Regulatory Reporting Consultation Response

Finance & Commercial

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22nd February 2019

Dear Sir/Madam,

Consultation on regulatory reporting

Thank you for the opportunity to respond to your consultation on regulatory reporting for the 2018/19 reporting year.

We have included our detailed responses to the consultation questions in the attached Appendix 1.

Water UK coordinated a number of workshops to improve the consistency of the common performance measures reporting. The workshops addressed any ambiguity and uncertainty with the following three measures, which were new for the 2017/18 shadow reporting:

- Sewer collapses
- Wastewater resilience
- Unplanned outages

We have provided the results and outcomes, which we support, of the workshops in appendices 2, 3 and 4, respectively.

Please do not hesitate to contact either myself or my team if you have any questions or comments on our response. We look forward to working closely with Ofwat in supporting the further development of performance reporting.

Yours faithfully,

[redacted]

Brandon Rennet
Chief Financial Officer

Appendix 1 – Detailed responses

Questions relating to 2018/19 reporting:

Q1 **Transparency of financial flows**

a. Do you agree with the scope of the proposed information items in the new table?

We agree with the scope of the proposed information items in the new table.

b. Is there any information missing from this table which you think should be included in order to achieve transparency and consistency for financial flows reporting?

We believe that the information captured in this table sufficiently achieves transparency and consistency for financial flow reporting, however, there are certain items for which we seek further clarification as outlined below.

Do any of the line item definitions require further explanation?

- **Line 8:** There is a reference in the RAG 4 definition to 1F.7, however we believe the correct reference is 1F.9 (The cost of debt (unadjusted for hedging instruments = cost of debt less 1F.9))
- **Line 9:** In the pro-forma table, the line for 'hedging instruments' which is under the 'actual returns and actual regulatory equity' for current year is marked as being a calculated cell, however we believe this should be an input cell.
- **Line 15:** We believe that the RAG 4 definition should also include 1F.3 (Total earnings is the sum of 1F.3, 1F.10 & 1F.14)
- **Line 16:** In the pro-forma table, the line for 'RCV growth' which is under the 'notional returns' column is marked as being a calculated cell, however we believe this should be an input cell.
- **Line 17:** To improve transparency and clarity, could this line be titled: 'Total shareholder return (nominal)'.
- **Line 19:** Should the RAG 4 definition be 1F.17 - 1F.18 (Total shareholder return less net dividend)? Currently it is (1F.17 – 1F.17).
- **Line 21:** We note that there is a definition change relating to interest received on intercompany loans to now include 'as included in the P&L account', however, the definition for gross dividend related to the 'total amount of dividends paid during the period'. If we input the interest received on intercompany loans as shown in the P&L account, we believe the corresponding definition for the gross dividend line would be 'total amount of dividends recognised in the period'. Could Ofwat please clarify?

Q2	**New connections** **a. Do you agree with the scope of the proposed information items in the new table?** To enable reconciliation of revenue against costs, we believe that this should be presented on a 5 year period basis. Could Ofwat please confirm? **b. Is there any information missing from this table which you think should be included in order to achieve transparency and consistency for new connections reporting?** We propose that an additional line 'prior period adjustments' should be incorporated into the table to allow for transparent reporting of income against costs. For example, in an instance where a prior year accrual should be written off, without a prior period adjustments line, the in-year performance would be distorted. We also believe it should also include a set of cumulative columns to present the 5 year period/rolling performance (subject to outcome of query raised in question 2A above). **Do any of the line item definitions require further explanation?** - **Line 4:** The pro-forma table for 2K shows the variance brought forward line: Can Ofwat confirm that in the reporting year 2018/19 this should be shown as nil? Going forward, we believe the variance brought forward should then be split by water and waste.

Q3	What are your views on the proposed changes to the existing tables?	
Table	**Line**	**Issue**
2E	**1 - 5** **9 - 10**	In the RAG definitions for table 2E, the Water Industry Act references have been removed. As a result, we believe that this has made the guidance ambiguous and inconsistent with prior periods. For example, in the 2017/18 reporting year, we reported NRSWA and HS2 diversions within other contributions (non-price control), however current RAG guidance would place these contributions within the diversions line. Please could Ofwat confirm if this was their intention? Could Ofwat also confirm the guidance displayed in Appendix 1 Income categorisation table?
2E	**11**	The RAG definition states that this line should report price control contributions received towards wastewater capital projects. In 2017/18 we included s.104 adoptions income within this line as per guidance in appendix 1 of RAG 4. Could Ofwat please confirm where s.104 adoptions income should be reported?
2I	**23 - 24**	RAG definition marked as TBC. Could Ofwat please confirm?
2J	**7**	Missing text from RAG definition.
3S	**9**	Please can Ofwat provide guidance on how to assess the certainty grade relating to the performance calculation? (eg. is it possible to send the URL to the Certainty grade (see metric certainty grading as defined in the definition document available from the 'Outcomes definitions – PR19' page of the Ofwat website).
3S	**13**	Please can Ofwat clarify their expectation for this line. Is merely supporting information required and what are the parameters for the confidence grades? If the requirement is the same as for 3S.9 should the wording should be the same?
4C	**1 - 3**	Could Ofwat please confirm the price base of these lines? Our expectation is that 4C line 1 should be in base year (i.e. 2012/13) prices, in order to be consistent with 4B line 9, however, we would expect that 4C line 2, 3 and 4 should be converted into March 2019 year-end prices, in order to be consistent with line 5. Could Ofwat please confirm if this is correct? These lines calculate the total expenditure (totex) over/underspend with the formula 'menu baseline totex' – 'actual menu totex'. We agree that the use of menu totex is appropriate for the Water and Wastewater controls, as the costs excluded from the menu do not contribute to the RCV end-of-period adjustments for these two price controls, however, according to the PR14 final determination, TTT land costs are

		excluded from the menu, but variances still get included in RCV through a 100:0 cost sharing. Thus, the use of menu totex in the definition may not be most appropriate for the TTT price control. Should TTT land costs be included in this table? If so, could Ofwat update the definitions to reflect this or confirm that they agree to our treatment of the TTT land costs? In the proposed definitions, the totex over/underspend is calculated as 'menu baseline totex' – 'actual menu totex'. Following this, if a company overspends, line 3 (RCV element of cumulative totex over/underspend) is populated with a negative number. However, according to the PR14 reconciliation rulebook, an overspend generates an increase in RCV at the end of AMP6 (and vice versa for underspends). Should the definition therefore be adjusted to use the following formula: ('actual menu totex' – 'menu baseline totex') * (1 – 'PAYG%') ? This would generate an RCV adjustment of the correct sign. Could Ofwat please confirm?
4C	**2 - 3**	The proposed definition for line 3 states that it "should be calculated using the PR14 reconciliation rulebook calculations." and refers to the formula: ('menu baseline totex' – 'actual menu totex') * (1 – 'PAYG%'). However, the PR14 rulebook and the totex menu adjustment model apply financing costs to the totex over/underspend ('menu baseline totex' – 'actual menu totex') before allocating the RCV element share (1 - PAYG%). Our expectation is that for table 4C we should disregard financing costs. Is this correct?
4C	**3**	The PR14 reconciliation rulebook (p. 26) states that "To allocate the final totex adjustment between revenue and RCV the model uses a weighted average of the company's PAYG profile, using the proportion of baseline totex in each year to weight the company's annual PAYG rate for each wholesale control." Please confirm that this is the expected calculation method for the PAYG used in line 4C.3.
4H	**5**	For consistency with new lines added to table 4H (4H.21 - 4H.26) the RORE line 5 should also have an AMP to date field. Could Ofwat please confirm?
4J	**20 - 21**	Line definitions for 4J.20 to 4J.21 have been duplicated in the cash expenditure section of the table. We propose these should be deleted.
4L	**1**	"NERC" is included in the proforma but not the RAG4 line definition. Can the definition be updated to align with the table?
4M	**14**	The RAG definition refers to line 151. Can Ofwat please confirm the line reference?

4M	**15**	The RAG definition refers to line 129. Can Ofwat please confirm the line reference?
4M	**24**	The RAG definition refers to line 289. Can Ofwat please confirm the line reference?
4R	**3 & 4**	The changes document refers to 'clarification' in lines 4R.3 – 4R.4 however we cannot see any change from RAG4.07. Please can Ofwat confirm the change?
4V 4W		**Employment cost and FTEs:** For PR19, Ofwat required that employment cost (and corresponding FTEs) were completed on a totex basis (as opposed to an opex basis that is required for tables 4V & 4W.) Could Ofwat please confirm that an opex basis is still required for tables 4V and 4W as is implied by the draft RAGs?

Q4	**What are your views on the issues highlighted in section 3 'Future developments in performance reporting'?** **IFRS 16:** We agree with the reporting requirement for 2019-20 that companies should quantify and explain the impact that applying IFRS 16 has on the operating costs in the income statement. **Table 2A – Impact of new price control units:** We agree with expanding table 2A – Segmental income statement to include revenue so a profit or loss will be published. Appendix 1 of draft RAG 4.08 does not break down revenue into the new price control units therefore we would appreciate further guidance on how to determine the price control for revenue, particularly revenue currently recorded as 'other non-price control third party revenue' in table 2I.16. This would ensure that the revenue related to these activities is recorded consistently and comparably across the industry. **Bio-resources trading:** We agree with the plans to extend the analysis relating to imported sludge to show cost and profit. **Impact of retail non-household exit:** We welcome changes to the allocation of activities between retail and wholesale from 2020-21 onwards. Although we are aware that the inclusion of certain activities in the retail non-household price control allows comparability to the price controls set in the final determination, we are concerned that the current practice of recording costs in a price control where we no longer have a licence to operate is confusing for our customers.

	Income from 'diversions' activities: We agree with aligning the treatment of diversions to be consistent with PR19 from the start of AMP7. **Are there any other issues which we should consider? We are particularly interested in your views on the impact of additional price control units (section 3.2).** With the exception of expanding the guidance presented in Appendix 1 of draft RAG 4.08 as outlined above we have no further comment on the future developments in performance reporting.

Q5	**What are your views on our preference to require all costs associated with the 'Traffic management act' to be reported (section 6)?** We currently report the direct opex costs of Traffic Management Act (permits, lane rentals, and parking bay costs). Other potential costs that could relate to the Traffic Management Act (such as general overheads relating to planning and management) are not always separately identifiable, therefore these costs would require apportionment by an appropriate cost driver or management judgement which may lead to inconsistency in reporting. Recording only direct costs associated with the act would ensure comparability in this line across the industry. Could Ofwat please confirm?

Q6	**What are your views on our additional asset type descriptions for Water resources which recognise 'desalination' and 'effluent reuse' abstraction assets (section 7)?** We agree with the descriptions provided for the 'desalination' and 'effluent reuse' as additional asset types for water resources.

Appendix 2 – Sewer Collapses (Water UK)

Rationale for proposed revisions to reporting guidance

The proposed changes relate to clarifications in five areas: the scope of the measure, the definition of customer and environmental impact, which assets that should be included, report timing and exclusions covering proactive status and impact of root ingress.

- **Clarification of the scope of the measure**

  Making clearer that the measure is for sewer collapses that have not been identified proactively by the company and cause an impact on service to customers or the environment

- **Clarification of the definition of customer and environmental impact**

  Making clearer that 'impact' covers any contact with the company (i.e. an impact on service has caused someone to contact the company), or any unplanned escape of wastewater, that results in the need to replace or repair the pipe to reinstate normal service; this revision aims at providing clarity that an impact to customer and environment should not be limited to a flooding or pollution event.

- **Clarification of assets that should be included**

  Making clearer that a reportable sewer collapse also applies to pipe bridges, and failures on the infrastructure network, including inputs into the inlet of treatment works and terminal pumping station rising mains (in accordance with RAG guidance 4.07).

- **Clarification of the report timing**

  Making clearer that a sewer collapse should be reported in the reporting year when the service incident was reported to the company and not when the repair was completed.

- **Clarification of exclusions covering proactive status, impact of root ingress**

  Making clearer, via an updated flow diagram, the distinction between the proactive and reactive sewer collapse. Additionally, removing two exclusions (fractured assets and minor pipe breaks), providing clarity on how root ingress and patch repairs should be treated, and making the wording on exclusions less ambiguous.

We, and other companies, would be happy to expand further on the rationale for these changes if that would be helpful.

If the approach set out in this note was supported by Ofwat, and confirmation of this was provided by 22 March 2019 in line with the timeline set out in the consultation, we confirm that we would be able to report on this basis in the early APR submission by 15 May 2019, and resubmit business plan forecasts for 2019-20 to 2024-25 on this basis at the same time.

Annex: Proposed revisions

This annex sets out, in track changes from the published guidance, the proposed changes.

Reporting guidance – Sewer collapses per 1,000km

Objective

This guidance seeks to enable all companies to report on sewer collapses for the defined year with confidence and at a reasonable level of accuracy and with a common approach. Companies shall apply consistent and robust methods and common assumptions. This will facilitate the comparison of performance across companies by customers, regulators and other companies with reasonable confidence.

Key Principles

There are several key assumptions made in the compilation of the guidance:

- Reporting on number of sewer collapses shall be subject to each company's assurance process which is applied to all measures reported annually.
- Companies have a methodology or procedure in place for reporting on sewer collapses
- There is an assumption that there will be continued improvement by all companies in the short and medium term through innovation, new technology, data quality improvements and staff training:
- The measure assumes a clear and simple approach that can be understood by customers and regulators;
- The essential reporting requirements for reporting on sewer collapses are set out in the guidance;
- The focus of the guidance is on annual reporting of number of sewer collapses. It is not intended as a definitive guide to managing the risk of sewer collapses;
- Exclusions are to be kept to a minimum and shall be consistent with the reasonable expectations of an affected customer.

Applying this guidance is likely to mean that comparisons of historical performance between companies, and of individual companies' previous performance, may not necessarily be valid. However, it is anticipated that future individual company year on year trends in performance will be possible.

Measure Definition

Number of sewer collapses per thousand kilometres of all sewers that have not been identified proactively by the company and causing an impact on service to customers or the environment.

This measure seeks to reflect failures in the asset, causing any impact on service to customers or the environment that requires replacement or repair to reinstate service, while maintaining incentives for companies to proactively investigate asset quality.

A reportable sewer collapse is considered to be where a failure has occurred to the pipe that results in either any contact with the company (i.e. an impact on service has caused someone to contact the company) or any unplanned escape of wastewater and results in the need to replace or repair the pipe to reinstate normal service (as set out in the flow diagram below). The measure intentionally does not refer to the magnitude of the collapse.

This measure includes rising mains, pipe bridges, and failures on the infrastructure network, including inputs into the inlet of treatment works and terminal pumping station rising mains (in accordance with RAG guidance 4.07).

Note this measure should include all public sewer and lateral collapses recorded by the company inclusive of those incidents that have been reported as flooding or pollution failures, if the primary cause of the flooding or pollution was a sewer collapse.

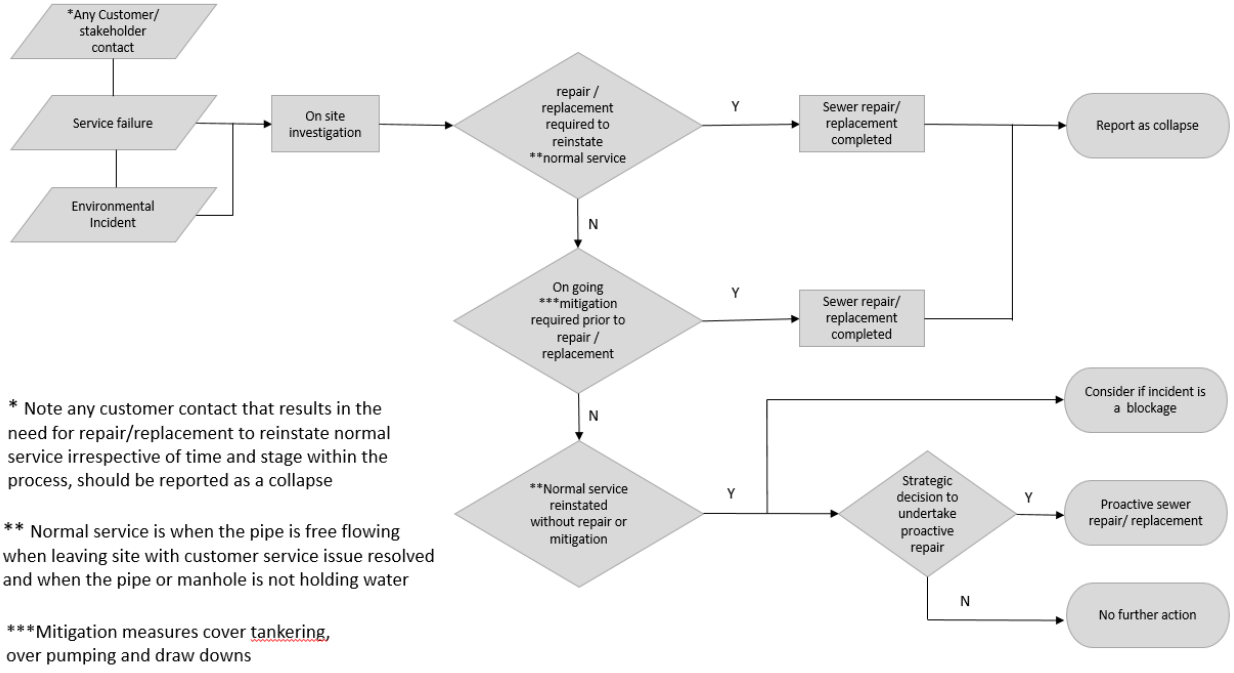
Note multiple incidents on the same length of sewer (manhole to manhole/ valve to valve) will count as a single incident if all work is carried out as part of the same remedial job. This assumes that the locations are in close proximity. This would not be the case if separate locations were more than 25m apart.

For clarity if jetting enables restoration of flow without the need for pipe replacement or repair then the incident is not to be reported as a sewer collapse.

However, if pipe replacement or repair is needed to resolve an issue that has been identified as a result of either a contact with a company or any unplanned escape of wastewater, then it is to be reported as a sewer collapse in the reporting year in which the service impact was reported to the company, not when the replacement or repair took place.

Reporting Process

The process for deriving the number of sewer collapses is given in the diagram below:



A sewer collapse should be reported in the reporting year when the service incident was reported to the company, not when the replacement or repair took place.

A company is required to report against this definition and:

- Disclose where its methodology does not comply with this guidance using the checklist in Annex A;
- Explain the reasons for any non-compliance;
- Set out its plans and programme to comply with the guidance; and
- Disclose any other factors which have an impact on the methodology for reporting outage.

Components

Sewer Length

Companies should separately record the length of sewer that was transferred to their responsibility under the Transfer of Public Sewers regulations 2011.

Exclusions

The following exclusions apply to the sewer collapse measure definition:

- Proactively identified collapses – Should the need to replace or repair a pipe be found as a result of proactive activity (survey or proactive sewer maintenance work) on the network then it should be excluded (see flow diagram above).

- Third party damage – Third party structural damage (including water utility damage) of the sewer is not an indicator of asset health and hence should be excluded.

- Manhole damage and internal backdrops should be excluded

- Displaced joints, cracked pipes, open joints, intruding connections, and hard blockages, patch repairs and sewer lining do not reflect sufficiently significant structural failure hence should be excluded from the measure.

- Root ingress is excluded unless it has resulted in a need for pipe replacement

Appendix 3 – Wastewater resilience (Water UK)

Context

This measure is new and relatively complex, with a number of stages, some of which involve the use of judgement (for example in assigning grading the vulnerability of catchments or whether to use 'buffer' or '2D' approaches to modelling). As would be expected for a newly introduced measure of this nature, there is some variability in the detailed approaches taken by companies; greater transparency would improve visibility of this and over time result in improved consistency through the identification of best practice.

Enhancing commentaries to improve transparency

To improve transparency to stakeholders, we propose that as a matter of routine, all companies provide in a commentary all the information set out in section 3.6 of Developing and Trialling Wastewater Resilience Metrics, Atkins, and specifically Tables 6-9.

In addition, all companies should:

- Set out the parameters they have used in applying the catchment vulnerability assessment (Appendix A of Developing and Trialling Wastewater Resilience Metrics, Atkins)
- Reporting the extent to which they use '2D' modelling approaches or the simpler modelling approach of applying a buffer zone
- Confirm whether they currently use FEH13 in their assessment, and if not, when they expect to do so

While we commit to providing this information, we suggest that it would be helpful for Ofwat to explicitly include a requirement to do so in the APR reporting requirements.

Technical aspects where companies will improve consistency

At a more technical level, we have identified more consistent approaches to applying some aspects of the methodology, set out below:

- Modelling properties at risk of flooding on the basis:
    - For the 'buffer' approach, including any residential property where flood water reaches the property address point centroid
    - For the '2D' approach, including any residential property where flood water reaches the house boundary

Future development

We recognise that over the next few years, there is further work to be done to improve understanding of this metric, for example more standardised parameters for the catchment vulnerability assessment and better understanding of the relative merits of using the two approaches to modelling ('buffer' or '2D'). We will continue to work with other companies on this to improve the robustness and comparability of this measure.

Appendix 4 – Unplanned outages (Water UK)

Rationale for proposed revisions to reporting guidance

The proposed changes relate to two areas, the definitions of 'Peak Week Production Capacity' (PWPC) and of the duration of an outage.

Peak Weak Production Capacity

- Making clearer (through reordering the first sentence, removing some unnecessary text and adding an additional sentence) that this measure is different from PWPC as defined in Water Resource Management Plans
- To improve consistency, clarifying that PWPC should be at least the highest historic performance that has been sustained for any seven-day period in the last five years (unless a change to assets or processes can be evidenced), but could be higher
- Expanding the section on how companies could evidence PWPC, including that the duration of any tests need not extend to seven days, to avoid unnecessary wastage of water and operational disruption

Duration

- Where an asset has been fixed and is ready to be put back into service, but there is not an immediate operational requirement for them to actually be put back into service, companies propose that to promote operational and water efficiency, the end time of the reportable unplanned outage should be when the asset is repaired, rather than when it is recommissioned, to avoid an unnecessary temporary recommissioning process
- To maintain incentives for companies to ensure that the asset is genuinely ready to be put back into service when it is needed, in line with the spirit of this measure, companies propose that in this situation, if the asset failed when subsequently being recommissioned to put back into service, then the start time for the reported unplanned outage should be the start of the original outage
- A minor amendment is also proposed to remove one sentence that could cause confusion between planned and unplanned outages

We, and other companies, would be happy to expand further on the rationale for these changes if that would be helpful. If the approach set out in this note was supported by Ofwat, and confirmation of this was provided by 22 March 2019 in line with the timeline set out in the consultation, we confirm that we would be able to report on this basis in the early APR submission by 15 May 2019, and resubmit business plan forecasts for 2019-20 to 2024-25 on this basis at the same time.

Annex: Proposed revisions

This annex sets out, in track changes from the published guidance, the proposed changes.

Reporting guidance – Unplanned outage

Objective

The guidance seeks to enable all companies to report on outages for the defined year with confidence and at a reasonable level of accuracy and with a common approach. Companies shall apply consistent and robust methods and common assumptions. This will facilitate the comparison of performance across companies by customers, regulators and other companies with reasonable confidence.

Key Principles

There are several key principles applied in the compilation of the guidance:

- Reporting of annual outage forms part of each company's assurance process applied to all measures reported annually by companies;
- A company needs to have a written methodology or procedure in place for reporting outage. This procedure is reviewed annually and updated as required;
- The reporting guidance for annual outage reporting is set out as a consistent good practice baseline for the industry which companies should achieve now or in the short and medium term; and
- Where a company is not able to meet any part of the good practice methods then it is required to explain any shortfalls and its plans to address this.

Measure Definition

This measure is to be used as a means of assessing asset health (primarily for non-infrastructure – above ground assets), for water abstraction and water treatment activities. It is defined as the annualised unavailable flow, based on the peak week production capacity. or PWPC), for each company. This measure is proportionate to both the frequency of asset failure as well as the criticality and scale of the assets that are causing an outage.

It is important to understand planned and unplanned outage as they both reflect on asset health. The actual unplanned outage should be reported as the temporary loss of peak week production capacity in the reporting year weighted by the duration of the loss (in days). Outages arising from planned works should be recorded separately to outages arising from unplanned causes, such as asset failure.

The proposed calculation for both figures is:

$$\frac{\text{Reduction in peak week production capacity} \times \text{Duration in days}}{365}$$

Unplanned outage for each water production site is calculated separately and then summed over the reporting year to give a total actual unplanned outage for the water resource zone.

The company water resource zone weighted outage can then be summed (Ml/d) and normalised based on overall company peak week production capacity to be reported as a percentage.

A calculation example is as follows:

For a single source works:

A source works has a peak week production capacity of 30 Ml/d
For 15 days the maximum production capacity is reduced to 15Ml/d due to a temporary unplanned outage (pump failure). This is a loss of peak week production capacity of 15 Ml/d for 15 days.

The weighted unplanned outage for this source works = 15 x (15 / 365) = 0.62 Ml/d
Each weighted unplanned outage is then summed over the reporting year to give a total unplanned outage for the water resource zone.

For a water resource zone:

First source works in zone –weighted unplanned outage = 0.62 Ml/d
Second source works in zone –weighted unplanned outage = 2.58 Ml/d
Third source works in zone –weighted unplanned outage = 3.67 Ml/d
Zonal weighted outage = 6.87 Ml/d

The company water resource zone weighted unplanned outage can then be summed and normalised based on overall company peak week production capacity.

Company normalising:

Zone 1 weighted unplanned outage = 6.87 Ml/d
Zone 2 weighted unplanned outage = 7.95 Ml/d
Company weighted unplanned outage = 14.82 Ml/d
Company peak week production capacity = 120 Ml/d
Unplanned outage proportion = 12.4%

Exclusions for managing raw water quality and other matters are permitted and described in Section 5.6. Exclusions should be reported alongside the planned and unplanned outage figures.

Reporting Process

The guidance is structured in the way that outage is normally estimated and components of outage are described in Section 5.

The process for deriving planned and unplanned outage is shown in the following diagram.

A company is required to report against this definition and:

- Disclose where its methodology does not comply with this guidance using the checklist in Annex A;
- Explain the reasons for any non-compliance;
- Set out its plans and programme to comply with the guidance; and
- Disclose any other factors which have an impact on the methodology for reporting outage.

Components of Unplanned Outage Calculation

Peak Week Production Capacity

A company should define its peak week production capacity (PWPC) for each water production site or source works included in its water resources management plan (WRMP). PWPC for this measure is not expected to be the same number as reported for dry year peak week production capacity (although it is possible that it may be the same).

For this measure, PWPC is equivalent to the maximum volume of water which can be put into supply and sustained over a period of one week measured in Ml/d. This should be at least as great as the highest historic performance that has been sustained for any seven-day period in the last five years (unless a change to assets or process can be evidenced) but could be higher. This should be supported by physical tests to demonstrate capability undertaken at least once every five years. It is expected that this value should be reviewed annually and as modifications to assets and processes are completed which impact capacity.

It is expected that PWPC would be a fixed value for each production site each year unless a change to assets or process can be evidenced.

Peak week production capacity does not account for seasonal changes in yield (most commonly observed at groundwater sources) and allowed abstraction volumes (most commonly observed at river sources) which are weather dependent and not an indicator of asset health.

A company is expected to:

- Define PWPC for each water production site.
- Review PWPC annually.
- Support PWPC with evidence of actual output or of capacity tests undertaken on a rolling programme each five years. This should be based on a risk-based approach for each works and the duration of testing does not need to extend to seven days.
- Support revisions to PWPC with evidence of changes to assets or processes.

Asset Failure / **Unplanned** Outage

The failure or deterioration of any asset which impacts on the ability to produce the peak week production capacity should be recorded as an unplanned outage. This may be a failure which impacts part or all of the production plant which contributes to peak week production capacity.

This can include:

- source abstraction assets (e.g. abstraction pumps, screens, boreholes);
- raw water transport assets (e.g. pumping plant and mains);
- raw water storage assets (e.g. balancing reservoirs);
- water treatment assets;
- treated water storage assets (e.g. contact tanks, pre-distribution storage); and
- treated water distribution assets before distribution input meter (e.g. treated water pumping).

In some circumstances the failure of assets upstream of the treated water distribution assets may not impact on the peak week production capacity. For example, where a river abstraction is pumped to bankside storage and then stored water is pumped onto treatment works, the failure of an abstraction pump may not impact peak week production capacity as water onto the treatment works can be maintained from the raw water storage. The length of time that this asset is unavailable will determine whether the peak week production capacity is reduced and therefore contributes to unplanned outage.

Where asset failures occur at water production sites with standby assets this may also not impact peak week production capacity. For example, a groundwater site with a peak week production capacity of 10Ml/d may have three boreholes on site, all with capacity of 5Ml/d. Under normal circumstances boreholes 1 and 2 may be operated to provide the site output of 10Ml/d. If the pump in borehole 1 fails then borehole 3 is switched on to replace the lost capacity. Providing borehole 3 is switched on within 24 hours to replace the failed asset in borehole 1 there would be no unplanned outage recorded. There may need to be an outage at a later stage to repair or replace the failed pump. Whilst this can be scheduled and planned for a convenient time the reason for the need to make the repair is an unforeseen failure of an asset and therefore the outage for the scheduled repair or replacement should also be classified as unplanned.

Planned Outages

Where assets are taken out of supply or made unavailable for supply to enable planned maintenance or capital works to be completed then these should be recorded as planned outages. The same principles for work on standby assets apply here as for unplanned outages.

It is expected that a company will have a process whereby planned works on production assets are approved and scheduled. This may be the basis of evidence to demonstrate that the outage is planned.

Where planned work results from an asset failure any resulting outage should also be recorded as unplanned.

Duration

Only outage events which exceed 24 hours in duration should be included in this measure. Outage duration should be recorded to the nearest whole day with normal rounding rules applied. For the avoidance of doubt, all outages below 24 hours are excluded and rounding does not apply. The duration may span a calendar day

By way of an example of rounding, an unplanned outage of 79 hours would be 3 days whereas an unplanned outage of 115 hours would be 5 days.

A company should identify the start of an outage period using telemetry data wherever possible. If a company uses another source of data to indicate the start of an outage period it should specify the data source and demonstrate auditable record keeping.

The end of the unplanned outage period should be recorded as the time when the asset was returned to a state meaning the availability of peak week production capacity is restored. For the avoidance of doubt this should not be when the individual asset is repaired or planned work completed but when the recommissioning process is completed, except when there is no immediate requirement to put an asset back into service.

In this case the repair time is taken as the end of the unplanned outage period. If when the asset is next required to be put into service, it operates in a way that would count as an unplanned outage, the start time for the reported unplanned outage should be that of the original outage.

For example, if a borehole pump is replaced due to an unexpected failure or planned works the end of the unplanned outage is not when the pump replacement is completed but when any subsequent pumping to waste and water quality testing is finished and full peak week production capacity is restored, if the pump is required in service immediately.

If the pump is not required in service immediately, then repair or replacement time is taken as the end of the unplanned outage. When the pump is next required to be put into service, should it operate in a way that would count as an unplanned outage, the start time for the reported unplanned outage should be that of the original outage.
Where planned work exceeds the duration of the scheduled outage any extension is to be included within the planned outage figure.

Where a company chooses not to respond immediately to an unplanned outage such as a failure at the weekend for which alternative water can be deployed the duration may be longer than it might otherwise have been. A company should make no adjustment for this in the measurement of the duration of the unplanned outage. This may result in reporting higher unplanned outage figures but given that alternative sources are available it is unlikely that the unplanned outage in this example would be contributing a large amount to the overall company peak week production capacity and so would therefore have a relatively small impact on the overall measure. This is something that could be reviewed as the definition of this measure is further developed.

Repeated unplanned outages at the same water production site should be treated as separate events with independent start and finish times unless the initial outage repair and recommissioning was not concluded and there was not full restoration of available peak week production capacity.

A company is expected to:

- Record unplanned outages over 24 hours in duration.
- Record unplanned outages as unplanned even if they result in a programmed outage later.
- Measure duration to the nearest whole day.
- Record the start and end time of an outage using telemetry data.
- Record the end of an unplanned outage as when recommissioning is completed and peak week production capacity is fully restored except when there is no immediate requirement to put an asset back into supply. In this instance the repair time is taken as the end of the unplanned outage and when the asset is next required to be put into service, if it operates in a way that would count as an unplanned outage, the start time for the reported unplanned outage should be that of the original outage.
- Make no adjustment for over-running planned outages.
- Make no adjustment for unplanned outages which are not responded to immediately.
- Justify use of data sources other than telemetry.

Reduction in Peak Week Production Capacity

For each unplanned outage the impact of the outage is recorded as the reduction in peak week production capacity. For asset failures or programmed work resulting in the total loss of water production from the site then the impact of the outage is recorded as the total peak week production capacity for the site. Some asset failures or programmed work may result in a reduction of peak week production capacity. For example, a groundwater source with a peak week production capacity of 10Ml/d may have three boreholes on site, all with capacity of 5Ml/d. Under normal circumstances boreholes 1 and 2 may be operated to provide the site output of 10Ml/d. If the pumps in boreholes 1 and 2 fail then borehole 3 is switched on but can only replace half the lost capacity. The lost peak week production capacity in this instance would be 5Ml/d. The replacement of the failed pumps may require the whole output to cease for the period of the works. From the point at which the output is zero the lost capacity would increase to 10Ml/d and would have a separate duration to the initial partial reduction in capacity.

Exclusions

Unplanned outage arising from changes in raw water quality beyond the normal water quality operating band shall be excluded as this is not a measure of asset health. Exclusions must be evidence based including evidence to show what the normal water quality operating band for that production site is. This exclusion applies to transient changes to raw water quality such as turbidity, algae, pollution, spikes in nitrate and pesticide. If a company chooses to manage variable raw water quality by proactively temporarily restricting water production then this should also be classed as an exclusion.

Long-term trend based changes in raw water quality which result in unplanned outages are not permitted as exclusions as a company should have the data to recognise a rising trend and foresee the need to plan for treatment etc.

Extreme weather can result in raw water quality events as described above. In addition to this they may present constraints on ability to resolve the unplanned outage e.g. a storm event may increase turbidity and cause a site failure and flooding of the immediate area. It may be difficult for operational staff to attend site to rectify the problem. In an example such as this the health and safety constraint on access should be allowed as a further exclusion, but would need to be well justified and assured. Extreme weather may also include heavy snowfall when access to remote sites can be difficult.

A company is expected to:

- Demonstrate based on evidence normal water quality operating bands for each water production site.
- Record raw water quality events outside of these bands and provide evidence of the exceedance.
- Provide evidence of extreme weather events such as storms and snowfalls which have presented hazards preventing access to sites.

Glossary

PWPC Peak week production capacity
WRMP Water resources management plan
Ml/d Mega litres per day