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M: [REDACTED]

Regulatory reporting consultation response  
Ofwat  
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Birmingham  
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By email to: [FinanceAndGovernance@ofwat.gsi.gov.uk](mailto:FinanceAndGovernance@ofwat.gsi.gov.uk)

21 February 2019

Dear Sir/Madam,

### **Annual Performance Report Consultation 2018/19**

Thank you for providing Yorkshire Water with the opportunity to contribute to the Annual Performance Report Consultation 2018/19.

We agree with Ofwat's aims in relation to this consultation. Our responses to the questions asked in the consultation are appended to this letter. We would welcome some clarity on certain aspects of the consultation and have also made suggestions to further improve the definitions and understanding. We have actively contributed with WaterUK on the common performance measures consistency project and we provide further comment on this within our response on outcomes.

If you wish to discuss the content of our response in more detail, please do not hesitate to contact me by email on [REDACTED], or by phone [REDACTED].

Yours faithfully,

[REDACTED]

**Kirstin Hutchinson**  
Regulatory Compliance and Assurance Manager  
Yorkshire Water

## Question 1: Transparency of financial flows (new Table 1F)

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

We agree with the scope of the information proposed for Table 1F. This information was supplied in the previous year and we are happy to include it within the Annual Performance Report documentation this year.

**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 do not consider there to be any missing information from this table.

**c) Do any of the line item definitions require further explanation?**

No further explanation of the line item definitions in Table 1F is required at this time.

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## Question 2: New connections (new Table 2K)

**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 in Table 2K to present the balance of costs and revenue each year from 2018/19 onwards.

**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 do not think that there is any information missing from this table. We note that Table 2K will need to evolve in reporting year 2023/24 when there will be over five years of cumulative information. This will ensure that Line 2K.7 will capture five years of rolling variance rather than total cumulative variance.

**c) Do any of the line item definitions require further explanation?**

As this is the first year of collecting this information, it would be our assumption that the variance presented in Line 2K.4 for 2018/19 would be nil. We would appreciate confirmation from Ofwat on their understanding of this line definition and the information to be supplied in this first year.

We do not levy a surface water infrastructure charge where the development does not communicate with or discharge to an existing public sewer. We do not consider this to be a discount, but we would welcome additional clarity on whether avoidance of the surface water infrastructure charge by developers not using this component of our wastewater service should be included in line 2K.2.

## Question 3: Proposed Changes to Existing Tables

Table	Line	Issue
1F	1F.19	The definition within the draft RAG 4.08 for Line 1F.19 Retained Value states that the calculation is Line 1F.17 minus Line 1F.17. We assume that this should read Line 1F.17 minus Line 1F.18 (as calculated in the previous year). We would just like to draw your attention to this so that the RAGs can be updated.
2K	2K.5 2K.6	We note that the calculated line 2K.7 is a sum of lines 2K.5 and 2K.6. As this is showing revenue and costs, we would assume that one number needs to be taken away from another number. Therefore, we would like clarification on whether line 2K.5 or line 2K.6 should be inputted as a negative value or whether the calculated line will be amended to take account of this.
4C	4C.2	We request confirmation on the price base required to be used on each line in the table. We assume this will be March RPI as stated for Line 4C.5 but we would welcome clarification in the RAGs for the other lines in this table.
4P	4P.24 4P.27	4P.24 was previously reported as 4P.20 and 4P.27 was previously reported in 4P.63. We note the clarification of the definition. As stated in previous submissions, our current data classification only records our asset pipes as treated water pipes or raw water pipes. We do not currently have a further breakdown of this information.
4P	4P.95-110	For clarity and completeness, we would value further information to define maximum production capacity within the RAGs. This would ensure all guidance is in one place for reference.
4R	4R.3-4	The APR consultation identifies a change on these lines, but no change can be seen within the RAG documents. We would like to seek clarification that we have not missed anything here.
4W	4W.1-13	We agree with the inclusion of new lines on sludge transport to align Table 4W with Table 4R. We note that within the RAGs, sludge cake transport (inter site movement of sludge) should not be included within sludge transport. However, there is a column for lines 4W.1-13 to collect data on movement of sludge by truck. We would envisage all sludge to be liquid and therefore moved by tanker. We would value further clarification of what might be included within the truck column of this section of the table on sludge transport to confirm our understanding of the reporting required.

***Other proposed changes: IFRS15***

Our statutory accounts are prepared under FRS 102, and therefore the provisions of the new accounting standards applicable in this period (IFRS 15 and IFRS 9) and future accounting periods (IFRS 16) will not be applied to the statutory results.

We note the point raised in the consultation in relation to RAG 3.11. This is an adjustment we have pushed down into the Yorkshire Water statutory accounts (despite not being prepared in accordance with IFRS 15), and therefore we will include a STAT to RAG adjustment as requested to disapply this.

***Other proposed changes: Condition F***

We agree that the inclusion of a table within RAG 3.11 setting out the source of the requirement to provide specific information is useful.

***Other proposed changes: Outcomes***

We agree with the request to provide further explanation for the two resilience common performance commitments.

***Wastewater resilience measure 'risk of sewer flooding in a storm'***

For the wastewater resilience measure 'risk of sewer flooding in a storm', we consider that there is an opportunity to demonstrate greater transparency and stimulate companies to drive for more consistent and uniform model coverage leading to a better level of resilience understanding for customers.

To that end and maintaining consistency with the published methodology, we consider that the numbers which are reported using 1a and 1b approaches should be reported in 2 separate lines, both in response to the IAP and in future APR publications. Undertaking this reporting approach would provide greater clarity and transparency to the metric. It would show how companies have based their understanding of resilience on modelling, or more potentially limited datasets (coupled with the confidence assessment included in the methodology). This would highlight the degree to which companies have previously invested

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in model coverage and network understanding, and be used as an incentive for all wastewater companies to continue increasing their modelling stock. This in turn will improve the confidence customers can have in their company's understanding of flood risk/resilience. Such an approach would also provide an easy way to identify changes in the reported numbers due to change in assessment methodology, i.e. 1a or 1b.

It's our view that such an approach can only lead to greater transparency and confidence.

#### *Sewer collapses and unplanned outages*

All companies have come together, facilitated by Water UK, to share experiences of shadow reporting for 2017/18 of the new sewer collapse measure and the new unplanned outages measure. Together we have identified opportunities to improve the consistency of reporting through clarifying and in some cases expanding the reporting guidance. As a result, we, in agreement with all other companies, propose a limited number of revisions to the reporting guidance aimed at providing clarity in reporting. The rationale and proposed changes for these revisions is provided in the appendices attached to this response.

- Appendix A: Sewer collapses common performance measure
- Appendix B: Unplanned outages common performance measure

If the approach set out in these appendices is supported by Ofwat, and confirmation of this is 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.

#### ***Other proposed changes: Dividend and executive pay policies***

We agree with aligning RAG3 with the new Board Leadership, Transparency and Governance principles.

#### ***Other proposed changes: Company direction and performance***

We will publish a separate annual statement as part of APR19 as requested.

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***Other comments: Pension deficit***

We would like to exclude from operating costs the pension deficit recovery payments from Table 2B, 4D and 4E and include these on the pension deficit recovery line within cash expenditure. This is in order to show our operating costs, unit costs and totex costs comparably with the industry and to align with the guidance and information supplied as part of the PR19 submission. We produce our accounts under FRS102 and within the statutory accounts include the deficits within operating costs, which is different to other WASCs who report under IFRS. We would include this adjustment in the reconciliation in Table 1A. We would welcome further discussion with Ofwat on this matter.

***Other comments: Unique identifiers***

We consider that it would be useful to introduce unique reference numbers for all the information collected within the Annual Performance Report. This would help in tracking changes between years when line numbers change. It would also support tracking information between submissions. A similar process was previously used in the June Return reporting process.

## Question 4: Future Developments

***What are your views on the issues highlighted in section 3 'Future developments in performance reporting'? 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).***

### ***IFRS16 - Leasing***

Our statutory accounts are prepared under FRS 102, and therefore the provisions of the new accounting standards applicable in this period (IFRS 15 and IFRS 9) and future accounting periods (IFRS 16) will not be applied to the statutory results.

### ***IFRS 9***

There is no reference to the disapplication of any aspects of IFRS 9. We have pushed down an adjustment to reclassify the accretion on the RPI uplift on our inflation-lined swaps from interest expense (Table 1A Line 7) to fair value gains/losses on financial instruments (Table 1A Line 10). Unless instructed otherwise, this will be reported in our statutory results, and no adjustment will be posted to reverse this.

### ***IFRS 16***

We will not be applying IFRS 16 in our statutory results for the reasons described above regarding the basis on which our accounts are prepared. We note that the advice is that we should not disapply this standard, and therefore would like to understand how we approach this for a regulatory accounts perspective.

### ***Table 2A Impact of additional price control units***

***Ofwat invite suggestions as to how we might change the current presentation and derivation of these transactions.***

We consider that the current table format with the revenues and profits for each of the price controls (including water resources and sludge) would be sufficient to provide this information.

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### ***Bioresources Trading***

We note the proposal to expand Table 1A to include costs and profits for bioresources.

### ***Impact of Retail non-household exit***

We note that Ofwat will revisit this area in time for 2020/21 reporting. We anticipate that there will be some residual non-household retail activities that need to be undertaken by the appointed business even after the appointed business has exited the non-household retail market. The non-household retail activities which we anticipate will continue to be undertaken by the appointed business are:

- Network customer enquiries and complaints (including receiving and passing on a phone call, email or letter; scheduling jobs where they are triggered by a customer call; and internally generated calls to the retail call centre to enable to customer call to be resolved).
- Services to developers

We believe that services to developers should be retained within the non-household price control as there is an income associated with this service. However, all other costs would not have an income associated with them and could be considered just to be wholesale activities as a result of market opening. We would welcome continued dialogue with Ofwat on this definition.

### ***Income from 'diversions' activity***

We note the proposal align RAG4 appendix 1 with the PR19 confirmed approach of treating diversions income as part of the price control.

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## Question 5: Traffic Management Act

***What are your views on our preference to require all costs associated with the ‘Traffic management act’ to be reported (section 6)?***

We think that gross costs associated with the ‘Traffic management act’ should be provided in Tables 4V and 4W. This would include the costs of the permits but also the additional costs associated with the permits, for example: 24-hour manned traffic lights, working out of hours, etc. We agree that all costs that arise as a result of complying with the legislation should be recorded. We welcome further clarification in the definition to support this requirement.

## Question 6: Water Resources

***What are your views on our additional asset type descriptions for Water resources which recognise ‘desalination’ and ‘effluent reuse’ abstraction assets (section 7)?***

We understand the reason for recognising the additional asset type descriptions and are happy to support this change.

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## Appendix A: Sewer Collapses Common Performance Commitment

All companies have come together, facilitated by Water UK, to share experiences of shadow reporting for 2017-18 of the new sewer collapse measure, and have identified opportunities to improve the consistency of reporting through clarifying and in some cases expanding the reporting guidance.

As a result, we – in agreement with all other companies - propose a limited number of revisions to the reporting guidance aimed at providing clarity in reporting. The rationale for these revisions is provided below, and the specific proposed changes are provided in the annex (in track changes).

### **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, 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, ~~due to structural weakness~~ 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 ~~structural~~ 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 any loss of flow has occurred that results in a service impact to a customer or the environment results in the need to replace or ~~restore-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.

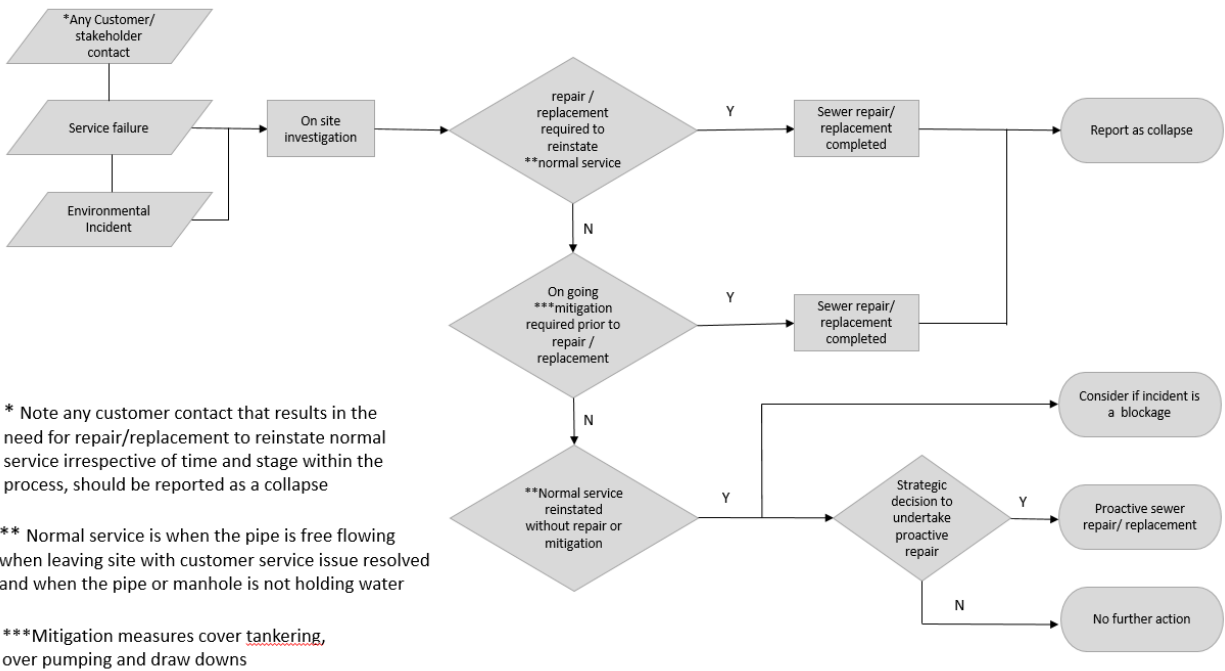
Note multiple incidents on the same length of sewer (manhole to manhole/ valve to valve) will count as a single incident if all work is carried out as part of the same remedial job. This assumes that the locations are in close proximity. This would not be the case if separate locations were more than 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 Regs 2011.

## Exclusions

The following exclusions ~~could~~ apply to the sewer collapse measure definition:

- Proactively identified collapses – Should ~~a collapse~~ the need to replace or repair a pipe ~~pipe that has structurally failed~~ be found as a result of proactive activity (survey or proactive sewer maintenance work) on the network ~~unrelated to the reported reactive activity to restore service~~ then it ~~could~~ 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 ~~could~~ should be excluded.
- Manhole damage and internal backdrops ~~could~~ should be excluded
- Displaced joints, cracked ~~or fractured~~ pipes, open joints, intruding connections, ~~minor pipe breaks~~ and hard blockages, patch repairs and sewer lining do not reflect sufficiently significant structural failure hence ~~could~~ should be excluded from the measure.
- Root ingress is excluded unless it has resulted in a need for pipe replacement



## Appendix B: Unplanned Outage Common Performance Commitment

All companies have come together, facilitated by Water UK, to share experiences of shadow reporting for 2017-18 of the new unplanned outage measure, and have identified opportunities to improve the consistency of reporting through clarifying and in some cases expanding the reporting guidance.

As a result, we – in agreement with all other companies - propose a limited number of revisions to the reporting guidance. The rationale for these revisions is provided below, and the specific proposed changes are provided in the annex (in track changes).

### **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 Week 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

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 15 March 2019, 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 (MI/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 MI/d  
For 15 days the maximum production capacity is reduced to 15MI/d due to a temporary unplanned outage (pump failure). This is a loss of peak week production capacity of 15 MI/d for 15 days.

The weighted unplanned outage for this source works =  $15 \times (15 / 365) = 0.62$  MI/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 MI/d  
Second source works in zone –weighted unplanned outage = 2.58 MI/d  
Third source works in zone –weighted unplanned outage = 3.67 MI/d  
Zonal weighted outage = 6.87 MI/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 MI/d  
Zone 2 weighted unplanned outage = 7.95 MI/d  
Company weighted unplanned outage = 14.82 MI/d  
Company peak week production capacity = 120 MI/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) - a company should define its peak week production capacity (normally an input for modelling purposes). 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 This 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 10MI/d may have three boreholes on site, all with capacity of 5MI/d. Under normal circumstances boreholes 1 and 2 may be operated to provide the site output of 10MI/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. This is likely to relate to an alarm, the unexpected loss of water into supply or a planned switch off. 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 10MI/d may have three boreholes on site, all with capacity of 5MI/d. Under normal circumstances boreholes 1 and 2 may be operated to provide the site output of 10MI/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 5MI/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 10MI/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
MI/d	Mega litres per day