November 2016

Trust in water

A consultation on the outcomes framework for PR19 Appendix 3 – Better reflecting resilience in outcomes

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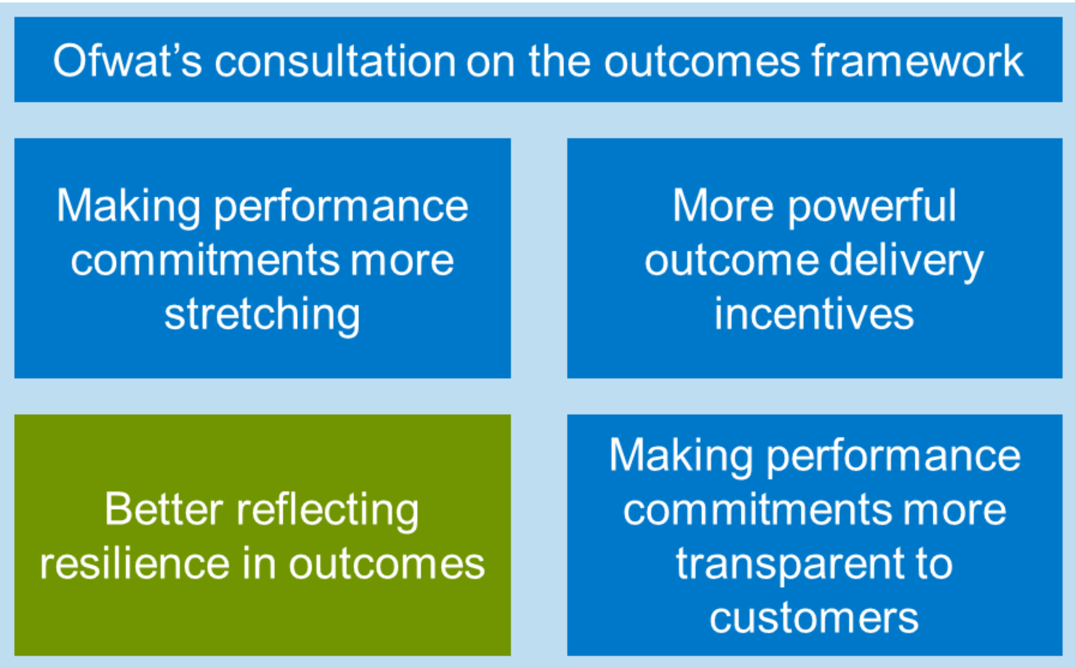
Appendix 3 – Better reflecting resilience in outcomes

This is appendix 3 to the consultation on the outcomes framework for PR19. It considers how we can better reflect resilience in the outcomes framework.

Resilient water and wastewater services are vital to current and future customers. Long-term resilience, alongside long-term affordability, is at the heart of what the sector needs to deliver for its customers. While we consider resilience in a separate appendix our proposals seek to better reflect resilience as an integral part of the outcomes framework for PR19.

Figure 1 –Appendix 3 relates to the third theme of the outcomes consultation



In this appendix we consider:

- The importance of resilience to customers and our resilience duty
- The Task and Finish group on resilience
- How Ofwat's programmes are contributing to furthering the resilience objective
- A set of resilience principles for PR19
- How our policy on customer engagement is contributing to our resilience duty
- How performance commitments and ODIs can contribute to our resilience duty

Table 1 – Our proposals for better reflecting resilience in outcomes

Proposals for better reflecting resilience in outcomes	Status
1. Our preferred approach is that there should be resilience planning principles for PR19. We propose some draft principles. (The draft principles go wider than the outcomes framework).	We are consulting on resilience planning principles for PR19 and the contents of those principles. We expect to consult on our wider approach to resilience in the methodology consultation.
2. Our May 2016 customer engagement policy statement emphasised the importance of companies engaging with their customers on resilience. CCGs will report at PR19 on how effectively companies have engaged with their customers on longer-term issues, including resilience. We will assess the quality of a company's customer engagement in the risk based review.	Decision made in the May 2016 customer engagement policy statement.
3. We have decided that companies' five-year performance commitments for 2020-25 should be supported by long-term projections for at least a further ten years.	This is our decision following consultation in May.
4. We are consulting on two options on resilience metrics. Our preferred approach is to ensure that the definitions of the common performance commitments and ODIs better reflect resilience and to encourage the development of resilience metrics.	We invite early views on resilience metrics. We expect to consult on the definitions of the common performance commitments and a preferred approach to resilience metrics in the methodology consultation.
5. We are proposing to introduce asset health expectations for PR19, which would improve the information customers, CCGs and other stakeholders have on asset health performance commitments and ODIs.	We are consulting on our preferred approach to asset health expectations. We expect to set out our decision alongside the methodology consultation.
6. We are proposing reporting requirements to require companies to provide more clarity on their approaches to asset health such as what the asset health sub-measures are, their definitions and the aggregation rules for any basket measures used.	We are consulting on our preferred approach to asset health reporting requirements. We expect to set out our decision alongside the methodology consultation.

7. We discuss whether we should move towards some standardisation or full standardisation of companies' approaches to asset health.	We invite early views on whether we should move to a more standardised approach to asset health for PR19. We will consult on a preferred approach to standardisation of asset health in the methodology consultation, should we consider a move towards more standardisation is appropriate.
8. We consider when ODI rewards might be appropriate for asset health performance commitments.	We invite early views on when ODI rewards might be appropriate for asset health performance commitments. We will consult on any preferred approach in the methodology consultation.
Our proposals elsewhere in this consultation on comparative information and stronger ODIs should help support better reflecting resilience in outcomes.	

1 The important of resilience to customers

Resilient water and wastewater services are vital to current and future customers. Long-term resilience, alongside long-term affordability, is at the heart of what the sector needs to deliver. If approached in the right way these two areas should go hand in hand.

The Water Act 2014 introduced a duty to further the resilience objective as one of Ofwat's general duties under section 2 of the Water Industry Act 1991. In relation to resilience, we must exercise and perform our specified powers and duties in a manner that we consider is best calculated to further the resilience objective.

The resilience objective is:

(a) to secure the long-term resilience of water undertakers' supply systems and sewerage undertakers' sewerage systems as regards environmental pressures, population growth and changes in consumer behaviour, and

(b) to secure that undertakers take steps for the purpose of enabling them to meet, in the long term, the need for the supply of water and the provision of sewerage services to consumers,

including by promoting –

(i) appropriate long-term planning and investment by relevant undertakers, and
(ii) the taking by them of a range of measures to manage water resources in sustainable ways, and to increase efficiency in the use of water and reduce demand for water so as to reduce pressure on water resources.

The concept of resilience is not new to Ofwat or the water sector – it links directly to our existing framework of duties, including on sustainable development, consumers and financeability. Customers already fund companies to provide resilient services now. However, our resilience duty gives us fresh impetus to examine how we can better reflect the resilience objective in our work. This can best be achieved by water companies having a clear understanding of the risks to their services and systems and considering a range of options for reducing the likelihood of future service failures.

1.1 The Resilience Task and Finish group

We set up an independently-chaired Resilience Task and Finish Group in 2015 to consider several questions related to what resilience means for the wider water sector. In its final report the group made ten recommendation including: agreeing a shared definition of resilience for the sector; improving our understanding of risk and failure; and developing benchmarking, standards and metrics.

The group defined resilience as:

> "Resilience is the ability to cope with, and recover from, disruption, and anticipate trends and variability in order to maintain services for people and protect the natural environment now and in the future."

Following the Group's report we published "Towards resilience: how we will embed resilience in our work".

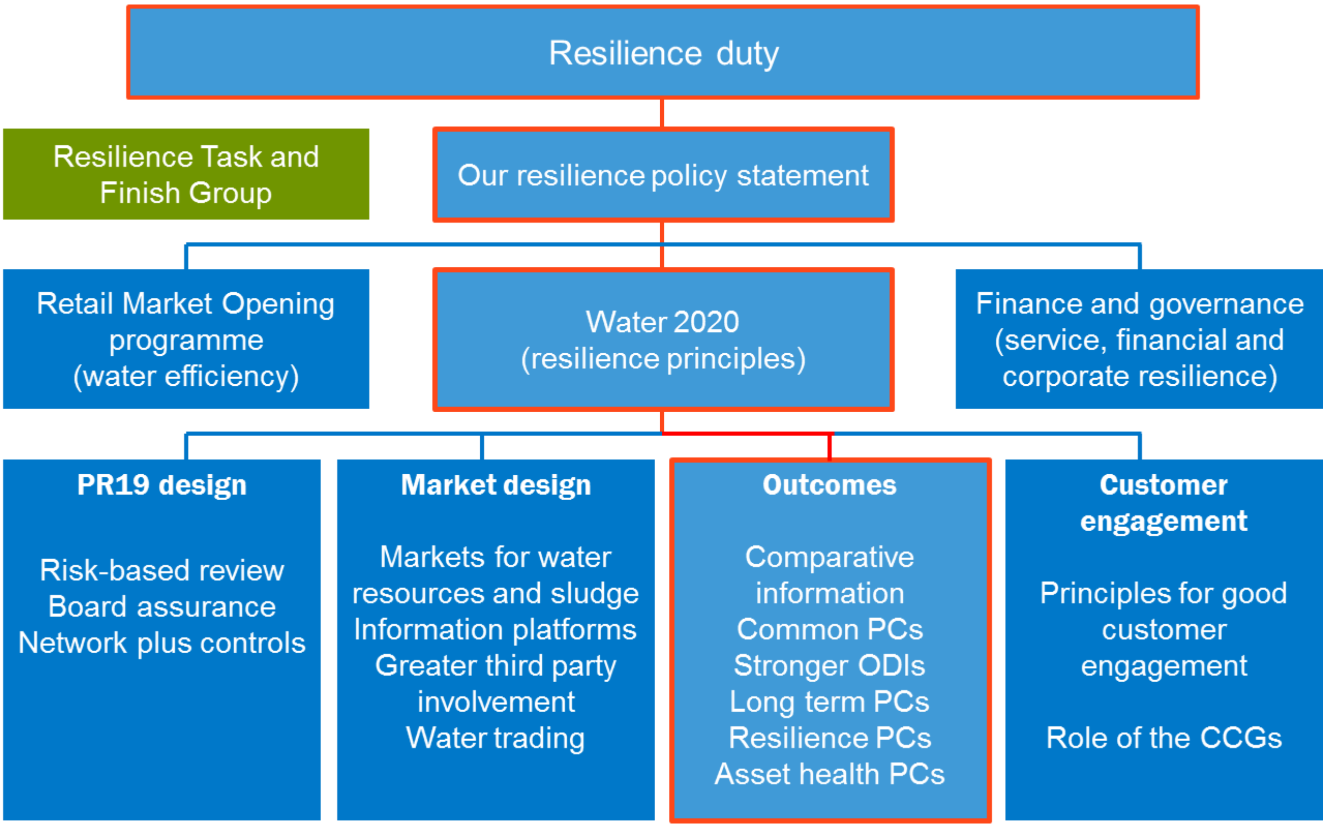
As well as the Task and Finish Group's work we have taken account of Sir Michael Pitt's review and the Cabinet Office paper 'Keeping the country running'. This gave guidance for critical national infrastructure and has been followed by a series of reports. These included a report this year on the long-term planning framework for water resources and the UK government's National Flood Resilience Review.

Security of supply and effective wastewater management are two important areas, but resilience goes beyond the condition of physical assets. Areas such as financial resilience, cyber security and resilience to other high-impact low-probability events are also an important consideration for companies and their customers. We understand that Defra will be launching its Water Sector Cyber Security Strategy early in 2017; water companies will need to take account of this and the intended subsequent guidance on good practice in this area in their business plans.

1.2 How we are taking account of resilience across Ofwat's programmes

Figure 2 illustrates that the outcomes framework forms just one part of our overall approach to resilience.

Figure 2 – How we are taking account of resilience across Ofwat's programmes and within the Water 2020 programme



There is a strong focus on resilience in the work we are doing across the Water 2020 programme and there will be more detail on this in our PR19 methodology consultation. Our work on retail market opening is delivering a new retail market for business customers which is likely to promote improvements in water efficiency and service provision to customers. Our Finance and Governance programme is monitoring companies' service performance, financial and corporate resilience so that action can be taken if needed. We recently published 'Monitoring Financial Resilience' drawing on information published in companies' annual performance reports for 2015-16 and updates.

2 Resilience planning principles

We invite stakeholders' views on whether there is a need for the sector to have resilience planning principles. We are proposing resilience planning principles to provide clarity on our expectations on planning for resilience in the development of company business plans for PR19. The draft principles align with and build upon the work of the Resilience Task and Finish Group, the principles we published in Towards Resilience and our 2012 report 'Resilience - outcomes focused regulation'. We have also taken account of respondents' views to our Towards Resilience paper and the NEW-PIN study on long-run resilience in the energy and water sectors.

The principles-based approach encourages companies to develop a thorough understanding of service risks and ensure a clear link between their resilience risk assessments and their business plans. The principles go wider than the outcomes framework, but as our approach to assessing resilience of company business plans is related to the development of approach to outcomes for resilience, we considered it is appropriate to consult now as part of this outcomes consultation.

Company plans need to be based on a clear and systematic understanding of their service and system risks and include a range of options for reducing the likelihood of future service failures. Companies also need to assess their options based on the cost effective mitigation of risk and need to do this against a background of uncertainty, valuing the wider future set of options that some courses of action allow for. Ownership and accountability for resilience planning sits with companies and they are best placed to build the relationships and partnerships necessary to develop the right level of understanding to identify the most effective and efficient solutions.

Customers have an important role to play in informing companies' approach to resilience and in being part of the solution to greater resilience. They can contribute to a better understanding of risk by helping to identify vulnerable services and risks. Companies should engage customers throughout the planning process and seek their opinions on different levels of resilience and potential solutions. This should help build customers' trust and confidence in water companies' long-term plans. We do not accept that companies cannot engage effectively with customers about the resilience of their services and systems over the long term. Some companies engaged effectively on resilience issues at PR14.

Box 1 - Draft resilience planning principles

Principle 1 - A better and more integrated understanding of service risks
Companies should carry out resilience risk assessments that provide a clear and

systematic understanding of service and systems risks across their entire business.

Principle 2 – Customer engagement
Companies' resilience risk assessments should be informed by engagement with their customers.

Principle 3 - A resilience golden thread and greater transparency
The outputs from companies' resilience risk assessments should inform companies' water resources management plans and business plans – i.e. there should be a resilience golden thread. Companies should make clear in their business plans and their engagement on their business plans how they have taken account of their resilience risk assessments.

Principle 4 - Broad consideration of intervention options
Companies' resilience risk assessments should consider a set of mitigating actions and interventions that consider all of the components of resilience including response and recovery. Companies should consider collaborative, innovative and long-term options.

Principle 5 - Cost effective solutions
Companies' resilience risk assessments should consider the most cost effective solutions for mitigating risk, valuing the wider future set of options that some courses of action allow for. This might involve partnership working with other organisations.

Principle 6 - Outcomes and customer focussed approach
Companies' resilience risk assessments should inform resilience outcomes and the associated stretching performance commitments based on future risks and customer preferences.

Principle 7 - Board assurance and sign-off
Company boards will need to assure us that companies' business plans have been informed by:
a) a robust and systematic assessment of the risks to systems and services facing the company; and
b) the results from engagement with customers on the relevant risks.

We invite views on whether there should be resilience planning principles for PR19 and on the content of our draft principles. Our preference is for resilience planning principles for PR19 to encourage companies to develop a thorough understanding of service risks and ensure a clear link between their resilience risk assessments and their business plans. The principles will have only a limited impact on a company's discretion to develop an approach that best reflects its risk profile and its customers' preferences.

3 Customer engagement

We expect companies to engage extensively with their customers on resilience. In Towards Resilience we set out resilience principles for the sector to follow to protect customers now and in the future. One of the principles was that customer views should be at the heart of service resilience provision.

In our May 2016 customer engagement policy statement for PR19 we emphasised the importance of companies engaging with their customers on long-term issues such as resilience, security of services and the long-term affordability of bills. We acknowledged that resilience is a complex and challenging area. A greater level of informing and educating of customers will be necessary to effectively engage them on resilience. A number of stakeholders agreed with our view that it is possible to effectively engage with customers on longer-term issues. We expect companies to be creative in exploring ways in which customers can best be engaged on long-term issues and to consider the best ways to frame and interpret such engagement. Our customer engagement policy statement also expects companies to draw on a rich and robust set of evidence on customer preferences, not simply relying on stated preference willingness to pay.

We explained in our policy statement that we will link the quality of a company's customer engagement directly to our assessment of business plan quality in the risk-based review.

In the customer engagement policy statement for PR19 we also set out a number of questions CCGs should address in their reports to us at the price review. One of these questions was whether the company had effectively engaged with its customers on longer-term issues, including resilience, impacts on future bills and longer-term affordability.

We are facilitating quarterly workshops with CCG chairs to enable the sharing of information, knowledge and good practice, including on approaches to long-term issues.

4 Long-term performance commitments

It was always and remains our intention that outcomes would be long-term objectives for companies relating to their customers' enduring preferences. This reflects the fact that the water sector is a long-term business with a high proportion of long-lived assets and that decisions taken today can have impacts well beyond the five-year price control period.

In our May 2016 Water 2020 publication we consulted on the use of long-term performance commitments and ODIs to underpin long-term outcomes. The benefits of long-term commitments include that they should result in better-quality engagement with customers and other stakeholders on future levels of service and a greater focus of companies on the long term in their plans. They should also make it easier for companies to make investment decisions that help them meet the challenges of resilience and long-term affordability.

We recognised some of the difficulties in setting long-term fixed commitments such as the risk that they become outdated with the possibility of companies' targets being easier to achieve than expected or unreasonably demanding. The aim of embedding long-term commitments in the outcomes framework is to drive a company focus on planning, investment and risk management to ensure the long-term resilience of systems and services customers rely on now and will in the future.

In our May 2016 Water 2020 document we presented four different options for setting long-term performance commitments and ODIs. Our preferred option was for performance commitments and ODIs to remain fixed at five years but for companies to provide long-term aspirations for all their performance commitments at PR19 and be transparent about these with their customers and other stakeholders. We considered our preferred approach achieved the right balance between focusing companies' plans and customer engagements on the long-term and avoiding binding performance commitments and ODIs which might become outdated over a long period. Our preferred approach to long-term performance commitments is supported by our proposed improvements to asset health performance commitments and ODIs which we discuss below.

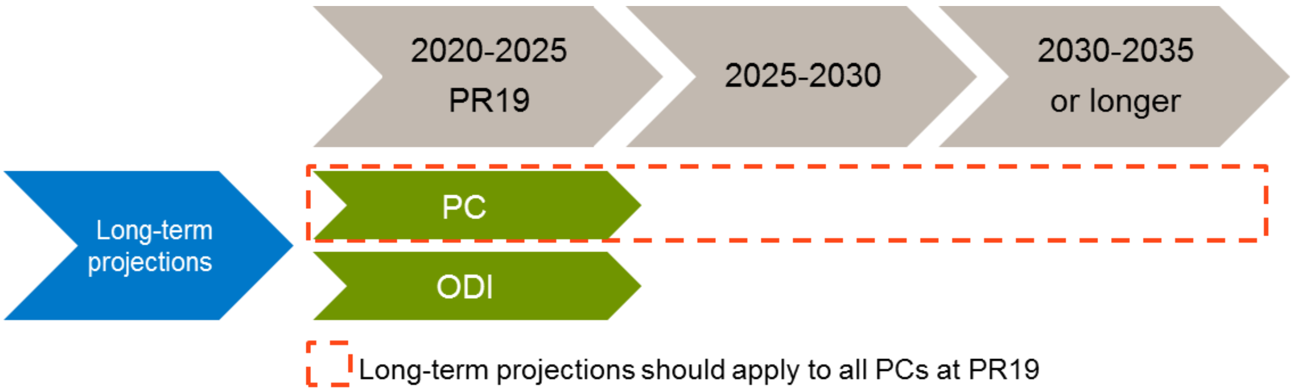
4.1 Responses to our May Water 2020 consultation on long-term performance commitments

There was strong support from respondents for our preferred approach of performance commitments and ODIs remaining at five years duration but with companies providing long-term aspirations, based on customer and stakeholder engagement, for all their performance commitments at PR19. Respondents saw placing companies' commitments into a longer-term framework as a positive innovation. This approach provides companies, customers and stakeholders with certainty about the performance commitments for the 2020 – 2025 regulatory period, while encouraging the industry to embed these commitments within a longer time horizon. Respondents highlighted the importance of building customers' needs into their long-term plans, recognising that customers' views can change over time. Several respondents thought companies should be able to propose more binding long-term commitments over a suitable time span where this is appropriate and where there is customer support to do so.

4.2 Our policy decision on long-term performance commitments

We expect all performance commitments to be supported by long-term projections for at least a further ten years after the five year duration of the performance commitments; in other words, the performance commitments should relate to 2020-25 and the long-term aspirations to at least 2025-35. If there were instances where a long-term aspiration would not be appropriate, we would expect a company to provide a justification for why this would be the case. Where companies are making long-term projections in other processes, for example in water resources management plans, we would expect these projections and the long-term business plan aspirations to be consistent or for the company to explain why a difference is appropriate.

Figure 3 – Five-year performance commitments and ODIs and long-term projections of at least ten years



This approach supports our expectation that companies put their five-year business plans in a genuinely long-term context at PR19. We will assess how well companies have done this at the PR19 risk based review by, for example, taking account of the quality of the evidence provided on longer-term planning, the customer engagement on this planning and the alignment between the business plan and longer-term planning.

We are open to companies proposing longer-term performance commitments with a default assumption they will remain unchanged beyond five years and longer-term ODIs in relation to some or all of their longer-term performance commitments. This could include direct procurement schemes that go beyond a single price review where appropriate (Appendix 4 discusses scheme-specific performance commitments). We expect companies to provide good evidence to justify their proposed approach, including from customer engagement.

Our policy for PR19 balances the need to plan for enhanced levels of service in the long term while recognising that customers' priorities may change over time. It is essential that companies are transparent with their customers about their long-term performance plans and use their longer-term aspirations as an opportunity to allow for more efficient investment.

5 Resilience metrics

We consider common metrics on resilience are important so that customers can understand the level of resilience they receive compared with customers in other areas. The Resilience Task and Finish Group highlighted the need to develop resilience metrics and standards as did the responses to our July 2015 resilience consultation. The Resilience Task and Finish Group highlighted that the lack of resilience metrics makes it difficult to objectively assess the resilience of the water sector.

In the rest of this consultation there are several options we discuss which help integrate resilience into the outcomes framework. In Appendix 1 we explain our approach to making more information available to customers, CCGs and the sector more widely. These cover a wide range of existing metrics, including some which could help measure aspects of a company's resilience.

In Appendix 1 we explained that there is a case for common performance commitments which all companies must have for outcomes that are a priority for all customers. This is especially true where the impact of service failures can have a significant detrimental effect on customers. The common performance commitments that we are proposing include some measures that relate to aspects of the resilience of company systems and services, such as water supply interruptions, internal sewer flooding and pollution incidents. We plan to engage with the sector working groups on the definitions of supply interruptions, leakage and internal sewer flooding. In this context we will check whether the definitions take account of resilience issues. Our decision to require companies to provide long-term projections of their performance commitments at PR19 will also improve the extent to which they take account of resilience.

In Appendix 2 we consider stronger ODIs. It could be the case that applying larger penalties to failures on existing performance commitments, such as supply interruptions, leakage or sewer flooding, would be sufficient to incentivise companies to invest to avoid high-impact low-frequency events for which there might be a low probability of the event occurring in a five-year price control period. Incentivising companies to avoid or reduce the impact of these events can deliver considerable benefits to customers. For example, work led by Water UK on the water resources long-term planning framework identified a central estimate of household willingness to pay to avoid emergency drought orders of £80 per year per avoided day of interruption per year from emergency drought orders.

Later in this appendix we consider ways of strengthening the framework for asset health measures including common performance commitments on water mains bursts and sewer collapses, introducing asset health expectations for PR19 and introducing reporting requirements to improve transparency about asset health. We also discuss whether we should go further towards some standardisation or full standardisation of companies' approaches to asset health performance commitments and ODIs.

The Resilience Task and Finish Group highlighted the need to develop new resilience metrics and standards as did the responses to our July 2015 resilience consultation. The Resilience Task and Finish Group recommended that companies and Ofwat work together to develop a method of comparing resilience, reflecting customer views, local context, the environment and company ownership of plans. Respondents to our July 2015 resilience consultation highlighted the need for a metric to establish a consistent baseline position and suggested a collaborative working group to develop appropriate measures of resilience.

There are several current initiatives to develop resilience metrics:

- The Environment Agency is considering resilience metrics for inclusion in its Environmental Performance Assessment (EPA)
- The Water and Wastewater Resilience Action Group (WWRAG)1 is setting up a resilience metrics group to deliver advice on resilience metrics to the WWRAG by March 2017
- UK Water Industry Research (UKWIR) has just started a project to consider resilience metrics
- The National Infrastructure Commission (NIC) has commissioned some work on resilience metrics

At this stage we are not proposing particular resilience measures, but some examples suggested by our stakeholders are:

- Percentage of water treatment / wastewater treatment works at risk from flooding that have protection in place
- Percentage of customers with more than one source of supply
- Security of supply under drought conditions
- Reduction in volume or proportion of surface water entering the public sewer system
- Proportion of total abstraction from sources that pose a risk to the environment

[1] WWRAG includes representatives from water companies, Ofwat, environmental non-governmental organisations and CCWater.

- Percentage of households eligible for a social tariff actually receiving a social tariff
- Households served on a tariff or financial incentive scheme that rewards water saving
- Acres of land in better stewardship due to water company catchment management
- Total litres/year discharge of untreated wastewater (including from combined sewer overflows) into the environment, normalised per capita served.
- Percentage of catchments with a long-term strategic wastewater plan

We plan to hold a resilience event in March/April 2017 to bring together current thinking about resilience across the sector. This event will provide a valuable opportunity to share approaches, learning and expectations related to resilience and to share information from the groups developing resilience metrics. We also propose to set out our expectations related to how companies should consider, consult on and assess resilience for PR19 ahead of our consultation on the price review methodology. These expectations will take into account comments on the resilience principles we are proposing in this consultation and will inform our methodology consultation for PR19.

We have considered two options in relation to resilience performance commitments and ODIs:

Option 1 – companies choose their own resilience measures - we could rely on companies to choose their own resilience outcomes, performance commitments and ODIs based on their analysis of the risks they face and the results of their customer engagement. Our other PR19 proposals on customer engagement, comparative information, common performance commitments, stronger ODIs, long-term performance commitment projections and asset health would significantly improve how the outcomes framework takes resilience into account. We would review with the sector whether the definitions of the proposed common performance commitments and ODIs (see main document and appendix 1) take sufficient account of resilience and adjust them if necessary. For example, some performance commitments have exemptions for exceptional events when these are precisely the type of events that companies should be incentivised to be resilient to. We would also consider at the price review the appropriateness of companies' performance commitments and ODIs in relation to resilience.

Option 2 – develop a common resilience measure or measures, plus option 1 – as described above there is a lot of support from our stakeholders for the sector to develop a common resilience measure or measures and our stakeholders are taking forward several initiatives to do this (as detailed above). This option would have to ensure a common resilience measure or measures is/are delivered in time for the PR19 methodology consultation. Companies could still develop and engage with customers on their own resilience performance commitments to be used alongside the common resilience measure or measures.

5.1 Our preferred option on resilience measures

Our preferred approach is option 2 i.e. to review and adjust the definition of the common performance commitments and ODIs so that they better reflect resilience and encouraging the sector to develop a common resilience measure or measures. These actions are in addition to the other PR19 proposals on customer engagement, comparative information, common performance commitments, stronger ODIs, long-term performance commitment projections and asset health which help the sector focus on improving its resilience.

We recognise that the sector has already carried out considerable work on both the definitions of existing measures and developing resilience measures. We do not want to lose this development work from the PR19 framework and we therefore want to pursue option 2.

6 Asset health - improvements to our approach

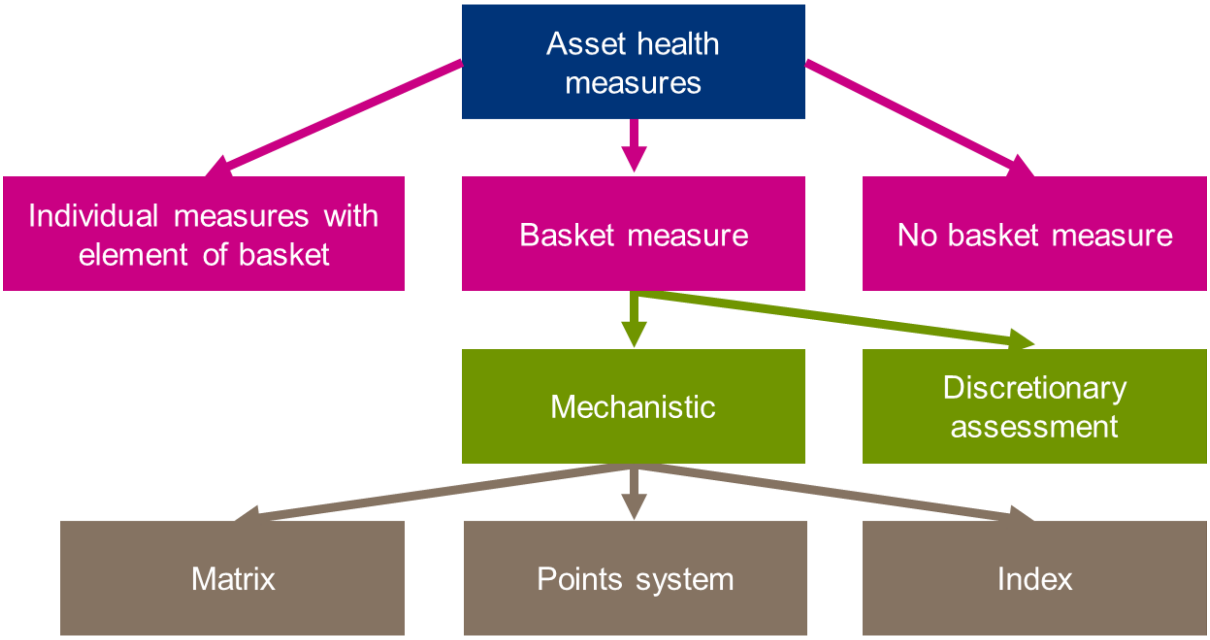
A key area of network and service resilience is asset health. Asset health is an indicator of a company's ability to continue to perform its functions for the benefit of customers and the environment in the future. Poor asset health is when assets are allowed to deteriorate to a point where the risk of failures, which will impact on customers and the environment, becomes unacceptably high. The health of companies' assets is a crucial element of achieving resilience in the water and wastewater sector in England and Wales.

Asset health is arguably an input measure helping to deliver the services that customers care about. If companies were correctly incentivised to deliver the outcomes that customers want performance commitments and ODIs related to asset health would be unnecessary. However, asset health outcomes and performance commitments give customers additional confidence that assets are being maintained appropriately for the benefit of current and future generations. For companies, focusing on asset health enables them to identify potential risks to their systems and service delivery and take action where required. It incentivises companies to balance expenditure against more short-term, customer-facing measures.

6.1 Why are we reviewing our approach to asset health?

At PR14, we moved away from standardising how companies should measure and report asset health. The outcomes framework enabled companies to develop bespoke approaches to long-term asset health reflecting the priorities of their local customers and stakeholders. The result was a wide variety of approaches to asset health as illustrated in the diagram below.

Figure 4 – The different approaches to asset health at PR14



The PR14 approach to outcomes encouraged companies to innovate in their approach to asset health and to think hard about what customers wanted. Some companies gave more visibility to their approach to asset health than previously.

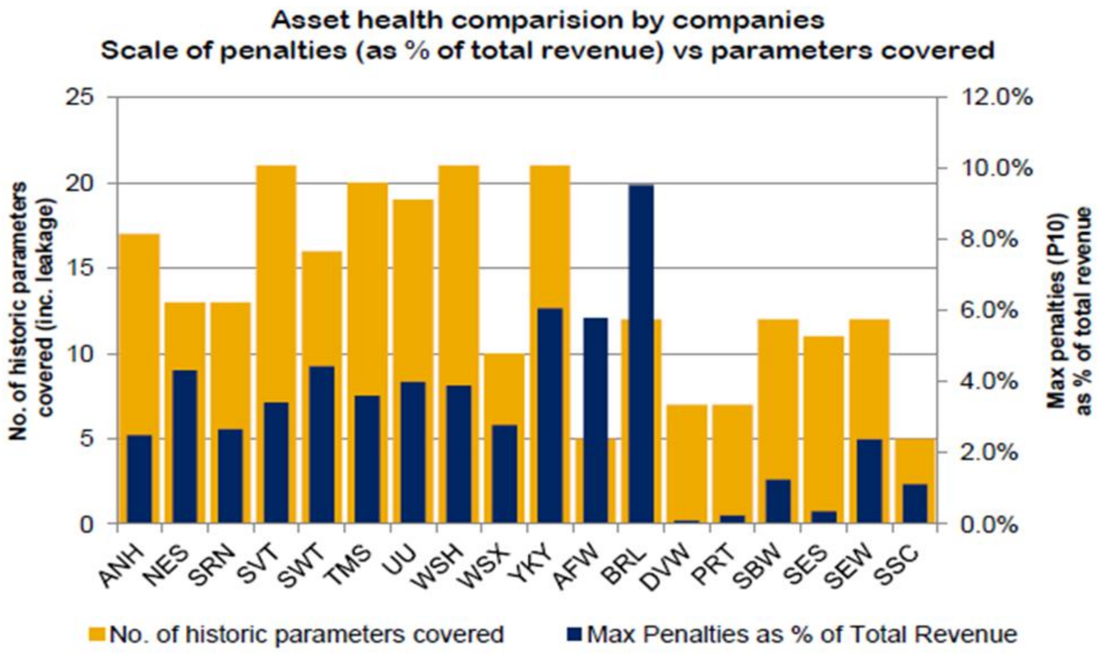
While there were many positive aspects of the PR14 approach to asset health we consider that there are five areas in which the approach could be improved for PR19.

First, a small number of companies used approaches to asset health where the company has discretion over how performance is assessed and penalties applied. While a mechanistic approach can be less subtle in dealing with particular patterns in asset health performance, it has the benefit of being more transparent for companies and their teams delivering asset maintenance and improvements as well as for customers, other local stakeholders and regulators. In addition, a discretionary approach owned by the company requires very strong levels of assurance for customers, CCGs and us to be able to trust the judgment the company has applied in relation to its performance and the application of any incentives.

Second, the information we received on asset health at PR14 could be improved. For example, it took time for us to obtain full information about how some companies' asset health mechanisms worked. Similarly, we did not capture full information on the 155 asset health sub-measures that underlie the asset health performance commitments in the business plan tables. We are addressing this in the Annual Performance Reports for 2017 by including a new table in which companies will have to report performance on their sub-measures.

Third, there was considerable variation in the size of penalties relative to total revenue for companies' asset health measures. Ahead of draft determinations we compared companies' penalties, illustrated in the figure below. Based on this analysis, we recommended some adjustments to a number of companies. We made interventions for Dee Valley Water, Portsmouth Water and Sutton & East Surrey Water to increase potential penalties because their potential penalties were relatively low compared with other companies. We also asked Bristol Water to reconsider its proposed penalties in the light of our analysis which identified its potential penalties to be relatively high.

Figure 5 – The scale of asset health penalties in PR14 business plans



Source: Draft price control determination notice: technical appendix A2 – outcomes

Fourth, it was unclear how effectively companies engaged with their customers and CCGs on asset health.

Fifth, the considerable variation in the approaches to asset health made it very difficult to compare the degree of stretch in companies' commitments.

In light of these reflections on the PR14 approach, we are proposing some options for adjusting the approach to asset health at PR19.

6.2 Stakeholder views on asset health

In our June 2016 outcomes workshop, we asked stakeholders to help shape our approach to asset health for PR19. Stakeholders commented that we need to be clear what we want to incentivise through our approach to asset health. The approach needs to be embedded in the wider approach to resilience with a long-term focus.

There was support for spreading learning from PR14 by promoting best practice on asset health and support for doing this through a common set of principles.

Most attendees were in favour of an approach that would be more transparent and said that guidance on asset health penalties would be useful. Some stakeholders commented that we need to be careful about the overlap between asset health performance commitments and other performance commitments.

In relation to customer engagement, some stakeholders commented that customers probably do not need to know about the details of asset health, just the overarching summary. However, it might be useful to educate and engage customers on asset health. There was a role for CCGs to challenge companies' assurance on asset stewardship.

There was some support for partial standardisation of the approach to asset health performance commitments, but attendees did not support a fully standardised approach, as this would not leave much scope for customer engagement.

Box 2 - Approach to asset health in other sectors

Other regulators take a variety of approaches to asset health. We discuss three examples below.

In **energy**, when Ofgem developed its RIIO regulatory model for electricity and gas network companies, as well as specific reliability related indicator targets, it introduced Network Output Measures (NOMs) "secondary deliverables" that aid in the measurement of performance in the primary output categories of reliability, safety, and environment. The NOMs link the network companies' allowed expenditure to the overall risk of asset failure that remains on the networks after the effects of asset management investments have been taken into account. Network companies provided Ofgem with forecasts of their asset health and criticality positions based on investment plans required to achieve desired levels of reliability and network risk. These were used to define the NOMs targets that represent the required improvement in asset health, criticality and risk.

Ofgem has been working with all sectors to develop the NOMs framework and to make the measures of risk more consistent across companies to enable: the comparative analysis of network asset performance between network companies over time; the assessment of the licensees' performance on secondary deliverables; and the communication of secondary deliverable information between the network companies, Ofgem and, as appropriate, other interested parties in a transparent manner.

In **rail**, the Office of Rail and Road (ORR) requires Network Rail to provide information on its key assets and projections on the life of those assets. Network Rail's asset life calculations have become more sophisticated over time to move away from a purely age based approach to take account of factors such as condition and utilisation as they have an impact on asset lifespans. ORR does not currently set targets on projections of asset reliability or health but does use these as key indicators in monitoring Network Rails overall performance.

ORR has set targets for Network Rail to improve its asset management capabilities as part of the last periodic review and continues to monitor Network Rails delivery of its periodic determination and compliance with its licence. The ORR has a range of tools to encourage this and can utilise its enforcement powers if necessary. To reflect changes in the industry, ORR and Network Rail are working to introduce regional reporting for Network Rail and considering the use of regional benchmarking in the future to support region specific determinations.

In **telecommunications**, many providers do not have significant market power (SMP) and therefore are not subject to periodic price controls or other remedies. An area where Ofcom sets quality of service requirements is for BT Openreach in certain parts of the business market. For particular types of business telecoms connection, BT Openreach is required to reach certain targets for the percentage of faults repaired within 5 hours. These requirements indirectly require BT Openreach to keep its assets in good health to be able to achieve these targets.

6.3 Options for improving the outcomes approach to asset health

In section 4 we identified five areas where the asset health outcomes framework could be improved:

1. clearer, more automatic approaches to how performance is assessed and incentives applied;
2. more information on asset health;
3. more information on asset health incentives;
4. improved customer and CCG engagement on asset health; and
5. increased stretch in companies' commitments.

To address the five areas we set out below our proposed asset health expectations and reporting requirements for PR19 and two options for going further. In addressing these areas we need to be mindful of not losing the benefits of the approach to asset health at PR14 such as allowing scope for companies to innovate.

6.4 Draft asset health outcomes expectations for PR19

We are proposing to introduce asset health outcomes expectations (see box below) for PR19. The draft expectations would improve the information customers, CCGs and other stakeholders have on asset health. The draft expectations should encourage companies to set appropriate asset health performance commitments and provide a tool for customers, CCGs and us to challenge them.

Box 3 - Draft asset health outcomes expectations for PR19

1. Companies should clearly present in their business plans their approach to asset health and which of their performance commitments and ODIs relate to it.

2. Companies should engage with their customers and CCGs on how their asset health measures protect current, future customers and the environment.

3. Companies should ensure their asset health mechanisms are easy to understand and are well explained to customers, CCGs and us.

4. Companies should explain to their customers, CCGs and us how their asset health penalties (and any rewards) relate to revenue and regulated equity.

5. Companies should submit their definitions and asset health mechanisms ahead of business plans.

6. Companies must include water mains bursts (for water companies) and sewer collapses (for wastewater companies) as part of their asset health measures.

We are also proposing to improve transparency about asset health performance commitments at PR19. Our draft reporting requirements are set out below. Transparency around asset health performance commitments is particularly important in the context where companies might be asking for additional resilience expenditure at PR19. This improved transparency would give customers, CCGs and us greater clarity on companies' asset health proposals enabling them to challenge and scrutinise companies' proposals more effectively. It will also enable customers, CCGs and us to check that customers are not being asked to pay for additional resilience expenditure in cases when it should be included as a part of maintaining good asset health.

Box 4 - Draft asset health performance commitments reporting requirements

Companies must provide:

- clarity on what the asset health sub-measures are;
- clarity on the asset health sub-measure definitions, including an explanation of why they are different to the industry standard measures (if this is the case). For the common performance commitments related to asset health companies must use the standard definitions;
- a clear statement of the reference level and any trigger levels which affect rewards or penalties[2] for each sub-measure, and the justifications for them;
- information on the AMP6 reference level and any trigger levels which affect rewards or penalties to compare with those proposed for AMP7;
- data on sub-measure performance for the five most recent years to compare with proposals for AMP7;
- clarity on the weighting / scoring / aggregation rules to be used in an asset health index, matrix or points system;
- assurance that asset health mechanisms will operate automatically, and
- clarity on what mitigation rules apply to the asset health measures and why these are appropriate in the context of improving resilience in the sector.

6.5 Options for more standardisation on asset health performance commitments

We invite views on whether we should move towards some standardisation or full standardisation of companies' approaches to performance commitments and ODIs

[2] In the past the trigger levels which affected the assessment of asset health were called upper control limits and lower control limits.

on asset health. Some of our stakeholders supported partial standardisation at the outcomes workshop in June 2016.

Option 1 involves a more standardised approach than at PR14. We could require companies to all have some key asset health metrics in their asset health proposals beyond the common performance commitments we are proposing of water mains bursts (for water companies) and sewer collapses (for wastewater companies), which might also have industry-standards ODIs attached (see appendix 2). We could require companies to have certain forms of asset health mechanisms, perhaps based on the approaches companies currently have. We could also set ranges for asset health penalties (and maybe rewards) as a percentage of revenue and/or regulated equity.

Option 2 is a fully standardised approach to asset health performance commitments. A full standardised approach could be developed in different ways. For example, we could require companies to adopt standard asset health measures using a standard list of asset health sub-measures, with standard aggregation rules from the sub-measures to a basket-level assessment and standard penalties as a proportion of revenue (or regulated equity or totex) for water and wastewater. Another example is that we could fully standardise the approach to asset health by increasing the number of common performance commitments to include more asset health measures, which would avoid a basket measure approach.

6.6 Our preferred option

We are minded to adopt asset health expectations and reporting requirements, subject to comments on our draft proposals detailed above. Together they would encourage companies to put greater emphasis on their approaches to asset health outcomes in their business plans and in their engagement with customers. The improved transparency would give customers, CCGs and Ofwat greater clarity on companies' asset health performance commitments enabling them to challenge and scrutinise companies' proposals more effectively. However, we invite stakeholders' comments on whether we should adopt the asset health expectations and the detail of what we are proposing.

We can see the case for a move towards some standardisation of the approach to asset health, as did some of our stakeholders at the outcomes workshop in June 2016. Partial standardisation of the approach to asset health fits with the key themes of this consultation around making performance commitments more stretching including through comparative information, embedding resilience fully in the outcomes framework and making performance commitments more transparent. It fits with the idea that customers should be better able to compare past and future company performance so that they can be clear what service performance they are being asked to pay for in the future. Partial standardisation still allows scope for companies to be innovative in their approaches to asset health and reflect their engagement with their customers and local stakeholders.

A fully standardised approach would have the advantage of producing more comparable information on asset health that would allow customers, CCGs and us to more effectively challenge companies on their proposals and make them more stretching. However, by restricting companies' freedom to develop their own approaches to asset health we would be unlikely to see the innovation in approaches we saw at PR14. At this stage we think that a move to full standardisation of asset health performance commitments might be overly restrictive on companies' abilities to reflect their engagement with their customers and local stakeholders in their proposals, even if it might make challenging companies to set stretching performance commitments easier.

6.7 Rewards for asset health ODIs

We invite views on when rewards for stretching levels of outperformance on asset health performance commitments might be appropriate.

At PR14, most asset health ODIs were penalty-based with rewards in only a small number of cases for measures which more directly affected customers, such as water discolouration. This reflects that, following large improvements in asset health since privatisation, in many cases asset health is about maintaining stability rather than making large improvements, which might be suitable for rewards if a company outperformed them.

However, there might be a case for rewards for companies reaching their stretching performance commitments more quickly than planned. This might be appropriate in a context where companies are seeking to improve their network resilience as part of a wider focus on improving the resilience of their services and systems.

Consultation questions: better reflecting resilience in outcomes

Q8: What are your views on our proposals for better reflecting resilience within the outcomes framework?

Q9: What are your views on the options and our preferred approach to asset health outcomes?

7 Impact assessment on better reflecting resilience in outcomes

We are consulting on a range of measures to better reflect resilience in the outcomes framework.

Our proposals for resilience planning principles should encourage companies to develop a thorough understanding of service risks and ensure a clear link between their resilience risk assessments and their business plans. The principles will ensure that the ownership and accountability for resilience planning sit with companies who are best placed to build the relationships and partnerships necessary to develop the right level of understanding and to identify the most effective and efficient solutions. The principles also allow for customers to have an important role in informing companies' approach to resilience, and in being part of the solution to greater resilience. A potential drawback to this approach is that it could limit a company's discretion to develop its own approach to resilience. However, we consider the resilience principles actually enable companies to develop an approach to resilience that best reflects its risk profile and its customers' capacities and preferences.

Our proposal to review the definitions of the common performance commitments so that they better reflect resilience should encourage companies to act to reduce the risk and impact of exceptional events on their services. Our proposal should reduce the risk associated with such events for customers, but increase it for companies at least as far as their common performance commitments are concerned. This is because companies would not be able to benefit from exclusions from the common performance commitments for exceptional events as they do now. We believe that this is appropriate as companies are better placed to mitigate this risk than customers and it is in the long-term interest of the sector for them to do so.

Our proposal to encourage the sector to develop resilience metrics is beneficial because the current lack of resilience metrics makes it difficult to objectively assess the resilience of the water sector and because resilience metrics would enable customers to understand the level of resilience they receive compared with customers in other areas. The resilience metrics will make it easier for customers, other stakeholders and companies themselves to make the case for adopting approaches which benefit the resilience of their systems and services. A difficulty with resilience metrics is achieving the right balance between how comprehensively they cover the different aspects of resilience and the ability to customers and other stakeholders to understand them. The various sector groups and we will be considering ways of addressing this difficulty ahead of the methodology consultation.

Our proposed expectations for companies' asset health performance commitments should encourage companies to set appropriate asset health performance commitments and empower customers, CCGs and us to challenge them. Our proposed reporting requirements for asset health should improve transparency and give customers, CCGs and us greater clarity on companies' asset health proposals enabling us to challenge and scrutinise companies' proposals more effectively. There asset health expectations and reporting requirements have low costs for companies as they represent good practice and might even lower costs by making our expectations clearer.

We consider whether we should move towards some standardisation of companies' approaches to performance commitments and ODIs on asset health. Partial standardisation would enable customers, CCGs and us to compare company performance and challenge companies' asset health performance commitments. It would also allow us to embed resilience into the asset health performance commitments and make them more transparent for customers. Partial standardisation would restrict companies' discretion in relation to their asset health performance commitments to some extent, but would still allow scope for companies to be innovative in their approaches to asset health and reflect their engagement with their customers and local stakeholders.

Resilience-focused ODIs come with their risks and costs. They involve a risk that it can be hard to value the impact of high-impact low-frequency events and that the ODI will be too strong or too weak given the costs for customers that need to be avoided. However, strengthening ODIs towards the estimated costs of high-impact low-frequency events should make them closer to the appropriate ODI than not making any such adjustments. There will be some costs to companies of developing these metrics, but they will be marginal compared with the improvement in the resilience of the sector, which these resilience measures should encourage.