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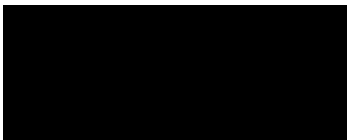
22nd February 2019

Dear Regulatory Reporting Team,

**Anglian Water's response to Consultation on the Annual Performance
Report Issued January 2019**

We welcome the opportunity to respond to Ofwat's proposed changes to regulatory reporting. We have provided our answers to the specific questions raised in the consultation document below, followed by more general queries and comments.

Yours sincerely



Alex Plant
Director of Strategy and Regulation

Specific Questions raised:

Q1 - Transparency of financial flows - Appendix 1 contains our new table 1F;

a. Do you 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?

Do any of the line item definitions require further explanation

We believe that the scope of the proposed information is useful up to a point, particularly in demonstrating the impact of using a lower equity denominator in calculating the percentage returns. In other ways, however, we believe the information has some limitations which could be improved and/or acknowledged in the guidelines. Our proposals are as follows:

1. The gearing line is calculated as pre tax. This means that the calculation does not reflect the benefit that customers receive from a lower tax building block as a consequence of higher gearing and higher interest cost. When setting the tax allowance in the Final Determination, the calculation of allowed taxable profit is based on the company's actual gearing. As the tax impact of any deviation from the notional structure is passed on to customers through this adjustment, it is not a return to shareholders. We recommend that it would be more meaningful to stakeholders if the gearing line was calculated on a post tax basis.
2. Gearing and Debt: These two lines on the financial flows calculation are inter-related. The calculation of the gearing line indicates a positive return for the more highly geared companies reflecting the replacement of equity with debt which is cheaper. Elsewhere in the financial flows calculation, this positive return is offset to a large extent by increased cost in the debt line as a consequence of being highly geared. This includes the impact of raising more expensive class B debt when maximum gearing levels for class A debt has been reached. However, this increased cost of debt associated with our higher debt levels is partly mitigated by the securitised structure that we have in place to protect bondholders and customers. We are happy to explain this in the commentary that accompanies the annual submission.
3. Hedging Instruments: The reporting requirement for this item, is not specific:

"The impact of hedging instruments on the actual cost of debt. This figure is calculated by the company"

Without a clear definition (we also raise this concern in our response to the consultation question relating to "line item definitions"), it is difficult to comment on this item, however, we make the following observations:

Ofwat advised us in its response to our 2018 financial flows submission that we should remove derivatives from the cost of debt line and report this as Hedging Instruments. If it is Ofwat's intention for future reporting, that companies should remove the impact of all derivatives from the cost of debt, then we do not believe this would be meaningful for stakeholders in isolation. We use derivatives as a means to

raise debt at the most economical level and not as hedging instruments per se. As such we consider that derivatives used for this purpose are integral to debt cost and should, therefore, be reported in the cost of debt line. Our use of derivatives is based on an economic decision at the time of raising debt as to whether for example the direct issuance of floating rate debt or fixed rate debt with an interest rate swap is more appropriate. This is also in line with accounting standards regarding netting the effect of hedging. Based on our economic use of derivatives we believe our cost of hedging is zero.

If Ofwat wants to identify separately the cost of hedging, then allowing companies to calculate this, rather than arbitrarily using derivatives as a proxy, would be more appropriate, however we note that this could result in different interpretations by companies.

4. Pre tax. We note that the Operational performance lines, Totex, ODI and Retail, are on a pre tax basis. Whilst we agree that the tax impact of this performance will be accounted for in the corporation tax line, we note that there will be a timing difference due to ODI's received in future periods and the revenue true-up for Totex performance. This limitation could be referred to in the footnotes
5. RCV growth: This line represents the RPI inflation effect on RCV. On the basis that Ofwat's price setting regime is undertaken on a 'real' basis and that the table is presented on a real terms basis, (ie using the 12/13 base) the RPI growth is not used in calculating returns. Recommendation: If Ofwat wishes to report this on a nominal basis it would be clearer to stakeholders reviewing the document if they changed the label to reflect/explain the calculation: e.g. "RCV growth from RPI Inflation".

Notwithstanding the above we are happy to complete the tables and explain the results in the commentary.

We would however ask that, as a minimum, that the label for RCV growth should be enhanced, as discussed above, or even dropped. We would also recommend that the gearing line is shown on a post tax basis as any tax benefit from higher gearing accrues to customers and not the company.

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?

1F.1 Return on regulatory equity

We have only one suggestion to make. For those companies that have exited the Retail Non Household market, we recommend Ofwat outlines a methodology that is consistent for all companies. For example, adjusting Return on Regulated Equity (Notional returns and notional regulatory equity) to remove the Retail Non Household margin would ensure all returns were consistent. To aid transparency, an additional line in the return could be added to capture the Retail margin for those e.g.:

- 1 Return on regulatory equity

- 1a Actual performance adjustment 2010-2015
- 1b Adjusted Return on regulatory equity
- 2 Regulatory equity base

Do any of the line item definitions require further explanation?

We believe that it would be useful to further clarify the following:

1F.6 Variance in Corporation Tax

Definition: during the development process you clarified that other adjusting items included in the Final Determination should be included in the variance in Corporation Tax calculation. We propose that this should be clarified within the definition by including an additional bullet point:

- Other Final Determination adjustments to accounting profit

This should help ensure a consistent understanding of the guideline across companies

IF.8 Cost of Debt (adjusted for Hedging Instruments)

Footnote 1:

Definition of interest: We note that Footnote 1 refers to interest paid. In order to make the guidance explicit and to ensure consistent reporting across the sector, we believe that this should instead refer to interest expensed as recorded in table 1A Line 7. This definition is included in the RAGs and therefore is clear and unambiguous.

Calculating debt: the current guidelines allow companies to choose either a weighted average or simple average when calculating average net debt. However, if companies can adopt different approaches in their reporting, this potentially reduces like for like comparability across the sector. We believe that the reporting requirements should be specific on a single approach to be taken in the formally published tables, with companies then able to present an alternative calculation by footnote or in their commentaries. Given that the opening and closing balances for the reporting period are publicly available data we believe this to be most appropriate basis.

RPI: Item c of Footnote 1 states that RPI should be subtracted from the calculated average interest rate. We recommend that the guidelines are amended to clarify that in order to arrive at an average real interest rate, the "Fischer equation" should be adopted. i.e. $(1+n)=(1+r)*(1+i)$. This approach is taken in the RORE calculation for table 4H and this table should be consistent in this regard.

Pre/post tax: We also note that whilst this is a theoretical adjustment the interest we pay is included within our taxable profit and therefore any out/under performance will have an effect on our actual tax and in-turn our corporation tax out/under performance. To make a deduction for corporation tax would therefore double count this impact.

The definition should read "Less Line 1F.9" rather than "Less Line 1F.7".

1F.9 Hedging Instruments

The guidelines state that this figure is calculated by the company. Notwithstanding our concerns relating to this item that we have raised in our response to question a above, we recommend that should this or a similar item be included, it should be defined more precisely to ensure meaningful and consistent reporting across the sector. We believe that reporting definitions should be clear and unambiguous to allow comparability between companies.

Depending on what OFWAT is trying to achieve, if it is the cost of hedging, then (as mentioned above in our response to question a) the line item should be renamed and to aid understanding, the company should use the associated commentary to detail its approach. If it is the cost of derivatives, this shouldn't be conflated with hedging and should be renamed as cost of derivatives. Although we would repeat that separating out the cost of derivatives is arbitrary and not in line with accounting standards regarding netting of costs of debt.

As our response to question a above details, our use of derivatives is based on an economic decision at the time of raising debt to match our required interest rate mix. Separating the derivatives shows an incorrect and misleading debt cost. Had derivative transactions not been available at the time of raising the debt, the business would have issued the same mix of debt but would have been forced to access more expensive direct markets to do so. Therefore our derivatives are an integral part of the cost of debt, rather than a cost of hedging.

1F.21 Interest received on intercompany loans

This definition should include repayment of intercompany loans. Anglian Water included repayment of £1.6bn of intercompany loan within this line in 2017-18. Other companies will be making similar repayments in 2018-19 and to ensure consistency it would help if the definition made clear that these intercompany loan repayments are entered in this line. We make this request for clarity to make sure companies are not criticised for misinterpreting reporting requirements.

Q2 New connections - Appendix 1 contains our new table 2K;

a. Do you 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 new connections reporting?

c. Do any of the line item definitions require further explanation

a. Yes

b. No

c. No

Q3 What are your views on the proposed changes to the existing tables in Appendix 1?

See table below for Appendix 1 comments and queries

Q4 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).

We are comfortable with all the future development proposals, on the basis that they apply from 2020-21.

Q5 What are your views on our preference to require all costs associated with the 'Traffic management act' to be reported (section 6)?

Our reported TMA costs currently represent 0.05% and 0.5% of total Wastewater and Water operating costs respectively and are therefore not material. Indeed, for the industry as a whole, Thames Water reports the highest proportion of TMA costs at 0.4% and 2.5% respectively, still not a material level.

The introduction of fully costed TMA expenditure would slightly increase these proportions, but the totals would remain relatively small. Requiring all costs of complying with the legislation to be included would also lead to inconsistencies in reporting that arise when indirect costs are allocated and therefore, for the values to be meaningful, guidance would need to be clear on what is in/out of the calculations.

The broader issue on TMA costs, however they are calculated, is the rationale for reporting them at all. We are unclear on how stakeholders find the reporting of such relatively small costs useful and unless the benefits from reporting TMA can be articulated, we propose removing the need to report these on an annual basis. We also believe that companies are able to pro-actively manage these costs and that they should not be removed from modelled costs.

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 do not have, nor plan to have any desalination assets. Our PR19 plan includes an effluent reuse asset and if this occurs, we will be able to report on this separately. We believe that reporting this information could be useful to stakeholders.

Responses to question 3 and general comments on the consultation

Table	Line	Issue
4C	1	<p><i>The difference between the actual cumulative totex and the allowed totex in the price control period. Calculated as; 'menu baseline totex' – 'actual menu totex'."</i></p> <p>Please could you confirm how this is calculated?</p> <p>The PR14 Rulebook spread sheet model calculations for totex under / outperformance are in 12/13 prices. Does Ofwat expect the cumulative totex over / underspend to be entered in 12/13 prices or outturn prices?</p> <p>If outturn prices are required, can Ofwat confirm whether this</p>

		<p>will be the cumulative over/underspend in 12/13 prices (from the PR14 Rulebook spreadsheet model) inflated to 18/19 prices (using year average RPI as the inflators), or is it the cumulative of the individual years in 12/13 prices, inflated to the individual year out turn prices?</p> <p>Please see attached Appendix 1 demonstrating the two approaches, as the answer differs depending on the approach used.</p>
4C	2	<p><i>"The customer share of the difference in line 4C.1. This should be calculated using the formula;</i></p> <p><i>('menu baseline totex' - 'actual menu totex') * (1 - 'cost sharing rate').."</i></p> <p>Please can Ofwat confirm that the "cost sharing rate" is sourced from the "Calculations" tab of the PR14 Final Determination Menu Models for Wholesale Water and Wholesale Wastewater?</p>
4C	3	<p><i>"The RCV impact of the difference between the actual cumulative totex for the AMP and the allowed totex as shown in line 4C.1. This should be calculated using the PR14 reconciliation rulebook calculations. i.e. ('menu baseline totex' - 'actual menu totex') * (1 - 'PAYG%').."</i></p> <p>Please can Ofwat confirm whether the RCV element should include the effect of the financing costs adjustment (as per the calculation in the PR14 Rulebook spreadsheet model)?</p>
4J & 4K	All	<p>These tables almost entirely duplicate tables 4D and 4E and due to the inclusion of atypical costs in row 11, are potentially confusing to stakeholders as the reported operating costs do not agree to any other reported numbers in the Annual Performance Report and there is no equivalent table for retail. We believe the atypical information included in 4J and 4K should form part of 4D and 4E and that 4J and 4K are removed.</p>
2A, 4D, 4E & 4F		<p>In response to the consultation comments in section 3.2, we have previously raised the issue of recharging for principal use assets and note that table 2A has not been amended to allow for the recharge of asset use in other tables. Previous guidance from Ofwat in relation to PR19 required that recharges between business units should be reflected in other operating expenditure on tables 4D, 4E and 4F. Table 2A row 3 currently agrees to table 2B row 11 and table 2C row 9. These in turn agree to 4D and 4E row 11 and 4F row 8. However, 2A rows 8 and 9 require recharges for asset use to be reported separately, and therefore will double count the recharge if it is</p>

		<p>also reported in row 3.</p> <p>The current guidance results in table inconsistencies due to recharges for the use of assets having to include costs such as financing charges and depreciation that are not included elsewhere in the tables (4D, 4E), whereas 4F includes depreciation but no capital maintenance expenditure. This mix of cost types is therefore potentially misleading.</p> <p>We would be happy to work with Ofwat to develop a more meaningful way of reporting principal use recharges.</p>
4P	29-57	<p>These lines require companies to classify the complexity of the treatment processes used at each of their water treatment works. The guidance for this classification is set out in a table in the reporting requirements which although it lists examples of treatment types, is not exhaustive and therefore open to interpretation. We have found it necessary to complete a more detailed version of this table to complete our categorisation and justify it to external assurers. We propose that the table in the reporting requirements should be made more detailed, along the lines of the one we have developed internally, to improve consistency between companies.</p> <p>Please see Appendix 2 below, showing the suggested categories of treatment processes to improve consistency between companies.</p>
4P	103-110	<p>Could further definition be given to clarify the new requirement to report the number of WTWs based upon maximum output, rather than in year average daily DI per WTW. Should the maximum output value for the DI output of the WTW reflect;</p> <p>1. Peak deployable output (MAXSO) – based upon maximum daily licenses/yield/capacity of the works if all critical plant is in service.</p> <p>2. Maximum Flow: This is the upper limit of the WTW at peak flow rate at peak time of day, to include license restrictions at peak period (peak week) output for that year for the WTW</p> <p>3. Absolute Maximum Flow: This is the theoretical absolute maximum the WTW is capable of outputting disregarding any license restrictions (i.e. design capacity)</p>
4P	83	<p>Ofwat has used data from this line as a measure of the topography of the regions served by different companies. In recent years companies have fitted single property booster pumps as a means of removing individual properties from their low pressure registers. These pumps do not pressurise the company network. Furthermore, they may be installed on a fit-</p>

		and-forget basis such that the company does not incur costs for either the operation or maintenance of them. We suggest these pumps should not be reported against this line and that the definition is amended with the addition of the words 'Do not include single property booster pumps'.
4R	7	<p>The word "collapses" in this line title appears misleading. It is our understanding that this line intends to capture failures on rising mains and that another line is to be used to reflect failures of sewers. Historically, we have only referred to failures of rising mains as "bursts" as they are designed to operate under pressure and fail when the asset can no longer stand the pressure being applied to it from the sewage being pumped through it. On the other hand, a collapse has historically referred to the failure of gravity sewers, which typically fail due to external pressure as these rarely operate at capacity or under pressure.</p> <p>We would suggest that the line title removes the word "collapses" to remove any ambiguity as this is something that our external assurance providers have commented on. Should Ofwat consider it necessary to refer to potential collapses to burst rising mains or any other type of failure of these assets, we would propose that this is added as part of the line definition.</p>
4R	26	We understand the purpose of this new line. The draft reporting requirement makes clear that the figure reported in this line should be included in the figure reported in 4R.25, which is the sum of 4R 23 and 4R.24. The reporting requirements for 4R 23 and 4R.24 include the words 'cross-border imports should be excluded'. For the avoidance of any doubt, we suggest that these words are added to the reporting requirements for 4R.26.
4R	27	<p>This comment relates to the definition of line 4R. 27, Percentage of sludge produced and treated at a site of STW and STC co-location.</p> <p>The purpose of this line is to assess the extent to which companies have to transport sludge by road between water recycling centres (WRCs) where sludge is produced and sludge treatment centres (STCs). Companies are differentially exposed to the scale and cost of this activity because of differences between them in the nature of the regions that they serve.</p> <p>Typically we transport sludge in a single step from a WRC directly to a STC beyond which there is no further sludge treatment. However, we also operate intermediate sludge</p>

		<p>handling processes where liquid sludge is de-watered before onward transport as untreated cake to the final STC. The purpose of this intermediate process is merely to reduce the proportion of water in the sludge to reduce transport costs.</p> <p>Under the current definition, any sludge produced at a WRC which is used as an intermediate de-watering station would be classed as co-located. However, this sludge still requires onward transport to a STC because the de-watering process does not produce a product of the standard required for final recycling to the environment. Because road transport of this dewatered sludge is still required, the definition does not produce the information necessary for the purpose this line is designed.</p> <p>We therefore propose this as the definition for 4R.27:</p> <p>The percentage of the sludge quantity reported in 4R.25 that is produced at co-located sites. <i>For the purposes of this definition: i) "co-located" includes sites where the STC is physically separate but the sludge is transferred from a wastewater treatment site by pipeline, and ii) STC means any site where thickening to >10%DS, and/or dewatering and/or microbial reduction (eg digestion, lime stabilisation etc) is undertaken <u>sludge is treated to a standard such that it can be recycled to the environment without any further treatment.</u></i></p>
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Further general comments on the consultation

1. **RAG 4.08 Appendix 2, Water Resources para 2.3.** With regard to supply point J, if there was a pump out of the storage reservoir, would this be classed as Raw Water Abstraction or Raw Water Transport?
2. We expect the RAGs will need to change further to reflect the AMP7 regulatory framework (i.e. reporting from 2020-21). We ask that Ofwat confirms these, following the usual consultation, during the final financial year of the current AMP, so they are clear before the start of 2020-21.
3. Appendices 3,4 & 5 relate to three of the Common Performance Commitments for AMP7 (Sewer Collapses, Unplanned Outage and Wastewater Resilience), they were produced by all companies as part of Water UK expert groups. Many companies, including ourselves, were concerned that the definitions that had been developed were not detailed enough to generate consistent reporting across the industry. These appendices provide proposals to amend the current definitions that were agreed during the expert groups.

We fully endorse the proposals and would support the inclusion of the recommendations to improve the consistency of reporting. Regarding the risk of

sewer flooding in a storm measure, the expert group recognised that this measure is relatively immature and as a result, reported figures are unlikely to fully comparable at this stage. Although the group did consider alternative approaches to improving consistency, they recognised that making changes would be impractical at this stage. The recommendation is to improve transparency on this measure through expanded commentaries, with the aim of increasing consistency over time through the identification of good practice.

Appendix 1 – Rulebook Price Base Examples

Indexation	RPI		2015-16	2016-17	2017-18	2018-19	Source	
2012-13 average year price base	244.675	Totex under / (over) performance						
2015-16 average year price base	259.433	Water: under / (over) performance	12/13 price base	-15.000	-20.000	-25.000	-30.000	Inputs from PR14 Rulebook spreadsheet model
2016-17 average year price base	264.992	Approach 1 - individual years in outturn prices						
2017-18 average year price base	274.908	RPI Inflation to outturn		1.060	1.083	1.124	1.157	
2018-19 average year price base	283.155	Individual years in individual year outturn prices	Outturn prices	-15.905	-21.661	-28.089	-34.718	
		Cumulative Water under / (over) performance	Outturn prices	-15.905	-37.565	-65.655	-100.373	This is a sum of the individual years with each year at "price of the day"
		Approach 2 - cumulative in 18/19 prices						
		Cumulative Water under / (over) performance	12/13 price base	-15.000 ^f	-35.000 ^f	-60.000	-90.000	
		RPI Inflation to 18/19 prices					1.157	
		Cumulative Water under / (over) performance	18/19 prices				-104.154	The cumulative total is different if calculated in 18/19 prices

Placeholder assumption of 3% RPI for 2018/19

Appendix 2 - Suggested Categories of Treatment Processes.

Treatment_Name	OFWAT_Class	Current 4P reporting requirements
Aeration	SD	Marginal chlorination
Air Injection	SD	Pre-aeration
Chlorination (Gas)	SD	
Chlorination (Sodium Hypochlorite-Liquid)	SD	
Chlorination (Sodium Hypochlorite-OSEC)	SD	
Pre-Chlorination	SD	
Aeration (Solvent Removal)	W1	Rapid gravity filtration
Filtration (Cartridge)	W1	Slow sand filtration
Filtration (Cartridge) BOLL	W1	Pressure filtration
Microstrainers	W1	
Mussel Trap	W1	
Pressure Filtration	W1	
Rapid Gravity Filtration	W1	
Slow Sand Filtration	W1	
Ammoniation	W2/3	Super chlorination
Biological Iron Removal	W2/3	Coagulation
Calgon	W2/3	Flocculation
Chlorination (Breakpoint)	W2/3	Biofiltration
Clarification	W2/3	pH correction
Clarification (Dissolved Air Flotation)	W2/3	Softening
Dechlorination	W2/3	
De-Ozonation	W2/3	
Fluoridation	W2/3	
Fluoride Blending	W2/3	
Lime Dosing	W2/3	
Nickel Blending	W2/3	
Nitrate Blending	W2/3	
Pesticide Blending	W2/3	
pH Correction	W2/3	
Phosphate Reduction In Raw Water Storage	W2/3	
Plumbosolvency Control	W2/3	
Selenium Blending	W2/3	
Sodium Blending	W2/3	
Oxygen Injection	W2/3	
GAC Adsorption	W4/5	Membrane filtration (excluding desalination)
Nitrate Reduction (Ion Exchange)	W4/5	Ozone addition
Post-Ozonation	W4/5	Activated carbon/ pesticide removal
Pre-Ozonation	W4/5	UV treatment
Rapid Gravity Filtration (GAC)	W4/5	Arsenic removal
Submerged Membrane	W4/5	Nitrate removal
UV Irradiation	W4/5	
UV Peroxide	W6	Desalination
		Re-use

Appendix 3 – Proposals for Definition Amendments Relating to Sewer Collapses

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, and in agreement with all other companies, we 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 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 that 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.

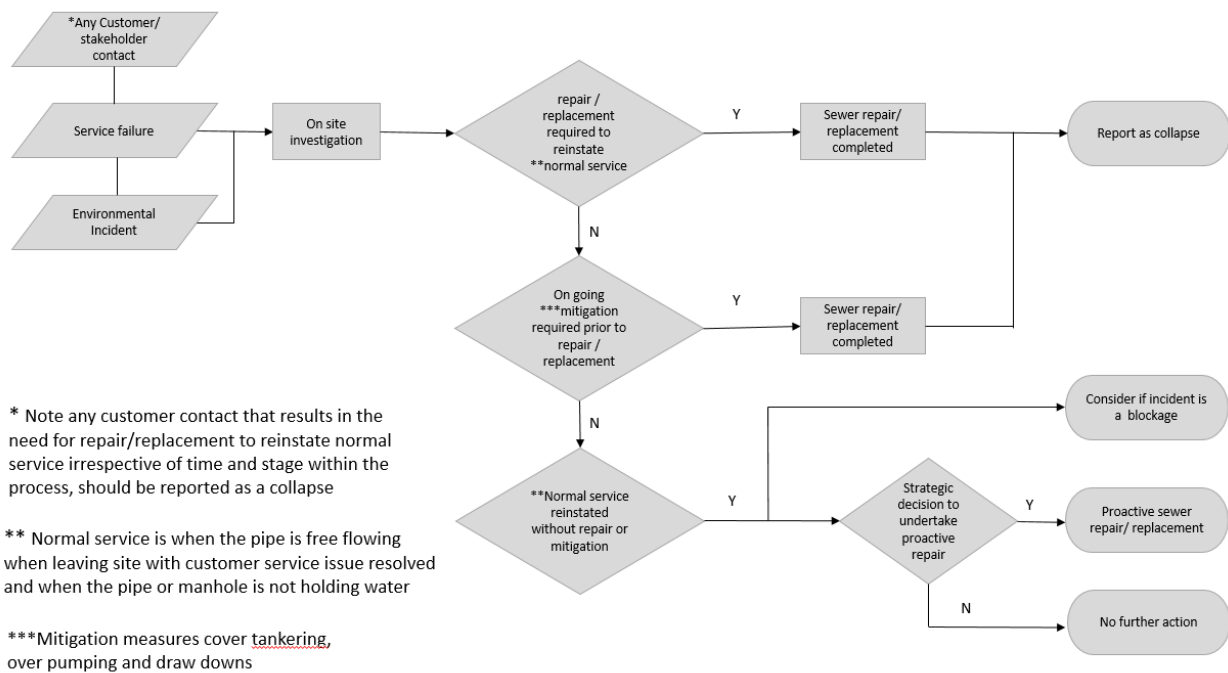
Note also that multiple incidents on the same length of sewer (manhole to manhole/ valve to valve) will count as a single incident if all work is carried out as part of the same remedial job. This assumes that the locations are in close proximity. This would not be the case if separate locations were 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
- 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 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 4 - Proposals For Definition Amendments Relating to Unplanned Outage

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, in agreement with all other companies, we 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 re-ordering 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 re-commissioned, to avoid an unnecessary temporary re-commissioning 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 re-commissioned 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 (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 15 MI/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
- 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)
- 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. 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

Appendix 5 - Proposals For Definition Amendments Relating to Wastewater Resilience

Wastewater resilience common performance commitment

All companies have come together, facilitated by Water UK, to share experiences of shadow reporting for 2017-18 of the new wastewater resilience measure (risk of sewer flooding in a 1 in 50 storm) and have identified opportunities to improve the consistency of reporting primarily through greater transparency.

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.