For each IWRA, there should be an assessment of the actual or potential impact of the organization on its status. The potential for impact can depend on many factors, including whether the site and IWRA are connected by a common water body; the distance of the feature and its direction (downstream or upstream); and whether run-off from the site can have an impact on it.

Such assessments will usually require specialist expertise (e.g. water or environmental consultant), except in some simple and obvious situations. Below are examples of potential impacts between the site and an IWRA:

- Borehole abstractions cause water levels to fall in other boreholes or in a wetland, or cause the flow from a natural spring to decrease
- Surface water abstractions reduce river flow, or flows entering a wetland
- Wastewater discharge cause nitrates to rise in a sensitive surface water body and contribute to eutrophication
- Run-off from a farm cause sediment and agricultural chemicals (fertilizer, pesticides) to enter a sensitive water body
- Agricultural chemicals used on a farm (fertilizer, pesticides) infiltrate and contaminate an important underlying aquifer
- Chemicals stored on the site are flushed away in a heavy storm to contaminate a nearby water body, with a potential knock-on impact of harming or killing plant and animal species

Examples of impacts an IWRA can have on the site:

- Increasing abstractions from a public supply borehole cause the water level to fall in the site's own boreholes
- Occasional flooding of a wetland (although beneficial to its own condition) causes flooding problems at the site

The priority is to identify if there is a current impact, but secondly to identify risks and potential impacts. It is also valuable to report where the assessment shows there is no risk or a low risk of impact. The assessment should also consider the scale of an impact. It can be misleading to assume any impact is significant. A small and limited impact may be acceptable and reasonable.

6. Actions to address impacts and risks

For any IWRA located on site, the AWS Standard requires the organization to maintain, or where appropriate restore and protect it, regardless of whether there is an impact or risk.

For an IWRA feature located off site but within the catchment(s), the actions depend on the impact and risk assessment or whether it is part of a shared water challenge. If there is no impact or risk link between the site and the feature, then no action is required.

Where an impact or risk is identified, the organization has a responsibility to stop or reduce the impact, at least to the level it can be classified as insignificant. The action to achieve this will be dependent on the cause of the impact and nature of the IWRA. Examples of actions include:

- Improve water efficiency at the site to reduce water abstraction volumes
- Establish a new water source further from the vulnerable IWRA. In some cases, this could mean switching from a private to a municipal water source
- Upgrade wastewater treatment
- Change the location of wastewater discharge or switch to a municipal service provider
- Change how land is managed to reduce run-off from agricultural land
- Install buffer strips between agricultural land and sensitive water bodies
- Improve how chemicals are stored to reduce the risk of them leaking or spilling

Some IWRAs may be impacted or at risk from others in the catchment in addition to the site. In this case, actions should be part of addressing shared water challenges to remove or reduce impacts and risk, and may present an opportunity for collective action.

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GUIDANCE ON SPECIAL SUBJECT: STAKEHOLDER ENGAGEMENT

Within a catchment, all water-related physical processes and activities are interconnected, although some more strongly than others. It is in the interests of all parties to communicate and cooperate, even though they may not have the same priorities, and may be competitors for the same water resources. Understanding each other's priorities and interests will provide a better chance of benefit for all, and for protection of the natural environment. Stakeholder engagement is a tool for water stewardship, not an end in itself.

The priority reason for stakeholder engagement is to support planning for the organization's water stewardship actions. The process should ensure actions consider the needs and interests of stakeholders and the natural environment as well as those of the organization. The process of engagement can also motivate collective action with stakeholders.

The process of stakeholder engagement and the trust it can develop, may provide opportunities for the organization to influence water stewardship, first by setting an example to stakeholders, and second, by potentially influencing water governance policies.

What are stakeholders?

Stakeholders include any organizations, groups or individuals that have some interest or 'stake' in the implementing organization's activities and can affect or be affected by them.

The four main categories of stakeholders are:

1. Those who impact on the organization (e.g. regulators, other water users, polluters, special interest groups).
2. Those on whom the organization has (or is perceived to have) an impact (e.g., other water users, neighbors, conservation management organizations).
3. Those who have a common interest (e.g. similar business sectors).
4. Those who are neutral, with no specific link, but with whom it is beneficial to maintain a positive reputation and relationship.

Of most relevance are stakeholders associated with water use and dependency, but engagement should not be limited to these. Stakeholder Engagement should be much broader, as many issues are interlinked, including community welfare, local economy, natural environment and the organization's reputation.

Every location and situation are different, and roles and influence vary significantly between countries and cultures, but typical stakeholders include the following:

- Local authorities, regulators and other government agencies (e.g. municipality, environmental agency, water management agency, department of agriculture)
- Community
- Indigenous peoples and their traditional leaders
- Influential individuals or groups, such as fishing clubs, water sports clubs and enthusiastic conservationists.
- Famers and landowners

- Small farmers may independently have limited resources and influence, although their water rights and risks are important. Some may be represented via a collective with larger net influence.
- Larger farms and landowners may have important surface water bodies on their property, or aquifers below.
- Other water users: industry, private homes, public supply
- Environment; commonly represented by conservation groups, NGOs, or including hunting and fishing clubs who have a strong interest in protecting the natural habitats

At the beginning

The organization should first have a good understanding of its water and wastewater situation, and have defined its physical scope, at least provisionally, which may ultimately be adapted because of stakeholder engagement. This information will come from Step 1-Gather and Understand. This puts the organization in the best position to:

- Plan where to engage and with whom
- Know its own water challenges and therefore be prepared for constructive discussions on shared water challenges
- Be prepared to respond to questions about its water use and wastewater management, for example, how much water it uses (total and net), what it uses water for, and where its wastewater goes.

In this context, the organization should know the location and nature of its water sources, and the main water bodies that supply them (surface water body or aquifer). If it uses only municipal supply, it should know the supplier and the main water bodies upon which it relies. Similarly, the organization should know where its wastewater goes in terms of location and receiving water bodies. The physical scope is based principally on the catchment(s) of relevant water bodies (surface and/or groundwater), as described in the 'Catchment' section of this guidance.

Timescales

There are two main timescales for stakeholder engagement. The short-term aim is to identify shared water challenges and to support the development of initial water stewardship actions. However, stakeholder engagement should be maintained as a long-term process of two-way engagement and communication. The organization should be ready to adapt actions if circumstances change, for example due to increasing demand for water in the catchment, increasing physical water scarcity, increasing water charges, and extreme events such as flood or drought.

How to start engagement

The key stages in Stakeholder Engagement are:

Identify and map stakeholders. Starting with a map of its Physical Scope, the organization should identify as many stakeholders as possible. Stakeholders should be listed (ideally in table form) identifying their name, location, contact and reason for being a stakeholder. It is recommended to also show stakeholders on the Physical Scope map. There are a number of ways a stakeholder may be linked to the organization's defined Physical Scope, which include being:

- Physically located within the Physical Scope (e.g. inhabitants, businesses, farms)
- Users of land, water bodies or IWRA features within the Physical Scope

- Suppliers of water or wastewater services to locations within the Physical Scope
- Governments and regulators with responsibility in the Physical Scope
- Other organizations with a strong interest within the Physical Scope (e.g. NGOs responsible for managing IWRA features)

Categorize stakeholders. The organization should review its stakeholders and categorize them according to the four categories shown in Fig 3. This may be undertaken as a ‘materiality assessment’ (common terminology in sustainability reporting), whereby for each stakeholder it is assessed to what extent they are ‘material’ or important, to the organization and its water stewardship program. For some stakeholders, it may be possible to categorize them only after initial engagement. The category then helps define the form of engagement appropriate to each stakeholder or stakeholder group, as shown in Fig 3.

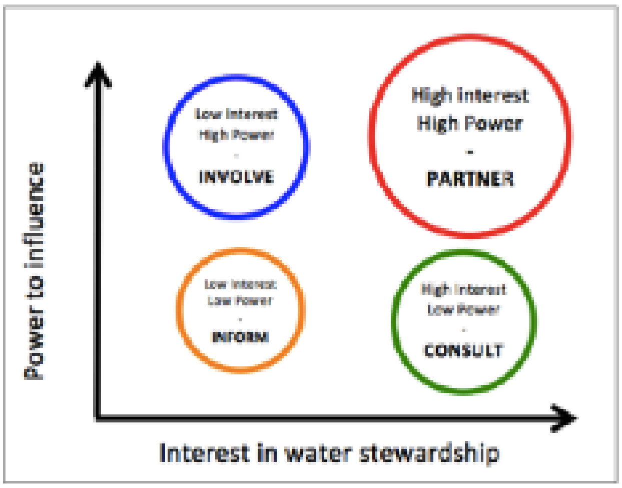

Figure 3

Know the water policy framework and institutions. Engagement on water-related issues in the catchment should be within the context of the policy framework and institutions and should not conflict with them. The organization needs to be sensitive to others who hold responsibility. For example, if the organization and its stakeholders rely on municipal water supply, the organization should first go through the supplier. If it first discusses water supply issues or concerns directly with stakeholders, then it may raise mistrust. Equally, if the organization relies on its own private water sources, it should first go through the relevant regulatory agency. The organization also needs to be aware of any existing engagement programs and start through them, so as not to duplicate work or conflict with existing programs. For example, England has an advanced program called Catchment Based Approach (CABA www.catchmentbasedapproach.org/) to promote engagement and partnership on a river basin scale.

Assigning responsibility within the organization’s team. The organization should define a team to undertake stakeholder engagement, with responsibilities, tasks and a timetable of actions. This is a component of Step 3- Implement.

Plan of action. Once the stakeholders are identified and mapped, the organization plans actions accordingly. This will consist of a number of types of action; including: actions for engaging with and communicating with stakeholders (short-term and long-term); actions for developing partnerships with relevant stakeholders to address shared challenges; and specific actions to address water stewardship issues and shared challenges.

Categorizing stakeholders to guide communications
The most advanced stage in stakeholder engagement is to establish a program of long-term engagement combined with active promotion of water stewardship. This form of transparency is a first step towards influencing practice, and potentially policy, by example. The ultimate aim is to successfully encourage good water stewardship across the catchment to the benefit of all stakeholders and the natural environment.

The influencing of actions or policy needs to be managed carefully and sensitively. How it should be done is very specific to the local political landscape and culture. Considerations include:

- Be aware of any existing stakeholder engagement initiatives in the catchment. If they exist, the organization will have an opportunity to benefit from them and should avoid duplication of effort or conflicting actions
- For small farmers and businesses, their priority is economic survival, and they therefore need to understand how water stewardship actions can support this
- Farming communities may be conservative and skeptical to 'new ideas' from perceived 'outsiders.' It may require a program of long-term engagement (perhaps over years) to develop trust in the benefits of change
- Some NGOs are highly experienced at influencing practice and policy and can therefore make good partners in stakeholder engagement

Communicating with stakeholders
There are many possible methods for communicating with stakeholders, as shown in Table 1. The method should be appropriate to the stakeholder and determined from the outcome of the categorization process as described above and indicated in Figure 3. The organization needs to decide what form of communication and engagement is appropriate to which stakeholder, but it does not need to rigidly align with the categories shown in Figure 3. The form and method of communication should consider the cultural conditions and traditions of the community. This includes the levels of technological advancement and literacy within the community, and therefore whether digital, written or verbal communication is most appropriate.

Table 1. Examples of communication methods for different stakeholder categories

Inform	Consult	Involve	Partner
Send out information leaflets, newsletters, etc. (e.g., door-to-door, by post, email)	Questionnaire surveys	Advisory panel	Joint projects with other water users
Public access website	Focus groups	Invite input into planning of actions	Joint projects to protect or improve HCV features (e.g., with conservation NGOs)
Public presentations (e.g., at council meetings)	Stakeholder physical meetings	Interactive website, allowing feedback and comment	

Invitations to visit and tour the organization's site			
Press releases and media postings			
Information panels in public places			

The level of stakeholder engagement required

The Standard cannot define the appropriate level of stakeholder engagement, which will be dependent on a number of factors. The appropriate level can depend on considerations such as the following:

- The relative size of the organization in a catchment compared to other operations
- Whether the organization is considered a large water user or generator of wastewater
- Whether the organization uses its own private water sources or external service provider
- The scale of water-related challenges in the region
- The nature and advancement of water governance

Where a lower level of stakeholder engagement is justified, it should not allow for no engagement. The organization should show it has undertaken an assessment and can justify the level of stakeholder engagement it applies.

Consensus

Where an organization is required to show consensus, it should show it has sought it, and ideally achieved it. Recognizing the organization cannot insist on feedback from its stakeholders, where feedback is difficult to gain the organization should show an absence of serious objections and that the interests of vulnerable stakeholders are not negatively impacted. Some indicators within the AWS Standard require the site to demonstrate it has sought consensus for its plans or actions, considering all reasonable positions and concerns.

Further guidance on stakeholder engagement

There are a number of guides on stakeholder engagement available from various sectors. Many of these are comprehensive and detailed and may be more appropriate for the more advanced levels of stakeholder engagement. Smaller organizations may not have the resources to undertake such comprehensive stakeholder programs. As stated at the beginning of this section, stakeholder engagement is a tool for achieving the water stewardship objectives and not an end in itself. As such, the scope and level of stakeholder engagement should be appropriate to the scale of the organization and the scope of its water use and wastewater generation, and relevant to the scale and issues of the catchment and defined physical scope.