A3: Designing performance commitments

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A3 – DESIGNING PERFORMANCE COMMITMENTS

In Chapter 2, we outlined the framework we have developed to set bold performance commitments driven by our customers' needs and priorities, with targets that we can demonstrate are stretching.

This appendix provides supporting detail on the process we have adopted, in alignment with Ofwat guidance, to design our performance commitments and pledge stretching targets. It outlines the rationale we have adopted to select and thereon set stretching targets for the 41 commitments we are proposing within our plan, aligned with customer views, comparative and historical data and in accordance with the six approaches outlined by Ofwat.

This Appendix is structured as follows:

- Part 1 explains our approach to designing performance commitments.
- Part 2 sets out the full definition for each of our bespoke performance commitments, reflecting the feedback from Ofwat on our May PC definitions submission; and
- Part 3 explains in detail how we have set the targets for each performance commitment.

For further information please see:

Part 3 Delivering better outcomes – which discusses our track record and how we will deliver our commitments to our customers;

Appendix A1 - Engaging Customers – which provides further detail on our customer engagement and valuation studies;

Appendix A4 – Designing outcome delivery incentives; and

Appendix A8 – Securing cost efficiency - which provides further information on enhancement expenditure and our real option mechanisms.

In this appendix we've redacted information that relates to the location of some of our water sites.

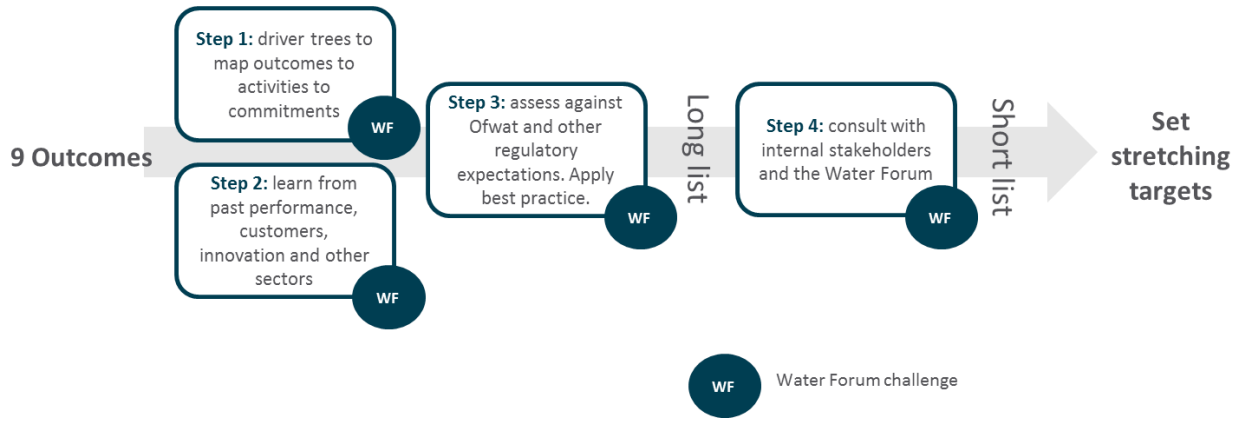
Contents

Part 1 Designing performance commitments

1. Defining our performance commitments

We're proposing [41] performance commitments to hold us to account to deliver our outcomes.

As outlined in Chapter 2, we've used an iterative process comprised of four key steps to develop our portfolio of performance commitments for 2020-25 as illustrated below. It started by creating a long-list of potential commitments which we iteratively reduced to reach a final short list. Through the process, we've refined these commitments through successive pieces of customer research, and in the light of our ongoing experience of delivering our current commitments.



In developing our PCs we have sought Water Forum challenge and collaboration at every step. Our Forum benefits from a wide range of expertise, including customer research, investment appraisal, climate change, regulation and insight from the water sector which has ensured in depth comparative challenge on our plan. We haven't shied away from embracing their challenge to first create a transparent framework and second make our performance commitments and ODIs better for all stakeholders.

The following sections provide supporting detail on the four key steps we adopted to design our commitments.

1.1 Putting our customers first

As set out in Chapter 2, underpinning the process we adopted, we've used four principles to select our performance commitments and associated targets. These principles, which seek to put our customers at the forefront of our decision making, reflect Ofwat guidance and include further refinements from discussions with the Water Forum.

Customer focused principles

Principle	Example
1. We'll embrace customer insight - even if it means changing how we think and operate.	We've incorporated a customer driven measure for low pressure complaints – even though this will mean changing our operations because pressure is a tool used to manage leakage.
2. We should deliver the best possible service at the lowest possible price.	All customer facing commitments will feature a higher level of service and there'll be no deterioration in any measure whilst also delivering a 13% bill reduction (like for like reduction with PR14).
3. We should welcome comparative assessments and not use differentiating factors to support weaker targets unless supported by robust evidence.	We won't make adjustments to reflect the characteristics of our operating area – such as weather for flooding or AIM based on variation due to sandstone aquifers.
4. We should use a multi-AMP journey to deliver our customers' needs.	Our approach allows us to learn and tackle all forms of sewer flooding over time. Our approach to resilience continuously improves over time and is aimed at targeting the Cabinet Office's four R's – resilience, reliability, redundancy and response and recover.

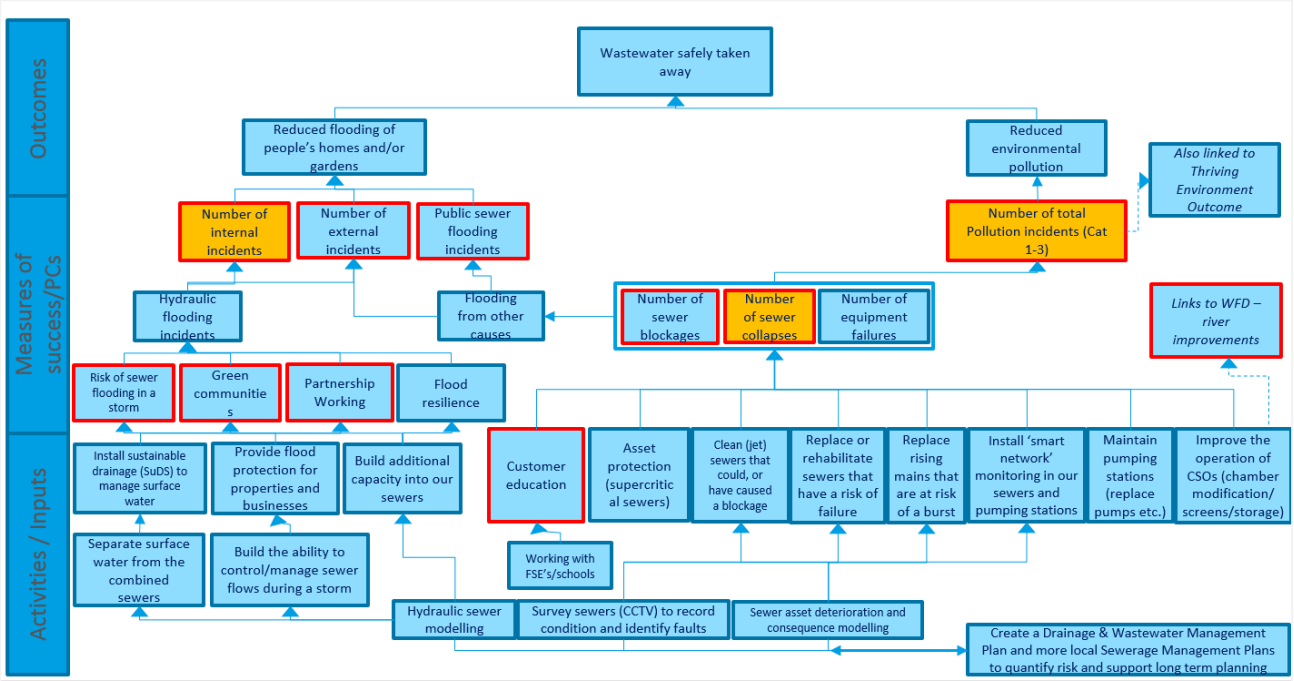
1.2 Outcomes – to activities - to performance commitments (step 1)

As performance commitments are designed to measure progress against outcomes, this was our starting point. For our nine outcomes, we've developed 'driver trees' which map the activities required to deliver each outcome and the potential measures of success that could be used against each.

To aid comparability and transparency for customers Ofwat have defined 14 performance commitments (for water and waste companies) which are compulsory for all companies. Therefore we mapped the Ofwat compulsory measures onto our driver trees to understand how well they reflect the things our customers care about.

Through analysis of our current performance and engagement with customers we established where the biggest gaps were and then sought to develop bespoke performance commitments to fill those gaps.

By ensuring that there is a clear line of sight between outcome, activity and measures of success we can demonstrate that our performance commitments offer customers an appropriate breadth and depth of protection.



The selection criteria when deciding which PC to include in our basket of performance commitments for PR19 involved:

- considering PCs role within the driver tree; and
- mapping customer views and priorities.

Where measures are not a clear driver of success or a priority for customers, we've not included them within our long list of proposed performance commitments. This doesn't mean they are unimportant, but rather will be covered as part of the wider information we will collect to monitor and drive performance centrally through our communication cell set-up.

1.3 Reviewing our 2015-20 performance commitments (step 2)

Having defined our driver trees, we then considered the right mix of PCs by reviewing our existing 2015-2020 commitments and inviting challenge from our Water Forum (CCG).

Over the last three years we've gained valuable experience of how our current suite of performance commitments work in practice. With concurrent challenge by the Water Forum, we've assessed their effectiveness on the basis of whether they:

- drive the right behaviours;
- drive performance improvements in the areas intended;
- are consistent with Ofwat's methodology for 2020-25; and
- will remain relevant in the longer term.

For our 2020-25 portfolio of performance commitments, we've proposed a number of changes and improvements to our current measures. These changes have been discussed, refined and ultimately agreed with the Water Forum. A full list of retired, retained, replaced or evolved performance commitments, and the Water Forum's challenge, is presented below:

Proposed treatment of 2015-20 performance commitments

PR14 Performance Commitment	AM6 performance RAG	Proposed Treatment for PR19	Rationale	Water Forum (CCG) Challenge
W-A1: Number of complaints about drinking water quality		Retain	Discolouration is a continuing concern for our customers. Pre-2020 measure is proven to be effective and appropriate	Support need to keep PC
W-A2: Compliance with drinking water quality standards		Retire	CRI is a new measure, developed by the DWI and mandated by Ofwat.	Support need to retire
W-A3: Number of sites with coliform failures		Retire	CRI is based on a composite score reflecting both pre-2020 measures	Support need to retire
W-A4: Successful catchment management schemes		Revise	Enhance from an outputs PC to develop an outcomes PC based on learning from AMP6	Support – outcomes is a better approach for customers
W-B1: Resource Efficiency		Retire	Replaced by PCC	Support need to retire
W-B3: Speed of response in repairing leaks		Revise	Revise PC to focus on significant customer reported leaks	This reflected challenge to retain a commitment on speed of response given the importance of leakage to customers but accept need to revise PC to make it more relevant and focussed on customers.
W-B5: % of customers with resilient supplies (a second source of supply)		Revise	Revised to reflect the best practice guidance from DEFRA covering response and redundancy. Revised to combine two elements of a resilient water supply – Source of treated water and network resilience	This reflected challenge on the 2015-20 PC which lacked clarity in its definition and is focussed on asset redundancy. Thus it does not take account of wider resilience practices
W-B7: Number of customers at risk of low pressure		Revise	Low pressure is a very important issue for our customers. Thus commitment has been revised to deal with persistent low pressure	Support – rationale provided for change

PR14 Performance Commitment	AM6 performance RAG	Proposed Treatment for PR19	Rationale	Water Forum (CCG) Challenge
			issues. Additionally we will propose a second low pressure PC looking at first time complaint resolution	
W-B8: Restriction on water use		Retire	Redundant. The Drought Resilience commitment should cover this	Support– rationale provided for change
S-A2: Number of external sewer flooding incidents		Revise	Improved through the adoption of the consistent definition as published by Ofwat	Support – rationale provided for change; welcome inclusion in plan
S-A3: Partnership Working		Revise	Revised to align with learning from AMP6 and ensure PC is more outcome focused on customer properties or external areas as opposed to schemes delivered. New PC better aligns with DEFRA proposed PC for EA	Reflected challenge about whether it was supported by customers? If yes should be considered for PR19.
S-A4: Sewer blockages		Retain	To continue to focus on sewer network based on customer feedback	Support rationale welcome inclusion in plan
S-A5: Statutory Obligations (section 101A schemes)		Retire	Statutory obligation hence a specific PC is not needed	Support – rationale provided for change;
S-C5: Sustainable sewage treatment		Retire	PC introduced in AMP6, however it did not drive significant change in our operations and delivery hence not included for AMP7	Support– rationale provided for change;
S-C7: Overall environmental performance		Retire	Retired as it is a basket measure which is not aligned with Methodology guidance	Support – rationale provided for change
S-C8: Number of category 4 pollution incidents		Retire	Retired because Cat 4 incidents mainly covers those that have had no impact on the environment hence retired post support from EA	Support – rationale provided for change; Supported by EA
W-B9 - WB14: Timing delays on Birmingham resilience scheme		Retire	Birmingham resilience scheme to be finished in AMP6. Ofwat will roll forward penalties for delay beyond AMP6	Reflected challenge that we should consider a PC in case scheme is not finished
W-C1 & S-B1: Customers rating our services as good value for money		Retire	Replaced by our financial vulnerability PC	Support- Severn Trent should continue to monitor through either CCW tracker or internal data set
W-D1 & S-C1: Improvements in river water quality against WFD criteria		Revise	Revised definition based on learning from AMP6. New PC covers Water and Waste, eels and chemicals to enable us to deal with a wider range of quality and flow determinands as outlined in WINEP.	Support rationale for single PC based on scope of WINEP requirements

PR14 Performance Commitment	AM6 performance RAG	Proposed Treatment for PR19	Rationale	Water Forum (CCG) Challenge
			Given the majority of points are for waste we are going to maintain a single PC	
W-D2 & S-C3: Environmental compliance		Retire	Retired because it's a basket measure, and partially covered by treatment works compliance and total pollutions PC	Support – rationale provided for change; Supported by EA
W-D3 & S-C4: Biodiversity		Revise	Revised to increase the scope of our commitment to enhance biodiversity both on land that we own and land that we do not own	Support –rationale supported by Natural England
W-D4: Sites with eel protection at intakes		Retire	As there is only 1 eel site in WINEP we have incorporated it into WFD PC.	This reflected challenge on whether there should be a specific PC on eels sites in WINEP or have it covered in another PC. EA support inclusion of eels within WFD commitment
W-E1: Size of our carbon footprint		Retire	Retired to support PC focus on more important customer issues	Support, consider information should be collected and reported elsewhere but not as a central feature of commitments to customers
S-D1: Size of our carbon footprint		Retire	Retired to include a more specific sludge compliance PC for Bioresource price control	Support need for a more specific PC for the Bioresource price control.
W-F1 & S-E1: Improved understanding of our services through education		Revise	Revised and proposed changes to develop an outcomes based PC	This reflected challenge to have a more outcome driven PC
R-A1: Customer satisfaction with their service		Retire	Replaced by C-Mex	Support – rationale provided for change;
R-A2: Customers' experience of dealing with us		Retire	Replaced by C-Mex	Support – rationale provided for change;
R-B1: Number of customers helped by a review of their tariff and water usage and/or supported by our social fund		Revise	Revised to include all tailored support schemes	Support – rationale provided for change
R-B2 % of customers who do not pay		Revise	Revised to include all tailored support schemes	Support – rationale provided for change;

1.4 Water Forum discussion and challenge (step 3)

Our Water Forum has played a key role in shaping, challenging and testing our performance commitments and target setting. Given our AMP6 success, the forum heavily focussed on challenging us on the robustness of our process and the targets we pledged, to ensure they were stretching and continued to give customers a better service.

We set up a dedicated sub-group comprising five members from the main Forum to enable time for detailed, meaningful challenge. We also organised focussed sessions with key subject matter experts from the Water Forum covering bespoke and compliance measures. Overall, this has involved seven sub-group meetings, two environmental sessions, four triage sessions, a review of our rationale for targets (Appendix A3 Part 3) and response to circa. 40 challenges.

The Forum's challenge on our long-listing and subsequent short-listing of commitments included, although not exhaustively, the following:

Challenge	Response
The company should develop a framework and principles for selecting commitments and setting targets.	A summary of the framework is outlined in the following section.
The company should demonstrate the link between investment, activity and the outcomes that customers value.	We developed driver trees to show the link between investment, activities and the outcomes that customers value as outlined in Section 1.1 Step 1.
Any proposed changes to PR14 performance commitments should be discussed, and in the context of current performance.	We discussed and agreed all changes with the Forum. The outcome, including details of current performance, is as outlined in Section 1.1 Step 2.
The company should ensure that all price controls are covered by performance commitments.	All price controls have performance commitments, but we have sought to be proportionate where markets and/or other regulations also help to protect customers • 16 PCs on water network plus • 15 on Wastewater plus • 10 on Water Resources • 1 on Bioresources • 8 on Retail
The company should consider including commitments relating to: flooding on roads, sludge compliance, pressure issues, natural capital, biodiversity and vulnerable customers.	PCs introduced • Public sewer flooding – to cover flooding on roads. • Pressure – 2 PCs introduced to cover pressure. • Sludge compliance – to specifically cover Bioresource price control. • Financial vulnerability – to support vulnerable customers. • Green communities – to cover improving Natural Capital. • PCs revised and further improved • Speed of response to visible leaks – focussed scope to cover customer reported significant leaks. • Biodiversity – increased scope of PC to enhance partnerships with third party to improve biodiversity on land we do not own. • Farming for Water – moved to an outcome PC to ensure work we do reduces the risk of raw water contamination from specific pollutants. • Customer education – moved to an outcomes PC which is focussed at improving behavioural change.

1.5 Testing our shortlisted performance commitments (step 4)

We further tested our PCs against industry best practice and regulatory and stakeholder expectations to develop a short list of PCs from our long list:

Testing against industry best practice

We've tested our performance commitments using the UKWIR framework that was developed for the 2014 price review and Ofwat methodology guidance, as illustrated by the example below.

The framework features a number of checks including the extent to which performance is within our control, how well the measure covers the outcomes, ensure there are no aggregations of sub-measures or unreasonable exemptions in the measure and above all whether it is reflective of customer views and easy to understand by customers and stakeholders. For example, we have not taken forward our carbon performance and environmental compliance commitment given they involved aggregation of sub-measures and are not easy for customers to understand.

Outcome: Wastewater safely taken away			
Criteria	**Potential measures of success**		
	External sewer flooding	**Sewage blockages due to misuse**	**Sustainable sewage treatment**
As closely related to outcome as possible and covering a large portion of the outcome	Close to outcome and aligned with customer priority	Close to outcome and is also heavily linked with customer education	Covers part of the outcome – it utilises our assets to their full
Measureable and verifiable	New guidelines help to remove uncertainty regarding what constitutes an incident	Subjectivity regarding whether a blockage was caused due to misuse	Subjectivity on how sustainable is defined
Easy to understand by stakeholders	New definition provides clarity however demarcation of garden maybe confusing	Classification of why a blockage is classed as being caused due to misuse has ambiguity	Difficult for customers to understand as no direct impact on customer
Degree of water company controllability	Performance will be affected by weather variations, and longer term by climate change.	Performance will be affected by weather and customer activities	Performance will be affected by areas of growth outlined by councils and commercial enterprises
Future proof			
Conclusion	Select metric	Use total sewer blockages as the metric	Do not select for PR19

Meeting regulatory and stakeholder expectations

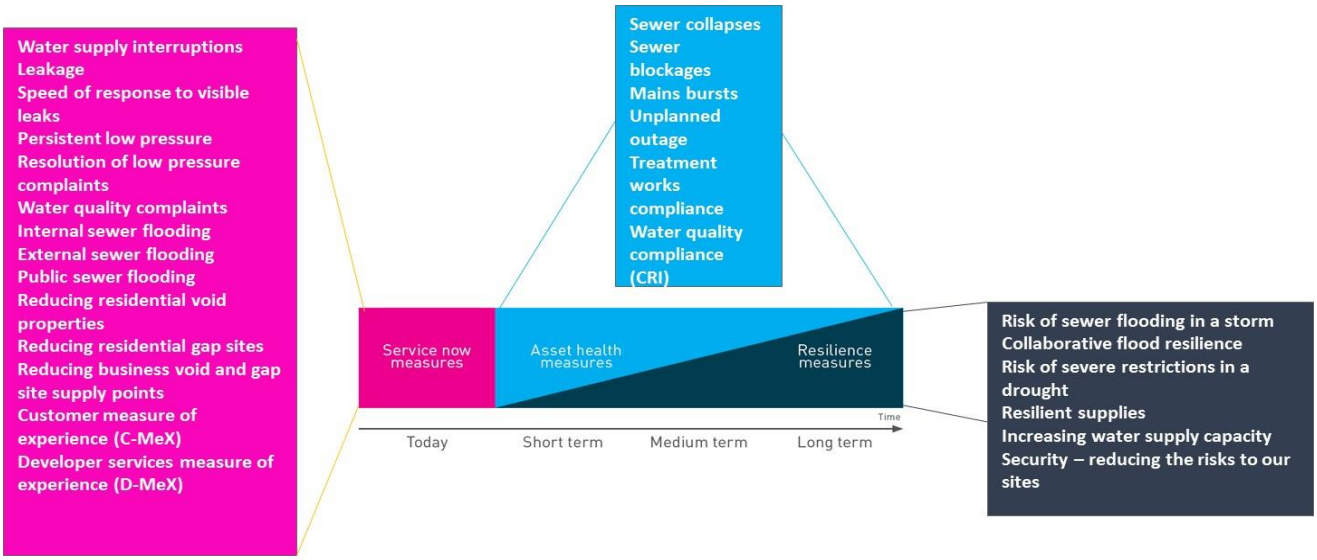
In addition to the expectations of Ofwat, we've made sure the measures we've chosen capture or complement our wider regulatory obligations for example, WINEP, and respond to wider stakeholder expectations wherever possible. This includes the scope of our commitments, the means of measurement and the degree of stretch.

Regulator/stakeholder	Requirement or expectation	Response
National Infrastructure Commission (NIC)	Recommendation that the water industry should halve leakage by 2050	Our long term ambition for leakage reflects the NIC's recommendations. Our commitments on public sewer flooding, green communities and collaborative flood resilience also reflect the direction of travel signalled by the NIC's national infrastructure assessment.
Environment Agency	WINEP – range of expectations on water framework directive and environmental improvements. WISER –range of compliance expectations across water and waste	We've included three commitments to cover WINEP obligations – WFD; farming for water and biodiversity. Company will aim to deliver all WISER expectations.
Natural England	Expectation for company to produce Biodiversity Action Plans and deliver all actions within the target	Our biodiversity commitment reflects a significant (+186%) increase in ambition.
DWI	Expectation for company to target zero on CRI. Expectation for company to do more to address lead	We're proposing a target of zero on CRI and are introducing a new commitment on lead – focussing on future generations first.

Protecting customers today and tomorrow

Our performance commitments are designed to not only protect customers today, but also customers in the future by ensuring we're making the right investment now. We've tested our performance commitments against different time horizons, in line with our asset health and resilience framework, to ensure we have an appropriate balance as illustrated by the figure below.

Understanding and measuring resilience



Our portfolio of 41 includes six resilience commitments and six relating to asset health. This framework is part of the 'service areas and time horizons' approach described in the third point below.

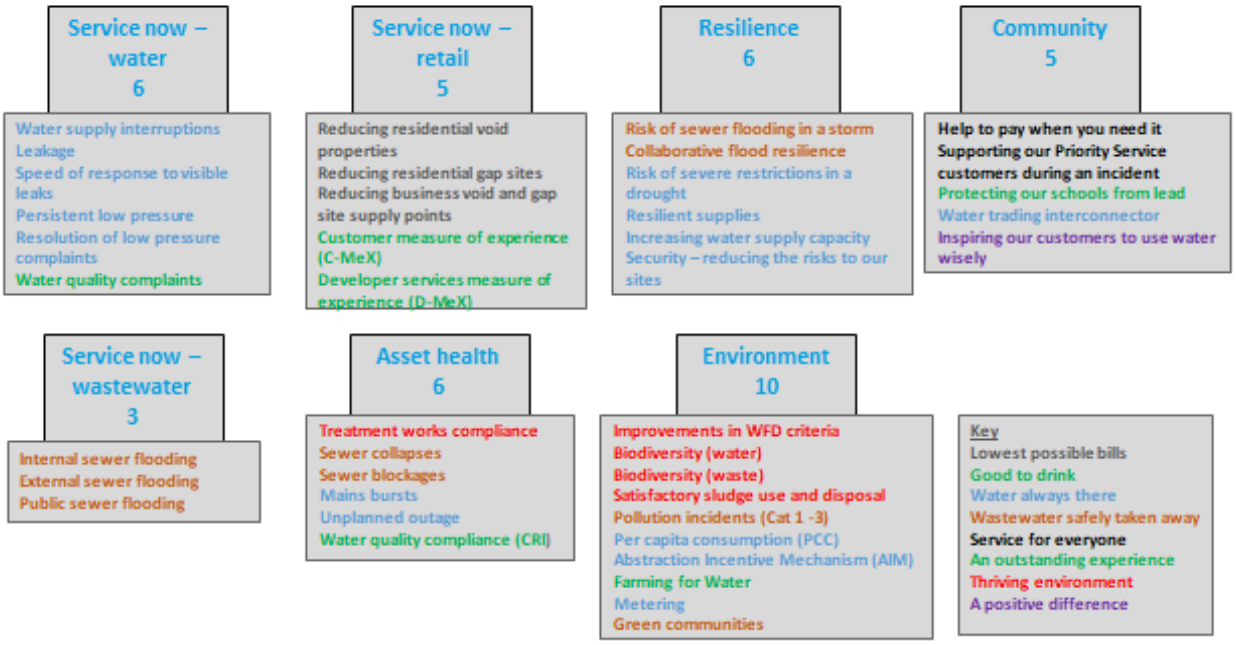
A balanced portfolio

We've tested our new suite of performance commitments against three different drivers to ensure we are providing our customers a balanced level of protection against all of them.

- **Outcomes.** The primary driver. We've built our performance commitments to ensure that they measure our progress towards the outcomes that are important to customers – as evidenced by our driver trees.

- **Controls.** We've ensured that every price or revenue control includes performance commitments.
- **Service categories and time horizons.** We use this framework in our current annual performance reports. Our customers find it easier to understand than other approaches (based on testing with our online panel) and it also reflects the categories used in Ofwat's own annual reporting in the industry. Within the service categories we have ensured that service areas such as asset health, resilience, environment, vulnerability and AIM are covered by performance commitments that challenge us to further stretch performance in these areas. We recognise we need to do more to improve on water and have created more measures to stretch ourselves in this area. Details on the commitments against each service category are outlined in the figure below.

Number of performance commitments in each of the service categories



1.6 Our proposed package of performance commitments

We've created a portfolio of performance commitments which:

- offer a wide breadth of **protection** for customers, covering each price or revenue control, with specific commitments developed where we are proposing significant enhancement expenditure or an unmodelled cost adjustment;
- are **innovative**, either in their scope or method of measurement (for example, our new farming for water commitment, pushes our sector forward by seeking to measure the impact of behavioural change on raw water quality);
- **reflect new customer insight and areas of priority** (for example, our pressure complaints commitment responds to new insight that our existing measure wasn't getting to the root of our customers' concerns);
- **make a broader contribution to our communities** (for example, our green communities commitment creates new natural capital while tackling flood risks); and
- **incorporate our regulatory obligations and stakeholders' expectations** (for example, the Environment Agency's expectations within WINEP and the direction signalled by the National Infrastructure Commission for creating drainage plans with local authorities by introducing a community resilience partnership commitment).

Our [41] proposed commitments

Outcome	Performance commitment	Status	Control
Lowest possible bills	Reducing residential void properties	New	Residential Retail
	Reducing residential gap sites	New	Residential Retail
	Reducing business void and gap site supply points	New	Business Retail
Good to drink	Water quality compliance (CRI)	New	Water Resources/Water Networks Plus
	Water quality complaints	Continuation	Water Resources/Water Networks Plus
	Farming for water	Revision	Water Networks Plus
	Protecting our schools from lead	New	Water Networks Plus
Water always there	Water supply interruptions	Revision	Water Network Plus
	Leakage	Revision	Water Network Plus
	Per capita consumption (PCC)	New	Water Resources
	Mains bursts	Continuation	Water Network Plus
	Unplanned outage	New	Water Resources/Water Network Plus
	Risk of severe restrictions in a drought	New	Water Resources
	Speed of response to visible leaks	Revision	Water Networks Plus
	Persistent low pressure	Revision	Water Networks Plus
	Abstraction incentive mechanism	New	Water Resources
	Resilient supplies	Revision	Water Networks Plus
	Resolution of low pressure complaints	New	Water Networks Plus/Residential retail
	Increasing water supply capacity	New	Water Resources
	Security – reducing the risks to our sites	New	Water Networks Plus/Wastewater Networks Plus
	Number of water meters installed	New	Water Resources
	Water trading - interconnector	New	Water Resources
Wastewater safely taken away	Internal sewer flooding	Revision	Wastewater Network Plus
	Pollution incidents (Category 1-3)	Revision	Wastewater Network Plus
	Sewer collapses	New	Wastewater Network Plus
	Risk of sewer flooding in a storm	New	Wastewater Network Plus
	External sewer flooding	Revision	Wastewater Network Plus
	Sewer blockages	Continuation	Wastewater Network Plus
	Public sewer flooding	New	Wastewater Network Plus
	Green communities	New	Wastewater Network Plus
	Collaborative flood resilience	Revision	Wastewater Network Plus
A service for everyone	Help to pay when you need it	Revision	Residential Retail
	Supporting our Priority Service customers during an incident	New	Residential Retail
An outstanding experience	Customer measure of experience (C-Mex)	New	Residential Retail
	Developer Services measure of experience (D-Mex)	New	Water Network Plus/Wastewater Network Plus
Thriving environment	Treatment works compliance	New	Water Network Plus/Wastewater Network Plus
	Improvements in WFD criteria	Revision	Water Resources/ Wastewater Network Plus
	Biodiversity (water)	Revision	Water Resources
	Biodiversity (waste)	Revision	Wastewater Network Plus

Outcome	Performance commitment	Status	Control
	Satisfactory sludge use and disposal	New	Bioresources
A positive difference	Inspiring our customers to use water wisely	Revision	Water Network Plus, Wastewater Network Plus

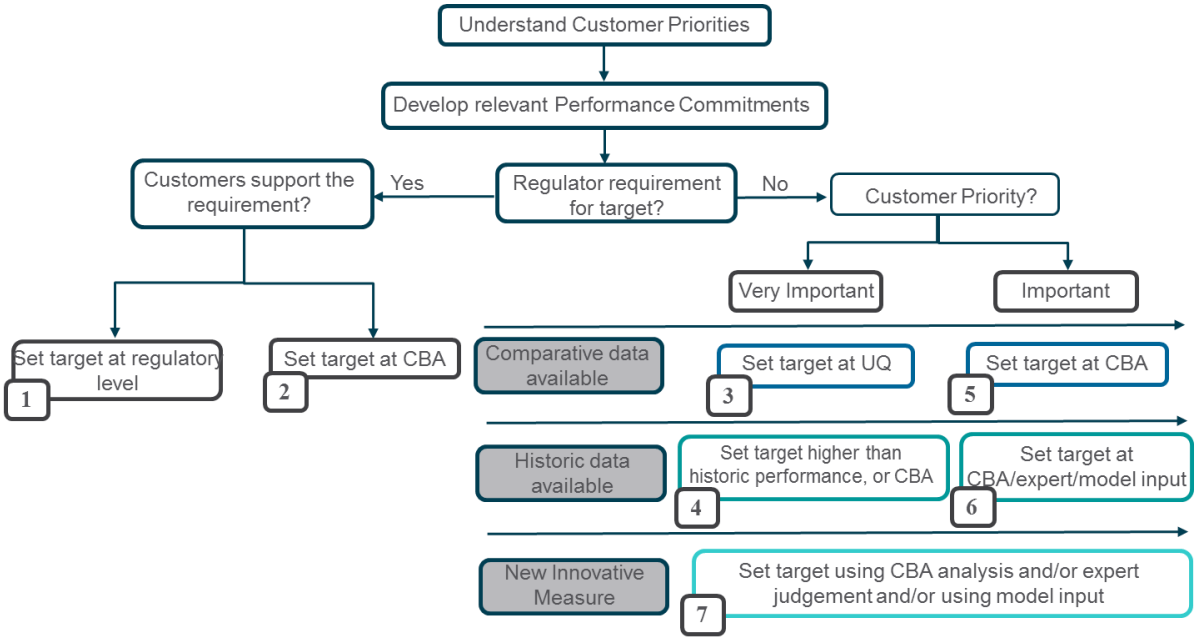
2. Setting stretching targets

We've worked with our Water Forum to develop a framework to make sure that we not only set targets that are stretching, but also that the rationale for them is transparent to our customers and stakeholders.

2.1 Using a transparent framework

The framework we've developed with the Water Forum includes the six approaches Ofwat suggests companies should consider for target setting (comparative upper quartile performance, customer evidence, cost-benefit levels, maximum and minimum performance, and expert judgement). The framework allows these approaches to be systematically applied, and makes sure that wherever possible our customers have a direct impact on the targets set. For example, either through the degree to which customers view the area of service a priority for improvement, or by using the value they place on improvements in cost-benefit assessments. Our framework is summarised below.

A framework for target setting



One of the key advantages of this approach is that we have been able to use a range of different methods to calculate our targets which can be compared. We summarise below the range of methods used with details on their application for each PC provided in Part 2 of this Appendix.

# Method	Performance Commitments	Target	Comparative	Historical	Min	Max	CBA	Expert
1 (regulatory, customers support)	PCC, AIM, Risk of severe restrictions in a drought	Defra Advisory		✓	✓			✓
	Treatment works compliance, CRI, Satisfactory sludge use and disposal	Compliance	✓			✓		
	Leakage, WFD Improvements	Guided	✓	✓	✓	✓	✓	✓
2 (regulatory, not supported)	None	n/a						
3 (v important with comparator)	Supply interruptions, C-MeX, External sewer flooding, Internal sewer flooding, Pollution incidents	UQ	✓	✓	✓	✓	✓	
4 (v important with historical)	Speed of response to visible leaks, Persistent low pressure, Help to pay when you need it, Resilient supplies	CBA / Historical		✓	✓	✓	✓	
5 (important with comparator)	Sewer blockages, WQ Complaints	Median / CBA	✓		✓	✓	✓	✓
6 (important with historical)	Sewer collapses, Reducing residential void properties, Reducing business voids and gap site supply points, Unplanned outage, Mains bursts	Various		✓	✓	✓	✓	✓
7 (new/innovative)	Reducing residential gap sites, Supporting our priority services customers during an incident, Biodiversity, Farming for water, Protecting our schools from lead, Resolution of low pressure complaints, Collaborative food resilience, Green Communities, D-MeX, Inspiring our customers to use our water wisely, Public sewer flooding, Risk of sewer flooding in a storm, Increasing water supply capacity, Number of water meters installed, Security – reducing the risks to our sites	Expert with CBA where appropriate			✓	✓	✓	✓

2.2 Ensuring our targets reflect obligations and regulatory expectations

For a number of measures either Ofwat, DWI or the Environment Agency have set stretching expectations of the target that companies should deliver. This will stretch us to delivering performance levels significantly above historic improvements, for example a target of 0 on CRI and 15% target on leakage. These will require a considerable uplift in activity. So, while a higher target might be justified by the potential benefits, the ramp-up in activity needed and the ability to manage this effectively and efficiently inherently carries considerable risk.

2.3 Incorporating customer priorities into target setting

We've used customer insight for two purposes in our framework. First, we've used willingness to pay and other valuation data to inform our cost-benefit analysis. Second, the extent to which customers regard the service area as a priority for improvement informs, the level of stretch we are proposing wherever possible. Typically the higher the priority the greater the level of stretch. Our view of whether an area of service is 'important' or 'very important' is based on a synthesis of a range of different insight sources, as illustrated below for two examples.

Triangulating different sources of insight

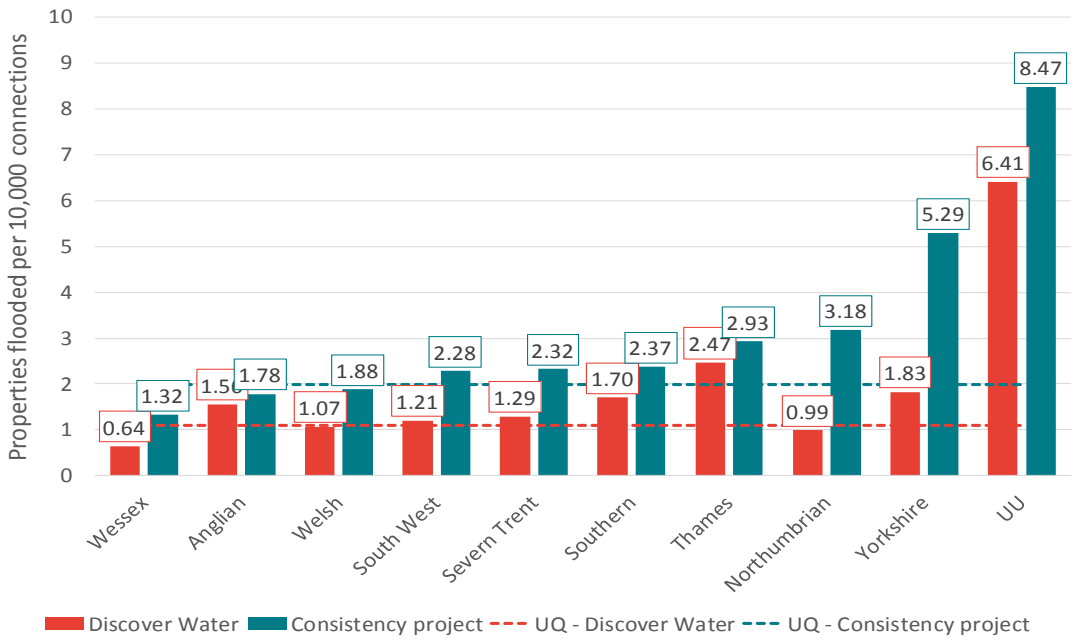
	Implications for target	Customer tracker	Willingness to pay	Budget game	Deliberative/other research	Choices research
Leakage	Very important	High priority	High priority	High priority	High level of support	Top priority
Water supply interruptions	Important	High priority	Low priority	High priority	Shorter duration interruptions less important	Medium priority

2.4 Calculating the forecast upper quartile

For three performance commitments, internal sewer flooding, total pollutions and supply interruptions, we've proposed a target based on our forecast of what upper quartile will be for the industry in 2025. To do so, we've used comparative historical industry data to determine the historical trend in the UQ (i.e. how it has evolved over time) extrapolating it out to 2024-25.

Our approach to using comparative historical data

We recognise that whilst all companies have access to the same publicly available information, for all three measures, there have been concerns regarding consistent reporting across the industry. The published standard consistent reporting guidelines seek to address this discrepancy but currently provides consistent data for two years only – 2016/17 and 2017/18, which has indicated significant variation in reporting as outlined below using an example, for internal sewer flooding using 2016/17 data (see figure below).



Internal flooding based on 2016-17 consistency data

The analysis shows that for internal sewer flooding:

- The performance of every single company increased (i.e. worsened) relative to the figures reported on Discover Water;
- Northumbrian went from being the second best performer in the Discover Water data (and therefore within the UQ) to the third worst performer in the consistency project data – this example in particular highlights how issues with the data can have a material impact on the UQ;
- STW went from 1.29 incidents per 10,000 connections in the Discover Water data to 2.28 in the new data; and
- The UQ went from 1.1 based on the Discover Water data to 2.0 in the consistency project data.

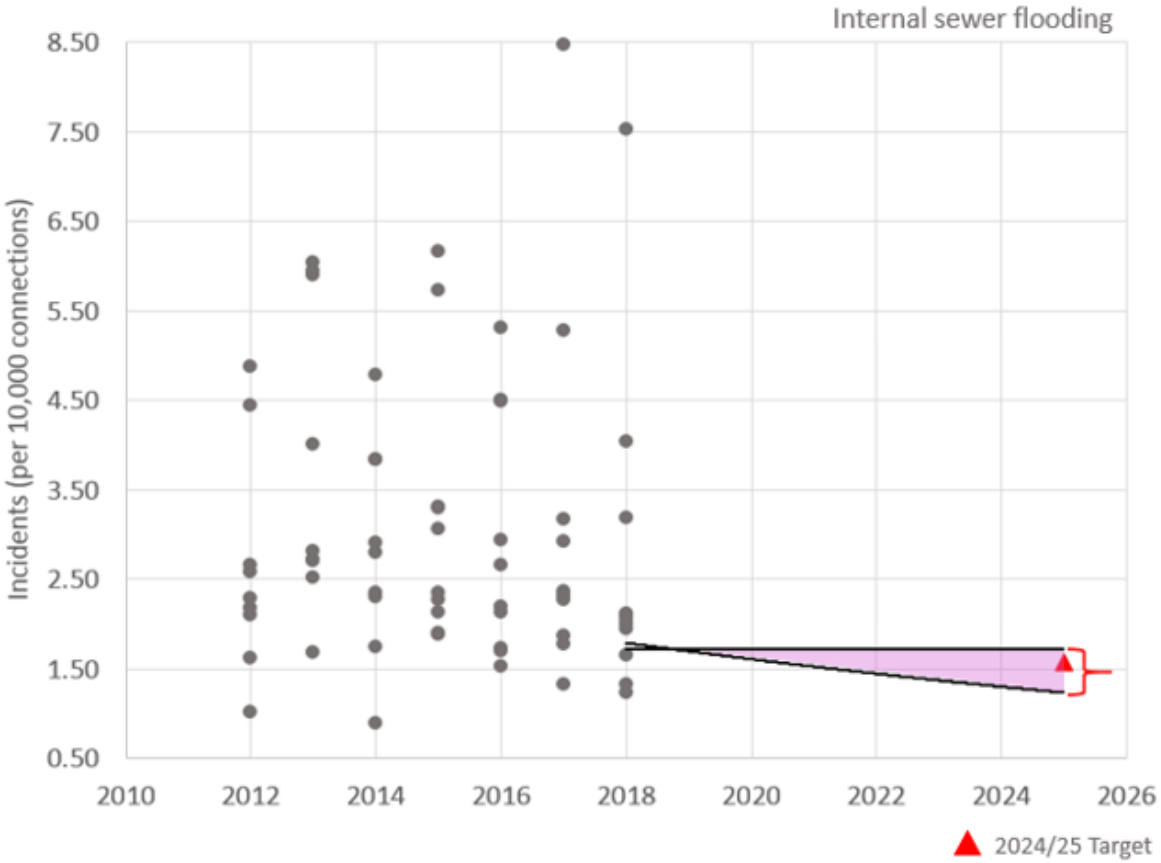
Therefore, in light of the concerns with the historical data, we had the option of either using only two years data to assess forecast UQ which provides limited understanding of industry improvement trends or consider using a wider dataset with an appropriate scaling adjustment factor to account for the variation due to consistency reporting.

For the purposes of the UQ calculation we have scaled the historical data based on the results of the consistency project. For example, our performance for internal sewer flooding in 2016-17 and 2017-18 as reported in the consistency project data is 1.03 times greater than that in the Discover Water data for the same year. Thus we have scaled all of the historical performance data by 1.03, and applied the same approach to other companies; data presented in App1 reflects consistent historic data.

We sought an independent view from Frontier Economics on our approach to scaling the historical data based on consistency results. Our approach was cited as being reasonable.

Our approach to calculating forecast UQ:

- Scale the historical data based on the results of the consistency project;
- Extrapolate the historical UQ trend based on fitting an exponential curve through the historical data (last 5 years), to get the 2024/25 UQ;
- Extrapolate the current UQ to get the 2024/25 UQ;
- The area between these limits denotes where the forecast UQ will fall;
- Apply a risk based assessment to ensure proposed targets are aligned with challenges that each commitment presents on delivery, the current CBA and customer expectations.



To forecast UQ, we extrapolated the historical trend in the UQ by fitting an exponential curve through the historical data. We believe that this approach is reasonable because it implicitly helps to capture diminishing marginal returns. That is, as performance improves over time, subsequent outperformance may become harder and more costly, such that the rate of improvement may slow down.

We would note that extrapolating the historical data implicitly assumes that the historical trend observed in the past will continue going forward. This however is unlikely for example, for supply interruptions, performance is made up of planned interruptions and unplanned interruptions. We understand that the improvements seen in recent years across the industry have been driven largely by companies reducing their planned interruptions, whereas unplanned interruptions tend to be more difficult and costly to reduce. Therefore, if companies are left with an increasing share of unplanned interruptions, it may be unreasonable to assume that the historical trend (driven by reducing planned interruptions) will continue. Additionally since 2011/12, the performance of the Water only companies (WoCs) has improved by approximately 38%, compared to that of water and sewerage companies (WaSCs) of 50%. To accurately account for the starting position, and progress made, of these two distinctly different groups, we have chosen to target the forecast upper quartile of comparable WaSCs.

Similarly introduction of severe weather within the flooding commitment will impact on the rate of overall improvement as it will introduce vulnerability to flooding levels above current asset flood risk standards. Companies will need to build improved resilience to flooding to deal with this, which will take time as these schemes and approaches will require long term solutions.

Similarly on pollutions as we get better, hot spot targeting based on past performance trend analysis will need to be replaced wholly by predictive targeting based on models which tend to have lower accuracy and success rates limiting the rate of improvement.

Our forecast UQ targets for the three common PCs are as outlined below:

Performance commitment	Forecast UQ
Internal sewer flooding	1.51 flooding incidents per 10,000 connections
Wastewater pollutions	22.49 pollution per 10,000kms
Supply interruptions	8:41 mins

2.5 Using cost benefit analysis

Understanding marginal costs

We considered our targets in the context of past performance and cost benefit analysis. To calculate marginal cost, we have used the data from our optimisation process that helped derive the PR19 investment plan. A variety of methods were used, dependent on their appropriateness to the specific PC:

If a PC is delivered through specific investments with a defined delivery, we have directly calculated the incremental £/unit improvement.

If a specific investment or group of investments delivers multiple PC benefits, we have identified the common costs and apportioned the investment to give a marginal cost for each individual performance commitment.

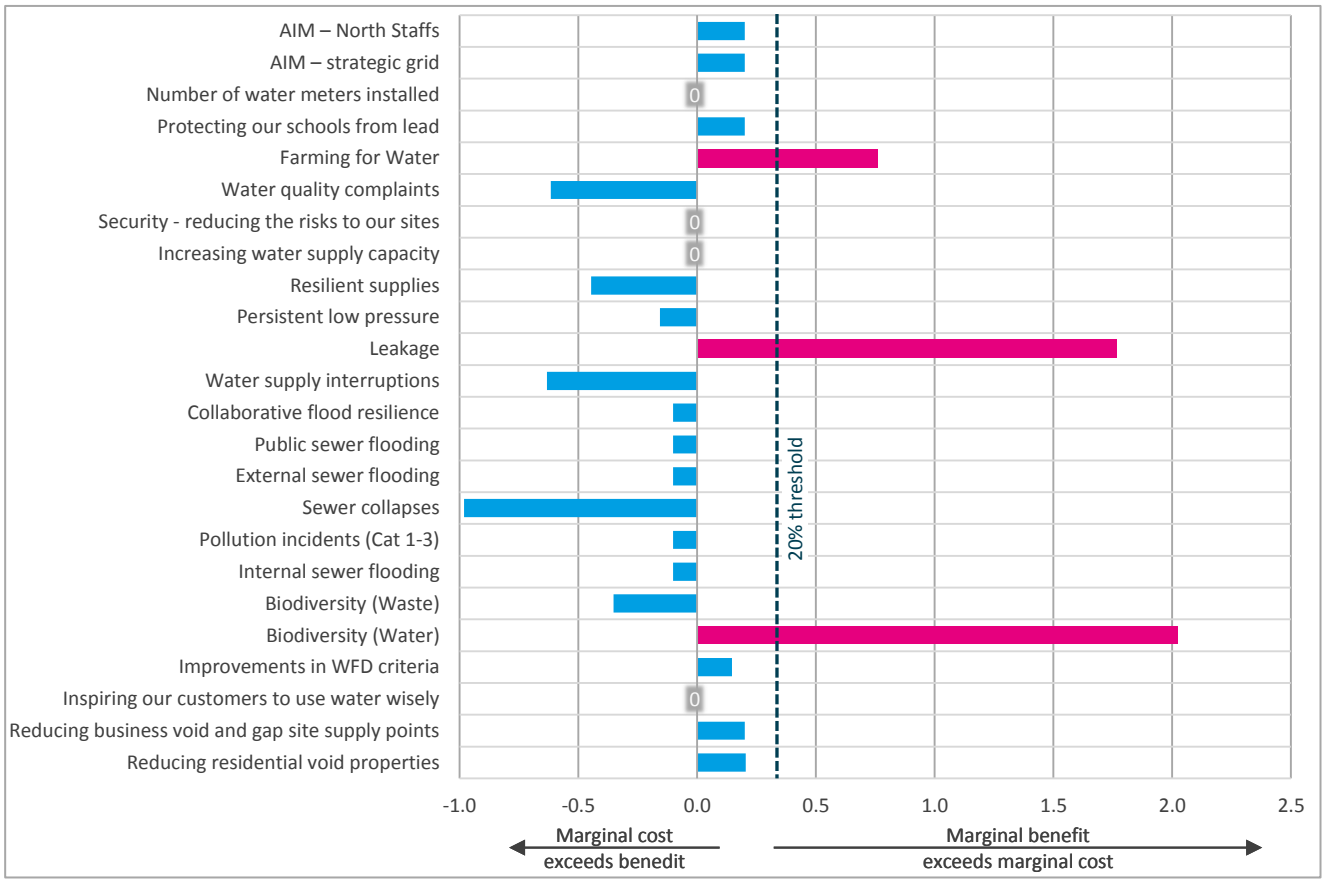
We have also benchmarked our data against actual historic data, the expected AMP7 efficiency and other company data, where available.

For 26 of our PCs with financial ODIs[1], we have analysed the ratio between: the efficient marginal cost, based on the units that will deliver our PC target; and the full marginal benefit (in other words two-times the ODI rate) expected from delivering the units to meet our PC target.

The nine PCs with reputational incentives were not part of this analysis, given their absence of monetised benefits. Also excluded from the analysis were the two penalty-only measures relating to compliance – satisfactory sludge use and disposal, and treatment works compliance. This is because expectations should be that compliance is 100%.

The two metrics which are associated with infrastructure investment – mains bursts and sewer blockages – will have a diverse range of benefits hence are also excluded. This is because the business cases for such investments will have a number of different drivers, such that meaningful, robust cost allocations are challenging to achieve. Furthermore, the spending will likely be large-scale, rather than provide incremental changes that would be of use for comparison with marginal benefits. Finally C-MeX and D-MeX were also excluded, because the PCs, valuations and ODIs remain under development with Ofwat.

Our analysis establishes there is a strong balance between costs and benefits



Extent benefit is proportionately different from marginal cost

[1] For the purposes of this discussion, AIM is counted as a single PC, although its costs and benefits are analysed on an individual basis.

Our CBA analysis has established that we have achieved a strong balance between marginal costs and marginal benefits. For this analysis, we have quantified the benefit at two-times the relevant ODI rate. The result of setting challenging and stretching PCs for AMP7 is quite clear – 11 of the non-infrastructure/enhancement PCs are at the level where costs exceed benefit. This also means that we are setting ourselves a further cost efficiency challenge that we will have to meet in order to deliver our commitments.

For a further six PCs, benefits are no more than 0.2 greater than costs –this is a result of the marginal cost being used to calculate the ODI for these PCs, in accordance with Ofwat's approach - where[2] in the event that marginal cost is needed for the valuation, where a 20% uplift is used to provide an incentive over costs. Additionally, there are a small number of PCs where the ODI has been set to match the marginal cost without any uplift. This is because we do not need an additional incentive above marginal cost given that any spending will be driven by the need to meet our regulatory requirements in the case of Security – Reducing the risks to our sites and Increasing Water Supply Capacity.

For infrastructure/enhancement-related PCs, such as resilient supplies, the apparent discrepancy in down to the type of cost that is identified as marginal. Because of the capital nature of the investment – in other word, assets that will be around a long time – the marginal cost is really a long-run marginal cost. By contrast the marginal benefit is a short-run valuation. Consequently, when the marginal benefit and marginal cost are compared it appears that there is a discrepancy. However, in CBA-terms, the lifetime discounted costs and benefits overcomes this discrepancy, such that the investment schemes are found to be of net benefit.

We have also found that there are three PCs where marginal benefit exceeds marginal cost 20% threshold. Upon further investigation, it is clear that there are valid reasons for this. The three PCs and their reasons are as follows:

- farming for water – with this PC we are undertaking significant delivery risk, given the need to identify, engage with and gain agreement from third-parties, something that has proved challenging in the past. Consequently, the PC has been set to take account of this risk, such that it is set at a level that might be lower than that implied by the potential benefits.
- leakage – we are aware that customers typically express very strong feelings about leakage and express seemingly high WTP values for reductions in leakage. It is highly likely that customers' valuation not only relates to the occurrence of leakage, but also attributes to and overlaps with speed of response to leaks[3] – for which there is a separate PC and a separately evaluated ODI that will be around four-times more powerful than the current AMP6 ODI. A further important consideration is that the target set for the PC represents what is realistically achievable within AMP7, which itself will require a considerable uplift in activity. So, while a higher target might be justified by the potential benefits, the ramp-up in activity needed and the ability to manage this effectively and efficiently mean that a lower, but still challenging, target has been set.
- biodiversity (water) – the volume of biodiversity (water) improvements that can be achieved, and therefore used to set the PC, has physical limits. At a higher level, it risks necessitating the purchase of additional land just to meet the target – land that would have no other purpose for the business. It is worth noting that on the waste side, the marginal the marginal cost is 0.35 greater than the benefit, meaning that across the two commitments there is both a reasonable CBA balance and stretching targets.

2.6 Applying comparative and historical data

Where comparative data exists we have sought to apply the data both to provide meaningful context to customers on the improvements we are pledging and to develop stretching targets.

This has involved using data from various sources such as Discover Water, Environment Agency publications, CCWater publications and company performance reports. On bespoke commitments where data is not directly comparable we have sought to provide an indicative understanding of the scale of comparison by aligning our proposal to units used by other companies.

Of the 17 commitments where we have been able to use comparative assessment, we have sought to pledge targets in the UQ range for 14 of these commitments. In the case of mains bursts, sewer collapses and leakage, our targets are aligned with our asset requirements therefore our targets are above average.

This analysis was also extended to our historical data ensuring that we pledged targets which take account of historic performance covering the historical, min and max tests for target setting.

Details on how we have applied this across all 41 performance commitments is provided in Part 3 of this appendix.

[2] Ofwat (Dec 2017), "*Delivering Water 2020: Our methodology for the 2019 methodology price review Appendix 2: Delivering outcomes for customers*," p 37.

[3] As agreed with Water Forum, we have not identified marginal costs for speed of response to visible leaks because of the cost allocation challenges, away from other drivers of leakage repairs including repairs of self-identified and non-visible leaks.

2.7 Applying expert judgement

We have also considered our targets in light of expert judgement especially for new innovative commitments. In these cases, given there is limited comparative or historical data, we have given expert judgement more weighting. For example, for our new performance commitment relating to collaborative flood resilience, we've based our target on flood risk assessments to understand the number of high confidence locations where we can work with partners to reduce flooding.

Details on where we have applied expert judgment is presented in Part 3 of this appendix.

2.8 Ensuring stable asset health, compliance and resilience

Our targets on these metrics are guided by our objective to develop a robust and resilient network for the long term.

Overall on asset health and compliance metrics, our proposals continue to ensure we maintain stable service as a minimum and where metrics have a direct service impact, we have proposed improving performance. Thus we are proposing further improvements on metrics such as sewer blockages, water quality complaints and low pressure as supported by our customers.

For asset health and compliance metrics we have used comparative assessment as a guide only and sought to set targets based on asset needs. However, where we are currently within the UQ, our proposals to further improve for AMP7 will enable us to maintain that position – for example treatment works compliance, risk of sewer flooding in a storm and sewer blockages.

On resilience metrics we are offering significant long term improvements across all metrics listed above. For example: we will be working towards a long term objective over two AMPs to reduce the risk of severe restrictions in a drought to a 1:200 year event from 63.7% to 0% by 2030/31 as outlined within the WRMP. Similarly on resilient supplies on our water network we will be aiming to ensure 99% of our customers are resilient by 2040. We recognise that this will require further innovation, both on cost and delivery for the future and will be contingent on future business plan submissions.

2.9 Aligning targets with enhancement expenditure

We have ensured that all of our enhancement expenditure is supported by an appropriate commitment or statutory obligations. Further details are provided in Appendix 8.

For material enhancements expenditure as outlined below and which we shared in our May submission, we have developed bespoke commitments. Where feasible, we have sought to ensure that the PCs are focused on outcomes rather than linked to outputs to ensure customers receive the benefit of the expenditure.

We have defined stretching targets for these commitments based on the enhancement need. **The inclusion of these performance commitments is contingent on a successful cost adjustment claim**. There are also some performance commitments where targets will be partly delivered through cost adjustment claims.

Further detail about these PCs/ODIs and how they protect customers (through replicating a logging down mechanism) is outlined in Appendix 4.

Performance commitment	Enhancement business case
Improvements in Water Framework Directive (WFD)	Wastewater WFD
Increasing water supply capacity	Supply-demand balance
Number of water meters installed	Supply-demand balance
Security – reducing the risks to our sites	Security
Resilient supplies	Resilience

2.10 Ensuring transparency on common performance commitments and metrics that lack a continuous historical time series

We will adopt the reporting guidelines as outlined by Ofwat for the 14 common performance commitments. For some of the common metrics, we are currently working to improve our reporting requirements in alignment with the consistency guidelines. Consistent with the Methodology guidance, for a small number of measures we have used the best information available to propose performance commitments based on a percentage change. We propose to translate to absolute numbers when we have the actual outturn for 2019/20. This applies to unplanned outages, sewer collapses, PCC and leakage.

For leakage we also propose to adopt a reporting period from October to October which is aligned with the hydrological year. In doing so, we will ensure that all reporting is in accordance with the consistent guidelines.

Additionally, for new bespoke commitments such as low pressure complaints, public sewer flooding and speed of response to visible leaks we have adopted the same approach, given we are further improving our reporting data. We have currently proposed commitments based on percentage change which we propose to translate to absolute numbers in 2019/20.

2.11 Sewer flooding and interaction with the AMP6 wastewater cap

Customers have told us that sewer flooding remains the highest valued service improvement area in all forms of customer research. We have focused strongly on this important topic during AMP6, turning around our performance through a set of significant investments in order to respond to this customer priority area. If, following our application, our waste ODIs were uncapped in AMP6 we would have the capacity to invest substantially more in this area over the next two years to deliver an additional step change in the service we provide to customers to further reduce the instances of sewer flooding.

In such an important area for customers, the service improvements from the investment that uncapping would support would clearly result in a better outcome by 2020 than is assumed in our current plan. Any additional improvements we make from today would also shift the sector UQ. So, in addition to the benefit to our own customers directly, this would create a much stronger benchmark from which Ofwat could set comparative targets for the future. We therefore strongly support continued incentivisation to help drive sector wide improvement for all customers across the country. This is something our customers resoundingly support, with 72% favouring the removal of ODI caps to incentivise better services.

As our uncapping application is in process and the scale of the investment and therefore the outcomes we are able to drive over the coming two years is unknown, we are proposing two options on targets for AMP7: one relating to the cap being retained and one to it being removed.

In each scenario we would target the same demanding percentage improvement of 9% for internal floodings and 8% for external flooding from our AMP6 actual exit rates for each measure. If our waste ODIs were to be uncapped, we forecast our further investments could deliver a considerably improved outcome for customers in AMP6 and therefore potentially a lower start point for AMP7, which would be in the range of 63-105 fewer internal floodings and 766-1277 fewer external floodings. In the unlikely event that we are uncapped and performance deteriorates in AMP6, we would set our starting point for PR19 at the original level (i.e. our target will be based on the lower of 2019/20 outturn or the original projection to ensure customers benefit under every potential scenario).

3. Forecasting targets to 2045

We have extended our performance framework to define our long term ambition taking account of wider regulatory and stakeholder expectations as illustrated in the table below.

In doing so we have stretched ourselves to take account of ambitions outlined by regulatory bodies or other stakeholders. For example: on leakage and PCC we have pledged to embrace stretching recommendations from the NIC to reduce leakage by 50% and achieve a PCC of 118Ml/d for the long term. We recognise that this will require further innovation, both on cost and delivery and will be contingent on future business plan submissions.

Method	Performance Commitments	Target	Long term ambition
1 (regulatory, customers support)	PCC, AIM, Risk of severe restrictions in a drought	Defra Advisory	Defra Advisory
	Treatment works compliance, CRI, Satisfactory sludge use and disposal	Compliance	100% compliance Guided by WRMP, National Infrastructure Commission and EA
	Leakage, WFD Improvements	Guided	
2 (regulatory, not supported)	None	n/a	n/a
3 (v important with comparator)	Supply interruptions, C-MeX, External sewer flooding, Internal sewer flooding, Pollution incidents	UQ	UQ – assume linear trend by industry
4 (v important with historical)	Speed of response to visible leaks, Persistent low pressure, Help to pay when you need it, Resilient supplies	CBA / Historical	Continued improvement
5 (important with comparator)	Sewer blockages, WQ Complaints	Median / CBA	Stable unless customer detriment; improving for WQ
6 (important with historical)	Sewer collapses, Reducing residential void properties, Reducing business voids and gap site supply points, Unplanned outage, Mains bursts	Various	Stable – unless customer detriment for asset health Biodiversity – expert judgement
7 (new/innovative)	Reducing residential gap sites, Supporting our priority services customers during an incident, Biodiversity, Farming for water, Protecting our schools from lead, Resolution of low pressure complaints, Collaborative food resilience, Green Communities, D-MeX, Inspiring our customers to use our water wisely, Public sewer flooding, Risk of sewer flooding in a storm, Increasing water supply capacity, Number of water meters installed, Security – reducing the risks to our sites	Expert with CBA where appropriate	Expert judgement

4. Water Forum challenge

We worked with the Water Forum to develop the framework in response to its initial challenge that we must have a robust justification for the level of stretch proposed. The Forum has also challenged our application of the framework, including:

Challenge	Response
The company should ensure that comparative data is used when testing performance commitments with customers.	We included comparative data in our initial willingness to pay, and subsequent choices research.
The company should ensure comparative data is used wherever possible in target setting	Our target setting framework has ensured that where comparative data is available, it is used to inform our level of ambition. Where directly comparative data is not available, we have used alternatives proportionately for context.
Given there is no prescribed approach in Ofwat's methodology to forecast upper quartile data, and in some instances (where the definition of the measure has changed) there is one data point, the company should consider how it will ensure its forecasts are robust.	We have explored a range of approaches and methodologies with the Water Forum. Our agreed approach is explained above.

5. Our package of PCs and demonstrably stretching targets

We've created a balanced portfolio of targets that are stretching because:

- in areas where we have consistently achieved the best or amongst the best in our sector, we're driving further improvements that **push the sector forward** (for example, external sewer flooding);
- in areas where we haven't achieved amongst the best, we're committing to doing so, in some cases this will be a **substantial, even transformative change** (for example, water quality complaints)
- for the vast majority of measures we are proposing targets **beyond the cost beneficial level**, reflecting challenges from regulators and other sources of insight (for example, supply interruptions)
- our targets reflect our **customers' ambitions**, which is why we have developed a range of bespoke performance commitments, including persistent low pressure, speed of response to visible leaks and public sewer flooding; and
- for measures that are critical to **securing the future of our service**, we're accelerating our ambition (for example, our proposed 15% reduction in leakage by 2025 was originally our target for 2040).

All our performance commitments and targets are set out in App1.

Part 2: Performance commitment definitions

In this section we set out the detailed definitions of our proposed bespoke performance commitments (PCs) for 2020-2025. Before presenting these definitions we first explain how we have responded to the Ofwat feedback on our May submission.

For the 14 common commitments outlined by Ofwat we will be following standard consistency guidelines as outlined on Ofwat's website.

1. Responding to Ofwat feedback

We welcome the feedback from Ofwat on our detailed performance commitment definitions which covered 12 of our performance commitments. Our overall aim on all commitments has been to ensure that they:

- comply with standard consistent reporting guidance
- provide clarity ensuring there are no inconsistencies across commitments
- comply with PR19 final methodology guidance and ensure that definitions are complete with no inappropriate exemptions or aggregation of sub measures
- present technical language in a way that is easy for customers to understand

Acting on the feedback, we have improved our PC definitions, a summary of our response is outlined below.

Ofwat feedback on PC definition	Response
Improve clarity of definition on: • **Reducing residential void properties,** • **Reducing business void and gap site supply points,** • **Biodiversity,** • **Satisfactory sludge use and disposal,** • **Supporting our Priority Service customers during an incident,** • **Abstraction Incentive Mechanism (AIM),** • **Resilient supplies,** • **Security - reducing the risks to our sites**	Specific comments on each commitment addressed. Additionally overall text and terminology reviewed to ensure clarity.
Improved clarity needed on: • **Green communities - confidence adjustment and overlap with other commitments** • **Collaborative flood resilience - flooding standards to which protection is provided**	Additional clarity provided: Green communities - no overlap with other PCs ensured with details on confidence adjustment provided. Clarification on protection standards, modelling assumptions and standards of models used for verification included in detailed definition.
Review exemptions: • **Speed of response to customer reported leaks - consider leaks not subject to the 2U notice that could have a significant negative customer impact;** • **Low pressure complaints - consider how we class contacts regarding pressure complaints during a supply interruption event**	Speed of response - We have provided clarification on how we will calculate the duration of leaks. Additionally we have considered leaks not subject to 2U notice, however, given the repair time is incumbent on the permit conditions dictated by the council and hence out of company control we have not expanded the scope. However it should be noted that 2U notices cover all leaks that cause negative community impact. Low pressure complaints – We have considered the exemption and have included "If the contact occurs during a supply interruption (for example caused by a burst main), this will always be counted as a first time contact as it is indicative of a new (temporary) network issue rather than an unresolved low pressure problem. If the event is closed and the customer contacts us again, this will count as a second complaint".

Outcome 1: Lowest possible bills

A01: Reducing residential void properties

Short definition

The reduction in the number of residential void properties (a property connected for water services that does not receive a bill or is thought to be unoccupied).

Measurement

Properties (0 d.p.).

The number of billable voids (water supply properties) is measured on an annual basis each financial year (i.e. 1st April – 31st March). The definition of a void property will be in line with the Annual Performance Report definition. The performance commitment is measured as the change in residential void properties year on year.

Mitigation / exceptions

No mitigation / exceptions.

Any other information relating to the performance commitment

This is a new performance commitment for PR19. It is in line with Ofwat's Affordability business case and is beneficial for customers as it spreads bills across as many properties as possible.

Full definition of the performance commitment

A residential void is defined as a property connected for water services that does not receive a bill or is thought to be unoccupied. To ensure we keep the lowest possible bills for all of our customers we will commit to reduce the number of residential void properties over the course of AMP7.

In the current situation companies have a revenue cap (Wholesale Revenue Forecasting Incentive Mechanism) so any extra revenue is adjusted in the following period. Void properties also have a very high debt rate so billing void properties incurs extra bad debt costs leaving the company in a net negative position. Companies are therefore disincentivised from pursuing voids.

To mitigate this key barrier the outcome delivery incentive will set an incentive rate at slightly lower than the bad debt rate (which incentivises improved performance) whilst the extra revenue generated offsets the bad debt risk leaving Severn Trent largely cost neutral while still delivering a benefit to the customer, the incentive rate will be set to stretch Severn Trent to become more efficient at delivery.

A02: Reducing residential gap sites

Short definition

The number of residential gap sites (a property connected for water services that is not known and therefore not billed) brought into charge.

Measurement

Properties (0 d.p.).

The number of residential gap sites brought into charge is measured on an annual basis each financial year (i.e. 1st April – 31st March). The performance commitment is measured as the number of residential gap sites brought into charge during the year.

Mitigation / exceptions

No mitigation / exceptions.

Any other information relating to the performance commitment

This is a new performance commitment for PR19. It is in line with Ofwat's Affordability business case and is beneficial for customers as it spreads bills across as many properties as possible.

Full definition of the performance commitment

The performance commitment is the number of residential gap sites brought into charge.

For this performance commitment a residential gap site is defined as a property connected for water services that is not known and therefore not billed.

To help understand our gap sites we will be using the credit reference agency data share to compare the properties connected to an electricity supply to the properties connected to our water supply.

A03: Reducing business void and gap site supply points

Short definition

The number of business void and gap site supply points brought into charge (a void is a supply point connected for water services that does not receive a charge or is thought to be unoccupied, and a gap site is a supply point connected for water services that is not known and therefore not billed).

Measurement

Supply points (0 d.p.).

The number of business voids and gap sites brought into charge. It will be measured using a process agreed with the Business Retailers, along with the current Market Operator software.

Measured, assured and reported on an annual basis (financial year i.e. 1st April – 31st March). The definition of a void property will be in line with the Annual Performance Report definition.

Mitigation / exceptions

Only properties that have been in void over six months will be included.

Any other information relating to the performance commitment

This is a new performance commitment for PR19. It is in line with Ofwat's Affordability business case and is beneficial for customers as it spreads bills across as many customers as possible.

Full definition of the performance commitment

This performance commitment will measure the increase in the number of business void and gap site supply points that are brought into charge each year.

A void is defined as a supply point connected for water services that does not receive a charge or is thought to be unoccupied. A gap site is defined as a supply point connected for water services that is not known and therefore not billed.

To ensure we keep the lowest possible bills for all of our customers we will incentivise the business retailers by offering them revenue per void brought into charge that has been in void over six months and revenue per gap site brought into charge.

The outcome delivery incentive will then offset the cost of this for Severn Trent by earning an outperformance payment per property on all void (in void over six months) and gap site properties brought into charge that are over the average annual voids brought into charge over the first three years of AMP6, while still delivering a benefit to the customer.

Outcome 2: A positive difference

B01: Inspiring our customers to use water wisely

Short definition

The number of people who have agreed to change their behaviour as a result of our educational activities.

Measurement

Number of people (0 d.p.).

This will be measured through the completion of an educational activity resulting in a behaviour change commitment being made. This activity will support the following behaviour changes:

- Using wonderful water wisely (not wasting water)

- Knowing what not to put down the toilet and the sink

- Choosing tap water for a healthy you and a healthy environment (reducing plastics)

Measured, assured and reported at financial year end (1st April – 31st March) by summing the total number of people who have agreed to change their behaviour towards any one of our three core behaviours.

Mitigation / exceptions

We will not count the same person committing to change the same behaviour more than once. We will count separate commitments for different behaviours if they are completed during different interactions. We have allowed for this exclusion in acknowledgement that a commitment will be something that is to be undertaken for the long term.

Any other information relating to the performance commitment

Our research shows that our customers would like to see education playing a key part in our future, and they would like us to do more to increase awareness on positive water and wastewater behaviours. We have therefore completely overhauled our education programme and created an immersive, innovative experience that will better embed desirable behaviours. We will offer this to hundreds of thousands of customers and ask them to make a behaviour change commitment as a result.

Our research also shows that health, wellbeing and the environment are important topics for our customers. We are therefore introducing a new education message for AMP7; 'Choosing tap water for a healthy you and a healthy environment'. This message is designed to teach the benefits of good hydration (and help support some macro social issues such as levels of obesity), and to encourage our customers to reduce the amount of plastic bottles they use in line with Defra's 25 year plan.

This performance commitment is therefore a revision of our AMP6 SE-1/WF-1 performance commitment (Improved understanding of our services through education) as it now focuses on measuring the number of people who have agreed to change their behaviour as a result of our engagement activities, rather than just measuring the number of engagements.

It will focus on us asking our customers to agree to change their behaviour against one, or more of the following three areas (we will count separate commitments for different behaviours if they are completed during different interactions):

- Using wonderful water wisely (not wasting water)

- Knowing what not to put down the toilet and the sink

- Choosing tap water for a healthy you and a healthy environment (reducing plastics)

We will promote these messages throughout the customer life-cycle (in schools, in community groups, to targeted audience groups) through a range of engagement activities designed to inspire positive water and wastewater behaviours for life. These engagements include:

- **Improved face-to-face engagement:** we will increase the immersive and experiential nature of our face-to-face engagements so that they better embed behaviours and learnings for the long term. We will target interventions throughout the customer life-cycle but our main focus will be on inspiring a generation of primary school children aged between 7-11, because experts have cited that they are the most receptive to learning and embedding behaviours for life.

- **New digital and mass media engagements:** our customers interact with us in many different ways, and increasingly via digital channels. We will provide information and engaging materials through a range of channels and media that will educate and inspire customers to change their behaviours. This will be in support of and help to reinforce the messages that we are delivering face-to-face to encourage behaviour commitment.

- **Introducing a new message about tap water:** we recognise the broader societal impact that we can have by introducing a new message ('Choosing tap water for a healthy you and a healthy environment (reducing plastics)'). From our research we know that these are important topics for our customers too, and in delivering this message we can help in supporting some of the biggest challenges we have in society today. We are working with health professionals and charities to align our messaging and maximise delivery.

This performance commitment will count the outputs of these engagements through the number of behaviour commitments made as a result of our education work.

Full definition of the performance commitment

To inspire our customers to adopt positive water and wastewater behaviours for life we will carry out educational engagement to inspire our customers to agree to a behavioural change commitment in at least one of the three behaviour areas (we will count separate commitments for different behaviours if they are completed during different interactions):

- Using wonderful water wisely (not wasting water)

- Knowing what not to put down the toilet and the sink

- Choosing tap water for a healthy you and a healthy environment (reducing plastics).

We will count the number of people who commit to a change in behaviour as a result of our educational activities through our work in schools, universities, community groups and organisations.

For this performance commitment "agreed to change their behaviour" has been defined as one person making a behavioural change commitment to live by one of our three core messages (as defined above), following at least a 30 minute face-to-face engagement utilising comprehensive sets of teaching and learning support materials aligned to the principles in the UKWIR guidance[i].

i. UKWIR report no. 09/WR/25/4: Estimating the water savings for baseline water efficiency activities. https://www.ukwir.org/reports/09-WR-25-4/67232/Estimating-the-Water-Savings-for-Baseline-Water-Efficiency-Activities

Outcome 3: Thriving environment

C02: Improvements in WFD criteria

Short definition

The number of Water Framework Directive (WFD) classification improvements attributable to interventions delivered by Severn Trent Water to improve river water quality and/or quantity.

Measurement

Number of points (0 d.p.).

The measurement of classification improvements vary depending on the parameter, as such we have split out the improvements against which we would claim a point, based on the type of classification as detailed in the long description below.

For nutrient, sanitary determinand (defined as: ammonia, biological oxygen demand, and dissolved oxygen) and ecology measures, assessment of improvement shall be with reference to River Basin Management Plan 2 (RBMP2) baseline classification data, except where specifically agreed with the Environment Agency (EA).

For 'waste – chemicals' and 'water – flow' and eels, specific agreement with the EA of the delivery of improvement and thereon award of points for improvement, will be required, except where measures are already included in Water Industry National Environment Programme 3 (WINEP3).

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

Exceptions to the use of the agreed baseline: the baseline position indicating the starting quality of the waterbody being improved, will need to be formally agreed with the EA. For example, where partial improvement to 'moderate' condition is planned in AMP6, the AMP7 commitment will be based upon the planned end of AMP6 position, not the current classification as stated in the baseline data.

River water quality improvements to meet WFD[i.] objectives are assessed on a fair share load removal basis – it is usually the case that WFD failure is due to more than one source of the pollutant in question and our performance commitment therefore specifically relates to addressing our fair share of the overall problem. To count as an improvement, Severn Trent Water shall deliver an improvement sufficient to meet its fair share contribution to the overall load reduction needed to deliver a change in WFD classification for the parameter being improved. Fair share load removal requirements will be jointly agreed with the EA as they will define the basis upon which revised discharge permit conditions (these are the conditions under which all of our sewage works and storm overflows operate and are issued by the EA) will be calculated. For the purposes of reporting against this performance commitment, it shall not be necessary to revisit these fair share load calculations - delivery of 'fair share' will be implicit in the conditions contained within revised discharge permits.

Any other information relating to the performance commitment

This performance metric was developed for our PR14 submission in consultation with the EA and they continue to support it for PR19. The measure has delivered as intended in AMP6 and we have therefore decided to retain it for AMP7 with improvements.

For PR19, we have revised the PR14 definition to enable us to deal with a wider range of water quality and flow determinands as outlined within WINEP. Thus the PR19 measure combines waste, water and eels rather than having each as a separate commitment.

A key benefit of this change is that in the event of the EA deciding that a specific planned improvement in WINEP3 is no longer required, we can identify a replacement improvement with them to ensure that customers still receive the overall outcome that they have paid for.

Full definition of the performance commitment

This performance commitment comprises four separate elements, as detailed below.

1. Waste – nutrient, sanitary and ecology measures

For nutrients, sanitary determinands, and ecology, the WFD defines 5 categories; bad, poor, moderate, good and high. The over-arching objective of the directive is to improve rivers to "at least good status". There is no requirement to improve to "high status", but rivers already at high status are not allowed to deteriorate.

The number of wastewater WFD classification improvements Severn Trent Water delivers are counted by points; one point is counted for each classification improvement per parameter improved, appropriate to the water company contribution ("fair share", as agreed with the EA). Severn Trent Water will confirm with the EA that the agreed improvement has been implemented. Points are only counted for changes up to good status according to the following matrix.

Current class	Improvement delivered		
	Poor	Moderate	Good
Moderate	n/a	n/a	1
Poor	n/a	1	2
Bad	1	2	3

With the exception of hazardous substance improvements (see below) points are limited to improvements relating to the following nutrient, sanitary determinand and ecology parameters:

- Phosphate
- Total Phosphate (lakes and reservoirs only)
- Ammonia
- BOD (biological oxygen demand)
- Dissolved oxygen
- Fish
- Invertebrates
- Macrophytes & Phytobenthos

The parameters listed above have been selected on the basis that they account for every nutrient, sanitary and ecology sewage related Reason for Not Achieving Good (RNAG) status listed in the published dataset.

2. Waste – Chemical

WFD chemical status is measured on a 'pass/fail' basis and encompasses >40 named substances. As WFD baseline classification data is limited, points will be linked to the identification of a 'River Needs' improvement by the EA based upon Chemicals Investigation Programme data, and not the River Basin Management Plan 2 (RBMP2) baseline dataset.

Points will only be claimable for improvements that relate to substances where the EA are considering imposing discharge permit limits in AMP7 or AMP8. Substances for which source control is the current, preferred method of achieving WFD targets, are excluded from the measure. For AMP7 the eligible substances for improvement under this performance commitment are limited to:

- Dissolved Zinc (Zn)
- Dissolved Nickel (Ni)
- Dissolved Copper (Cu)
- Dissolved Lead (Pb)
- Dissolved Chromium (Cr)
- Total Cadmium (Cd)
- Total Mercury (Hg)
- Tributyl Tin and related compounds
- Hexabromocyclododecane (HBCDD)
- Cypermethrin
- Nonylphenol
- Triclosan
- Diethylhexylphthalate (DEHP)

Any 'River Needs' improvement identified by the EA on the basis of data from the UK WIR co-ordinated Chemical Investigation Programmes[ii] 1 or 2 (CIP1, CIP2;) is eligible for a point (on a per parameter basis), provided that the EA agree that the proposed intervention:

a) Delivers a fair share improvement (and a discharge permit is issued accordingly).
or
b) Obviates the need for a permit condition (e.g. through works closure or change of discharge location)
or
c) Is the best technical solution available to treat for the substance in question.

This element of the performance commitment is included to provide an incentive to incorporate measures to address hazardous substances into our AMP7 projects where there is a likelihood that further investment could be required in AMP8.

3. Water – flow

The number of water WFD classification improvements Severn Trent Water delivers are also counted by points and is based on improvement level appropriate to the water company contribution (as with waste). A point is awarded for each intervention delivered that will either improve surface flow, groundwater and/or provide connectivity for ecological habitat through an agreed solution with the EA. For sites where we have implemented 'upfront permitting' (whereby we agree with the EA future changes in our abstraction licences) in AMP6 and have claimed a point in AMP6 we will not be claiming a point for this in AMP7 when the abstraction licence change comes into effect. However, if during AMP7 we carry out another agreed significant intervention which further improves the same waterbody further then we may look to claim another point in this waterbody.

4. Water – eels

Any EA agreed improvement that is carried out by Severn Trent Water for the benefit of eels will count as 1 point per agreed improvement implemented.

i. EU Water Framework Directive information http://ec.europa.eu/environment/water/water-framework/facts_figures/guidance_docs_en.htm

ii. UKWIR chemicals investigation programme https://www.ukwir.org/site/web/news/news-items/ukwir-chemicals-investigation-programme

C03: Biodiversity (Water)

Short definition

The number of hectares of land managed using an approved biodiversity action plan or a Severn Trent funded grant scheme that enhances biodiversity through a series of pre-agreed measures.

Measurement

Hectares of land improved (1 d.p.).

Measures that directly relate to rivers will be measured in kilometres, with 1km deemed to be equivalent to 1ha (it assumes a notional 10m river width as per Natural England guidance), to enable the use of externally published data for reporting purposes.

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

Adverse impacts, resulting in a potential reduction in biodiversity, for any designated Sites of Special Scientific Interest (SSSIs) or Special Areas of Conservation (SACs) caused by the following will not contribute negatively towards this measure:

- Damage to SSSIs in our ownership caused by third party actions that are outside of our control, for example pollution from agriculture or industry.
- Adverse impacts of a transitory nature that have occurred in the course of undertaking planned work and with prior written consent from Natural England, for example in excavating an agreed wetland habitat diggers have temporarily damaged an area of land which is anticipated to recover and the long-term impact will be no net detriment to biodiversity. It is standard practice when working in protected areas to have prior agreement with Natural England that will cover ways of working and post construction remediation.
- Adverse impacts caused by permit compliant activities (if such circumstances arise, we will work with Natural England and the Environment Agency to understand the causes and consider measures to prevent reoccurrence.) For example, this might include impacts arising from storm overflow or sewage works discharges where these are operating in accordance with the relevant EA issued permits to discharge.

Any other information relating to the performance commitment

During AMP6 our biodiversity performance commitment was restricted to biodiversity improvements on SSSIs and sought to create a net improvement to 75 ha of land.

This proposed AMP7 performance commitment is a revision of our AMP6 performance commitment and expands the scope of our biodiversity enhancing activities to cover all SSSIs that we own or biodiversity related activities within the WINEP but also covers areas that we improve through implementation of agreed action plans for biodiversity on the land that we own. It also includes the delivery of biodiversity enhancements on land that we can influence through our grant schemes, such as catchment management schemes, which simultaneously benefit biodiversity and water quality rather than purely focusing on the water quality element.

We have expanded the scope of the performance commitment based on feedback during our customer research and improved knowledge of our estate. We have conducted both quantitative and deliberative research with our customers who told us that they would like to see a more stretching approach to improving the biodiversity given the importance of the issue and the benefits for the environment from biodiversity, such as regulation of our climate, purification of our water and pollination of our crops.

Where a catchment based intervention through the Severn Trent Environmental Protection Scheme (STEPS) is included in the Outcome Delivery Incentive (ODI) for biodiversity we will avoid double counting with our Farming for Water performance commitment. If a more costly intervention is chosen as part of STEPS that enhances biodiversity over and above the base requirements for water quality the difference in cost will be funded via the biodiversity ODI and the benefits will be counted as part of the biodiversity ODI. For example this could include propagating wildflowers along set-

aside buffer strips where the land set-aside for the buffer strip would be included in the core STEPS programme but the additional cost of seeding wildflowers would be borne by the biodiversity ODI.

To ensure that there is no double counting with the Farming for water performance commitment, a list of qualifying biodiversity enhancement measures will be agreed with Natural England. These qualifying measures will be drawn from a list of Countryside Stewardship measures implemented through DEFRA funded land management schemes. To qualify as a biodiversity enhancement, these measures will be over and above the Farming for water measures required to deliver catchment protection outcomes.

No Farming for water measures are included within our performance commitment total. This element relates entirely to outperformance opportunity and is subject to agreeing appropriate qualifying interventions with Natural England and successful engagement with the agricultural community to deliver.

The scale of overlap between the biodiversity and Farming for water commitments (i.e. where biodiversity related work is undertaken by farmers over and above their STEPS obligations) will not be known until AMP7 whereby we understand farmer uptake of both STEPS and then whether they agree to additional work for biodiversity benefits.

Full definition of the performance commitment

This performance commitment measures the number of hectares of land:

1. Where we have delivered biodiversity related Water Industry National Environment Programme (WINEP) obligations. This includes river restoration interventions delivered as part of our abstractions adaptive management programme.
2. That we own and are under an implemented biodiversity action plan (i.e. following an ecological survey we have agreed an action plan to improve biodiversity and implemented improvements on the back of it).
3. Under a Severn Trent funded grant scheme supporting biodiversity on land that we do not own but can influence.

This performance commitment pertains to the number of hectares of land managed using a biodiversity action plan approved by a registered environmental body, such as Natural England or Local Wildlife Trusts, or a Severn Trent funded grant scheme that enhances biodiversity through a series of measures, that are pre-agreed. These measures cover the following categories of land and actions:

- Sites of Special Scientific Interest (SSSIs) owned by Severn Trent Water Limited.
- Land owned by Severn Trent Water Limited that is currently managed under countryside stewardship or other third party grant schemes to deliver biodiversity benefits.
- Site specific biodiversity related projects delivered under the Water Industry National Environment Programme (WINEP) framework. This covers all ‘green’ or ‘amber’ implementation or adaptive management projects which have one or more of the following drivers:
    - Countryside and Rights of Way Act (SSSIs)
    - Habitats Directive (Special Areas of conservation - SACs)
    - Natural Environment and Rural Communities Act (NERC)
    - Water Framework Directive (only projects with an ecology related driver code – eg. ‘Fish’ – does not include projects with sanitary/nutrient/chemical drivers)
    - Water Framework Directive Flow – specifically limited to river restoration actions undertaken to improve or prevent deterioration of ecological status from flow pressures
- Having all of our SSSIs under Biodiversity Action Plans (BAPs) and to implement such actions, as agreed with Natural England, necessary to:
    - Retain existing Favourable Conservation Status, or
    - Enable SSSIs not at Favourable to move towards this status

- Maintaining the status and management approach of the hectares of land that are currently under land stewardship schemes
- Delivering all biodiversity related Water Industry National Environment Programme (WINEP) obligations.
- We will also include the following types of measures that are not statutory in the total scope of our biodiversity (water) performance commitment:
    - Changes to land management practices on land that we own, to deliver biodiversity enhancements. This element will be underpinned by site biodiversity action plans and the measures implemented subject to independent expert corroboration by bodies such as Natural England or Local Wildlife Trusts.
    - Changes to land management practices on land that we don't own, delivered through partnership working with the agricultural community. This will be limited to a predefined set of qualifying measures that will be agreed with Natural England. Validation that the agreed interventions funded by Severn Trent Water have been implemented will be through our catchment team's inspections and assurance of this data/information.
    - Biodiversity improvements (including measures to remove invasive non-native species) delivered in partnership with third sector groups such as Wildlife and Rivers Trusts.

Targets will be measured, assessed and assured annually as follows:

i) Delivery of performance commitment measures contained within WINEP3 will be confirmed through the normal NEP sign-off process overseen by the Environment Agency. This will be on an annual basis each financial year. Evidence of obligation delivery will also be submitted to the APR assurance process.

ii) Confirmation of delivery of non-WINEP3 performance commitment measures will be as follows:
a) Maintaining the 'favourable' or 'recovering' status of SSSIs that we own will be via annual written confirmation from Natural England to this effect. This will be submitted to the APR assurance process.

b) For our landholdings currently under third party management and/or environmental grants for the benefit of biodiversity, evidence confirming that these arrangements remain in place will be submitted annually to our APR assurance.

c) For SSSIs in our ownership where intervention is required to improve condition, written confirmation will be sought from Natural England to the effect that agreed interventions have been implemented. This will be submitted to the APR assurance process.

d) For damage caused to third party owned SSSIs caused by our activities (subject to the exceptions outlined above), confirmation of hectares damaged will come from Natural England and be submitted annually to our APR assurance.

e) Farming for water measures that also deliver a biodiversity benefit: this will be evidenced through our STEPs system that records the payments made to farmers to implement agreed biodiversity enhancing measures. This will be subject to APR assurance and will follow the same format that will be used to assure our Farming for water ODI. A pre-agreed list of qualifying biodiversity interventions will be drawn up in consultation with Natural England.

f) Other biodiversity enhancing measures. Evidence of delivery will be through written confirmation from a Wildlife Trust or Natural England or another recognised environmental NGO (e.g. the RSPB), that an agreed set of interventions to enhance biodiversity have been implemented. In the case of partnership schemes, evidence will also be submitted for APR that we have made a meaningful contribution to delivery (financial or 'in kind', such as through volunteering).

Adverse impacts upon any designated SSSIs or SACs caused by our actions or activities will be measured and deducted from our performance.

C04: Biodiversity (Waste)

Short definition

The number of hectares of land managed using an approved biodiversity action plan or a Severn Trent funded grant scheme that enhances biodiversity through a series of pre-agreed measures.

Measurement

Hectares of land improved (1 d.p.).

Measures that directly relate to rivers will be measured in kilometres, with 1km deemed to be equivalent to 1ha (it assumes a notional 10m river width as per Natural England guidance), to enable the use of externally published data for reporting purposes.

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

Adverse impacts, resulting in a potential reduction in biodiversity, for any designated Sites of Special Scientific Interest (SSSIs) or Special Areas of Conservation (SACs) caused by the following will not contribute negatively towards this measure:

- Damage to SSSIs in our ownership caused by third party actions that are outside of our control, for example pollution from agriculture or industry.
- Adverse impacts of a transitory nature that have occurred in the course of undertaking planned work and with prior written consent from Natural England, for example in excavating an agreed wetland habitat diggers have temporarily damaged an area of land which is anticipated to recover and the long-term impact will be no net detriment to biodiversity. It is standard practice when working in protected areas to have prior agreement with Natural England that will cover ways of working and post construction remediation.
- Adverse impacts caused by permit compliant activities (if such circumstances arise, we will work with Natural England and the Environment Agency to understand the causes and consider measures to prevent reoccurrence.) For example, this might include impacts arising from storm overflow or sewage works discharges where these are operating in accordance with the relevant EA issued permits to discharge.

Any other information relating to the performance commitment

During AMP6 our biodiversity performance commitment was restricted to biodiversity improvements on SSSIs and sought to create a net improvement to 75 ha of land.

This proposed AMP7 performance commitment is a revision of our AMP6 performance commitment and expands the scope of our biodiversity enhancing activities to cover all SSSIs that we own or biodiversity related activities within the WINEP but also covers areas that we improve through implementation of agreed action plans for biodiversity on the land that we own. It also includes the delivery of biodiversity enhancements on land that we can influence through our grant schemes, such as catchment management schemes, which simultaneously benefit biodiversity and water quality rather than purely focusing on the water quality element.

We have expanded the scope of the performance commitment based on feedback during our customer research and improved knowledge of our estate. We have conducted both quantitative and deliberative research with our customers who told us that they would like to see a more stretching approach to improving the biodiversity given the importance of the issue and the benefits for the environment from biodiversity, such as regulation of our climate, purification of our water and pollination of our crops.

Where a catchment based intervention through the Severn Trent Environmental Protection Scheme (STEPS) is included in the Outcome Delivery Incentive (ODI) for biodiversity we will avoid double counting with our Farming for Water performance commitment. If a more costly intervention is chosen as part of STEPS that enhances biodiversity over and above the base requirements for water quality the difference in cost will be funded via the biodiversity ODI and the benefits will be counted as part of the biodiversity ODI. For example this could include propagating wildflowers along set-aside buffer strips where the land set-aside for the buffer strip would be included in the core STEPS programme but the additional cost of seeding wildflowers would be borne by the biodiversity ODI.

To ensure that there is no double counting with the Farming for water performance commitment, a list of qualifying biodiversity enhancement measures will be agreed with Natural England. These qualifying measures will be drawn from a list of Countryside Stewardship measures implemented through DEFRA funded land management schemes. To qualify as a biodiversity enhancement, these measures will be over and above the Farming for water measures required to deliver catchment protection outcomes.

No Farming for water measures are included within our performance commitment total. This element relates entirely to outperformance opportunity and is subject to agreeing appropriate qualifying interventions with Natural England and successful engagement with the agricultural community to deliver.

The scale of overlap between the biodiversity and Farming for water commitments (i.e. where biodiversity related work is undertaken by farmers over and above their STEPS obligations) will not be known until AMP7 whereby we understand farmer uptake of both STEPS and then whether they agree to additional work for biodiversity benefits.

Full definition of the performance commitment

This performance commitment measures the number of hectares of land:

1. Where we have delivered biodiversity related Water Industry National Environment Programme (WINEP) obligations. This includes river restoration interventions delivered as part of our abstractions adaptive management programme.
2. That we own and are under an implemented biodiversity action plan (i.e. following an ecological survey we have agreed an action plan to improve biodiversity and implemented improvements on the back of it).
3. Under a Severn Trent funded grant scheme supporting biodiversity on land that we do not own but can influence.

This performance commitment pertains to the number of hectares of land managed using a biodiversity action plan approved by a registered environmental body, such as Natural England or Local Wildlife Trusts, or a Severn Trent funded grant scheme that enhances biodiversity through a series of measures, that are pre-agreed. These measures cover the following categories of land and actions:

- Sites of Special Scientific Interest (SSSIs) owned by Severn Trent Water Limited.
- Land owned by Severn Trent Water Limited that is currently managed under countryside stewardship or other third party grant schemes to deliver biodiversity benefits.
- Site specific biodiversity related projects delivered under the Water Industry National Environment Programme (WINEP) framework. This covers all ‘green’ or ‘amber’ implementation or adaptive management projects which have one or more of the following drivers:
    - Countryside and Rights of Way Act (SSSIs)
    - Habitats Directive (Special Areas of conservation - SACs)
    - Natural Environment and Rural Communities Act (NERC)
    - Water Framework Directive (only projects with an ecology related driver code – eg. ‘Fish’ – does not include projects with sanitary/nutrient/chemical drivers)
    - Water Framework Directive Flow – specifically limited to river restoration actions undertaken to improve or prevent deterioration of ecological status from flow pressures

- Having all of our SSSIs under Biodiversity Action Plans (BAPs) and to implement such actions, as agreed with Natural England, necessary to:
    - Retain existing Favourable Conservation Status, or
    - Enable SSSIs not at Favourable to move towards this status
- Maintaining the status and management approach of the hectares of land that are currently under land stewardship schemes
- Delivering all biodiversity related Water Industry National Environment Programme (WINEP) obligations.
- We will also include the following types of measures that are not statutory in the total scope of our biodiversity (waste) performance commitment:
    - Changes to land management practices on land that we own, to deliver biodiversity enhancements. This element will be underpinned by site biodiversity action plans and the measures implemented subject to independent expert corroboration by bodies such as Natural England or Local Wildlife Trusts.
    - Changes to land management practices on land that we don't own, delivered through partnership working with the agricultural community. This will be limited to a predefined set of qualifying measures that will be agreed with Natural England. Validation that the agreed interventions funded by Severn Trent Water have been implemented will be through our catchment team's inspections and assurance of this data/information.
    - Biodiversity improvements (including measures to remove invasive non-native species) delivered in partnership with third sector groups such as Wildlife and Rivers Trusts.

Targets will be measured, assessed and assured annually as follows:

i) Delivery of performance commitment measures contained within WINEP3 will be confirmed through the normal NEP sign-off process overseen by the Environment Agency. This will be on an annual basis each financial year. Evidence of obligation delivery will also be submitted to the APR assurance process.

ii) Confirmation of delivery of non-WINEP3 performance commitment measures will be as follows:

a) Maintaining the 'favourable' or 'recovering' status of SSSIs that we own will be via annual written confirmation from Natural England to this effect. This will be submitted to the APR assurance process.

b) For our landholdings currently under third party management and/or environmental grants for the benefit of biodiversity, evidence confirming that these arrangements remain in place will be submitted annually to our APR assurance.

c) For SSSIs in our ownership where intervention is required to improve condition, written confirmation will be sought from Natural England to the effect that agreed interventions have been implemented. This will be submitted to the APR assurance process.

d) For damage caused to third party owned SSSIs caused by our activities (subject to the exceptions outlined above), confirmation of hectares damaged will come from Natural England and be submitted annually to our APR assurance.

e) Farming for Water measures that also deliver a biodiversity benefit: this will be evidenced through our STEPs system that records the payments made to farmers to implement agreed biodiversity enhancing measures. This will be subject to APR assurance and will follow the same format that will be used to assure our Farming for Water ODI. A pre-agreed list of qualifying biodiversity interventions will be drawn up in consultation with Natural England.

f) Other biodiversity enhancing measures. Evidence of delivery will be through written confirmation from a Wildlife Trust or Natural England or another recognised environmental NGO (e.g. the RSPB), that an agreed set of interventions to enhance biodiversity have been implemented. In the case of partnership schemes, evidence will also be submitted for APR that we have made a meaningful contribution to delivery (financial or 'in kind', such as through volunteering).

Adverse impacts upon any designated SSSIs or SACs caused by our actions or activities will be measured and deducted from our performance.

C05: Satisfactory sludge use and disposal

Short definition

Compliance with sludge use and disposal standards as per the Environmental Performance Assessment (EPA) definition (EPA methodology (version 3) November 2017)[i].

Measurement

Percentage (2 d.p.).

Measured, assured and reported on an annual basis. This will be done on a calendar year basis in line with the EPA (i.e. 1st January – 31st December).

Mitigation / exceptions

Exemptions are in line with the EPA definition, and will change in line with the EPA if these change in the future.

Any other information relating to the performance commitment

This is a new performance commitment for PR19 and explicitly covers the Bioresource price control.

Full definition of the performance commitment

The overall percentage compliance of company sludge satisfactorily disposed to agricultural land that comply with and is in line with the Environment Agency's EPA definition.

All sludge that we produce in our wastewater treatment process that we treat ourselves is included in this performance commitment. As is all sludge that we trade – both imports and exports. For sludge imported from 3rd parties we would ensure the same disposal standards are applied to this imported sludge as to the sludge we produce and dispose of ourselves. Any sludge exports to third parties will be contractually assured to meet our own internal standards before being exported.

i. Environment Agency Environmental Performance Assessment (EPA) methodology (version 3), 2017. https://www.ofwat.gov.uk/wp-content/uploads/2017/12/WatCoPerfEPAmethodology_v3-Nov-2017-Final.pdf

Outcome 6: A service for everyone

E01: Help to pay when you need it

Short definition

The percentage of struggling to pay customers supported through tailored schemes.

Measurement

Percentage (0 d.p.).

1) To calculate the percentage of customers struggling to pay:

- The total number of customers struggling to pay is derived from an econometric modelling forecast of affordability levels using historical quarterly tracker data.

- A forecast unaffordable percentage will be calculated for each year (2020-2025) and translated into a number of households that find bills unaffordable.

2) To calculate the number of customers on a tailored scheme:

- The number of customers on Social tariff and Watersure tariff will be taken as the number of customers on either scheme as at 31st March of the relevant year.

- The number of customers supported through Water Health Checks, Payment Matching, Payment Plan Concession, Payment breaks, Severn Trent Trust Fund water grants, Home Water Efficiency Checks for customers in social housing, private issues fixed for free will be taken as the total number of customers helped, at any point, within the reporting financial year (i.e. 1st April – 31st March).

The total number of customers on schemes (see point 2) is divided by the total number of customers finding bills unaffordable (see point 1), multiplied by 100 to give the percentage of struggling to pay customers supported through tailored schemes.

Mitigation / exceptions

No mitigation / exceptions.

Any other information relating to the performance commitment

This performance commitment is similar to our PR14 performance commitment (R-B1) but has been revised so that it includes all tailored support schemes. It is represented as a percentage rather than a number. This will make it easier for customers to understand the degree to which we are helping all of the customers who find bills unaffordable.

Full definition of the performance commitment

This performance commitment measures the proportion of customers who find their bills unaffordable, whom are supported through any help to pay scheme. The current support schemes offered include:

- Social tariff

- Watersure
- Water health Checks
- Matching Plus
- Payment Plan Concession
- Payment breaks
- Severn Trent Trust Fund water grants
- Home Water Efficiency Checks for customers in social housing
- Private issues fixed for free

However, additional schemes may be added and current schemes may be expanded. Reporting of this performance commitment will therefore also include any customers supported through additional schemes which are set up during AMP7, and the extension or expansion of any listed scheme. In the instance where a scheme is added in AMP7 we will seek the approval of our Water Forum.

The historic view on the total number of customers struggling to pay is derived from a quarterly online survey which asks at least 4,000 customers annually a number of questions regarding their satisfaction with Severn Trent Water services. One question in this survey asks customers about the affordability of their bills, of which the results were used to calculate the number of customers finding bills unaffordable (see 'measurement' section). This information is used in conjunction with the following variables in order to calculate the percentage of customers struggling to pay:

- The probability of customers defaulting is determined by two variables:
    - The bill relative to 10th percentile income accounts
    - A measure of default risk constructed by Equifax
- The total number of customers is the scale variable
- The proportion of private rental properties and the proportion of metered properties are included as control variables.

E02: Supporting our Priority Service customers during an incident

Short definition

The percentage of customers in vulnerable circumstances (CIVC) who are registered on our Priority Service Register (PSR) that we provide support to during a clean water incident.

Measurement

Percentage (0 d.p.).

The number of PSR customers supported during incidents is recorded on our SAP/Target system/Excel report. The number of PSR customers impacted by an incident will be calculated as those living in the area impacted by the incident. The number of PSR customers supported during incidents is divided by the total number of customers on the PSR which were affected by the incident, multiplied by 100.

Measurement will be recorded after each incident. Measured, assured and reported on an annual basis (financial year i.e. 1st April – 31st March).

Mitigation / exceptions

No mitigations / exceptions.

Any other information relating to the performance commitment

This is a new performance commitment for PR19.

Full definition of the performance commitment

This performance commitment is designed to ensure we provide customers in vulnerable circumstances (CIVCs) with the support that is relevant and needed by them during clean water incidents. This performance commitment measures the percentage of CIVCs who are registered on our Priority Service Register (PSR) that we provide support to during a clean water incident.

A customer in vulnerable circumstances (CIVC) is defined as "a customer who due to personal characteristics, their overall life situation or due to broader market and economic factors, is not having reasonable opportunity to access and receive an inclusive service which may have a detrimental impact on their health, wellbeing or finances". Our Priority Service Register (PSR) records all customers in vulnerable circumstances who have identified themselves to us and classified themselves as eligible. The support which we provide to PSR customers during an incident is outlined in the PSR support matrix which aligns customers' health and wellbeing needs with the support offered (see appendix 1). The scope of this performance commitment includes those registered on the PSR due to health and wellbeing vulnerabilities, not those specifically in financial vulnerability (unless they are registered for both).

For every incident in scope, the number of PSR customers who we support is added over the year and is expressed as a percentage of the total number of PSR customers impacted by those incidents over the year. This overall percentage will be reported to 0 decimal places.

The water supply incidents in scope of the performance commitment are those which:

- impact 500 to 400,000 properties for greater than six hours

Discolouration and low pressure events are out of scope of this performance commitment.

Reasoning and clarification of scope

We provide support to all relevant PSR customers in all levels of supply interruption events and for incidents impacting less than 500 properties are smaller scale and managed locally. The majority are fixed very quickly and are managed and well run, providing support for those customers who need us most. For incidents over 500 properties we escalate these to our central incident management teams to ensure that we manage these effectively with a broader pool of resources. We currently manage some large events brilliantly but our performance is inconsistent. Therefore the scope of this performance commitment is to ensure that we provide a consistently strong level of support for incidents over 500 properties.

During the first few hours of an incident we are able to quickly diagnose the issue and assess the best approach to restore supplies. Many incidents are successfully resolved within three hours and have limited impact on customers. In these circumstances providing alternative supplies for relevant PSR customers would be an inconvenience as their continuous water supplies are rapidly restored. If through our initial assessment we believe that the resolution will take a longer period of time - over six hours, and therefore the impact for these customers becomes more significant, we would assess and start to invoke alternative supplies for those of our PSR customers who need it. In order to reassure customers, we mobilise our proactive communication in the first 90 minutes of incidents to keep them informed of the development of the incident.

As a result of our research incidents over six hours impact customers to a greater level and are therefore the focus for this performance commitment. We provide bottled water to those categories of customers on our PSR that require this support and will keep customers informed through our proactive messaging, in addition to providing updates through all available communications channels including radio, our LRF liaison, social media and our website. The performance commitment requires the bottled water alternative supplies process to be triggered (for example request submitted to the contracted supplier and mobilised) before the no supply event has reached six hours.

If we do experience a large strategic event then our experience shows we may need to prioritise service based on the potential impact on the wellbeing of these customers to ensure we deliver it in a timely manner. Circumstances that might result in larger scale incidents are terrorist threats which could impact a water company across the entire region or a burst outside a large treatment works like we experienced at our [REDACTED] Treatment Works two years ago. The [REDACTED] incident had the potential to impact 400,000 customers and we managed to resolve it without the need to invoke the contingency plans we had developed. These contingency plans were very challenging and had the potential on paper to require support from other water companies and suppliers to help with logistics of providing alternative supplies on such a broad scale simultaneously.

Severn Trent currently store the largest quantity of water with Water Direct compared to the seven other water companies and four NAV water companies who also contract with them under their National Bottled Water Bank and our recent assessment of the market shows there are no other organisations with greater capacity and capability. However despite these levels of contingency, with the increased forecast volume of PSR customers in future (39k in 2017/18 to an estimated 409k by the end of 2024/25 as referenced in data table App4), our ability to simultaneously deliver water to those PSR customers that require a delivery of bottled water will become more even more challenging without an untimely disruption and inconvenience to customers during unsociable hours.

Taking into account an assessment of historic incidents of this scale, the step change in PSR customer volumes and market capabilities, we have therefore put a cap on the scale of the incident in scope of the performance commitment to 400,000 properties. Our experience shows that we have historically had very few incidents above this scale.

There are times when it may not be safe to deliver bottled water to customers in vulnerable circumstances – where access is inhibited due to severe weather such as snow and the roads are closed, or where the area is flooded. Where this is the case we will do everything possible to deliver bottled water to customers. Our customers appreciate that we cannot put the safety of our teams at risk. If we are unable to deliver then we will attempt to contact the customer(s) and inform them. In these cases we will record unsuccessful delivery of support.

Tailoring and adapting our service offering to meet customer needs

Our service offering is focussed on delivering a tailored service to meet customers' individual needs based on the context of the event. Therefore we are proposing to truly tailor support and review the standard offering in line with the specific event circumstances. We recognise that in some circumstances it is not always in the best interest of customers for us to provide any additional support, for example sending communication (text or recorded landline messages) at night whilst customers are asleep. When we have sent proactive incident messages during the night historically we have received feedback from customers that they did not require it and questioned why we had done it as it had disturbed their sleep. In addition, delivering bottled water to a customer's doorstep in the middle of the night might cause anxiety, particularly for customers in vulnerable circumstances, who may be concerned by an unexpected visitor or their family are awoken by the noise. We will therefore be further adapting and tailoring our service to consider these circumstances when supporting customers and will not deliver bottled water or proactive messages/calls to customers between the hours of 10pm and 5:30am, unless a customer specifically contacts us during the incident to request that we do. In these circumstances of further adapting our service between 10pm and 5:30am, to respect our customers wishes and therefore we will classify this as compliant in terms of measurement. This measurement will be assured through our normal audit processes.

Appendix 1 – Example of incident support offered

Today we will deliver bottled water to all customers on our PSR as our current system does not allow us to identify specific requirements. For some customers we have had feedback that they have other needs and requirements from Severn Trent but that the delivery of alternative supplies is not required. In the future we will be segmenting our customers on the PSR and tailoring the service to better meet their individual needs. We will deliver bottled water only to those customers who are in vulnerable circumstances that depend on this delivery. We will also be introducing a new support offering of sending an SMS or landline message to a nominee. We will also be offering an alternative print format water quality notice for certain customer groups. Finally we will be looking to send a more tailored SMS or landline message to customers across specific vulnerable circumstance groups – for example a deaf customer would prefer an SMS, whereas a sight impaired customer would prefer a landline message.

There is a project underway to redesign our priority service register to enable us to capture the specific vulnerable circumstance so we can identify customers who will be supported by each of these different service offerings. The new PSR system is expected to be delivered by the end of March 2019.

In the design of the new PSR we will be aligning our vulnerable circumstance categories to a water industry standard. This standard is currently under development through a collaborative activity between all water companies being led by Water UK. This standard will be complete later in 2018.

The support which we provide to PSR customers during an incident will be aligned to a PSR support matrix which aligns customers' needs with the support offered. Below is an example of what the matrix might look like for the physical vulnerable circumstance customers across four of the proposed service offerings (tailored communication not in matrix below). This support matrix will be completed when the water industry categorisation has been completed, however the process has already lead to the refinement of our special categories to focus on the customers.

Physical vulnerable circumstance	Bottled water delivered to customer property*	Highly dependent – priority customer contact	Proactive notification	Nominated contact communication option	Water quality notice options
Hearing difficulties (including deaf)	⊗	⊗	✓	✓	Key video updates available online with British Sign Language Social media/website updates
Speech difficulties	⊗	⊗	✓	✓	N/A
Blind	✓	⊗	✓	✓	Audio version online
Partially sighted	✓		✓	✓	Large print notice Pictorial notice (standard) Audio version online
Physical impairment	✓	⊗	✓	✓	N/A
Dialysis, feeding pump and automated medication	✓	✓	✓	⊗	N/A
Chronic/serious illness	✓	⊗	✓	✓	N/A

** Bottled water as an indicator on the PSR flag is transient in nature. The advisor can select or de-select these options as appropriate based on the customers' situation. The above is an example of the 'standard' options that are pre-configured for each physical vulnerable circumstance when the PSR code is selected but these are changeable based on the customers' needs.*

When a customer registers for the PSR the support that we offer will be reviewed to ensure it meets their personal needs. Therefore for example a customer who is registered for partially sighted might still want their bill in an alternative format but may feel they do not need bottled water delivery during an incident as they may prefer that a family member in the household can collect this for them from one of the distribution points. If this is the case then this will be changed on the PSR system so the support a customer receives is tailored to what they have requested.

Outcome 7: Wastewater safely taken away

F05: External sewer flooding

Short definition

The number of external sewer flooding incidents per year.

Measurement

Number of incidents (0 d.p).

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

All mitigations will be as per Ofwat's PR19 Outcomes Definitions.

The following areas shall be excluded from the reported numbers:

1) 'Highways' – including footpaths; and

2) 'Public' open space; agricultural land; car parks.

3) Fraudulent reports of flooding made with the intention to gain GSS payments or receive increased service, and there is no evidence of flooding

4) Flooding caused by the blockage or failure of a gully, shared by two or more properties and connected to a public sewer, or blockage of the gully grating, or the failure of any pipework above ground, shall be excluded.

5) Flooding caused by assets which are beyond our control are also excluded, for example:

i) Flooding due to surface water run off which has not originated from public sewers;

ii) Fluvial flooding;

iii) Coastal flooding;

iv) Groundwater which has not originated from a public sewer;

v) Flooding from water mains etc.; or

vi) Incidents caused by highway drains and private assets. The Water UK "Guide to Transfer of Private Sewers Regulations 2011", published on 30th September 2011[i.] shall be applied to assess if the flooding incident should be attributed to the undertaker or a private asset

Any other information relating to the performance commitment

This performance commitment has been selected from Ofwat's Asset Health long list[ii.] and is a revision of our AMP6 S-A2 External Sewer Flooding performance commitment, improved through adoption of the consistent definition as published by Ofwat[iii].

Full definition of the performance commitment

This performance commitment definition is consistent with the definition as outlined in the Ofwat sewer flooding reporting guidance[iii].

It is the number of external flooding incidents per year, including sewer flooding due to severe weather. A flooding event is the escape of water from a sewerage system, irrespective of size as evidenced by standing water, running water or visible deposits of silt or sewage solids. All causes (overloaded sewer and other causes) of flooding are included, including severe weather, but that severe weather will be reported as a separate category.

External flooding is flooding from a public sewer (including sewers transferred in 2011) which enters a curtilage whether domestic or commercial. This includes gardens and flooding to buildings which are not occupied, such as detached garages, sheds and integral garages (with no adjoining door to the occupied building).

i. Guide to transfer of private sewers regulations 2011. https://www.water.org.uk/publications/reports/guide-transfer-private-sewers-regulations-2011

ii) Ofwat's PR19 Outcomes Definitions. https://www.ofwat.gov.uk/outcomes-definitions-pr19/

iii) Reporting guidance – sewer flooding. https://www.ofwat.gov.uk/wp-content/uploads/2018/03/Reporting-guidance-sewer-flooding.pdf

F06: Sewer blockages

Short definition

The total number of sewer blockages on Severn Trent Water's sewer network (including sewers transferred in 2011).

Measurement

Number of incidents (0 d.p.).

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

No mitigation / exceptions.

Any other information relating to the performance commitment

This is a continuation of our AMP6 performance commitment S-A4: Asset stewardship – Blockages. Additionally, we have selected sewer blockages from Ofwat's Asset Health long list[i] to continue focus on our sewer network based on customer feedback.

Full definition of the performance commitment

The number of sewer blockage events per year that require cleaning. A blockage is an obstruction in a sewer (including sewers transferred in 2011) which causes a reportable problem (not caused by hydraulic overload), such as flooding or discharge to a watercourse, unusable sanitation, surcharged sewers (a sewer that is at full capacity) or odour.

i) Ofwat Asset Health long list. https://www.ofwat.gov.uk/outcomes-definitions-pr19/

F07: Public sewer flooding

Short definition

The number of sewer flooding incidents caused by equipment failures, blockages or collapses (collectively grouped as other causes) affecting public highways/footpaths.

Measurement

Number of incidents (0 d.p).

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

The following areas shall be excluded from the reported numbers, and are broadly aligned with the consistency guidelines for flooding:

- Flooding caused by hydraulically overloaded sewers (as a result of rain or snow melt).
- Other areas of open space that are not a public highway/footpath i.e. public open space (such as a park), agricultural land, or car parks.
- Fraudulent reports of flooding made with the intention to gain GSS payments or receive increased service, and there is no evidence of flooding.
- Flooding caused by the blockage or failure of a gully, shared by two or more properties and connected to a public sewer, or blockage of the gully grating, or the failure of any pipework above ground, shall be excluded.
- Flooding caused by assets which are beyond our control are also excluded, for example:

    i) Flooding due to surface water run off which has not originated from public sewers;

    ii) Fluvial flooding;

    iii) Coastal flooding;

    iv) Groundwater which has not originated from a public sewer;

    v) Flooding from water mains etc.; or

    vi) Incidents caused by highway drains and private assets. The Water UK "Guide to Transfer of Private Sewers Regulations 2011", published on 30th September 2011[i.] shall be applied to assess if the flooding incident should be attributed to the undertaker or a private asset

Any other information relating to the performance commitment

In AMP6 and AMP7 our performance commitments on internal flooding and external flooding in accordance with the consistency guidelines are focused on reducing sewer flooding closest to customers – in homes and gardens.

In response to customer views and the Water Forum highlighting flooding on public highways and footpaths as a key priority where we need to do more to reduce flooding that is caused by our assets, we are proposing to include a new performance commitment.

We have sought to introduce a new performance commitment as opposed to expanding the scope of the external flooding performance commitment to ensure the external flooding reporting is aligned to consistency guidelines.

The new performance commitment thus expands the coverage of work we do on flooding to cover public highways and footpaths caused by blockages, collapses or equipment failures on our assets.

We recognise there will still be flooding from hydraulic causes that this new performance commitment will not cover. To ensure customers are protected, we will do two things:

Target these incidents through our collaborative flood resilience performance commitment. Most of the hydraulic flooding on highways and footpaths is generally linked to multiple sources of flooding and thus we will work collaboratively with other risk management authorities to reduce flooding risk from hydraulic issues.

Develop better data on this type of flooding and the cost of interventions so that we can adopt a further measure in AMP8.

Full definition of the performance commitment

The number of sewer flooding incidents caused by equipment failures, blockages or collapses (collectively grouped as other causes) affecting public highways and footpaths.

A flooding event is the escape of water from a sewerage system, irrespective of size as evidenced by standing water, running water or visible deposits of silt or sewage solids.

For this commitment, the definition of sewer blockage and collapse will be as within our PR19 submission.

For equipment failures the definition will be aligned to the JR11 definition - the number of incidents of (public) sewer flooding caused by the failure or incorrect operation of company apparatus (e.g. non-return (flap) valves, pumping stations, maintenance equipment, penstocks, combined sewer overflows, or real time control systems).

i) Guide to transfer of private sewers regulations 2011. https://www.water.org.uk/publications/reports/guide-transfer-private-sewers-regulations-2011

F08: Green communities

Short definition

The amount of natural and social capital value that we create for local communities through the construction of sustainable drainage and water management features.

Measurement

£millions (3 d.p.).

It will be measured, assured and reported on an annual basis each financial year (i.e. 1st April to 31st March).

Mitigation / exceptions

To measure the value that we create we will be using the B£ST (Benefits of SuDS Tool). We will exclude some benefit categories from the tool when calculating a value created. This is because some benefit categories double count our core duties, such as resolving flooding, and some have less certainty in the value they create, such as crime reduction. These particular benefit categories will be removed before any calculation. The benefits which will be used with the B£ST benefit assessment will be limited to:

- Air quality
- Amenity
- Carbon sequestration
- Education
- Health
- Rainwater harvesting
- Recreation
- Water quality

All other benefit categories will be excluded from the calculation.

There is the possibility that some of the value we create could already be counted as part of one of our other performance commitments, namely the Biodiversity performance commitment or the Water Framework Directive performance commitment. Where this is the case we will exclude the relevant benefit categories from our value calculation. This will be done and independently assured on a case-by-case basis i.e. there is the ability within B£ST to 'switch off' certain benefit categories to avoid any overlaps with other performance commitments.

Any other information relating to the performance commitment

This is a new performance commitment for PR19 that is designed to strengthen our commitment towards accounting for the benefits of natural and social capital in our decision making.

Natural capital is the element of nature that directly or indirectly produces value (or benefits) for people. Social capital is the value created through improved individual or societal wellbeing and prosperity.

Full definition of the performance commitment

The amount of natural and social capital value that we create for local communities through the construction of sustainable drainage and water management features.

To measure the value of natural and social capital created we are using a tool called B£ST (Benefits of SuDS Tool). The B£ST Tool was first created in 2015 through a project commissioned by CIRIA (the Construction Industry Research and Information Association – an independent, member based, not-for-profit research organisation) and delivered by Stantec (previously MWH - a major global specialist consultancy). The B£ST tool was developed through understanding the potential range of benefits that a SuDS (sustainable drainage system) could provide. These benefits were then quantified as a monetary equivalent value using a range of potential valuation data sources and methods.

The B£ST tool is being updated by CIRIA and Stantec during 2018/19 to take account of the latest information on benefit values. We will use this updated version for the calculation of our performance commitment.

The inputs to the tool are the details of the sustainable drainage features we are installing. The tool has built in calculations that works out the value of benefit created in each category. These benefits are totalled over 25 years with a discount rate of 3.5% applied to convert to a present value.

The B£ST tool is widely recognised in the UK and globally as being a robust and comprehensive way of valuing the benefits from SuDS. It is widely used in both the public and private sectors and is available for free on the Susdrain website[i].

i) B£ST tool available via Susdrain: www.susdrain.org/resources/best

F09: Collaborative flood resilience

Short definition

The number of properties and areas benefitting from a reduced risk of flooding from our sewer network achieved by working in collaboration with other Risk Management Authorities (RMAs) or other organisations.

Measurement

Number of properties or areas (0 d.p.).

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

No mitigation / exceptions.

Any other information relating to the performance commitment

The Environment Agency currently have a role to administer capital grants to RMAs under Section 16 of the Flood and Water Management Act 2010 which are used to deliver Outcome Measures[i]. Not all investment associated with this performance commitment will attract or require these capital grants. However for ones that do, the Environment Agency will have a role in assuring that the grant is invested in accordance with "Flood and Coastal Resilience Partnership Funding: Defra Policy Statement on an outcome-focused, partnership approach to funding flood risk management."

This performance commitment is a revision of our PR14 SA-3 Partnership Working performance commitment. We have learnt lessons from AMP6 based on increased experience and listening to the feedback of stakeholders and customers. The measure has been revised so that we have moved from an outputs measure (number of partnership schemes) to an outcomes measures (reduced flood risk). It also aligns to our own risk based approach flooding measures (internal and external sewer flooding). Furthermore there is increased alignment with the criteria for what makes a good outcome measure (Defining and incentivising Outcomes and Measure of Success (UKWIR, 2012)) and the Defra Outcome Measures (OM2) used by the Environment Agency and Lead Local Flood Authorities.

Currently, there is an overlap / gap when it comes to who is responsible for pathway flooding. We want to make our network more resilient and contribute our fair share in managing flood risk, and making our network more resilient by better understanding and managing the impact of 3rd party assets and flows on our network and customers. This revised measure aims to facilitate this.

The revision of this performance commitment from PR14 delivers benefits for customers as it will primarily drive an increased quantity of partnerships that are larger and of improved quality to ensure we seize every opportunity to reduce flood risk from our sources, making our network more resilient and reducing flood risk to our customers.

Full definition of the performance commitment

The number of properties and areas benefitting from a reduced risk of flooding from our sewer network achieved by working in collaboration with other Risk Management Authorities (RMAs) or other organisations.

- Properties - Properties include internal flooding (affecting a habitable building or attached garage) or external flooding (affecting a curtilage of a property – e.g. a garden or driveway). Definitions of internal and external flooding align with the respective sewer flooding performance commitments. A property will only be counted as either internal or external, not both.

- Area - An area is a public highway. One highway counts as one area. If more than one highway benefits, then each additional highway will count as an additional area if it is a different postcode area.

- Risk of Flooding - The risk of sewer flooding can either be observed or predicted. The baseline flood risk and the reduction in flood risk attributed to the scheme / intervention will be quantified using a hydraulic model. The hydraulic model will be assessed and must be deemed 'fit for purpose' in accordance with our own wastewater hydraulic modelling Standard Operating Procedures (SOP) which aligns with the Code of Practice for the Hydraulic Modelling of Urban Drainage Systems (CIWEM, 2017). We also have detailed Sewerage Management Plan (SMP) modelling procedures which cover all aspects of model build, verification and testing. These set out the modelling specifications, parameters and assumptions used in our models, including the use of design storms and antecedent conditions in our modelling. Our hydraulic models are maintained to a minimum of a 'Type II' standard in catchments with significant risk and are maintained as per our model maintenance SMP procedure.

- Sources / types of flood risk – This measure is designed to encourage all sources / types of flood risk to be reduced through collaborative working by all organisations who have a responsibility for managing the different sources of flooding.

- Flooding – The specific definition of what constitutes flooding is that used by the Risk Management Authority that has responsibility for managing that source / type of flooding. There is no minimum depth or duration of what constitutes flooding from any source. In general terms this measure conforms to the definition of 'Flood' in Section 1 of the Flood and Water Management Act 2010.

- Reduced risk of flooding - To count the property or areas as benefitting from a reduced risk of flooding from the sewer network the likelihood must be reduced by at least a 10 year return period and a minimum protection standard of 1 in 20 year return period must be met. The maximum protection standard is a 1 in 200 year return period, above which any further protection will not qualify for the purposes of this Performance Commitment. The 1 in 200 year standard aligns with the point at which FCERM Flood Defence Grant in Aid flood risk category moves from MODERATE to LOW.

- Methods for reducing risk – Any flood risk management action or measure (such as a flood alleviation scheme) that is carried out which results in a reduction of the risk. "Risk Management" is defined in Section 3 of the Flood and Water Management Act and includes activities such assessing a risk.

- Sewer Network – Includes all apparatus under the responsibility of Severn Trent Water associated with our statutory sewerage general duty under Section 94 of the Water Industry Act 1991. It therefore includes sewerage pumping stations.

- Risk Management Authority (RMA) - As defined in the Flood and Water Management Act (2010) i.e. Lead Local Flood Authorities, Environment Agency, District or Borough Council, Internal Drainage Board, Highway Authority, Water Company.

- Other organisation – Refers to other organisations that have an interest or a responsibility for managing flooding and could include:
    - Public Authorities - Such as town council, parish council, Local Enterprise Partnerships (LEPs).
    - Not-for-profit organisations – Such as voluntary and charitable organisations such as Rivers Trusts, Wildlife Trusts, Canal and River Trust.
    - Developers

- Collaboration - means the involvement of one or more organisations in the co-creation or co-delivery of the action or measure that results in a flood risk reduction. The reduced risk of flooding from other sources (such as from watercourses or surface water runoff) must be demonstrated and reported.

i) Flood and Coastal Resilience Partnership Funding: Defra Policy Statement on an outcome-focused, partnership approach to funding flood risk management
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221094/pb13896-flood-coastal-resilience-policy.pdf

Outcome 8: Water always there

G07: Speed of response to visible leaks

Short definition

The time taken to fix customer reported significant visible leaks on Severn Trent Water's network.

Measurement

Days (1 d.p.).

Customer reported significant visible leaks are recorded in the company SAP system when received. Subsequent follow-on work, as a result of customer contact, are also monitored and tracked through SAP. The time to fix the leak is taken from the time of contact to the time the leak is fixed and reinstated, as documented in SAP.

The data recorded against this performance commitment will be assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

The definition of significant includes all work that allows immediate response or is covered under the immediate 2U notice (two hour urgent; council permission which permits us to commence work immediately). Therefore, by definition all other customer reported leaks are excluded, for example, in the event that the leak is near a gas main or a high voltage electricity cable and is not subject to the 2U notice and could take a number of months for permission to be granted.

This performance commitment only considers leaks on pipes for which Severn Trent Water has responsibility. This excludes service pipes (the pipes linking water mains to properties) and private water supply networks.

Any other information relating to the performance commitment

This performance commitment is a revision of our current performance commitment W-B3: Speed of response in repairing leaks, which measures the percentage of leaks, visible and detected, which are fixed within twenty-four hours. We recognise that our performance against the current measure has been below the targets outlined in our PR14 business plan. Furthermore, our ongoing customer research continues to demonstrate that our speed of response to visible leaks is important.

The original measure was designed to ensure we meet our customers' expectations when it comes to fixing visible leaks. It measures the speed of response to a trickling leak as equally important to that of a large burst, however, the consequences of the latter can be considerably more impactful than the former. To overcome this issue, we are proposing to adapt the measure slightly.

Furthermore, the PR19 proposed performance commitment will measure our response to customer reported significant visible leaks only, and not include leaks detected by Severn Trent Water as per the PR14 commitment.

We will be incentivised by our leakage performance commitment and target to ensure leaks detected by Severn Trent Water are dealt with in a timely manner. Hence focus in PR19 has been aligned to deal with customer concerns on visible leakage.

Full definition of the performance commitment

The average time taken to fix customer reported significant visible leaks on Severn Trent Water's network. In this definition, the term 'customer' is broadly used to include any member of the public notifying us of a leak on our network.

This performance commitment will measure the average time from when the leak is first reported until the time when reinstatement works after the leak have been completed.

The term 'significant' is used to include all work that allows immediate response or is covered under the immediate 2U notice. Only leaks where we are granted an immediate 2U notice by a council are within our control to fix immediately. We would be unfairly penalised against this performance commitment if we were to include all visible leaks as there would be a number of these where we would not be granted immediate permission to carry out repair and reinstatement work. 2U notices are generally granted to restore loss / stop loss of supply or unplanned interruption to services; or, to end or prevent damage to people and property and also includes dangerous defects. To this effect, leaks that could have a significant negative customer impact should be covered by the 2U notice in the majority of instances.

The aim of this performance commitment is to incentivise us to efficiently attend and fix all customer reported significant visible leaks. To do this we will measure the average time, in decimal days (1 d.p.), that it takes for us to inspect, fix and reinstate customer reported significant visible leaks. Below is an example of how we will calculate each leak duration from the time of customer contact to the time the leak is fixed and reinstated:

For a leak reported by a customer at 10:00 on Monday and repaired at 14:00 on Wednesday of the same week the number of decimal days is calculated as the number of hours from the time the leak is reported to the time the repair is finished divided by 24.

- In this case, this is 52 hours divided 24.
- The resulting decimal days is 2.2 (1.d.p)
- We will report to one decimal place

G08: Persistent low pressure

Short definition

The number of low pressure days experienced by properties which have exceeded the persistent low pressure threshold. The persistent low pressure threshold is more than 25 days of low pressure in a 5 year rolling period.

Measurement

Number (property days) (0 d.p).

Pressure loggers capture pressure data across the Severn Trent Water distribution network, with averaged 15 minute readings. The number of properties which experience low pressure is calculated based on the height of the property connection point to the water main in relation to the pressure in the network in that area.

This measure will be measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

Only low pressure days exceeding the persistent low pressure threshold will be counted (persistent threshold covers properties which have experienced more than 25 low pressure days within a 5 year rolling period). This ensures that this measure focuses on the more severe pressure issues in the network, and not the transient, or temporary issues.

The pressure breach must be greater than, or equal to, 1 hour in the day to be included against this measure. Any pressure loggers that average over a time period of 1 hour will require 2 readings of a pressure breach to qualify, whereas any pressure loggers that average over a time period of greater than 1 hour will only require one reading of a pressure breach.

One off incidents, including mains bursts, failures of company equipment, fire service usage and action by a third party, will not be included in this measure as this does not represent ongoing, persistent low pressure issues.

Any other information relating to the performance commitment

For AMP7, we are proposing two performance commitments with respect to low pressure:

1) Low Pressure Complaints, which aims to reduce poor supply complaints from customers. This largely covers the issue to temporary, transient or customer perception related low pressure concerns.

2) Persistent Low Pressure, which tackles the issue of long-term, persistent pressure issues.

The latter performance commitment is detailed here. This is a revision of our AMP6 performance commitment W-B7: Customers at risk of low pressure - which followed the methodology of the DG2 serviceability indicator[i].

During AMP6, we have found that the number of properties coming onto the low pressure register, and off again, within the same year, is significantly larger than the number of properties which remain on the register for over a year. The current measure gives the same weighting, or importance, to a property which has below regulatory pressure 6 days of the year, as a property which has below regulatory pressure 365 days of the year. As such, the AMP6 measure does not incentivise us to tackle the harder, more costly, but also, more persistent pressure problems. To address this, we have changed how we measure pressure breaches, so that properties are weighted by the number of days in a year that they experience below regulatory pressure. This will reprioritise the properties currently on our low pressure register, so that those suffering persistent low pressure will be tackled first.

Full definition of the performance commitment

This performance commitment measures the number of low pressure days experienced by properties which have breached the persistent low pressure threshold of more than 25 days of low pressure in a 5 year rolling period. The persistent low pressure threshold criteria was developed following the guidance from the DG2 Serviceability measure [ii], to maintain focus on the properties which suffer from persistent low pressure and not those which are experiencing a transient low pressure issue. As such, this measure will only include the days of pressure breaches of properties which have experienced a pressure breach more than 25 days in a 5-year period. The number of reported pressure days is the number of pressure breaches of those qualifying properties in the reporting year.

The reference level of service for pressure is a flow of 9 litres per minute at the customer's stop tap, at a pressure of 10 metres head (this applies to a single property[iii]). If it is not possible to take a pressure reading at the stop tap, we will take a reference pressure in the adjacent distribution main, which must be greater than or equal to 15 metres static head. If pressure falls below this level, it is a pressure breach.

The pressure at the property connection point must fall beneath the reference 15 metres static head for 1 or more hours for a property to be recorded as having a day of low pressure, and thus included against this measure.

The calculation for this performance commitment will be the number of low pressure days, which is equal to the number of properties multiplied by the number of days of low pressure experienced by each property. For example, if 2 properties have experienced 29 pressure breaches over the past 2 years, 2 of which were in year 1, and the subsequent 27 in year 2. The year 1 pressure breaches would not qualify the property to be included in this measure, so it would not contribute any low pressure days in that reporting year. In year 2, after 23 pressure breaches it will have met the low pressure threshold of 25 days. Therefore in year 2, all pressure breaches experienced by these two properties in that financial year, would be included, so that 2 properties, experiencing a total of 27 breaches in the year would equate to 54 low pressure property days for that reporting year (27 x 2 = 54).

i) Ofwat serviceability indicator definition. https://www.ofwat.gov.uk/wp-content/uploads/2015/11/pap_rsh_opa2004-05.pdf

ii) Ofwat persistent low pressure threshold criteria. https://www.ofwat.gov.uk/wp-content/uploads/2015/11/pap_rsh_opa2004-05.pdf

iii) Ofwat properties at risk of receiving low pressure guidance. https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Properties-at-risk-of-receiving-low-pressure.pdf

G09: Abstraction Incentive Mechanism (AIM)

Short definition

Reducing water abstraction at environmentally sensitive sites to prevent environmental deterioration.

Measurement

Megalitres (0 d.p.).

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Abstraction at each identified site at times when the groundwater trigger threshold has been crossed will be measured and compared against each of the identified baseline abstraction values. To calculate AIM performance for each site the following formula applies (as per Ofwat AIM guidelines[i.]):

AIM performance in Ml = (average daily abstraction during periods when groundwater level at or below the trigger threshold – baseline average daily abstraction during period when groundwater levels are at or below the trigger threshold) * length of period when flows are at or below the trigger threshold.

Performance will normalised using the following formula (as per Ofwat AIM guidelines[i.]):

Normalised AIM performance = AIM performance / (baseline average daily abstraction * length of period when groundwater levels are at or below the trigger threshold).

Mitigation / exceptions

No mitigations / exceptions – see full definition section regarding the additional checks applied when selecting AIM sites.

Any other information relating to the performance commitment

AIM is a new PR19 performance commitment for Severn Trent Water. It is a bespoke performance commitment but one where all companies need to include a version of it for PR19. Severn Trent Water has not previously adopted AIM because the impact of groundwater abstraction on surface water bodies is too complex to be addressed by flow gauging (measuring flow) on the surface water body due to the sandstone nature of our aquifers. Due to this complex groundwater – surface water interaction we are using groundwater trigger levels as opposed to surface water flow trigger levels.

Full definition of the performance commitment

Reducing water abstraction at environmentally sensitive sites to prevent environmental deterioration.

The performance commitment will measure the difference in megalitres between actual abstraction at our identified AIM sites during periods of time when the AIM threshold has been crossed against the set baseline daily average abstraction value. Operationally we will monitor and measure the abstraction from each of the identified sites on a daily basis when the trigger has been crossed to ensure we do not abstract more than the baseline daily average abstraction value. For the purposes of reporting we will calculate the final reported number for the Annual Performance Report using the formula provided in the measurement section (a negative number signifies an improved performance as average abstraction is less than the baseline).

In line with the Ofwat AIM guidelines[i.] we have removed certain abstraction sites from inclusion in AIM due to the risk to security of water supply. Furthermore, sources that have been identified through the WINEP prioritisation work, as per the AIM guidelines, that are 'compensation only' sources have been removed for use in AIM as these sources already have an agreement in place to support rivers during times of low flow. Finally, any source where there is an operational

dependency on blending requirements due to water quality have been removed for use in AIM. This is because inclusion of these sites would pose a risk to supply.

This performance commitment uses groundwater trigger levels at the identified sites rather than surface water flow trigger levels. To this effect, we will monitor identified observation boreholes that are close to the abstraction site and within the same groundwater management unit that the source abstracts from. Once the level in an observation borehole falls to below the trigger threshold then we will reduce our abstraction in line with the baseline average daily abstraction value that has been set for the identified site. The AIM calculation will work exactly the same as if the trigger level was a surface water flow.

The AIM sites that have been selected are included in the submission to Ofwat within the relevant business plan table.

i. Ofwat guidelines on the abstraction incentive mechanism (February 2016). https://www.ofwat.gov.uk/wp-content/uploads/2016/02/gud_pro20160226aim.pdf

G10: Resilient supplies

Short definition

The percentage of customers whose service to the tap can be restored within 24 hours of a single failure event in their normal supply route.

Measurement

Percentage (1 d.p.).

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Increases delivered through our capital investment programme will be evidenced by contract completion documentation for individual projects.

Increases delivered through operational response activity will be evidenced through an update to our Network Analysis used as part of the methodology to determine our end of AMP6 baseline percentage.

Mitigation / exceptions

The effect of any methodology changes will not be included or considered in the assessment of performance delivery. This means that the baseline percentage we set for the start of AMP7 will remain constant even if there are methodology changes – we will be measuring the incremental change from this baseline percentage. This is as per our PR14 W-B5 resilient supplies performance commitment.

Measuring only incremental change will protect the customer from outperformance payments being made for changes in methodology or errors which alter the baseline percentage without additional investment in AMP7.

This resilience capability is designed for *average conditions (demand and water treatment outage) in the event of single failure.

*average demand means we operate with normal levels of supply headroom

This measure will not cover maintaining supply in the event of extreme conditions such as:

- Peak demand (hot weather or freeze-thaw events)

- Multiple failure scenarios

- Drought

Note - Customers have indicated an acceptance of service interruption that are caused by reasons outside of our control, this type of event would fall into this category.

The dual streaming benefits delivered by our Birmingham Resilience scheme were explicitly excluded from the AMP6 performance commitment. For the avoidance of ambiguity, these benefits will be counted towards the end of AMP6 baseline percentage.

Any other information relating to the performance commitment

This is a revision of our PR14 W-B5 performance commitment which covered only the failure of customer's source of treated water. This proposed performance commitment is an improvement as it combines the two elements of a resilient water service; source of treated water resilience and network resilience.

For a customer to be considered resilient under the new performance commitment, we have to be capable of restoring a continuous supply to the customer's tap within 24 hours of the initial loss of supply.

Full definition of the performance commitment

A water supply we can restore to the tap within 24 hours of a customer suffering a supply interruption caused by either a failure in their primary source of treated water or the network.

This performance commitment relates solely to the increase in resilience capability. Actual performance against the capability is measured elsewhere, i.e. Supply Interruptions greater than or equal to three hours.

Our resilience capability as defined within this PC is designed to cover an event under normal operating conditions, i.e. average demand and average water treatment work outage.

This measure will not cover capability to maintain supply in the event of extreme conditions such as:

- Peak demand (hot weather or freeze-thaw events)

- Multiple failure scenarios

- Drought

Details on key terminology are as follows:

Primary source of treated water

The surface water treatment works, groundwater treatment works or bulk import from another water company used to supply customers on a day to day basis.

Network

The aqueduct, trunk main, distribution main and any ancillary equipment forming the normal supply route to deliver treated water to the customers tap.

Methods of reducing risk

Our proposals are fully aligned with the four components of resilience published by the Cabinet Office '*Keeping the Country Running: Natural Hazards and Infrastructure'* in October 2011[i].

Our methods of risk reduction consider these four components as we seek to deploy the most appropriate, cost beneficial solutions to attaining our goal of a resilient water supply for all our customers.

Source Resilience - a resilient source of treated water deployable within the required timescale

Sufficient network connectivity to allow a second source of treated water to be delivered

OR

Primary source of treated water which is dual streamed (and therefore has no single points of failure which could cause a total loss of output)

For populations supplied by our largest WTW's, these two combine to provide a resilient source of treated water, e.g. [REDACTED] at the end of AMP6 following completion of our [REDACTED] scheme

OR

Sustainable tankering operation

Network Resilience - a resilient network deployable within the required timescale

Network failures forming part of the normal supply route can be repaired

OR

Sufficient network connectivity to allow the primary source of treated water to be delivered in the event of a network failure

OR

Sustainable tankering operation

The ability to repair network failures is measured using a repair time model based on location analysis and a standard set of variables which have been aligned to historical supply interruptions data. This Network Analysis will be rerun on the updated model at the end of AMP7 to demonstrate the benefit of each planned intervention.

A sustainable tankering operation has been assessed at 1,500 properties for a network failure, and 2,500 properties for a failure of a treated source of water.

The required timescale for both components is defined as the time available to either repair an asset failure or deploy an alternative means of providing water to the customer's tap to avoid a supply interruption in excess of 24 hours. In practical terms, the timescale is based on the available network storage time plus 24 hours.

Our decision to use 24 hours as the criteria for the new performance commitment came out of detailed customer research undertaken to improve our understanding of customer's views on disruptive events.

Whilst customers see short to medium term supply interruptions (up to a day) as inconvenient, they are considered manageable and to some extent acceptable. Supply interruptions exceeding 24 hours are seen as unacceptable due to the potential far reaching impacts on customers' everyday lives.

i) Keeping the country running: natural hazards and infrastructure. A guide to improving the resilience of critical infrastructure and essential services. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/61342/natural-hazards-infrastructure.pdf

G11: Resolution of low pressure complaints

Short definition

The percentage of customers who report a low pressure or poor supply issue and have their complaint resolved without having to contact us for a second time.

Measurement

Percentage (1 d.p.).

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Complaints from customers, with regards to poor supply, are recorded in SAP at the time the contact is received. The notification in SAP is classified immediately based on the information provided by the customer. The percentage reported is the number of unique first time contacts divided by the total number of low pressure calls (includes repeats) received multiplied by 100 (if the second contact is received during the subsequent financial year but falls outside the 'opportunity' timeframe (defined later in this definition) then this will be counted in the numbers of the financial year in which the repeat contact falls. The initial contact is counted in the previous financial year).

Mitigation / exceptions

Repeat contacts can only be counted as a second complaint if the contact occurs after Severn Trent Water have had the opportunity to visit the customer. The 'opportunity' timeframe has been defined as the timescale up to the first appointment as agreed with the customer.

Contacts that occur during a supply interruption should always count as a first time contact.

Any other information relating to the performance commitment

This is a new performance commitment for PR19, and is complemented by our other performance commitment regarding low pressure – Persistent Low Pressure. Customer research for PR19 revealed that pressure issues were the most commonly experienced service failure. This was not represented by any of our PR14 performance commitments. The aim of this measure is to ensure we are adequately investigating and addressing our customers concerns, and issues, regarding low pressure and poor supply.

Full definition of the performance commitment

This performance commitment measures the percentage of all customer poor supply or low pressure complaints which are resolved in line with our regulatory commitment, without a customer having to contact us for a second time to re-raise the issue. When customers call in to report a poor supply or low pressure issue, it is documented in the Customer Contact Centre as a 'poor supply' contact, with the code WSPS. If the customer contacts us a second time, with a poor supply or low pressure issue, this will count against this performance commitment unless the contact occurs before we have had the opportunity to visit the customer (the 'opportunity' timeframe has been defined as when we agree the first appointment with the customer).

If the contact occurs during a supply interruption (for example caused by a burst main), this will always be counted as a first time contact as it is indicative of a new (temporary) network issue rather than an unresolved low pressure problem. If the event is closed and the customer contacts us again, this will count as a second complaint.

The aim of the measure is to improve our first time resolution of customer low pressure or poor supply complaints – ongoing low pressure problems are covered by our persistent low pressure performance commitment.

G12: Increasing water supply capacity

Short definition

The increase in sustainable water supply capacity needed to maintain our projected supply / demand balance (SDB).

This performance commitment is specifically linked to the supply demand strategic investment submission.

Measurement

Megalitres per day (Ml/d) (0 d.p.)

Measured, assured and reported at the end of 2023/24 to confirm delivery milestone, with the additional capacity measured, assured and reported at the end of 2025/26.

Mitigation / exceptions

No mitigations / exceptions.

Any other information relating to the performance commitment

This new Performance Commitment measures new supply added rather than total available capacity or overall SDB so that we deliver the increases required as stated in our Water Resource Management Plan (WRMP) (adjusted in line with our uncertainty mechanism) which has been developed looking at total available capacity as well as the SDB.

Our SDB plan is based on the justification of need as set out in our WRMP, and the supply / demand solutions proposed in that plan. If our WRMP is rejected or challenged by the Secretary of State then we will need to align our delivery plan with the recommendations, however this will only affect the target proposed rather than the definition of this performance commitment.

Full definition of the performance commitment

The increase in sustainable water supply capacity provided by the water abstraction, treatment and strategic distribution schemes needed to maintain our projected end AMP8 supply / demand balance (SDB). These will cover the water supply sources, treatment and distribution schemes needed to replace unsustainable sources of abstraction (i.e. our abstraction sites that are deemed to be causing environmental harm) and maintain the long term supply and demand balance. The capacity will be measured at a water resource zone level, based on the supply / demand needs as described in our WRMP (adjusted in line with our uncertainty mechanism). The delivery progress will be assessed in 2023/24, and the final additional capacity will be measured in 2025/26.

G13: Security – Reducing the risks to our sites

Short definition

The number of our Category 2 sites brought up to a security standard to ensure compliance with the Protective Security Guidelines (PSG) (2020) as defined by Defra.

Measurement

This measures covers the equivalent number (2 d.p.) of Category 2 sites that have met the Protective Security Guidelines standard as defined by Defra.

We will assess compliance by comparing work executed on each of our relevant sites against the requirements of the Protective Security Guidelines. This will cover each type of site, within the scope of our security cost adjustment claim namely; Distribution Service Reservoirs, Surface Water Treatment Works and Sewage Treatment Works.

The completed work will be signed off internally by Severn Trent Water's security team and the reported number will be assured using our external auditor. Our performance will also be shared with Ofwat in our performance commentary using a similar approach we currently have for our PR14 W-B11 and W-B12 performance commitments.

The outcome will be assessed at the end of AMP7 (2025).

Mitigation / exceptions

No mitigation or exceptions.

Any other information relating to the performance commitment

This is a new performance commitment for AMP7 and has been defined to hold us to account on our security cost adjustment claim.

Activities will include compliance of the Protective Security Guidelines delivered via a risk based approach for all Category 2 sites. These could range from enhancing CCTV, adopting thermal imaging, electronic access keys, to physical hardening. Each improvement activity is not counted separately, only once the site has been brought up to the required security standard will it count towards this performance commitment. The Defra PSG is an official sensitive document and hence will not be published.

Full definition of the performance commitment

We will improve security at our Category 2 Distribution Service Reservoirs, Surface Water Treatment Works and Sewage Treatment Works sites to ensure compliance with the Protective Security Guidelines (2020) outlined by Defra. This work will enhance the service customers receive as a result of improved risk mitigation against the prevailing threat environment.

G14: Number of water meters installed

Short definition

The total number of selective and optant meters installed.

Measurement

Number of water meters (0 d.p.).

The number of customer water meters installed is measured on an annual basis each financial year (1st April – 31st March) through our metering programme.

Where a customer already has a water meter but the water meter is being replaced this will not count towards our target. It will only be the number of first time customer water meters installed.

Mitigation / exceptions

No mitigation / exceptions.

Any other information relating to the performance commitment

This is a new Performance Commitment for PR19. It is specifically linked to one of the special cost factors that we are submitting for PR19. This is proposed as an outperformance payment and underperformance payment PC with the base target being delivery of the directly funded element (with underperformance payment applied if not delivered, and outperformance payment for meters delivered above the base funded volume).

Full definition of the performance commitment

This performance commitment will measure the number of first time water meters that are installed at customer properties each year. We believe that there are wider demand management benefits that will result from increasing metering coverage. In particular, we view the need for increased meter coverage to be a crucial enabler to delivering our very ambitious leakage reduction strategy, reducing demand for water and lowering per capita consumption.

By increasing the number of metered properties on our network, we will have greater visibility of changing water demand patterns and better control of our network performance. This will make leaks easier to detect, and will mean we are able to deploy leakage repair more effectively and efficiently. We will be able to target water efficiency advice to the customers who use the most water. A further advantage gained from our roll out of metering at the customer boundary will be the identification of remaining lead pipework both in our network and customers supply pipes, providing the opportunity to advise customers as appropriate.

G15: Water trading - interconnector

Short definition

The completion of preparatory work on feasibility studies and outline design to enable a third party to develop detailed design and construct a viable (physically and commercially) regional transfer via a water interconnector.

Measurement

This is an input measure with successful completion of the preparatory work being measured by proving we are in receipt of an independent assurance report from the assigned third party carrying out the feasibility studies and outline design.

Mitigation / exceptions

No mitigation / exceptions.

Any other information relating to the performance commitment

This is a real option mechanism. The target is set to zero to ensure no activity is undertaken without the trigger being exercised. Further detail on the design is set out in Appendix A8 (real option mechanism chapter).

Full definition of the performance commitment

Our water trading real option mechanism is designed to support a more robust and thorough assessment of a River Severn to River Thames transfer solution. This includes undertaking feasibility studies and improving the accuracy of the cost estimate so that Thames Water and Ofwat can better assess which solution is in the best interests of customers. It also includes looking at commercial and operational arrangements given the unique nature of this transfer.

Real option issues arise in at least two different ways when investment in these activities is being considered:

- It has the potential to materially increase option values, by improving the information base against which future investment decisions (in relation to these options and others) will be made, and reducing the lead times that may be associated with proceeding with a number of options. That is, undertaking these activities has the potential to materially increase the likelihood of better decisions being made in the future in a context where those decisions may have very major economic consequences.
- The value of undertaking these activities is itself highly uncertain, and that uncertainty may diminish materially during AMP7. Importantly, the value of this further work is likely to be heavily dependent on a range of decisions that different parties will take during AMP7 that will affect both demand and supply-side prospects given the interdependencies involved.

This means that there may be a strong case for proceeding with more preparatory work during AMP7, and if that emerges, then there may be significant benefits associated with being able to respond in an effective and timely manner, not least because the case for others to engage in related work may itself be influenced by our responsiveness. This highlights a potentially serious coordination problem that could arise in this context: the effects of a lack of timely responsiveness from one party can be magnified as it can increase the likelihood of delay from others. Overall progress may be stifled even where the case for further preparations is strong. However, the strong case for proceeding with further investment has not yet been made. Given this, it does not seem appropriate for customers to be asked to contribute to this work on the basis that it may happen: our customer research has strongly pointed against such an approach, and to customers wanting us to explore intermediate possibilities. In line with this, we consider that it is appropriate to put in place a real option mechanism to address this issue.

Given the nature of the work involved (planning, feasibility) and the challenges this poses for assessment (in a context where the ultimate consequences of decisions may not arise for many years, and even then may remain unclear), there

look to be significant risks associated with an approach that seeks to apply some kind of incentive rate. That is, such an approach may have unwanted adverse consequences that only become apparent (potentially) many years in the future.

In recognition of this, we propose that maximum cost of £40m, reflecting 5% of the projected £800m - £1bn. This estimate is considerably more than typical unit cost for new water sources given the wholly different nature of the work being undertaken. It aligns with the early pipeline only cost of £500 - £700m developed with a third party and is in line with feasibility for the Birmingham Resilience Scheme. We would provide assurance about the efficiency of the costs through the following checks:

- our initial schedule of expected costs would provide a benchmark against which identified costs could be compared;
- relevant identified costs would be subject to appropriate third party assurance which could then be reviewed by our Water Forum;
- our identified cost levels and contracting processes would prove a basis for Ofwat to review the appropriateness of the arrangements at PR24.

We summarise the parameters of our proposed real option mechanism below:

Parameter	Water transfer options uncertainty.
Outcome	Completion of preparatory work on feasibility studies and outline design to enable a third party to develop detailed design and construct a viable (physically and commercially) regional transfer via a water interconnector.
Cost rate	Capped at £40m, with costs subject to independent assurance at the outset (proposal stage) and verification of successful delivery (completion).
Trigger	Ofwat approval of trigger having been hit and/or of our approach to trigger assessment.
Cost recovery	100% RCV.
Maximum investment	£40m.

Outcome 9: Good to drink

H02: Water quality complaints

Short definition

The number of consumer complaints about the appearance, taste or odour of their drinking water quality.

Measurement

Number (0 d.p.).

Consumer complaints are logged when they are received. They are classified following DWI guidance[i]. according to the information provided by the consumer.

This performance commitment is measured, assured and reported on an annual basis each calendar year (i.e. 1st January – 31st December).

Mitigation / exceptions

Complaints reported during an incident notifiable to the Drinking Water Inspectorate are excluded. During an event, e.g. a trunk main burst, the number of water quality complaints can increase exponentially in an area, due to the significant disturbance to the network. By excluding these complaints, this performance commitment is a measure of asset health, and asset management, and enables us to target areas of the network accordingly.

Repeat complaints, related to the same, unresolved issue, are excluded, following DWI guidance[i]. If the water quality issue is resolved, and a new issue is raised, then the water quality complaint is included as a new complaint.

Only complaints related to the appearance or taste and odour of their water are included in this measure. These are the most prevalent complaints, and thus by targeting these complaints, we can tackle the most common issues experienced by our consumers.

Social media contacts are not included in the methods of communication as per the current DWI guidance. The target will be set with this exclusion. If the DWI guidance changes in the future then either the target will have to change to represent this inclusion, or the target will remain constant and we will report social media contacts separately to the target.

Any other information relating to the performance commitment

This is a continuation of the current AMP6 measure. We have retained this measure in its entirety, as over the past five years we have found that it drives the right behaviours, and improves the service to our customers. PR19 research has demonstrated that the appearance, taste and odour of drinking water are still important issues to our consumers, and this is an area of service we can still improve upon.

The number of water quality complaints about discolouration of drinking water, was an optional Asset Health performance commitment proposed by Ofwat, in the Asset Health long list in Appendix 2[ii]. Discolouration is included in this performance commitment, but we have maintained the broader scope of taste and odour and other appearance complaints as well. This is a result of our customer research, which indicates that customer complaints regarding the taste and odour of their drinking water are more important compared to complaints about the appearance.

Full definition of the performance commitment

The number of consumer complaints about the appearance, taste or odour of their drinking water quality.

For this performance commitment we have specified a 'consumer' complaint about drinking water quality, not a 'customer' complaint. We recognise that many people may work, or be visiting the area, who are not necessarily customers, but are consumers of our drinking water. As such, any complaints received by any person consuming our drinking water are included in this measure. The complaint can be made to Severn Trent Water through a number of different mediums, including phone, letter, email, in person, or website request form.

This performance commitment measure is a sub-component of the total number of water quality complaints reported in the DWI annual return. All water quality consumer complaints are required to be recorded with a complaint type in accordance with DWI guidance[i]. This is subject to change by the DWI but currently there are five categories of consumer contact; (1) a consumer enquiry, (2) a consumer contact about the appearance of drinking water, (3) a consumer contact about the taste and odour of drinking water, (4) a consumer contact about illness, and (5) a consumer contact about a water quality concern. For this measure we include only contacts from categories 2 and 3, to allow us to target the most common water quality issues that consumers are experiencing. The DWI guidance includes details on how repeat complaints about the same issue should be categorised and the exclusion of incident-related contacts, which are reported to the DWI separately, in and 3 day or 20 day incident report.

i) DWI complaint classification guidance. http://www.dwi.gov.uk/stakeholders/information-letters/2006/01_2006.pdf

ii) Ofwat Asset Health long list. https://www.ofwat.gov.uk/wp-content/uploads/2017/07/Appendix-2-Outcomes2.pdf

H03: Farming for Water

Short definition

The number of catchment schemes where we have improved control of raw water quality risk from specific pollutants by engaging with farmers and changing farming practices.

Improvements in control are defined as changes in the Effectiveness of Control (EoC) classifications within the Catchment Risk Assessment (CRA) of our Drinking Water Safety Plan. There are three EoC classifications (Effective/Partially Effective/Ineffective). These will be assigned according to changes in Key Performance Indicators (KPIs) that are specific to each catchment scheme. These KPIs will cover percentage reduction in loading into raw water supply / intake (catchment outlet) for:

- Metaldehyde
- Pesticides
- Nitrate
- Cryptosporidium

Measurement

Number (0 d.p.).

Number of catchment schemes meeting end of AMP7 target KPIs and resulting in an improved classification of Effectiveness of Control's (EoCs).

In order to track progress throughout the AMP, annual and monthly targets for each KPI will be set.

Assured on annual basis each financial year (i.e. 1st April - 31st March) with end of AMP reporting (in 2024/2025).

The nature of this performance commitment and catchment management means that we need to work with third parties e.g. farmers. The ability of farmers to undertake mitigation options maybe weather and cropping dependant. To mitigate this we are recommending that the performance commitment is an end of AMP deliverable to allow for variations in weather and crop calendars.

Mitigation / exceptions

No mitigation / exceptions.

Any other information relating to the performance commitment

This is a revision of our Catchment Management AMP6 performance commitment. As a consequence KPIs have been revised to be output related (i.e. percentage reduction in loading into raw water supply / intake) rather than input related (i.e. number of farmers engaged with). Hence, our 2019/20 baseline has been defined as 0.

Please note we are still developing and testing the tools to enable us to measure the success of catchment schemes through the output measure described.

Full definition of the performance commitment

Raw water quality is important when it comes to providing water that is 'good to drink' (as per our outcome). Farming is a major source of raw water pollutants and it is important to reduce the risk of these pollutants at the source by working with farmers.

This performance commitment measures the number of catchment schemes where we have improved control of raw water quality risk from specific pollutants as a result of changing farming practices and engagement. Pollutants of concern are:

- Metaldehyde
- Pesticides
- Nitrate
- Cryptosporidium

KPIs are still in development, but they will be based on a percentage reduction in specific pollution loadings (e.g. nitrate, metaldehyde, pesticides) in each catchment. Target reductions at the catchment outlet required to safe guard raw water quality will be derived from modelled baselines. The success of catchment schemes will be measured according to the modelled impact of mitigation actions taken by farms. These will be captured on a field scale and scaled up to give a reduction load for each water quality parameter of concern for each specific catchment.

The model FARMSCOPER is being used to calculate target reductions and catchment/water quality parameter loadings. FARMSCOPER was developed by ADAS (agricultural and environmental consultancy) for DEFRA to provide a framework for the assessment of the potential to reduce agricultural emissions of pollutants to air and water at the farm scale. It is now widely used by NGOs, Environment Agency, Natural England and academia. FARMSCOPER represents the integration of a substantial body of agricultural research, data and component models that has previously been used in the development and analysis of government policy. FARMSCOPER and its many component models are published in the scientific literature. This provides evidence of peer review and scientific pedigree.

H04: Protecting our Schools from Lead

Short definition

The number of schools and nurseries in our region where we have taken action to minimise the risk of lead in their supply of drinking water.

Measurement

Number (0 d.p.).

Measured, assured and reported on an annual basis each financial year (i.e. 1st April – 31st March).

Mitigation / exceptions

If the school or nursery chooses not to replace their service pipe/lead plumbing or lead solder, then we will seek to provide or bring to notice information from public domain to schools on how to reduce the risk of lead being present in their water supply, and replace the lead communication pipe (if present). If we have met these criteria we will count this as fulfilling our commitment.

Any other information relating to the performance commitment

This is a new performance commitment for PR19. Research conducted for PR19 has revealed that customers view lead as an important issue. Within the next decade we anticipate the prescribed concentration value (the maximum legal concentration of a substance in drinking water) of lead to decrease, following EU legislation. We are proposing this measure to start to proactively find and replace all lead pipes in our network in a risk based manner.

Full definition of the performance commitment

The number of schools and nurseries in our region where we have taken action to minimise the risk of lead in their supply of drinking water.

Lead was used widely until the 1970's to link water mains in the road to properties. The pipe which links the water main in the street to the boundary of the property, is called the communication pipe. The pipe which leads from the boundary of the property to the internal stop tap, is called the service pipe[i]. When water in these pipes is stagnant, lead can dissolve into the water supply. Lead can also be found with the internal plumbing of buildings in both pipes and soldered joints. Lead is a cumulative toxicant which has proven negative health consequences, and is especially harmful to young children (for internationally agreed health based knowledge about lead, please see the World Health organisation website regarding lead[ii].). Due to the higher risk to children, we have elected to initially target our lead replacement strategy at schools and nurseries and will use our risk based tools to prioritise areas where they are more likely to have exposure to lead.

This performance commitment measures the number of schools and nurseries where we have proactively taken action to minimise the risk of lead to the school or nursery, through sample survey or through pipe replacement if required.

To assure their water supply, each school and nursery will have a lead sample taken, at larger schools we will take multiple samples to better understand the risk, this is to measure the concentration of lead at the tap(s) primarily used for drinking and cooking. The detection of any lead in drinking water can be indicative of lead pipes or solder in the supplying network. A check will also be made for the visible presence of lead pipes at the point of sampling

If a positive lead detection is made (greater than limit of detection), Severn Trent Water will carry out inspections of the communication and service pipe to determine if they are made of lead. If the communication pipe is made of lead it will be replaced by Severn Trent Water according to legislation[iii] up to the boundary stop tap. We will also take samples from additional taps within the building and carry out an inspection to check for sources of lead such as solder and internal plumbing lead pipes.

If a lead service pipe, lead internal plumbing or the presence of lead solder is found we will work in partnership with the Health Authority and school/nursery to identify the most appropriate course of action.

Following on from any improvement activity (communication pipe replacement, service pipe replacement or internal plumbing modifications) subsequent water samples will be taken to ensure that lead concentrations have fallen below detection. This process has been summarised in appendix 1.

The following outlines how we will measure success against our performance commitment:

1. If a school/nursery is sampled and the lead concentration is below the limit of detection, we will consider our commitment fulfilled.

2. If a school/nursery is sampled, lead is detected and an inspection is carried out with the replacement of any lead communication pipe, and this resolves the problem we would consider our commitment fulfilled. If the replacement of the lead communication pipe does not resolve the lead detection, and we carry out further sampling and inspections to inform the risk of any lead on the customer's assets, the outputs of which are shared with the Health Authority and school/nursery to drive improvement we consider our commitment fulfilled.

3. If a school/nursery is sampled, lead is detected and we fail to either, inspect, replace the lead communication pipe or seek to provide or bring to notice information from public domain to schools on how the school/nursery could reduce its risk, we would not consider our commitment fulfilled.

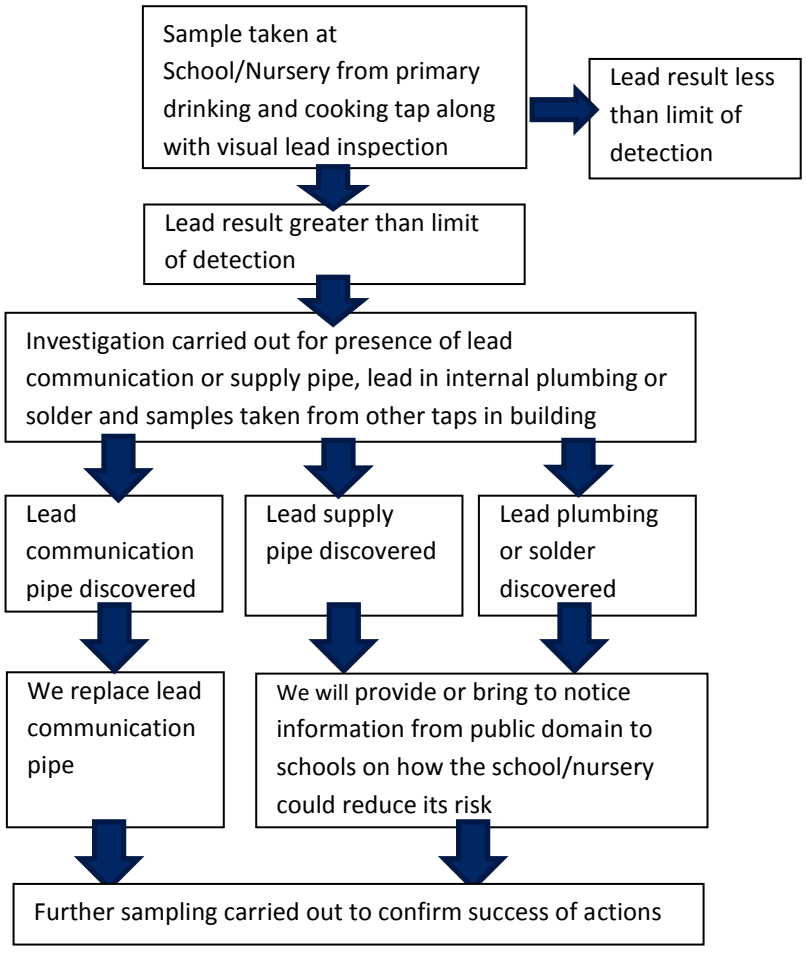
i. Ofwat supply pipes information. https://www.ofwat.gov.uk/households/supply-and-standards/supply-pipes/

ii. World Health Organisation lead fact sheet. http://www.who.int/mediacentre/factsheets/fs379/en/

iii. Water Supply (Water Quality) Regulations 2016. http://www.legislation.gov.uk/uksi/2016/614/regulation/30/made

Appendix 1:

Process



Part 3 Rationale for Target Setting

This section of the appendix provides supporting detail on the rationale we have adopted to pledge stretching targets for 41 commitments we are proposing within our plan, aligned with customer views, comparative and historical data and in accordance with the six approaches outlined by Ofwat.

We have not covered the water trading - interconnector in this Appendix. This is because this measure is a real option mechanism designed to support the development of an interconnector without creating unnecessary pressure on bills. We consider our approach to the interconnector is consistent with the joint letter from Ofwat, Defra, EA and DWI to promote projects on transfers. Further information on this mechanism can be found in Appendix A4 and A8.

We have presented our rationale for targets based on the Outcomes within which the performance commitment is placed, ensuring a clear link between outcomes - commitments - targets.

1. Outcome: Good to drink

In this section we summarise the performance commitments and associated improvements we are proposing to deliver for the outcome Good to drink. Providing a wholesome supply of water for our customers to enjoy every day, is at the very heart of what we do. It is our customers' most fundamental need of us. To keep our water good to drink we need to protect our water sources from pollution, carefully treat it, monitor (and manage) risks, and employ an expert workforce who are passionate about the quality of our product.

We entered the current five year period (2015-20) with a challenging track record – we have not always met our obligations (we voluntarily returned money to our customers via a shortfall in relation to the asset health of our treatment works) - and recognised we needed to do more to improve. In our 2015-20 plan we began a long term programme of transformation to improve water quality.

Our AMP7 plan continues that transformation. We'll build on the foundations we've laid – the benefits of which we are starting to see in improvements this year and forecast will continue to the end of the AMP – and will make substantial improvements against the industry's new compliance measure (CRI).

The outcome good to drink is underpinned by four performance commitments.

Performance commitments for the outcome Good to drink

Good to drink		4 PCs
Mandated	Water quality compliance (CRI)	
Retained/Revised	Water quality complaints	Farming for Water
New	Protecting our schools from lead	
Rationale	Challenged by the DWI to consider our approach to lead. Customer research shows an expectation that there is no risk of lead in the water Legal requirements expected to tighten in future - we think it's important to start delivering higher standards now, particularly for those at most risk so we can develop more innovative solutions for the future	

A summary of the improvements we will be pledging for AMP7 is as below:

Proposed Improvements for the outcome Good to drink

PC	Unit	Forecast (2019/20)	Target 2024/25	Improvement
Water quality compliance (CRI)	Index	7	0	Full compliance
Water quality complaints	Number	10,011	9,500	5%
Farming for Water	Number	0	16	16 catchments
Protecting our schools from lead	Number	0	500	500 schools/nurseries

In the following sections, we summarise each performance commitment and our rationale for improvements we are proposing to deliver. Each performance commitment covers a:

- description of where the PC sits in our performance framework;
- description of regulatory expectations where relevant;
- customer views on the PC;
- historical evidence where possible;
- comparative information where possible;
- and our rationale for targets based on the six approaches outlined by Ofwat

1.1. Water quality compliance - CRI (H01)

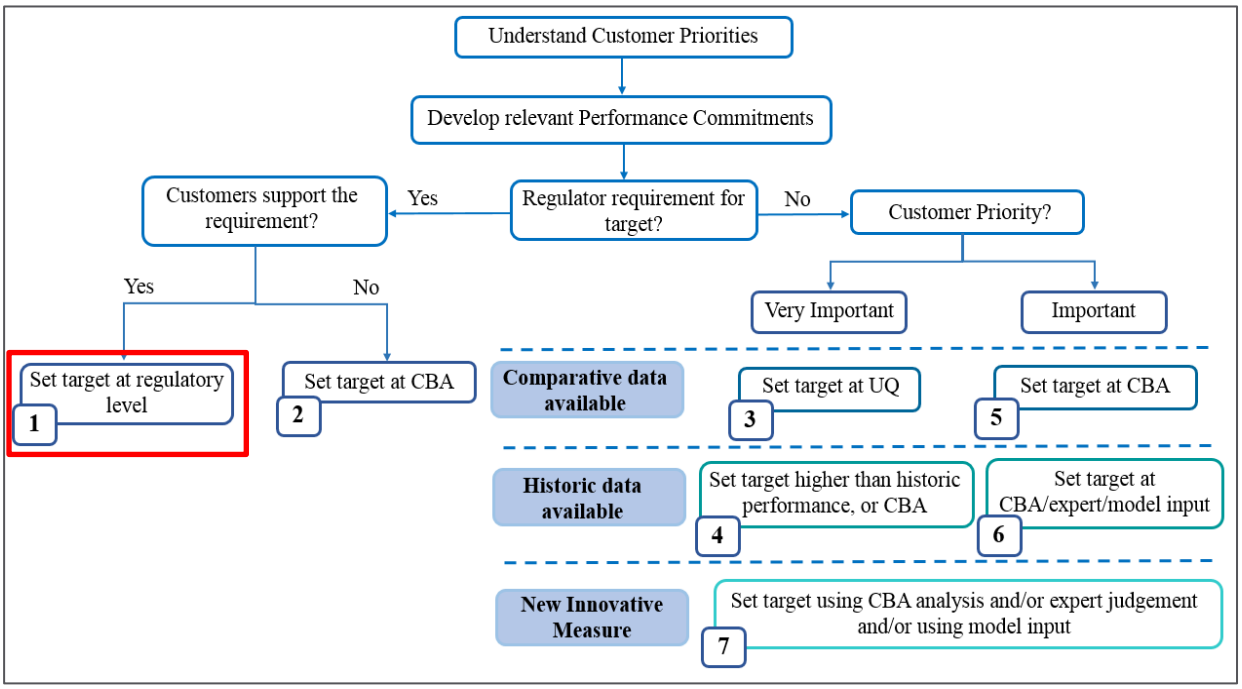
Over the next five years, while the standards of drinking water quality are not changing, the way we will be assessed by the Drinking Water Inspectorate (DWI) is. The Compliance Risk Index (CRI) is a new industry wide comparative measure of compliance and confidence in a company's ability to achieve water quality standards.

We have set our target at 0, with a deadband at 3.62, which represents a 62% improvement on our current performance and a 49% improvement on our best ever historic performance.

1.1.1. Position in the framework

CRI was developed by the DWI based on regulatory compliance to replace the current Mean Zonal Compliance (MZC). CRI is a measure of the risk arising from treated water compliance failures. It is comprised of separate risk indices for failures recorded at customer taps, at water treatment works (WTW) and at service reservoirs (DSR). It also considers the inherent risk associated with the type of failure and how companies deal with the incident. The sum of these, normalised to the company population served, total volume of water supplied, and total service reservoir capacity, respectively, forms the amalgamated overall CRI score.

As a compliance measure, CRI belongs to cohort 1 given there is a regulatory expectation to achieve full compliance.



Location of the performance commitment in the framework

1.1.2 Regulatory guidance

Ofwat has issued guidance, supported by the DWI, on CRI targets in its Water 2020 Methodology Document, December 2017.

"This is because CRI is a measure of water quality compliance and the performance commitment level should be set at zero. In addition, we recognise that CRI is a new measure and intended to be a more demanding metric of water quality compliance than its predecessor. Companies can take this into account when proposing any penalty deadbands." – source Ofwat Methodology.

While our objective is always to be fully compliant, as a more challenging measure than the current equivalent it is realistic to expect that over the next few AMPs there will need to be a period of improvement. As recognised by Ofwat and the DWI, we are proposing an appropriate dead band.

1.1.3 Customer views

Our research re-affirms that customers expect drinking water quality standards will be met. Customers view their supply of clean, safe drinking water as the core service we provide and as such there is no evidence to suggest we should depart from regulatory expectations.

1.1.4 Historical performance

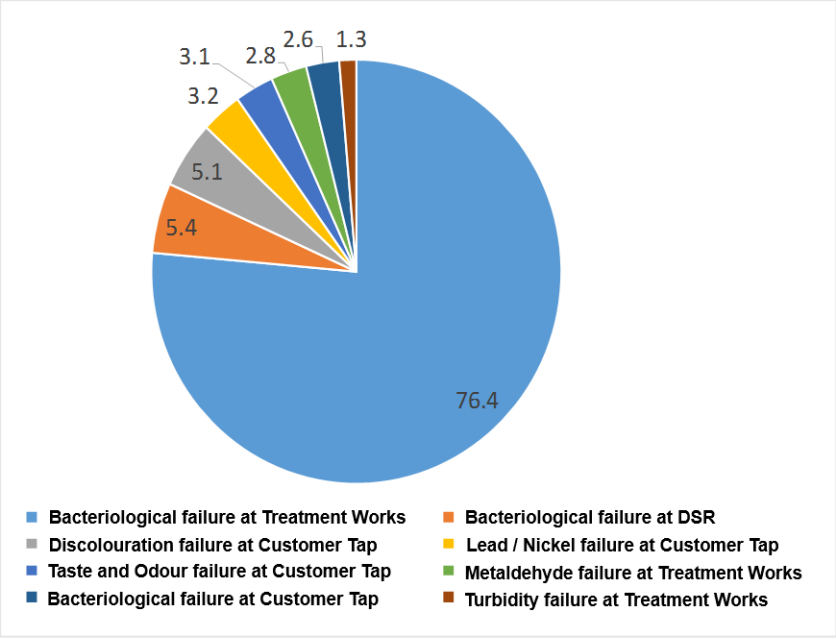
CRI will serve as a replacement for the current MZC, for which we have historic data, and also encompasses Severn Trent's bespoke AMP6 performance commitment **W-A3** – Number of sites with coliform failures.

CRI is designed to be more risk-driven than existing compliance measures, and by its nature will be more demanding to deliver - driving companies to consistently improve on and provide better protection for our customers. The DWI has back-calculated our CRI score over the past three years, based on recorded failures and their assessment. Since 2014 our best ever performance has been 7.12 and our average over the last four years of performance is 10.14. This is illustrated in the table below. (Please note data from 2018-2019 is an internal forecast, it is not from the DWI).

CRI Historic performance for Severn Trent

Year	2014	2015	2016	2017	2018	2019
CRI	14.4	9.6	7.1	9.4	7.0	7.0

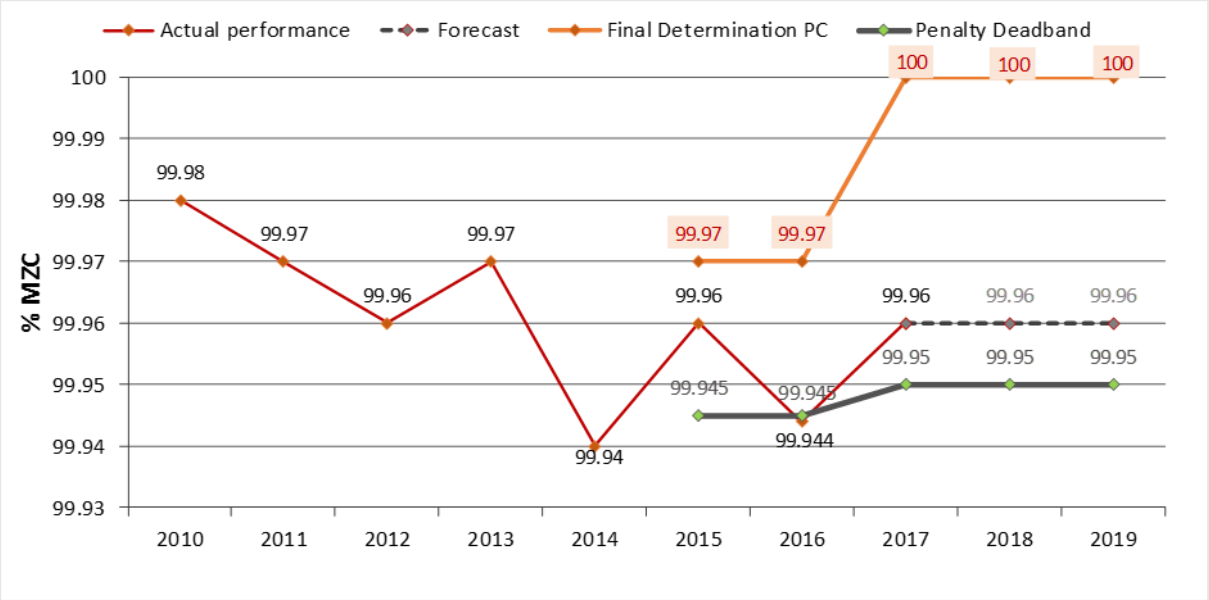
The breakdown of this CRI score between the three areas of failure (WTW, DSR, distribution network) is shown to be relatively consistent, with the vast majority caused by coliform failures at water treatment works (see figure below). The next largest contributor are regulatory failures in distribution service reservoirs.



CRI breakdown (%) by failure type for 2017

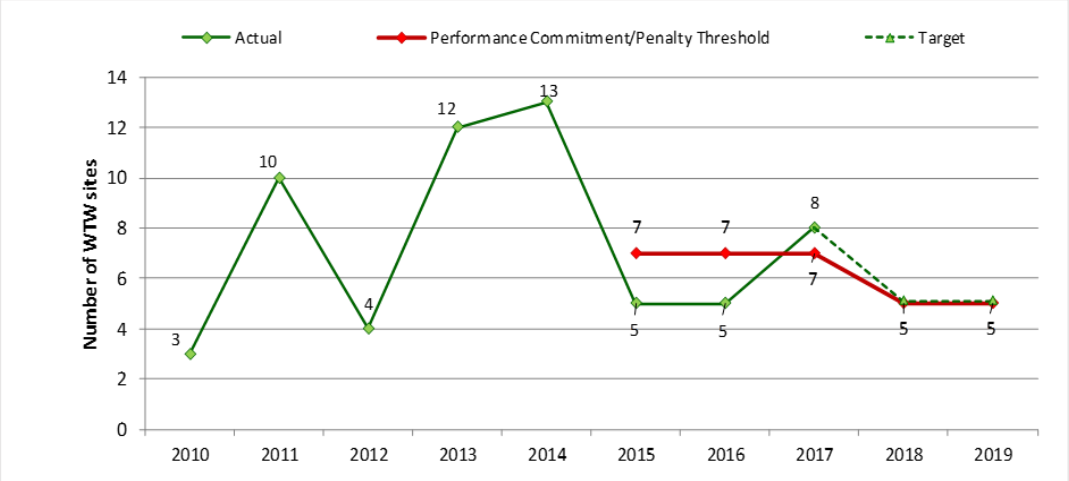
Through our transformation programme and additional investment, we are working hard this AMP to complete these "all sites" undertakings and actions. Our primary focus for the rest of the AMP, to get us in better shape for CRI, is preventing coliform failures at DSRs and WTWs through improvements to ingress protection and operational tasks. Based on the aforementioned improvements, our forecast 2020 baseline performance for CRI is 7.

Our current MZC target is 100% and our performance has averaged between 99.94 and 99.96 this AMP (and slightly higher in previous AMPs; see figure below). In 2017 we delivered a 25% reduction in total sample failures, with focused efforts on improved phosphate control and increased mains cleaning. The main failures impacting our performance are taste and odour, iron, lead and pesticides, which we plan to improve in AMP6 and AMP7 through continued mains flushing, and improved catchment management. These improvements will contribute towards reduced risk within the distribution network, which will be reflected in that part of the CRI score.



Compliance with drinking water quality (MZC)

At the end of AMP5, Severn Trent was the only company for which water non-infrastructure was classed as 'deteriorating' by Ofwat, causing us to accelerate planned investment for AMP6. We also improved the risk processes around our Drinking Water Safety Plan (DWSP) to better target our investment. The work carried out included UV treatment at a number of groundwater sites, and rapid gravity filter, coagulation and clarification refurbishments at a number of water treatment works. As a result, in AMP6 we have made significant improvements, however, further improvements need to be made to succeed in CRI.

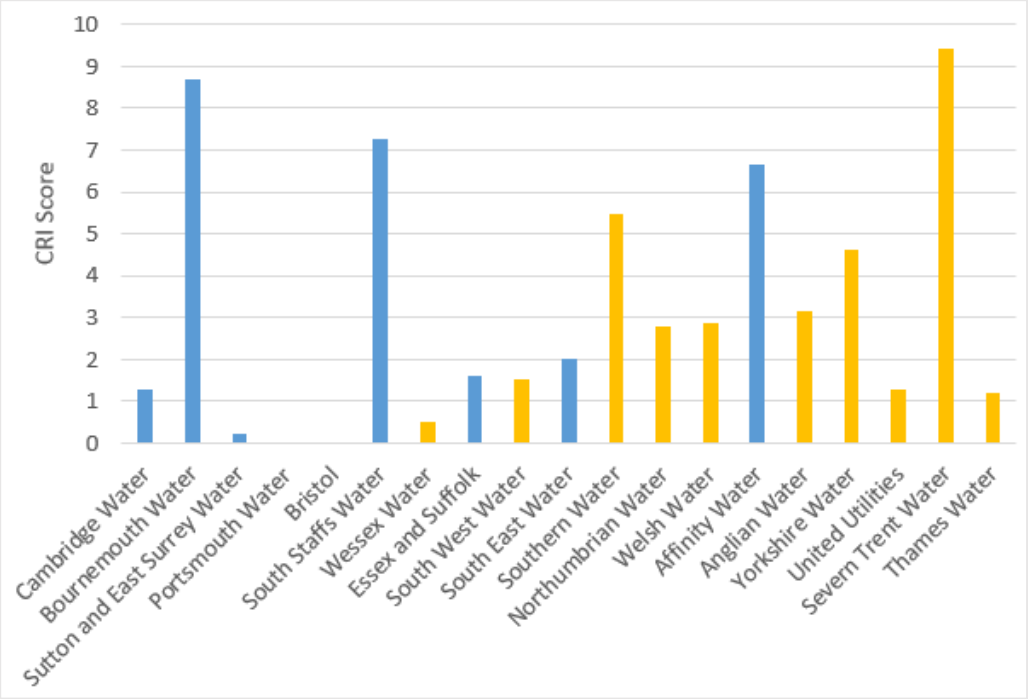


WTW sites with coliform failures

1.1.5 Comparative information

For CRI, the most recent industry UQ performance, as reported by the DWI, is at 0.39 with frontier performance at 0.01. The industry (England companies only) average in 2017 was 3.62 (DWI). The average score of the large companies (>1 million connections) is 4.60, in contrast to an average of 2.27 for the smaller companies.

Based on this dataset, Severn Trent's current performance is at lower quartile for this measure at 9.44. The deterioration from 2016 to 2017 can largely be attributed to coliform failures at water treatment works, which deteriorated in 2017. Despite the improvements made over the past few years, the size of the population served by some of our works, makes such a failure significant to the overall CRI number.



CRI score from 2017. The companies displayed in orange are Water and Waste Companies (WaSCs), whereas those in blue are water only. The companies are listed in order of increasing number of water connections.

The above data highlights the difference between the performance of larger and smaller companies with respect to CRI, and also demonstrates that it is predominantly the water only companies which are setting, and driving, the upper quartile performance.

1.1.6 Cost benefit analysis

Given this is a regulatory requirement targeted at full compliance levels (target of 0), we have not based our target on cost-benefit analysis.

1.1.7 Rationale for target

The DWI and Ofwat have both set an expectation that we will target a score of 0. Given there is no compelling evidence indicating customers would not support this target, we propose a target of 0.Based on our historic performance this is an extremely stretching target with 7.125 being our best historic score.

Given this is a new measure, the DWI have indicated that the ODI associated with this commitment should be reputational. Currently, based on guidance within Water 2020, we are proposing a deadband at the average industry (England only companies) score in 2017 (3.62), which we believe is appropriate in consideration of the apparent volatility of this measure (based on historical data), and based on our historic performance. This deadband demands a circa. 62% improvement from our current performance of 9.44. As we move into AMP8, at which point we can be confident that all legal instruments will have been removed, we propose to further improve to <2.

Our rationale for our propsed target of 0 aligned with the target setting approaches set out by Ofwat is outlined in the table below.

Application of Ofwat tests to the performance commitment *CRI*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing a target of 0, 100% reduction from the 2020 baseline with an accompanying deadband of 3.62, given – • this is a new commitment with volatility • it offers a 48% improvement over our 19/20 baseline of 7. Aligned with DWI recommendation we are proposing reputational ODI.
Comparative information	We will propose target of 0. Our proposed deadband of 3.62 represents an average performance across all companies' in England in 2017. As we move towards AMP8 we propose to move to <2.

	Given this is a new measure with volatility and a requirement for long term investment to affect an improvement, we are proposing a multi-AMP improvement approach.
Historical information	Our performance has ranged from: 14.42 – 7.12. Our best ever performance is 7.12 Our proposed deadband of 3.62 proposes a 49% improvement over our best ever performance of 7.125
Minimum improvement	Our current performance in 2017 is 9.44. The minimum improvement would be delivering our best ever performance of 7.12
Maximum level attainable	The maximum level attainable should be set at the upper quartile of 0.39 or frontier of 0.01. We are not proposing the above as our performance commitment level as this would require an investment level and pace that would be inefficient and thus not in the best interest of our customers. Furthermore, given this is a new commitment, there needs to be further work undertaken to improve consistency to enable robust estimation of comparative upper quartile and frontier levels.
Cost Benefit Analysis (CBA)	Given this is a compliance metric we have not undertaken CBA
Expert Knowledge	As CRI is a risk-based metric, it would be logical to take a risk-based approach to achieving our target of 0. Addressing the greatest impact on CRI (our water treatment works), will take more than one AMP, hence we will be focussing the high risk issues and aiming to achieve average performance across England with a longer term ambition to achieve <2.

1.2. Water quality complaints (H02)

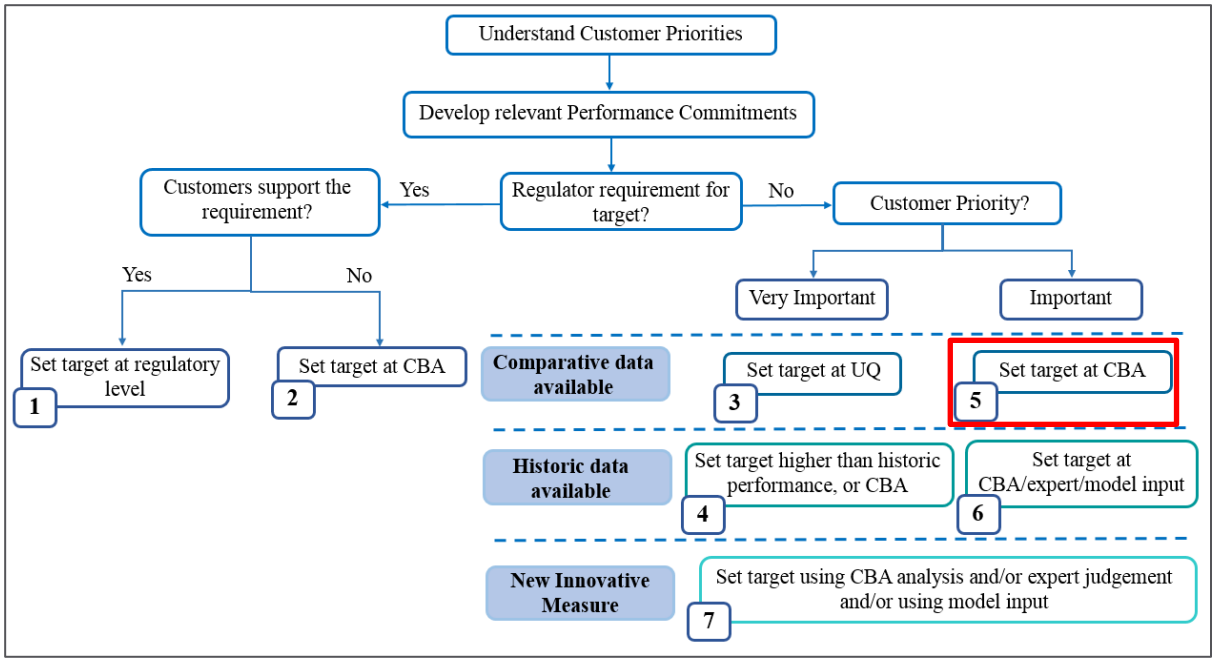
The number of consumer complaints about the appearance, taste or odour of their drinking water quality. This performance commitment is a continuation of our current PR14 measure and covers all contacts from customers regarding dissatisfaction with their drinking water quality.

Our target of 9,500 complaints will ensure that we are UQ across comparable companies in the West and represents an overall improvement on our best ever performance by 18%.

1.2.1 Position in the framework

Our customers expect us to be able to deliver a good quality and consistent product every time they turn on the tap. Changes in appearance, taste, or odour due to our treatment processes, different sources of water or movements around our network can all cause dissatisfaction in our customers' experience of their water.

The drinking water quality complaints commitment has been placed in cohort 5. It reflects a measure that is important to customers (although less so than leakage and sewer flooding) and in which comparative data (and historic data) is available to benchmark performance and develop targets.



Location of the performance commitment in the framework

1.2.2 Regulatory guidance

There is no specific regulatory guidance relating to this measure. We have discussed the scope of the measure with the DWI who are supportive of the inclusion of the commitment in our PR19 plan. At the previous price review we had a very challenging target that we have struggled to meet in AMP6. We have based our AMP7 targets on the assumption that we meet this target by 2019/20.

1.2.3 Customer views

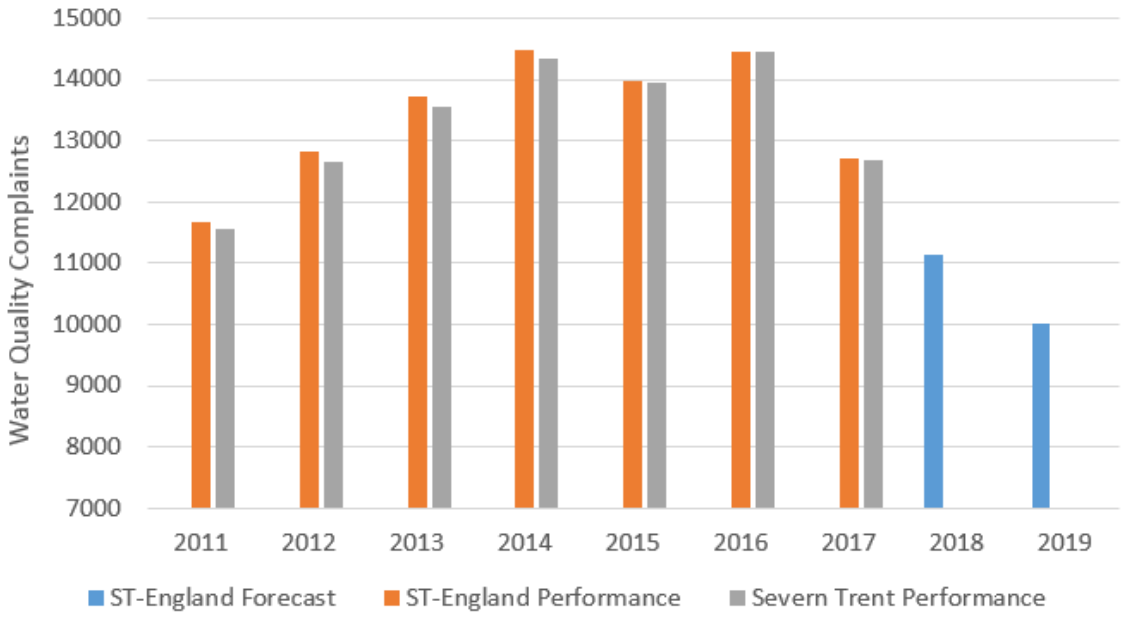
We have tested customer views on two elements – appearance and taste and odour. The highlights of the research can be summarised as follows:

- appearance complaints were found to be of low to medium priority across all research pieces; however
- taste and odour complaints were considered a medium to high priority.

Overall, this performance commitment is classified as important to customers. Any deviation from the standard to which our customers are accustomed to will lead to dissatisfaction, and as such, the underlying, and long-term aim of this measure is to assure a consistent supply of good quality drinking water.

1.2.4 Historical performance

From 2008 to 2011 our performance was stable, fluctuating between 11,547 and 12,099 complaints. However, in AMP5 our performance deteriorated and complaints increased from 11,547 to 14,339 over 4 years (from 11,657 to 14,489 for Severn Trent England – new licence). This deterioration was localised within the region we serve, to areas fed by our largest water treatment works. It is thought to have been caused by changes to water treatment resulting in the network experiencing greater vulnerability to discoloration.



Historic and predicted performance of water quality complaints for Severn Trent (old licence) and Severn Trent England (new licence)

Our improvement strategy has involved the development of a source to tap approach to tackle, primarily, discolouration, which makes up the majority of our water quality complaints. Current investment is aimed at mains cleaning, flushing and minimising disturbances on the network e.g. tackling illegal hydrant use, and proactively contacting customers to make them aware of the risk of discolouration after a mains burst. This work has resulted in a 12% reduction in 2017, to deliver our best AMP6 performance of 12,687 complaints (12,708 complaints for Severn Trent England).

Further improvements across this AMP and the next will require longer-term investment and optimisation (based on what we have learned to date). Planned activities include:

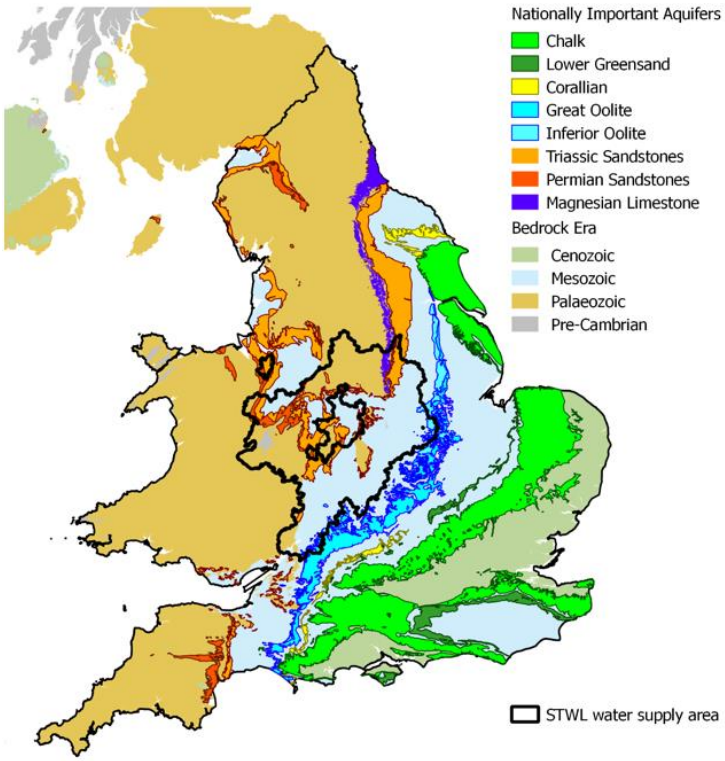
- controlling our WTWs better to control iron and manganese levels that are the primary causes of discoloration;
- replacement of unlined cast iron mains – targeting hotspot areas based on sampling data;
- using new dynamic flow control valves technology for trunk mains conditioning in Birmingham/Central area; and
- “predict and prevent” roll out following the innovation trials we have done on real-time network modelling of events for mitigation and proactive messaging.

This work will commence in AMP6 and continue into AMP7, enabling us to further drive down discolouration complaints for subsequent AMPs. The most sustainable practice is, naturally, to resolve the problem at source, by removing manganese at the treatment works, however, this also gives the longest period of return, meaning that improvement will be gradual over the subsequent AMP.

We are largely relying on increased maintenance activities (flushing and cleaning) to deliver our end of AMP6 target of 9,992 complaints, which would represent our best ever performance on record. Under the new licence of Severn Trent England, this target of 9,992 becomes 10,011, when we include the relevant part of the former Dee Valley.

1.2.5 Comparative information

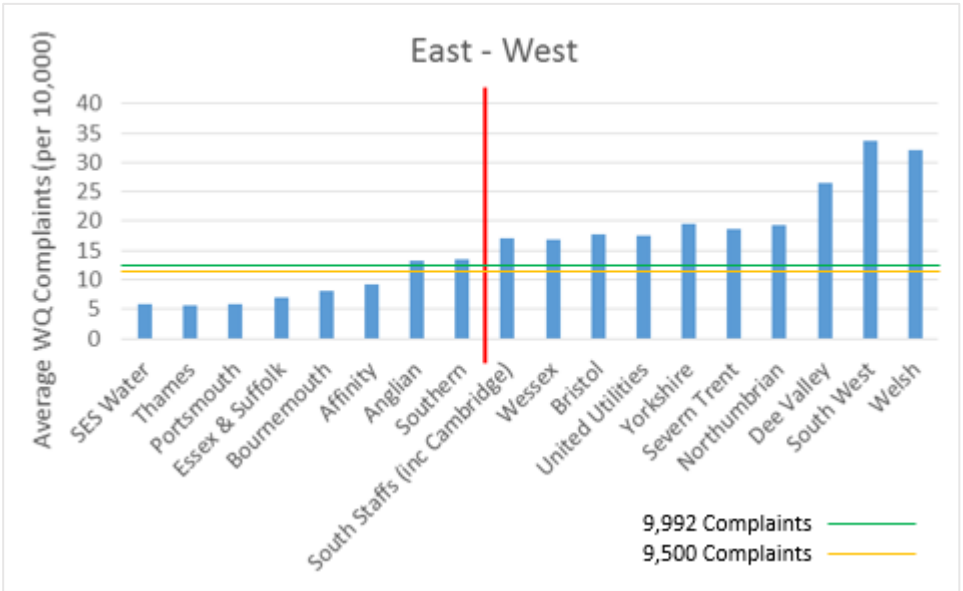
Industry UQ over the last few years has fluctuated between 7 – 9 water quality complaints per 10,000 population served, whereas our performance has been between 16 and 19. The majority of companies have demonstrated relatively stable behaviour over the past 3 years, with an average change of -1 complaint per 10,000 population from 2015 to 2017.



Geological map of the United Kingdom

There is a clear East-West divide in water quality discolouration complaints performance, with the eastern companies outperforming those in the west. An independent report has attributed this difference to the influence of geology on the water abstracted. Water with high manganese, and high dissolved organic carbon concentrations can compromise the treatment process for manganese removal from raw water[4]. The low mineral content of the water, with a low pH can also promote the corrosion of iron mains increasing the risk of discolouration further. Control measures exist for these particular risks but add to our cost to serve in comparison with the East (and cost models do not differentiate between geology).

Of the western companies (see Figure 3.5.2 for east-west divide), Severn Trent performance has been average for most of AMP6, however, the recent improvement in performance will move our position to upper quartile amongst companies with comparable geology (considering the following western-based companies; South Staffs, Wessex, Bristol, UU, Yorkshire, Northumbrian, Dee Valley, South West and Welsh).



Industry comparison of the number of water quality complaints in 2016

[4] Technical Note: Review of Spatial Factors Controlling Water Discolouration in England and Wales, Published by ESI Limited, August 2018

1.2.6 Cost benefit analysis

Our CBA calculation has indicated that the target of 9,500 complaints that we are proposing for 2025 is stretching and above the cost beneficial range. This is consistent with our findings at PR14, which indicated that the cost-beneficial point was higher than the target Ofwat set target of 9,992 complaints based on UQ. Further details are provided in Part 1 section 2.5.

1.2.7 Rationale for target

We are proposing a 5% improvement on our FD target for 2019/20, which would deliver our best ever performance.

Against our performance framework, we have set a target that is higher than the median of our peers and is stretching above cost beneficial levels. We recognise that using a crude sector comparison, our performance would place us in the top 50% of companies, and just shy of upper quartile performance. However, when comparing our proposed target to the performance of other western companies, our target would make us frontier as outlined in Figure 3.5.2.

Delivering a 5% improvement is particularly challenging given that we will be carrying out maintenance work on our [REDACTED] aqueduct (which supplies [REDACTED]), which will lead to temporary changes in water sources for large parts of [REDACTED]. We have been carrying out extensive work in the community to explain how these changes could impact customers, for example, a change in the taste of their water. We have not made any allowance for this in our AMP7 target and as such this represents an additional stretch.

Our rationale for our proposed target of 9,500 complaints aligned with the target setting approaches set out by Ofwat is outlined in the table below.

Application of Ofwat Tests for the performance commitment *water quality complaints*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing a target of 9,500 complaints, given it – • aligns with our customer expectations • will be our best performance over the past two AMPs (18% improvement on our current best historical performance) • aligns with the average performance across all companies • among comparable companies in the west this represents frontier performance
Comparative information	Upper quartile (all companies): 5,911 complaints. Upper quartile (west companies): 11,145 complaints. Frontier (west companies): 10,431 complaints. Our proposed target will ensure we deliver frontier performance amongst the western companies, which we believe are more comparable given they have similar geology and thus similar treatment challenges.
Historical information	Our past performance to date has ranged from 11,657 – 14,489 complaints (Severn Trent England – new licence) Our best ever performance to date is 11,657 complaints. Our target represents an 18% improvement over our best ever performance.
Minimum improvement	Our target represents an 18% improvement over our best ever performance.
Maximum level attainable	Upper quartile (west companies): 11,145 complaints. We will be stretching our performance by 15% above the upper quartile for all western companies, delivering frontier performance.
Cost Benefit Analysis (CBA)	Stretching – our CBA indicates that our proposed target will stretch us above the cost beneficial level.
Expert Knowledge	We have proposed our targets as above based on comparative and historical data assessment, informed by expert knowledge.

1.3. Farming for water (H03)

Raw water quality is important when it comes to providing water that is 'Good to Drink' (as per our outcome). Farming is one of the major sources of raw water pollutants and it is important to reduce the risk of these pollutants at the source by working with farmers.

This performance commitment measures the number of catchment schemes where we have improved control of, and thus reduced, the raw water quality risk, from specific pollutants as a result of changing farming practices and engagement. Pollutants of concern are:

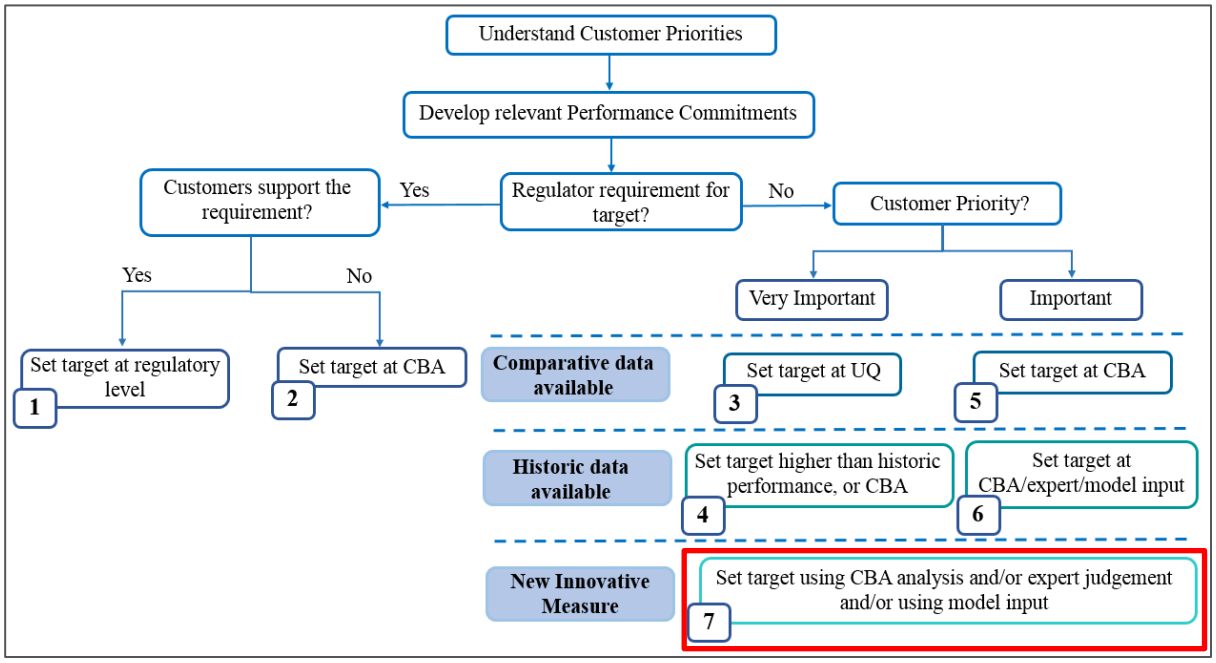
- metaldehyde
- pesticides
- nitrate
- cryptosporidium.

For AMP7 our target of 16 catchments, equates to catchment management across 350,000 acres, a 23% increase against AMP6, and incorporating work with over 900 farms issuing in excess of 1400 grants, a 42% increase compared to AMP6.

1.3.1 Position in the framework

Farming for Water is a bespoke performance commitment, and as such, does not have any directly comparable industry data. We do have some historical context based on our AMP6 experience, however, there are significant differences to our AMP7 performance commitment, which is aimed at targeting the outcome of improving management of risk related to raw water pollutants.

The Water Industry National Environment Programme (WINEP) does provide regulatory guidance from the EA on catchment management which we have considered in setting our target, however as we have sought to widen the scope of the commitment, the proposed performance commitment covers both statutory and non-statutory guided improvements. Hence, under our performance framework as outlined below, the commitment belongs to Cohort 7, where targets will be guided by various sources.



Location of the performance commitment in the framework

1.3.2 Regulatory guidance

As this is a bespoke performance commitment, there is no specific regulatory guidance for targets related to this measure. However, Farming for Water is closely linked to our DWI Undertakings for metaldehyde and the WINEP. WINEP was developed by the EA in consultation with water companies in order to determine the activities necessary to fulfil our regulatory and statutory obligations. Therefore our target is guided by regulatory obligations and the WINEP.

1.3.3 Customer views

For this price review, we conducted bespoke customer research into catchment management for the first time. In both the deliberative and choices research, customers supported working in partnership with farmers to tackle pollution of water sources, but wanted treatment solutions to be the contingency. They wanted reassurance on how Severn Trent would ensure the success of catchment management solutions. We have taken this into account in developing our commitment as outlined below.

1.3.4 Historical performance

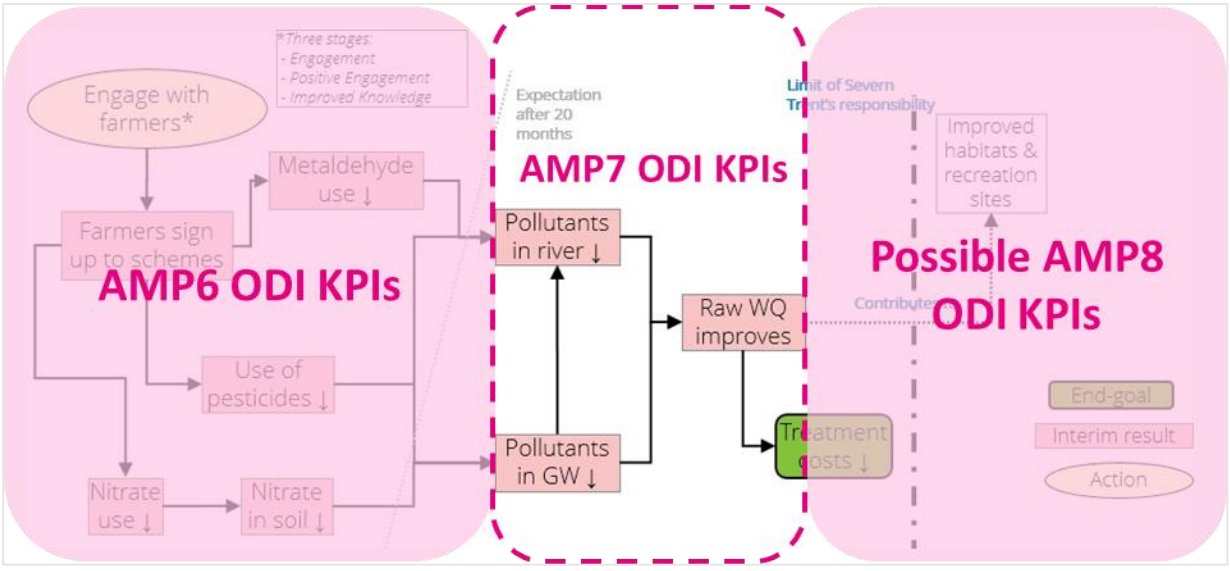
Our experience of catchment management in AMP6 has helped us to understand its potential, learn how to make it a success, and ensure that customers are protected from the risks associated with this behavioural based method of protecting raw water sources. The DWI has recognised that we have an industry leading approach.

Our current catchment management performance commitment uses a grant based approach along with payment for ecosystem services to incentivise farmers to change their practices. Our activity was mainly focused on engaging farmers and advising them on best management practises, and Key Performance Indicators (KPIs) were related to the success of engagement.

As we enter AMP7, we are stretching ourselves to go beyond inputs and move to an outcome measure that directly relates our activities to reducing levels of pollutants in raw water sources/intakes. For AMP7 we are improving how we monitor the success of our catchment management by quantifying reductions in risks identified through our Drinking Water Safety Plan (DWSP) (see figure below). Our success will depend on farmers making management and process improvements to their farming practise to ensure a reduction in pollutants in our raw water is realised.

KPIs will be based on a % reduction in specific pollution loadings for each catchment. Target reductions at the catchment outlet will be derived from modelled baselines using FARMSCOPER. The success of catchment schemes will be measured using modelled effectiveness of agriculture mitigation options. These will be catchment specific and captured on a field scale. This will then be scaled up to give an overall catchment specific reduction load for each water quality parameter of concern (see list above) for individual catchments.

Given that this is effectively a new measure, we are proposing a 2020 baseline position of 0 catchments.



Changes in key performance indicators from AMP6 to AMP7

1.3.5 Comparative information

There are a multitude of approaches which could be taken with respect to catchment management, and this is reflected in the bespoke performance commitments elected by companies at PR14. In AMP6, four other companies proposed performance commitments which involved catchment management. Two of the four were strongly based on legislation, such as the National Environment Programme (NEP) and Water Framework Directive (WFD), while one was based around scheme delivery.

Our proposed commitment aims to reduce the risk to our raw water sources from key pollutants and thus differs from others. The comparative assessment, in the table below, provides a comparative context and indicates that in addition to a stretching outcomes based commitment aimed at reducing pollutant risk, we will also be addressing a higher number of catchments in comparison to other companies.

Comparative assessment of current performance commitments dealing with Catchment management

Performance commitment	Company	Unit	14/15 Actual	19/20 Forecast	24/25 Farming for Water Target
Number of catchment management schemes	Severn Trent	Number	0	12	16
Environmental investigations or catchment management schemes carried out as part of the NEP	SES	Number	0	14	
	Severn Trent		47 investigations	13 investigations 8 new catchment schemes 20 continuation schemes	13 investigations 8 new catchment schemes 20 continuation schemes
Catchment management	South West	Acres	4,942	8,154	
	Severn Trent		0	284,343	350,020
Catchment Management	South West	Number of farms	650	1,400	
	Severn Trent		0	684	914
Water bodies improved or protected from deterioration as a result of Thames Water's activities (catchment)	Thames	Number	0	13	
	Severn Trent		0	38	50

1.3.6 Cost benefit analysis

Our current marginal benefit exceeds the marginal cost of delivery as outlined in Part 1 section 2.5. However, with this PC we are undertaking significant delivery risk, given the need to identify, engage with and gain agreement from third-parties, something that has proved challenging in the past. Consequently, the PC target has been set to take account of this risk, such that it is set at a level that might be lower than that implied by the potential benefits.

1.3.7 Rationale for target

For AMP7 we are proposing to not only substantially improve the effectiveness of our measure, but we are also proposing an increase of 33% in target covering 16 catchments in AMP7 as opposed to 12 in AMP6.

For AMP7 we are expanding the work done in these catchments, which will involve providing more targeted advice and training to farmers, expert farm visits, undertaking water and soil monitoring and expanding our grants and payment for ecosystem services incentives. All this work will be focused to reduce the risk of pesticides, cryptosporidium, nitrate, and metaldehyde failures. It should be noted that a significant level of engagement is needed with farmers to ensure their co-operation in changing farming practices in order to reduce risk of raw water pollution.

Our proposed target of 16 catchments, equates to catchment management across 350,000 acres, a 23% increase against AMP6, and incorporating work with over 900 farms issuing in excess of 1400 grants, a 42% increase compared to AMP6.

Of the proposed target of 16 catchments, approximately half are in the Environment Agency's WINEP3, of which four are groundwater schemes for nitrate, three are surface water schemes for metaldehyde/other pesticides, and one is a biodiversity scheme. The remaining catchments (all groundwater) are selected through our DWSP catchment risk assessment process and our Catchment Observation Codified Procedure. Our overall programme covers all our surface water treatment works and approximately 10% of our

groundwater sources where we have known water quality problems which can be mitigated at source in the catchment. Additionally, if any changes in catchment activity are noted and are potentially high risk then mitigation options to reduce the risk are discussed and implemented with local farmers outside of our catchment management scheme programme.

Our work on the Leam catchment in Warwickshire allows us to see the conversion from total number of farmers engaged with to subsequent behavioural and management improvements. To date in the Leam catchment we have engaged with 49% of our priority farmers and this has led to 62 grants being awarded in the catchment – a conversion factor of 37%. In order to meet our AMP7 outcome target in the Leam catchment we will need to achieve a conversion factor of 58%. Furthermore, farm improvements needed will potentially impact farm yields/profits so we know that it is going to be more difficult to incentivise farmers.

Thus the commitment is a significant stretch on our current AMP6 commitment.

The table below outlines our rationale for target setting based on the application of approaches outlined by Ofwat.

Application of Ofwat tests for the performance commitment *Farming for Water*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing a target of 16 catchments where we will deliver risk reduction of pesticides, cryptosporidium, nitrate, and metaldehyde failures, through changing farming practices. This represents: • an improved scope where we are targeting ourselves on a risk reduction outcome via our work with farmers - requiring farmers to physically make management and infrastructure changes and not just engage with us reflective of an input measure; • coverage of 16 high risk catchments, a 33% increase on AMP6 • work in 7 high risk catchments identified by Environment Agency in the WINEP; • a doubling of our target beyond minimum regulatory requirements.
Comparative information	Our proposed commitment differs from others, so comparative data is of limited value but we've sought to set the wide variation in table 4.5.1 and provide context where possible. Data indicates that our AMP7 targets are industry-leading both in terms of scope and targets.
Historical information	We have never directly targeted reducing raw water pollution risk through improving farming practices. Thus this is a new bespoke commitment as our previous focus was on inputs i.e. improving engagement. Our historic performance target on engaging with farmers covered 12 catchments; this covers a 33% increase in target catchments. In order to achieve our target of 16 catchments we will need to award in the region of 826 more grants across the 16 catchments compared to AMP6. If this is scaled to cover our whole AMP7 catchment management scheme programme it equates to 1410 extra grants being awarded, a 42% increase compared to AMP6.
Minimum improvement	11 catchments (4 are groundwater schemes for nitrate, 3 are surface water schemes for metaldehyde/other pesticides and a further 4 are covered by DWI Undertakings for metaldehyde). We are proposing to exceed our minimum improvement by 45%.
Maximum level attainable	Our overall programme covers all our surface water treatment works and ~10% of our groundwater sources where we have known water quality problems which can be mitigated at source in the catchment. We have 200 catchments within the Severn Trent region; however we are proposing to target of 16 catchments based on: • a risk based approach based on our Drinking Water Safety Plan; • targeting catchments supported by an established engagement with farmers enabling us to influence them to make management and infrastructure changes to reduce risk of pollution of raw water sources; • a long term approach based on a 25 year programme, where we maintain catchments at reduced risk status whilst targeting additional new catchments. The remaining catchments (all groundwater) are taken into consideration through our DWSP catchment risk assessment process and also Catchment Observation Codified Procedure.

Ofwat Test	Outcome
Cost Benefit Analysis (CBA)	We have based our target on our ability to convince farmers to change farming practices to reduce the risk of pollution to raw water sources.
Expert Knowledge	Catchment management is a long term commitment based on a 25 year programme of work. For AMP7, we will be targeting 16 catchments, 7 of which are listed within the WINEP. Selection of catchments has been based on robust feasibility investigation, cost benefit assessment and risk based targeting using Drinking Water Safety Plans. The work will be coupled with an engagement plan to inspire farmers to physically make management and infrastructure changes to enable risk reductions of pesticides, cryptosporidium, nitrate, and metaldehyde failures. The top 16 catchments selected are within the Red risk status for the pollutants within the scope of this commitment.

1.4. Protecting our schools from lead (H04)

The number of schools and nurseries in our region where we have proactively minimised the risk of lead in their supply of drinking water. This is a new performance commitment to track the number of schools and nurseries where we have conducted a sample survey, and/or a communication pipe replacement to assure the absence of lead in the supplying distribution network.

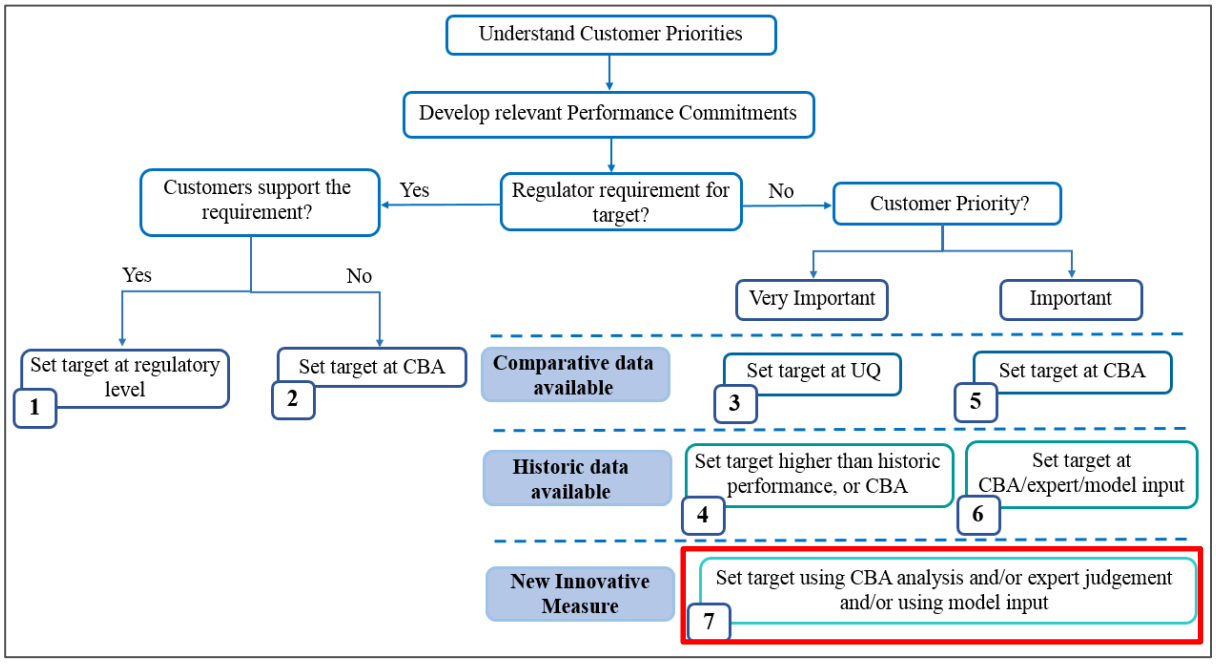
Our proposed measure to address lead is designed to deliver two outcomes where we identify lead in the supplying network:

- Outcome one – we replace the communication pipe
- Outcome two - we support the school replacing the pipes it has responsibility for (but the school retains responsibility)

We have set ourselves a challenging target of 500 schools – approximately 2 schools a week, where we will seek to eliminate any risk of lead in their drinking water supply from water company assets and provide meaningful support to schools where they retain responsibility.

1.4.1 Position in the framework

This is a new, innovative measure with no historic or comparative context. As such, it belongs in cohort 7 in our performance framework as detailed below.



Location of the performance commitment in the framework

1.4.2 Regulatory guidance

Over the next five years we will continue to maintain compliance with current lead standards (10 µg/l) through phosphate dosing, but we also want to do more to replace our lead pipes and help our customers replace theirs. This is part of our work towards maintaining the network for future generations, and will also better prepare us for potentially tighter EU lead standards in the future - which are aimed at reducing the lead standard from 10 µg/l to 5 µg/l by 2030.

Our initial estimate for achieving compliance with a higher target indicates the requirement for additional phosphate dosing schemes and up to c. £65m of lead communications pipe replacement in c. 30 water quality zones that are already phosphate dosed/optimised (rough estimate).

We believe our AMP7 approach will put us in good stead for this, by proposing to do this in a phased risk based approach it will allow us to identify smarter and more efficient ways to deliver the outcome.

Initial talks with the DWI have indicated that they support this measure, and they have encouraged our ambition in tackling lead.

1.4.3 Customer views

Choices research demonstrated that our customers find the issue of lead important. Due to the associated health risk customers see lead pipe removal as a priority. A proportion of customers also felt that they would like to see all lead pipes removed, regardless of whether levels are safe.

1.4.4 Historical performance

We do not have any historic context of a proactive programme of Lead assessment and replacement in schools and nurseries.

Over the past six years, most of our work has involved free tests and replacement of lead communication pipes in domestic properties. We propose to continue to offer this service for domestic customers, in addition to the work within the scope of this commitment which will target schools and nurseries in high risk areas.

Lead is a cumulative toxicant wherein the most important effect of long-term low level exposure is on intellectual and cognitive development in children. Hence, we are targeting all schools and nurseries in high risk areas of our region to test, and where relevant, replace, lead pipes within company ownership contributing to a positive lead detection.

This performance commitment has been developed as a multi-AMP commitment, with a long-term ambition of ultimately ensuring lead compliance to new regulatory standards (5 µg/l) in the Severn Trent distribution network. Our work, on schools, will also enable us to raise awareness in the community, improve asset data records on problems areas and look for more cost effective solutions.

1.4.5 Comparative information

In AMP6, there are currently no similar performance commitments on lead that companies have proposed, however, some companies have lead policies independent of performance commitments. For example, Welsh Water are currently running a pilot trial to replace customer owned lead pipework when the lead level exceeds 5 µg/l. This trial will enable Welsh Water to develop a policy for responding to customers where lead is detected at a significant level.

This has similarities to the service we currently have in place for domestic customers where we offer free lead tests and communication pipe replacements. We propose to carry on doing this for AMP7.

1.4.6 Cost benefit analysis

This work is set at a cost-beneficial level.

1.4.7 Rationale for target

Through this performance commitment we are proposing to proactively target lead pipe replacement for consumers who are most at risk (children).

- It will measure the number of schools and nurseries where we have proactively checked, and/or reduced the risk of lead in their supply of drinking water. Schools in high risk areas of our region will be sampled internally to measure the concentration of lead, in conjunction with inspections of pipework.
- Any lead pipes identified on our network, as contributing to a positive lead detection (>Limit of Detection), will be replaced.

- Where lead is detected within the school, we will offer support on how to mitigate/solve the issue.

The time taken to complete the associated work with this number is ultimately what has determined the range of our AMP7 target. Within that range, the most appropriate way of prioritising schools and nurseries, is to work from the DWSP risk, which considers risk based on property age, location and sample results from the previous 5 years. Based on 500 schools, we would anticipate circa. 30% of those sampled would need pipe replacements or substantial work (150 schools). Due to likely time constraints on when we can carry out the necessary work (school holidays), this represents a stretching target to deliver over 5 years, with a degree of uncertainty.

This measure and target will also allow us to be better prepared for potential government change. We are aware that the government are considering a change in policy, which could mean both a tightening of lead limits and potentially a change in ownership of supply pipes. Until there is further clarity, we believe our performance commitment is a sensible preparatory step which is consistent with the direction of government policy, and aligned with customer priorities.

Application of Ofwat tests for the performance commitment *protecting our schools from lead*

Ofwat Test	Outcome
Proposed 2024/25 target	500 Schools
Comparative information	There are no current AMP6 performance commitments comparable to this one. The Welsh Water trial on domestic properties is similar to the work that we currently do and propose to carry on undertaking in AMP7 in addition to this commitment.
Historical information	Historically we have replaced between 735 – 2228 lead communication pipes per year – either through customer requests, or from finding them in the network. We propose to continue doing this work in addition to delivering against the new commitment of working across 500 high risk schools to test and where needed replace communication pipes and support schools in replacing the pipes it has responsibility for (but the school retains responsibility).
Minimum improvement	As outlined above, the historical work we offer on domestic properties linked with Lead will continue. This commitment will be an enhancement above that and will focus on schools and nurseries in high risk areas.
Maximum level attainable	Approximately 6,000 school which would equate to 23 schools per week. Our current lead free schools measure and target of 500 schools (2 per week) is designed to deliver two outcomes where we identify lead in the distribution network Outcome one – we replace the communication pipe Outcome two - we support the school replacing the pipes it has responsibility for (but the school retains responsibility) Logistically, given we will need to access schools and nurseries during holiday periods to undertake the necessary remedial, our concern is that a higher target than 500 schools (i.e. 2 schools per week) might result in prioritisation of the first outcome and not the second, or we focus on delivering all outcomes but a small number, which would have significant reputational consequences. To ensure we provide meaningful support to schools we think our target of 500 schools with the ODI incentivising further work IF we have the capacity to deliver is appropriate.
Cost Benefit Analysis (CBA)	Cost-beneficial.
Expert Knowledge	Our proposed target as outlined above is based on us: • Targeting high risk areas using DWSP • Ensuring we do the needed lead tests and undertake asset replacement where needed • Ensuring we provide meaningful support to schools where they retain ownership of the asset failing the lead test. • Logistical planning to ensure we are able to deliver outcome without disrupting schools and nurseries

2. Outcome: Water always there

In this section we summarise the performance commitments and associated improvements we are proposing to deliver for the outcome Water Always There. The continuous supply of safe, clean drinking water is a core expectation of Severn Trent Water, and this underlies the outcome Water Always There. To ensure that we can reliably supply all of our customers with water requires sustainable management of our raw water sources, abstraction sources, treatment and infrastructure assets, building long term resilience, and a timely response to incidents when things go wrong.

Customer research tells us that failure to provide a reliable supply of wholesome water has a negative impact on customers' lives. Long duration supply interruptions emerged as notably less acceptable compared to short duration supply interruptions, which is consistent with customers' views that our network resilience should anticipate challenges and prepare us for when things go wrong. The importance of maintaining our assets in good condition is also very important, as customers found it more acceptable to suffer interruptions to their supply attributed to natural disasters, compared to asset failure.

These are all issues we seek to address with our range of performance commitments under the Water Always There outcome as outlined below.

Performance commitments for the outcome Water always there

Water always there			15 PCs
Common PC	Water supply interruptions	Leakage	Risk of severe restrictions in a drought
	Unplanned outage	Mains bursts	Per capita consumption (PCC)
Revised	Persistent low pressure	Speed of response to visible leaks reported by customers	Resilient supplies
New	Abstraction incentive mechanism	Resolution of low pressure complaints	Increasing water supply capacity
	Security – reducing the risks to our sites	Number of water meters installed	Water trading - interconnector
Rationale	Pressure – complaints data shows low pressure is a greater issue for customers than the current measure indicates; we get c.16k complaints p.a. versus a measure that focuses on 150 properties on the risk register Resilience – customer needs research and social media scraping shows that when we handle incidents well, we can improve satisfaction. This measure incentivises better response to incidents. Speed of response – customers are concerned about the quantum of leakage and visible leakage. We trialled a new approach at PR14 which isn't working, however, we recognise that the issue is of such importance that we need to maintain dual focus –reducing leakage and meeting customer expectation for those who contacted us (which is what the latter measure addresses).		

A summary of the improvements we will be pledging for AMP7 is as below:

Proposed Improvements for the outcome Water Always There

PC	Unit	Forecast (2019/20)	Target 2024/25	Improvement
Water supply interruptions	Minutes:Seconds	08:50	08:41	UQ performance
Leakage	Megalitres per day	387.63	-15%	15%
Per capita consumption	Litres per head per day	133.3	-3.5%	-3.5%
Risk of severe restrictions in a drought	%	63.7	58.2	5.5

PC	Unit	Forecast (2019/20)	Target 2024/25	Improvement
Mains bursts	Number per 10,000 km of main	113.69	147.66	Maintain stable performance
Unplanned outage	%	stable	stable	Maintain stable performance
Speed of response to visible leaks	Days		-50%	-50%
Persistent low pressure	Property days	20,073	-15%	15%
Abstraction incentive mechanism	Megalitres per day	0	0	N/A
Resilient supplies	%	87	96	9
Resolution of low pressure complaints	%	90	95	5%
Increasing water supply capacity	Megalitres	0	68.5*	68.5
Security – reducing the risks to our sites	Number	0	20.25	Guided by DEFRA
Number of water meters installed	Number	166,764	324,999	95%
Water trading - interconnector		0	0	As per real option

*25/26 delivery

In the following sections, we summarise each performance commitment and our rationale for improvements we are proposing to deliver. Each performance commitment covers a:

- description of where the PC sits in our performance framework;
- description of regulatory expectations where relevant;
- customer views on the PC;
- historical evidence where possible;
- comparative information where possible;
- and our rationale for targets based on the six approaches outlined by Ofwat

2.1. Water supply interruptions (G01)

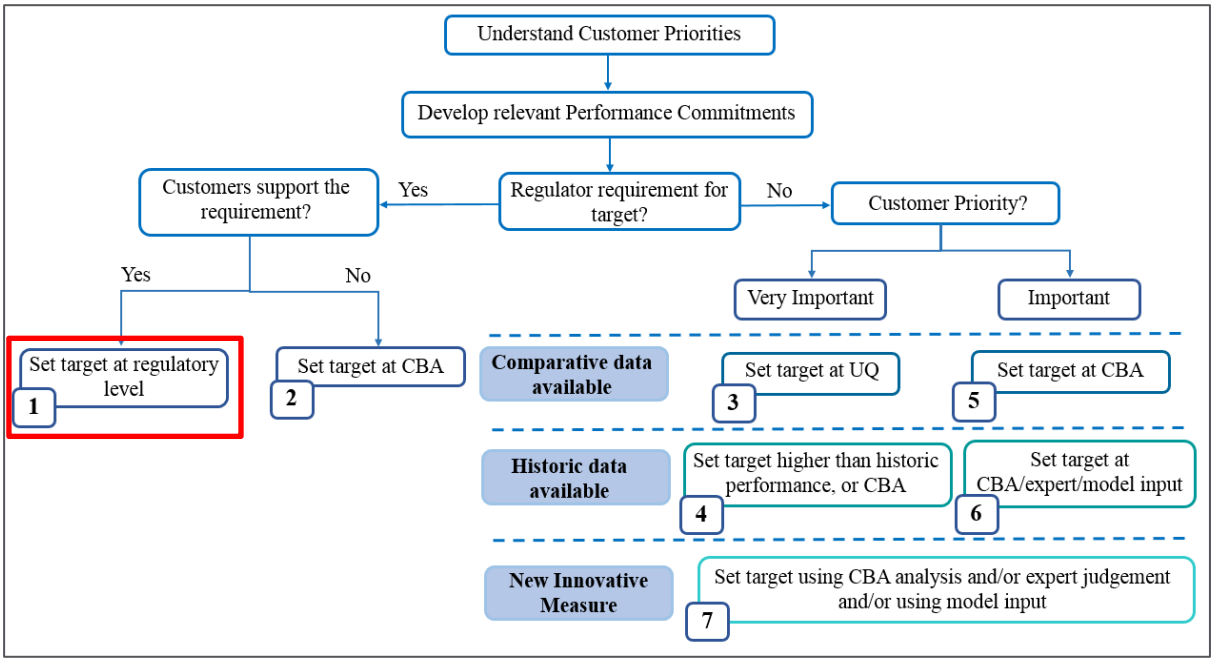
This is a common performance commitment required by Ofwat – and measures the average number of minutes, per property served by the company, of supply interruption, greater than 3 hours. The Ofwat common definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf

We are proposing to deliver a stretching target of 8:41, consistent with the forecast upper quartile range for Water and Waste companies. This represents an approximate 18% improvement on our current best ever performance and a step change of 76% improvement from the current 2017/18 position or c.56% from our average performance over the last three years. Below we discuss the rationale and analysis supporting this target.

2.1.1 Position in the framework

Water supply interruptions is an Ofwat common performance commitment as outlined in the Final Methodology, where Ofwat has stated that companies should propose their commitment levels to be at least the forecast upper quartile for each year of the price control.

Given target setting for supply interruptions will be guided by Ofwat guidance, this commitment belongs to cohort 1 within our performance framework as outlined below.



Location of the performance commitment in the framework

2.1.2 Regulatory guidance

Ofwat has provided guidance outlining that companies should propose their commitment levels to be at least the forecast upper quartile for each year of the price control.

Additionally, in March 2018, Ofwat published standard consistent reporting guidelines for supply interruptions, following which all companies have shared data for 2016/17 and 2017/18 performance based on consistency guidelines.

Our Water Forum has expressed concern over the lack of guidance to estimate forecast upper quartile. However, given this is an important metric for customers we have outlined a methodology as presented in Part 1 section 2.4.

2.1.3 Customer views

Many customers believe a very stretching target is unnecessary, as Severn Trent are not seen to be performing badly. Nonetheless we will be targeting forecast upper quartile performance for each year of the AMP.

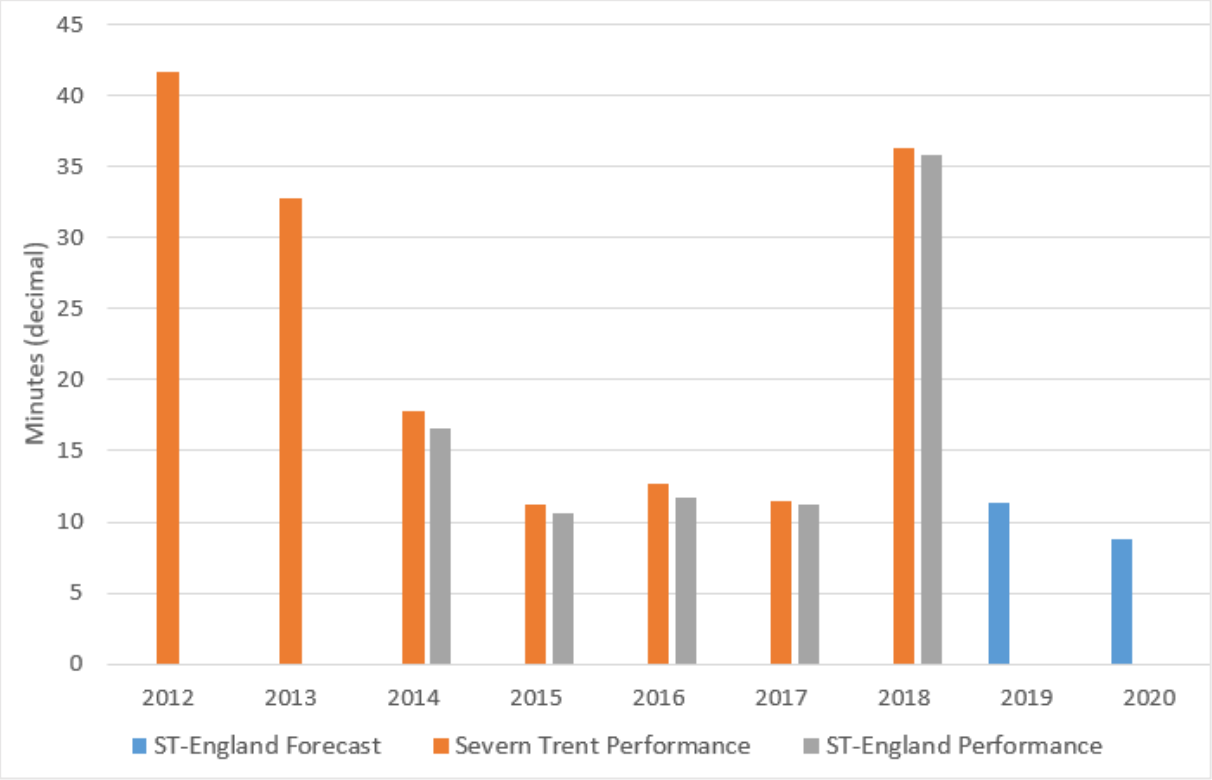
When it comes to customer views, our resilience research tells us that the duration of a supply interruption is key in determining acceptability. A short term interruption is seen as inconvenient but acceptable, whereas longer term interruptions (over a day) are seen as unacceptable because of the potential implications for customers. To reflect this, in addition to supply interruptions >3 hours we are proposing a 24 hour supply resilience commitment.

2.1.4 Historical performance

Historically, we have shown significant improvements in this performance commitment through AMP5 (figure 2.4.1), largely due to reducing the number of planned interruptions on our network. In 2011/12, 48% of our supply interruptions performance (36:34 minutes) was caused by planned work. This percentage fell to 9% in 2015/16, and declined further to 2% in 2017/18.

The year 2017/18, has seen a significant decrease in performance due to a number of large events including the Freeze-Thaw incident, which affected a number of companies within the industry. This has demonstrated that we need to continue improvements to our network resilience and response to interruption events.

We are on track to deliver the Birmingham Resilience Project this AMP, and have invested to improve network design deficiencies to offer greater resilience to 800,000 customers. Additionally, improvements are currently being implemented in our response to events, which should enable us to meet our proposed baseline position for 2020 of 08:50 (using the consistent reporting guidelines as outlined in the consistency project) as outlined in the figure below.



Historical performance and forecast for Severn Trent performance of supply interruptions

To further improve performance against this measure in AMP7, we plan to implement a greater level of monitoring on the network and condition assessments to proactively improve areas of deterioration. A large amount of work has already been carried out on our network analytics platform, which will allow us to better understand the criticality of assets and take a more risk-based approach to improving network design and reducing interruptions.

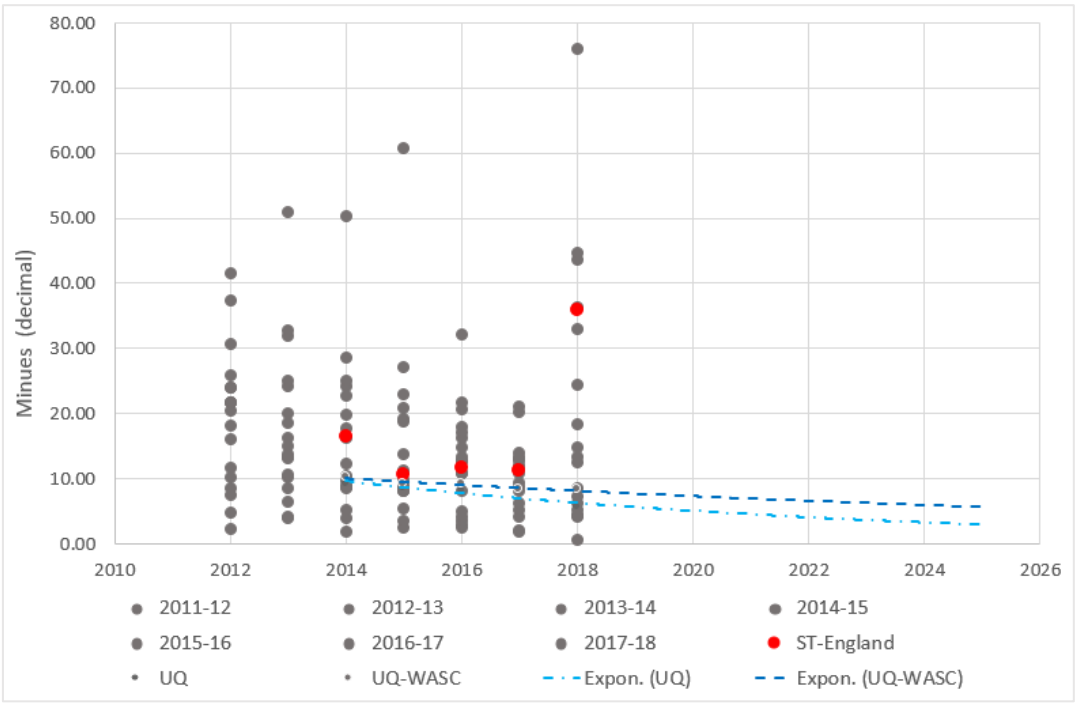
2.1.5 Comparative information

'Supply interruptions' was a common performance commitment in PR14, and as such there is comparative industry data available. This covers data submitted to Ofwat ahead of PR14, for their upper quartile assessment, in addition to that outlined in the Discover Water dashboard, and companies APR reported performance (see the figure and table below).

However, the consistency project completed in March 2018 highlighted variations in how companies were reporting supply interruptions and provided shadow reported data for 2016/17 and 2017/18 based on consistency guidelines.

Industry comparisons of water supply interruptions based on the Discover Water dataset demonstrates the potential volatility of this performance commitment (figure 2.5.1). Overall, the industry has demonstrated improved performance over the past 6 years as shown in table 2.5.1, with a 46% reduction in the average supply interruptions performance from 2012 to 2017. Severn Trent has exceeded this with a 72% reduction since 2011/12 (to 2016/17), while a number of companies have remained relatively stable. Frontier performance has not changed significantly over the past six years.

At the start of our data series (2011-12), the performance of Water only companies (WoCs) for Water supply interruptions was already a third of that of the Water and Sewerage Companies (WaSCs). Since then, the performance of the WoCs has improved by approximately 38%, compared to that of WaSCs of 50%. To accurately account for the starting position, and progress made, of these two distinctly different groups, we have chosen to target the forecast upper quartile of comparable companies.



Supply interruptions industry comparative data over the past 6 years. Grey dots represent individual water companies; red dots represent Severn Trent England performance. The blue lines denotes the UQ trend line, for the whole industry, and for the WaSCs, from three-year averages, extrapolated to 2024/25

Historical comparative industry data in decimal minutes. Source: years 2011 – 2014 – Ofwat; years 2014 – 2016 – Discover Water; year 2016-2018 – Convergence project industry datashare

Year	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Affinity	**18.26**	**20.06**	**22.80**	**27.05**	**17.92**	**21.10**	**32.90**
Anglian	**24.00**	**13.80**	**19.80**	**19.17**	**8.20**	**11.72**	**7.40**
Bournemouth	**2.28**	**4.20**	**1.80**	**2.45**	**2.53**	**1.93**	**0.71**
Bristol Water	**21.18**	**23.58**	**23.46**	**156.53**	**15.87**	**12.93**	**75.98**
Dee Valley	**12.00**	**15.60**	**9.00**	**10.20**	**5.22**	**20.33**	**4.33**
Welsh	**24.00**	**51.00**	**50.40**	**22.98**	**21.73**	**12.15**	**43.72**
Northumbrian	**9.60**	**7.20**	**4.56**	**3.93**	**3.33**	**2.17**	**5.32**
Portsmouth	**4.80**	**4.02**	**5.16**	**8.73**	**3.50**	**4.15**	**4.33**
SES	**9.60**	**15.00**	**13.44**	**28.57**	**6.30**	**9.33**	**4.10**
Severn Trent (old licence)	**36.60**	**28.80**	**15.60**	**9.90**	**11.17**	**11.53**	**36.32**
Severn Trent England (new licence)	**/**	**/**	**16.53**	**10.58**	**11.68**	**11.23**	**35.83**
South East Water	**21.60**	**13.20**	**16.20**	**8.07**	**32.05**	**12.92**	**44.63**
South Staffs (incl. Cambridge)	**7.54**	**10.23**	**9.00**	**8.30**	**4.23**	**5.18**	**8.53**
South West	**37.20**	**16.20**	**15.00**	**22.87**	**25.13**	**10.92**	**18.29**
Southern	**24.18**	**18.00**	**10.80**	**6.00**	**12.00**	**6.30**	**14.77**
Thames	**12.60**	**13.20**	**12.00**	**11.10**	**15.53**	**8.68**	**24.38**
United Utilities	**25.20**	**18.00**	**10.20**	**13.42**	**16.70**	**13.95**	**13.35**
Wessex	**36.00**	**24.00**	**24.00**	**20.12**	**14.30**	**13.32**	**12.57**
Yorkshire	**19.20**	**10.20**	**10.20**	**9.60**	**12.88**	**8.23**	**6.20**

The 2016/17 standing of Severn Trent is slightly below average, however, in previous years performance has been better than average. The current year of reporting (2017/18) has seen a significant deterioration in performance to 35.83 (new licence) minutes due to a number of large incidents. Comparatively, this is not unprecedented - in 2014/15 Bristol Water suffered events which led to a particularly large supply interruptions number, as did South East Water in 2015/16 and Dee Valley in 2016/17. We have plans in place to recover performance and enable us to deliver the forecast 2020 performance of 08:50 (against the new AMP7 definition).

2.1.6 Cost benefit analysis

Cost benefit analysis for this measure shows our proposed AMP7 target is higher than the cost benefit level and therefore is stretching. Refer to Appendix A3 (Part 1, Section 2.5) for details on our marginal cost assessment methodology.

However, as our customers have indicated that is an important service area, we have pledged a target within the forecast UQ range for each year. This also targets a significant improvement from our current performance.

2.1.7 Rationale for target

We are proposing to deliver a stretching target of 8:41, consistent with the forecast upper quartile range for water and sewerage companies. This represents an 18% improvement on our current best ever performance. We have sought challenge from our Water Forum and other stakeholders who felt the target was stretching.

We recognise that Ofwat has given the guidance that all water companies should aim to achieve upper quartile performance by 2024/25, however, there is little guidance on the recommended approach to calculate the predicted position for the end of AMP7. Historic data shows water supply interruptions to be one of the more volatile measures, prone to occasional significant deviations in performance, this previous year being such an example. As such, we have taken the approach of calculating the most likely range of upper quartile for 2024/25 as outlined in Part 1 and the above comparative section.

Below we discuss the six approaches set by Ofwat as outlined in the table below.

Application of Ofwat tests to the performance commitment *Supply interruptions*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing a target of 08:41 minutes, given it • aligns with customer views • aligns with Ofwat guidance and represents forecast upper quartile for WASCs • represents a 18% improvement over our best ever performance to date
Comparative information	The current maximum upper quartile based on consistency data is 08:41 minutes; We have chosen to propose the higher end of the upper quartile range as it aligns with our customer views and will be a significant stretch at ~18% higher than our best historic performance.
Historical information	Historically Severn Trent's (new license) performance has ranged from 35:50 to 10:35 minutes. In 2017/18, we have had exposure to some significant events resulting in a performance of 35:50 minutes. The best ever performance for Severn Trent was 9:54 mins (pre-convergence; 11:16 post-convergence). Comparably, the best ever performance for Severn Trent England (new licence), using the AMP7 definition, was 10:35 (post-convergence).
Minimum improvement	We consider the minimum improvement for this measure would be continuing the current rate of improvement. If we exclude 2017/18 the trend suggests an improvement of approximately 4% improvement per year assuming no diminishing returns
Maximum level attainable	The theoretical best performance is 0 minutes. Current frontier performance is 00:43 minutes. We are not proposing performance at this level as it is non cost beneficial and hence will not be in the best interest for our customers.
Cost Benefit Analysis (CBA)	The CBA is stretching and indicates our proposed target of 08:41 is not cost beneficial. However as per Ofwat guidance we are proposing this target as it the forecast upper quartile performance.
Expert Knowledge	We have not applied expert knowledge as a test given the target is mainly driven by comparative and historic performance. However in selecting our targets we have sought to select a target which allows for efficient delivery.

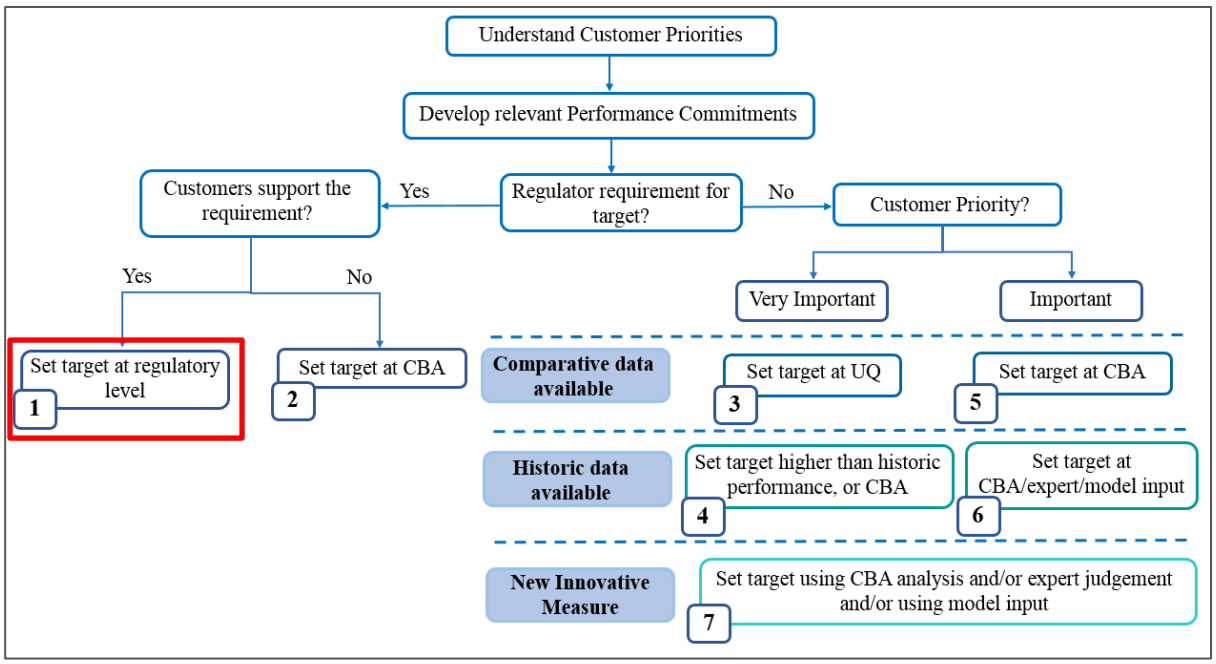
2.2. Leakage (G01)

Leakage is the amount of water lost from the distribution network and supply pipes, through leaks, in a day. This is a common performance commitment outlined by Ofwat, and will be reported as a three-year average. The Ofwat common definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf.

We are proposing to deliver a 15% reduction in leakage in AMP7, a reduction unprecedented in our history.

2.2.1 Position in the framework

Leakage is a top priority for our customers and is also a priority for Defra and the Environment Agency. Ofwat has stated the expectation that leakage targets should be ambitious, a message echoed by Defra and National Infrastructure Commission (NIC). Given the guidance from Ofwat and Defra, we have put leakage in cohort 1 of our performance framework.



Location of the performance commitment in the framework

2.2.2 Regulatory guidance

Ofwat have provided guidance in Delivering Water 2020: Our final methodology for the 2019 price review for companies to set a stretching leakage target, stating that company's leakage performance commitment levels should:

- achieve forecast upper quartile performance (in relation to leakage per property, per day and leakage per kilometre of main per day) where this is not being achieved – or justify why this is not appropriate;
- achieve at least a 15% reduction in leakage (one percentage point more than the largest reduction commitment at PR14) – or justify why this is not appropriate; and
- achieve the largest actual percentage reduction achieved by the company since PR14 or justify why this is not appropriate.

Defra set clear expectations that there should be ambitious plans to reduce leakage and help customers use water more efficiently. Our supply / demand investment and WRMP plan will help us work towards the ambitions set out in Defra's 25 year Environment Plan for achieving clean and plentiful water supplies.

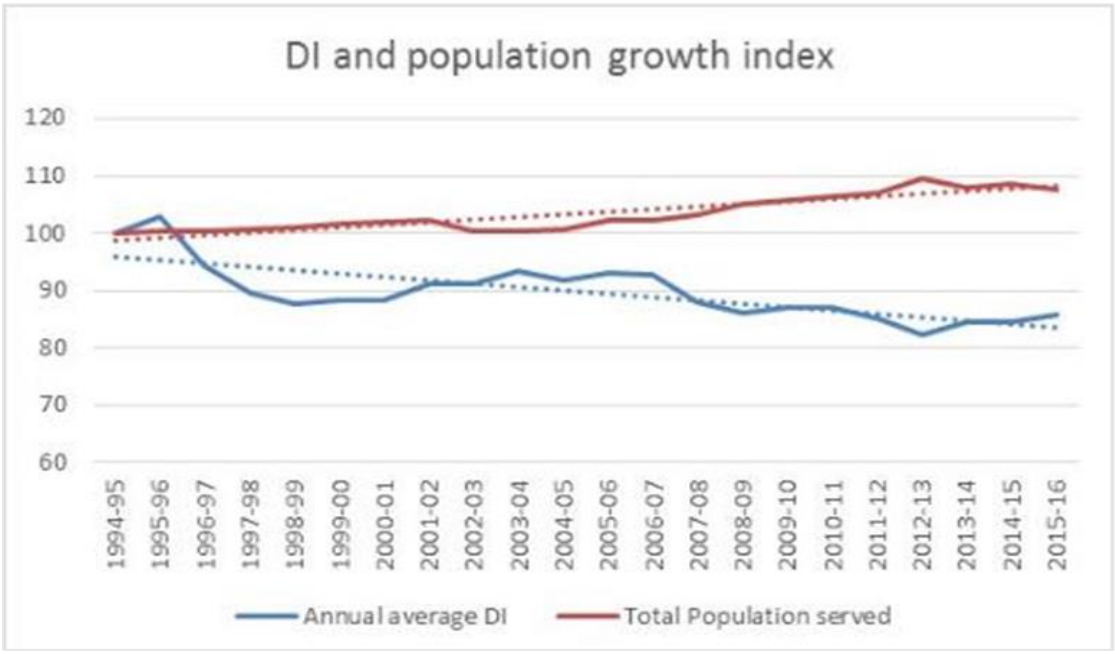
2.2.3 Customer views

Of all our performance commitments tested with customers, leakage was the one most customers felt most strongly about. Multiple customer research projects have validated that leakage is one of our customers' top three (prompted) priorities (river pollution and internal sewer flooding are the other two). Tackling leakage is non-negotiable and remains a top priority.

There is a strong belief amongst customers that if they are expected to be responsible with water then Severn Trent must also prioritise leakage – reducing leakage is one the most valued service improvements and fixing leaks in a timely manner is one example which demonstrates Severn Trent's commitment to use its resource responsibly. Customers tend to favour demand management approaches to water usage over supply options, however, they recognise that any solution will need to include a blend of both options.

2.2.4 Historical performance

Between 2010 and 2020 we will have reduced leakage by 72 Ml/d (15%), and reduced water consumption by around 45Ml/d through our water efficiency programme (see figure below).

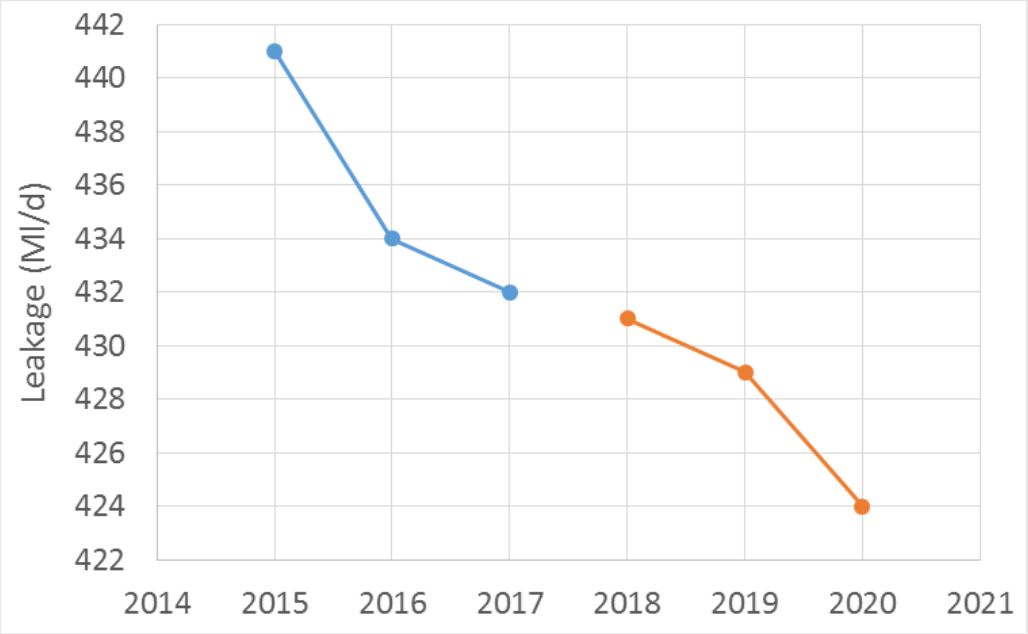


Annual average distribution input compared with total population served

Through the success of our leakage and demand management track record, we have not had to increase the total amount of water we put into supply in the last 10 years despite the population growth in our region, as demonstrated in the figure above, which shows the annual average distribution input compared against the total population served. Severn Trent has demonstrated consistent year-on-year improvement since 2014, and are on track to deliver a 6% reduction over AMP6.

To enable us to deliver our business plan target we plan to move away from the traditional campaign-led leakage control strategy to a more proactive data-driven targeted approach, details of which are outlined in the Outcomes section.

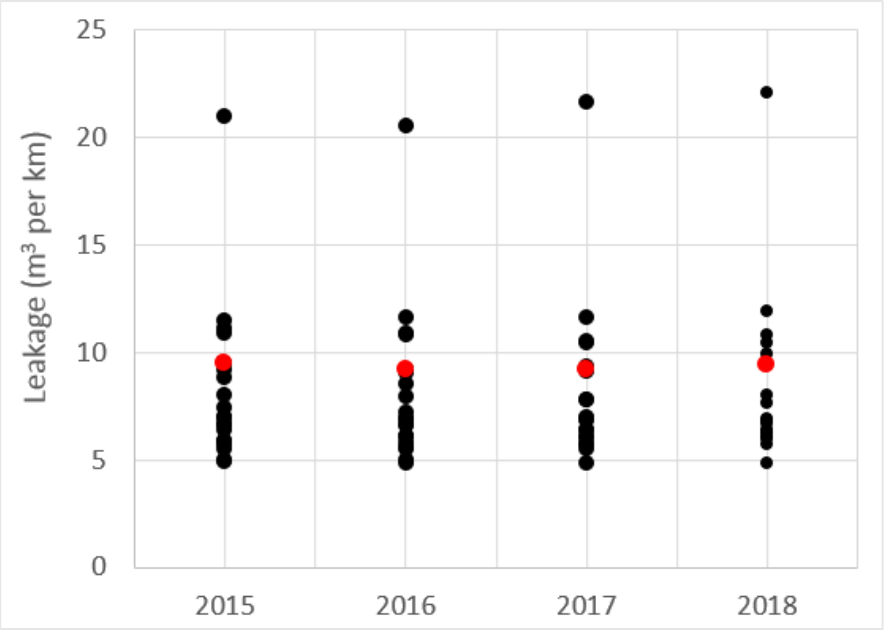
We are undertaking reporting improvements to leakage data to ensure alignment and reporting in accordance with the consistency guidelines. Therefore we will be reporting our 2025 improvement as a percentage improvement from the 2020 baseline position. The figure below shows our historic AMP6 leakage performance with our forecast data for the remainder of AMP6.



Severn Trent historic leakage performance from 2015 to 2018, and forecast performance from 2018 to 2020

2.2.5 Comparative information

There are significant differences in the methodologies employed by various water companies to determine leakage in their distribution networks, however, the figure below demonstrates that the industry trend demonstrates relatively stable performance over AMP6. By nature, changes in leakage performance will be relatively small in the absence of significant innovation, or investment. The greatest annual improvement demonstrated by any company over the past three years was a 7% reduction, made by Bournemouth water from 2015 to 2016. However, annual changes on average are much smaller – around 0.34%.



Comparative industry performance of Leakage (m³ per km) (Discover Water)

The consistency work being led by Water UK has provided us with two years (2016/17- 2017/18) of consistent comparable data (see the figure below). However, even within this reported data there were a number of areas of the guidelines where companies indicated that they were not fully compliant. The consistency reporting indicates that broadly, the overall range of leakage in the industry has not changed, however, the internal ranking of companies is likely to, as further consistent data is published. Severn Trent is currently just below average in leakage performance.

Convergence shadow reported data

2.2.6 Cost benefit analysis

As outlined in Section 2.5 (Appendix A3 Part 1) for leakage the marginal benefit exceeds marginal cost. We are aware that customers typically express very strong feelings about leakage and express seemingly high WTP values for reductions in leakage. It is highly likely that customers' valuation not only relates to the occurrence of leakage, but also attributes to and overlaps with speed of response to leaks – for which there is a separate PC and a separately evaluated ODI that will be around four-times more powerful than the current AMP6 ODI. **A further important consideration is that the target set for the PC represents what is realistically achievable within AMP7, which itself will require a considerable uplift in activity**. So, while a higher target might be justified by the potential benefits, the ramp-up in activity needed and the ability to manage this effectively and efficiently mean that a lower, but still extremely challenging, target has been set.

2.2.7 Rationale for target

We are proposing to deliver a 15% reduction in leakage in AMP7, which is more than double the calculated economic level of leakage (ELL) for Severn Trent at 7.3%. Achieving this level of reduction will be unprecedented in our history.

Leakage is a mandatory commitment for us and the only commitment where Ofwat has made their expectations clear, we need to aim for at least upper quartile performance or a 15% improvement across the AMP.

We are also facing significant water resource challenges in the future and need to consider all options for reducing our need to abstract water from the environment. Our Water Resources Management Plan identified a need to reduce real losses by 15% by 2025 as part of the best value package of solutions.

We will have to completely rethink our approach to leakage reduction. Analysis shows that by 2024/25 we will be operating around 35 Ml/day below the sustainable economic level of leakage – in order to ensure we continue to invest responsibly we will need to identify new and innovative ways to deliver the improvements.

Below we discuss the six approaches set by Ofwat as outlined in the table below.

Application of Ofwat Tests for the performance commitment *Leakage*

Ofwat Test	Outcome
Proposed 2024/25 target	A 15% reduction from the 2020 baseline as our target given it – • aligns with proposals outlined in our WRMP; • achieves 15% leakage reduction as per Methodology guidance; • targets the largest reduction achieved by us since PR09; • represents an improvement 7.7% above SELL
Comparative information	We will target 15% - higher than the largest improvement proposed by a company in AMP6 with a view to developing more economical interventions to improve leakage and thereon target Upper Quartile and overall 50% reduction over performance in subsequent AMPs.
Historical information	Our proposed target represents the largest improvement we have delivered since PR09. 10% reduction over AMP5. 6% reduction over AMP6; 15% reduction – AMP7 proposal
Minimum improvement	Our minimum proposed improvement would be our estimated SELL for AMP7, which is 7.3%. We have calculated SELL using the old leakage definition given lack of historical data regarding the consistent definition.

Ofwat Test	Outcome
	SELL calculations use outputs from the following contributory calculations: • Natural Rate of Rise of Leakage (NRR) • Background Leakage (BL) • Active Leakage Control (ALC) • quantitative assessment of social, environmental and carbon costs and benefits related to leakage activities For PR19 Pressure Management and Asset Renewal cost functions have also been incorporated into the methodology in line with the EA WRMP guidance (2017). SELL calculation do not take into account customer's willingness to pay, given the ODI reward would only be unlocked once we surpass a reduction of ~15%, by which time we would be far past the sustainable economic level of leakage.
Maximum level attainable	A 17% reduction would be required for Severn Trent to reach current upper quartile of 332.4 Ml/d or 29% to achieve frontier level of 283.5 Ml/d. We do not believe there is a basis for targeting this level of reduction in AMP7 given the lack of deliverability, customer views and our historical performance to date.
Cost Benefit Analysis (CBA)	A 15% leakage reduction is in accordance with the optimisation undertaken across supply and demand activities undertaken to reduce our supply demand deficit.
Expert Knowledge	Our proposed AMP7 target is aligned with our WRMP requirements and stretches us beyond SELL as outlined above.

2.3 Per Capita Consumption – PCC (G03)

This is a common performance commitment proposed by Ofwat and defined as the average amount of water used by each person that lives in a residential property (litres per head per day). The Ofwat common definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf.

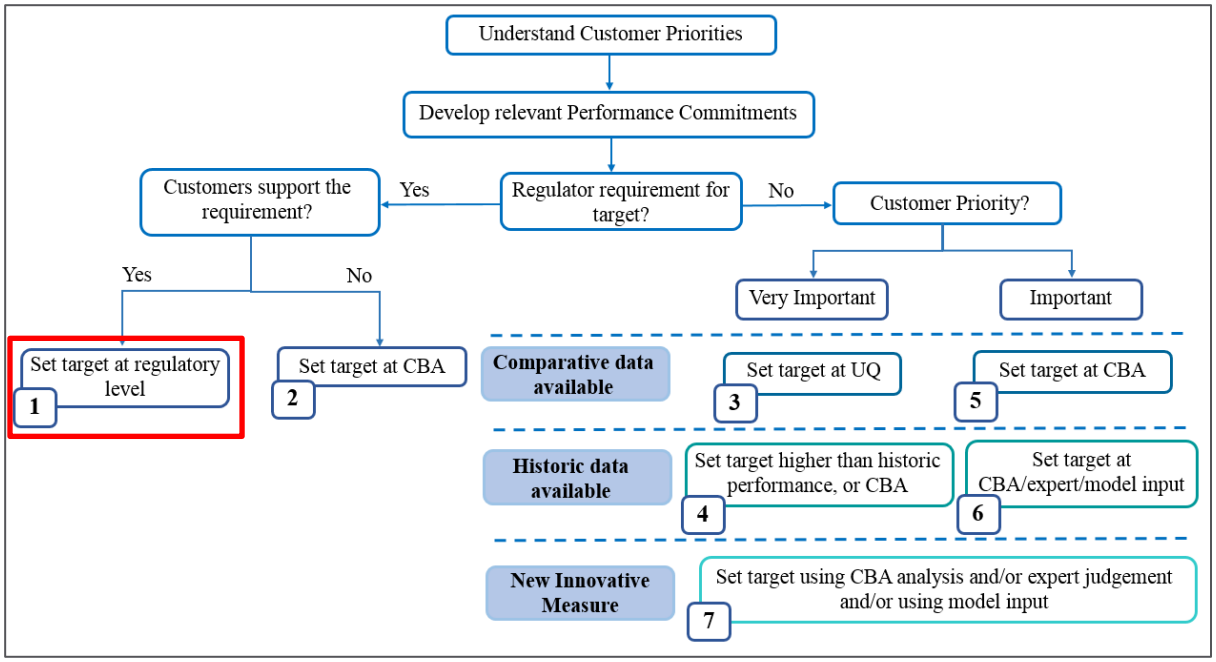
For 2024/25, our proposed target is a 3.5% reduction from our 2019/20 baseline. This will stretch us to deliver our best ever performance to date and importantly ensure we are driving the UQ benchmark for the sector.

2.3.1 Position in the framework

Similar to leakage, PCC is important to customers and they support efforts to conserve water and reduce waste. It is important to view PCC as a long-term performance metric ensuring improvements are sustained is critical to ensuring a long-term reduction in our overall demand on water resources.

As explained in our WRMP, maintaining and incentivising lower PCC is a key demand management intervention to manage our supply / demand deficit. Additionally, the National Infrastructure Commission (NIC) has also outlined long term ambitions for companies.

As such, our targets will be guided by regulatory requirements, and hence this commitment is located with cohort 1 in our performance framework shown in the figure below.



Location of the performance commitment in the framework

2.3.2 Regulatory guidance

Measures that can help reduce demand for water are an important part of the solution to meeting future water supply needs and protecting our rivers from unnecessary water abstraction. Defra have advised that they expect Ofwat to promote ambitious action to reduce leakage and PCC, where this represents best value for money over the long term. The government's 25 year plan to improve the environment (published January 2018) also states that they want to see water use in England fall, and for ambitious personal consumption targets to be set.

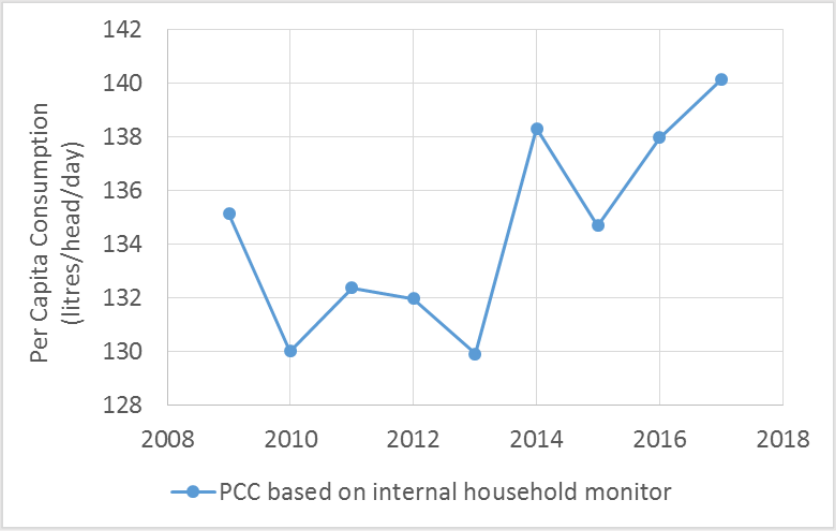
2.3.3 Customer views

Using water responsibly is important to customers, although not everyone is taking steps to do so. Dealing with leaks is thought to be a higher priority due to the scale of wastage (and being the company responsibility), though educating the public around reducing consumption is still an important investment. Additionally, to address supply-demand challenges, customers want us to help them reduce demand with strong support for metering (installing water meters) as one method for doing this.

Generally, customers are strongly behind efforts to conserve water and reduce wastage of a precious resource. The target is appropriate as customers believe Severn Trent is already doing well so feel that the proposed target should be set at a level which is a slight improvement.

2.3.4 Historical performance

In the figure below we have presented our PCC based on the historical data derived from the internal household monitors.



Historic PCC based on internal household monitors

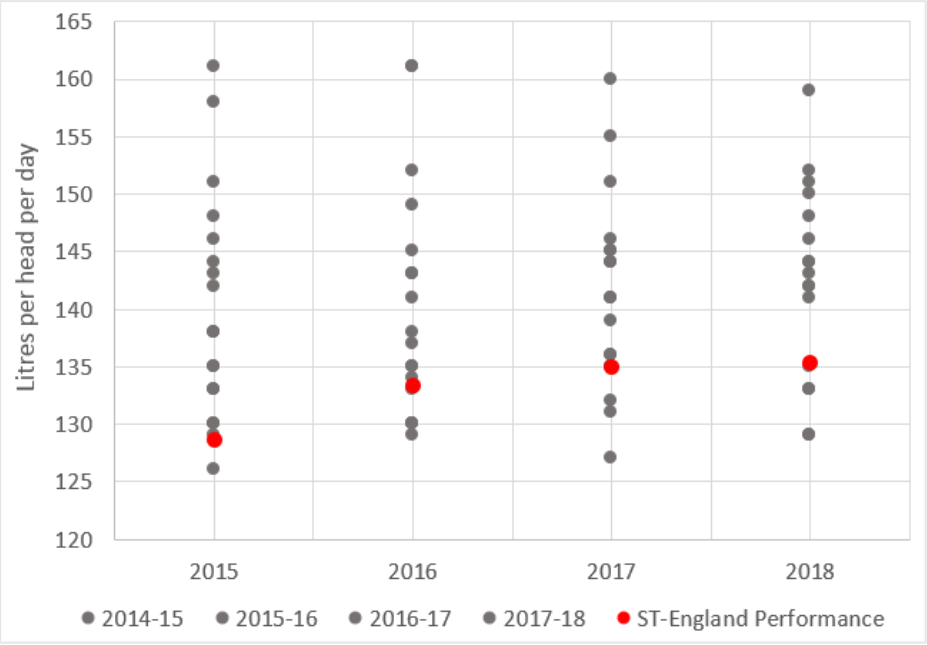
The basis for our PCC targets is derived from our WRMP, wherein a significant proportion of demand is driven down by a combination of water efficiency and metering. Over the next 25 years we propose to install significantly more meters across our region to support our PCC reduction in addition to our customer education performance commitment to improve PCC.

Our proposed 2020 baseline position based on consistency guidelines, and a three-year average, is 133.27 l/h/d.

2.3.5 Comparative information

The figure below shows the comparative industry data for PCC but using the current methodologies of the respective companies.

The consistent definition and reporting guidelines for PCC were published in March 2018. Thus given there is no shadow reporting performance data available, we have been unable to apply any adjustments based on the change in methodology.



Comparative industry information for PCC, using pre-consistency methodology. Source: Discover Water.

2.3.6 Cost benefit analysis

Our PCC commitment is largely targeted through our WRMP strategy, and is heavily dependent on delivery of our metering and education strategy. As such, cost benefit analysis is linked to work undertaken on supply demand enhancement expenditure.

2.3.7 Rationale for target

New reporting guidelines support best practice of using small area monitors to derive PCC. We are shifting our methodology to align with these guidelines, however, the limited time series of this new data gives a degree of uncertainty in our forecasts. As such, we have expressed our target as a percentage reduction from our baseline position, which is aligned with our metering strategy (and performance commitment) and education programme.

For 2024/25, our PCC target is expressed as a percentage reduction and is guided by our proposals within the WRMP on household metering, assumed water savings and water efficiency programmes.

For 2024/25, our proposed target of -3.5% will stretch us to deliver our best ever performance to date and ensure we are within UQ.

The outcome of our assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *PCC*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing -3.5% as our 2024/25 target given it – • aligns with our proposals to deliver the supply demand deficit as per the WRMP • aligns with our proposed metering proposals • reflects our best ever performance • reflects performance within industry UQ
Comparative information	We have one year of shadow reporting performance data available based on the new consistent reporting guidelines, which gives a PCC UQ of 136 l/h/d.
Historical information	The best historic performance of Severn Trent England, using the new AMP7 definition and against the new licence was 127.2 l/h/d, in 2012-13. Thus our target will ensure that we stretch performance beyond our best ever historical performance.
Minimum improvement	We have seen an increasing trend in PCC this AMP, thus maintaining our baseline would be the minimum improvement that we would consider. We are proposing a 3.5% improvement for AMP7, from our 2019/20 baseline.
Maximum level attainable	Current frontier in the UK, against the new guidelines, is 136 l/h/d. We predict that our 2025 target will put us in upper quartile position and help drive the benchmark for this measure. If we look across other countries with a comparative socio-economic status and climate, PCC values can be as low as 107 l/h/d in Belgium to 125 l/h/d in the Netherlands. We have the ambition to achieve the latter as reflected in our long term plan.
Cost Benefit Analysis (CBA)	Not appropriate.
Expert Knowledge	Our proposed target is guided by our proposals within the WRMP on household metering, assumed water saving and water efficiency programmes. Long term we propose to embrace the NIC ambitions and subject to future investment.

2.4. Mains bursts (G04)

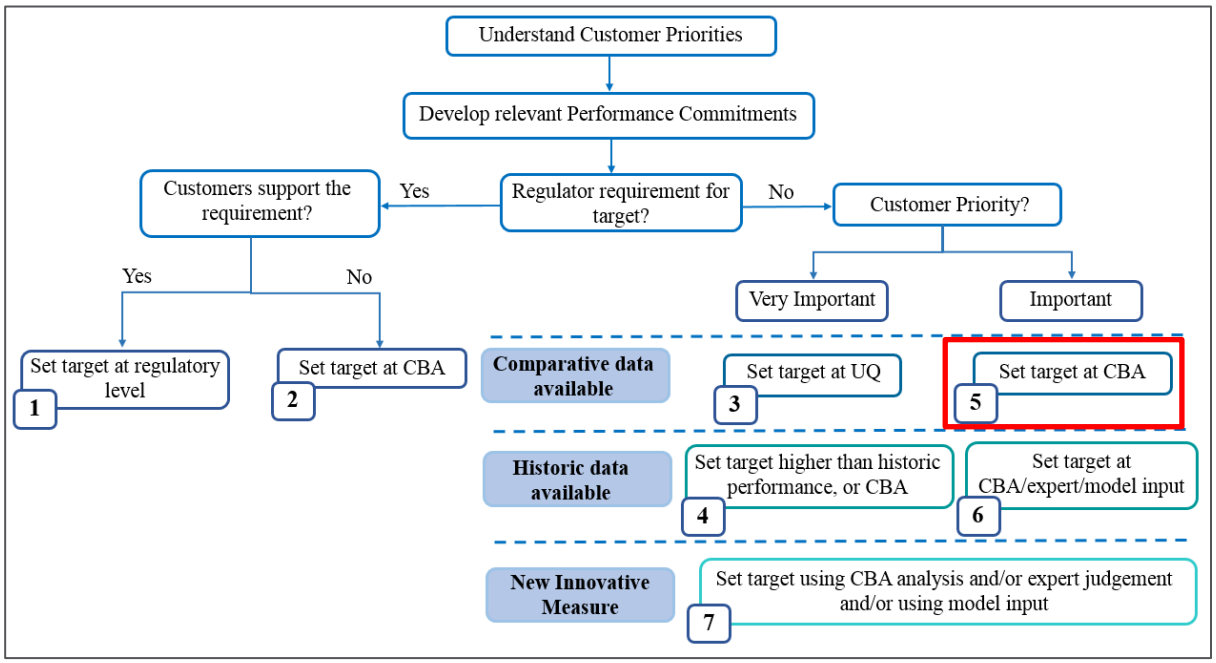
This is a common performance commitment proposed by Ofwat and defined as the number of mains bursts per thousand kilometres of total length of mains. The Ofwat common definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf.

We are proposing a target of <6,995 bursts, which reflects a c~10% improvement on reactive bursts; and accounts for an increase in proactive repairs from circa. 1863 in AMP6 to circa. 3500 repairs which we will need to undertake to deliver 15% leakage reduction. The latter point is critical – every time we repair a leak it counts as a burst. Therefore to deliver a large reduction in leakage we will need more proactive repairs and hence the overall bursts will increase. This is why we have separate the bursts measure into (i) proactive bursts (relating to leakage repair) and (ii) reactive bursts.

2.4.1 Position in the framework

Although there is comparative and historical data available, it should be noted that a review as part of the consistency project has indicated that there are variations in how companies report their performance on mains bursts. In March 2018 Ofwat published consistent reporting guidelines for companies on mains bursts which should improve transparency in reporting for the future.

Given mains bursts is important to customers with available historical and comparative data, this performance commitment belongs to Cohort 5 in our performance framework where targets will be set at the cost beneficial level as shown in figure 5.1.1.



Location of the performance commitment in the framework

2.4.2 Regulatory guidance

In AMP5, mains bursts was part of the suite of serviceability measures which were key performance indicators of stable water infrastructure performance. Targets were largely driven by historic performance and set within reference limits, which essentially indicated stable performance. As we moved into AMP6, there was no specific guidance from Ofwat and companies proposed bespoke asset health metrics mostly linked with a commitment to maintain stable performance.

In AMP7, within Delivering Water 2020, Ofwat has stressed the importance of asset health metrics indicating that companies can propose outperformance payments for asset health performance commitments if they can show there are benefits to customers and have customer support for improvements.

2.4.3 Customer views

Customers understand the importance of maintaining asset health and taking a long term view of infrastructure improvements. Whilst customers support this performance commitment, when presented with comparative information they are happy with target performance in the top 50% of all companies. Supply interruptions, caused by large mains bursts, are seen as less acceptable to

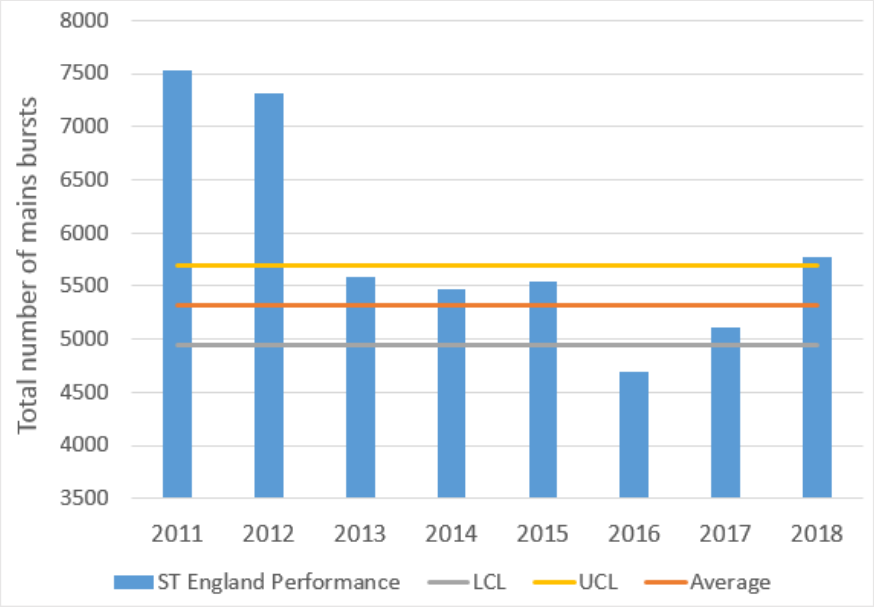
customers than interruptions caused by natural disasters, and therefore maintaining a healthy asset base is fundamental to providing core services.

Our proposed target will reduce reactive customer reported bursts, which have an adverse impact on customers by 9% and will increase in proactive repairs to enable us to reduce leakage and maintain stable asset health.

2.4.4 Historical performance

Historically, our performance for mains bursts has been stable (see figure below; note that these numbers reflect the adjusted number of mains bursts after our assurance picked up an error in reporting in 2016, and therefore there may be discrepancies with the APR reported numbers, for more details see https://www.stwater.co.uk/content/dam/stw/about_us/documents/Assurance-summary-1516-FINAL_1.pdf). There was an abnormal peak in mains bursts in 2009/10, which is attributed to a particularly cold winter period and similarly, we have seen an elevated number of bursts in 2018, after another cold winter and a number of freeze/thaw events.

The number of mains bursts reflects a variability linked with weather and therefore, as per Ofwat's serviceability framework, control levels (upper and lower) were defined for asset health metrics to allow for these fluctuations. Performance within the control levels was deemed as "Stable" performance whereas consistent performance above the upper control level was deemed as "Deteriorating" performance (similarly, consistent performance below the lower control limit was deemed as "Improving" performance). Through AMP5 and AMP6 we have delivered stable performance within our reference levels.

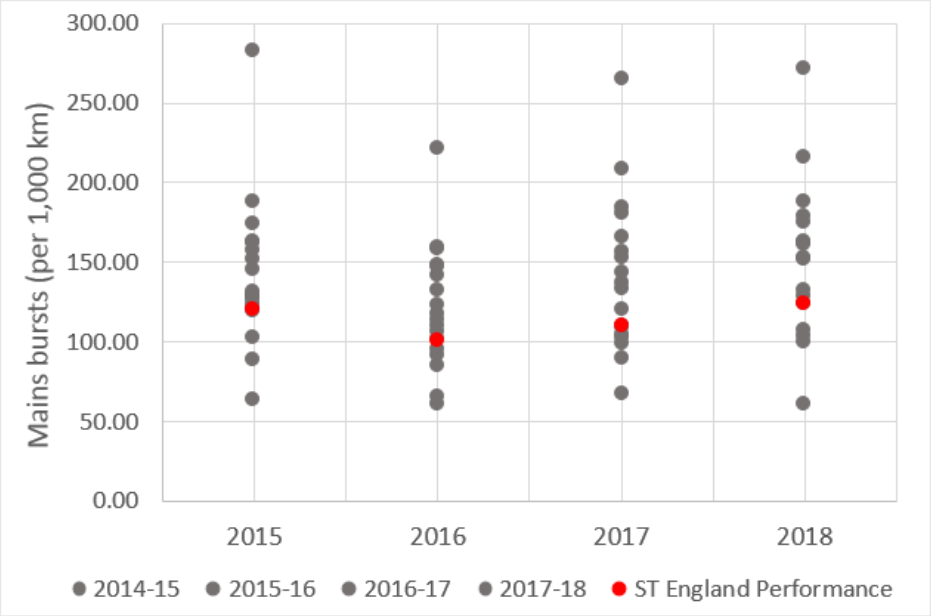


Historic Severn Trent England performance of total mains bursts

2.4.5 Comparative information

Mains bursts was part of the suite of serviceability measures in previous AMPs, and therefore we have historical and comparable data for this measure from over a decade (see figure below).

In 2015/16, we achieved our best ever performance of 4,690 bursts, which was just inside the industry upper quartile. Similarly, in 2016/17 we were very close to industry upper quartile. The industry upper quartile performance is predominantly driven by the small Water only companies (WoCs). Of the Waste and Sewerage companies (WaSCs) Severn Trent performed 2nd best in both years (first was Southern in 2015/16 and United Utilities in 2016/17).



Industry comparison for the normalised number of mains bursts

2.4.6 Cost benefit analysis

Given this is an asset health metric, target set at stable levels based on levels of repairs being planned to reduce leakage, hence we have not undertaken a separate cost benefit analysis.

2.4.7 Rationale for target

We are proposing a target of <6,995 bursts, which reflects a 9% improvement on reactive bursts and accounts for an increase in proactive repairs from circa. 1863 in AMP6 to circa. 3500 repairs which we will need to undertake to deliver 15% leakage (see table below).

The current AMP6 PC was set at the revised upper control limit for AMP6 of <7,758 bursts. This was revised to <6,906, following discussion with Ofwat and our CCG, after our assurance processes found duplicates had been counted both in the baseline, set in the final determination, and our recorded performance in the first year of the AMP.

The mains bursts commitment includes both reactive (customer reported leaks) and proactive (company detected leaks) repair work. This is different to the equivalent sewer collapses commitment which only includes reactive collapses. To ensure we are able to deliver the service levels on leakage expected by our customers, **it is important that we increase proactive repairs** and asset maintenance activities to avoid deterioration. These proactive activities should, all else remaining the same, result in an increase in proactive repairs and the overall mains burst out-turn.

Distribution of proactive vs reactive mains bursts

	Average proactive repairs per year	Average reactive repairs per year	Total number
AMP6	1,863	3,883	5,746
AMP7	3,500	3,495	6,995

In summary, this accounts for a 22% increase over our 5,746 over our AMP6 performance.

However:

- This is reflective of increased proactive repairs linked with leakage
- Indicates that we will be reducing reactive customer reported bursts on our network by 9%.

The outcome of assessment against the Ofwat recommended target setting test are as outlined below.

Application of Ofwat tests for the performance commitment *Mains bursts*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing <6,995 bursts (147.66 per 1,000 km) as our 2024/25 target given it – aligns with our proposals to deliver 15% leakage target; and reflects our customers' views.
Comparative information	Current (2017/18) upper quartile for all companies – 122 bursts per 1,000 km of length of mains and for Water only companies – 102 bursts per 1,000 km. Our proposed target as per our performance framework is aligned with the average performance across all companies.
Historical information	AMP5 – average of 6,329 bursts. AMP6 reference level of <6,906 bursts. Our historical performance range is 4,690 to 7,566 bursts with our best ever performance at 4,690 bursts. Our proposed target is within our historical range but exceeds our best ever performance as it takes account additional repairs we will need to deliver 15% leakage, a performance level we have never delivered before.
Minimum improvement	Stable performance (on reactive bursts) represents the minimum level for AMP7.
Maximum level attainable	Theoretical max level of 0 bursts. Current frontier performance is 61 bursts per 1,000 km of mains, this translates to <3,000 bursts for Severn Trent. We will not be proposing a target at this level as we are planning to implement a strategy of increasing proactive repairs on our mains network to deliver leakage improvement of 15%.
Cost Benefit Analysis (CBA)	Given this is an asset health metric, target set at stable levels based on levels of repairs being planned to reduce leakage, hence we have not undertaken a separate cost benefit analysis.
Expert Knowledge	Our proposed target has been developed using our asset deterioration models which have outlined the level of additional repairs above the AMP6 level of proactive repairs and reactive repairs on our mains network that we will need to resolve in AMP7. We've used our infrastructure model to assess the rate of mains renewal required to offset deterioration on our network and achieve the required improvements on mains bursts, supply interruptions, leakage and water quality complaints. Additionally, we're using extensive pressure management and optimisation across our network to reduce stress and extend the life of our assets.

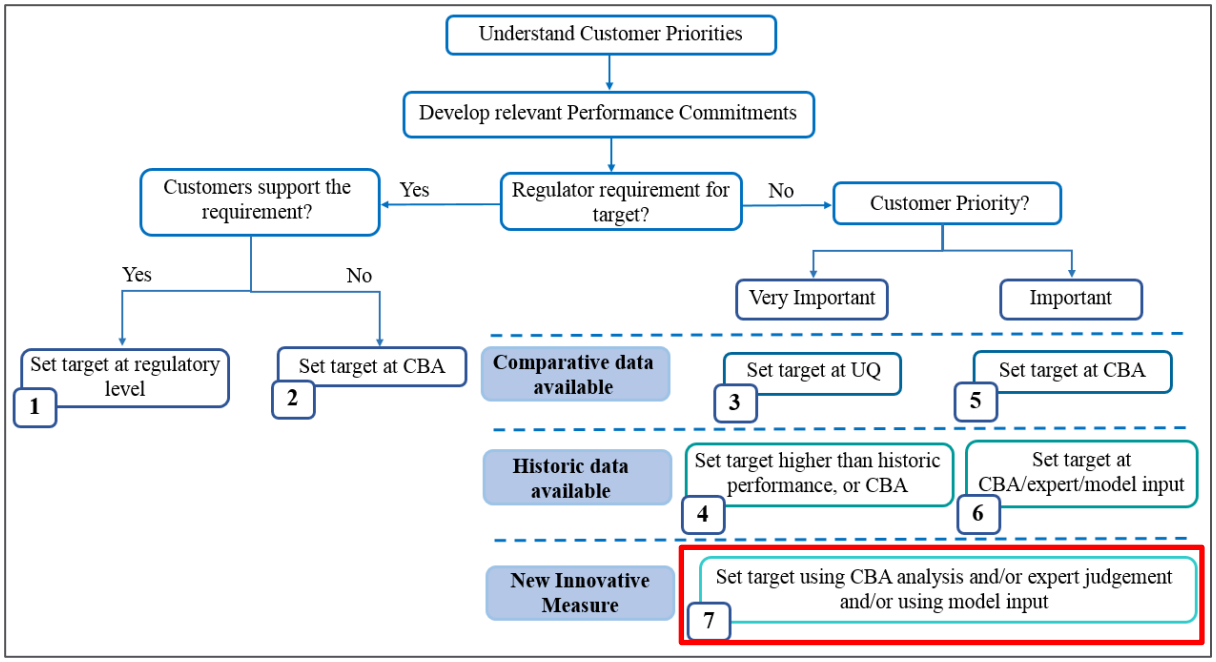
2.5 Unplanned outage (G05)

This is a common performance commitment required by Ofwat – and measures the annualised unavailable flow, based on the peak week production capacity (PWPC), for each company. 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). The Ofwat unplanned outage guidance can be found: https://www.ofwat.gov.uk/publication/reporting-guidance-unplanned-outage/.

Given this is a new commitment we will be targeting stable performance on this metric. We are confident at this level customers will not see any loss of supply due to unplanned outages at our production sites.

2.5.1 Position in the framework

This measure is designed to assess asset health for water abstraction and water treatment activities (primarily non-infrastructure). As a new performance commitment, we have no historical record of this measure. As such this performance commitment sits within cohort 7 of our framework (see figure below).



Location of the performance commitment in the framework

2.5.2 Regulatory guidance

This is a common performance commitment for AMP7 outlined by Ofwat with an expectation that companies focus on stable asset health which will be our key objective in setting targets.

2.5.3 Customer views

Customers understand the importance of maintaining asset health and taking a long term view of infrastructure improvements.

2.5.4 Historical performance

This measure is designed to assess asset health for water abstraction and water treatment activities (primarily non-infrastructure). As a new performance commitment, we have no historical record of this measure.

As part of our water resources management planning, we are required to log unplanned and planned outages at production sites. The definitions used for this data capture are not directly aligned to those of the unplanned outage measure, and as such, we can only derive an indication of our performance from the latter. However, the data does enable us to understand the behaviours and activities which may be required to perform well at this measure.

2.5.5 Comparative information

We currently only have one year of industry-wide comparative data for this measure. However, as a new measure, it is likely that a number of companies are not fully compliant with the reporting guidelines. As such, we have refrained from basing our target on a comparative basis. The one year of available comparative data indicates that UQ would be ~1.6%, and the frontier position is 0.6%. As such, our current performance is currently upper quartile.

2.5.6 Cost benefit analysis

As this commitment does not directly impact customers we have not used cost benefit analysis to set a target level.

2.5.7 Rationale for target

We are proposing to maintain stable asset health performance on this measure.

As an asset health metric without a direct customer impact (like external sewer flooding), our fundamental goal is to remain stable in our performance, as this indicates a balance between investment activities and performance at a sustainable level (other measures such as supply interruptions capture the direct customer impact). As such, our main focus will be to drive down unplanned outages in those areas of our network which are more vulnerable, for example, where an area is heavily dependent on a single source works.

Further analysis of this data over time will enable us to assess the efficacy of our maintenance strategy and help us to ensure we get the greatest benefit for our investment. Until we better understand our performance against this measure, our target for AMP7 is to maintain stable performance, given at current levels of performance we have demonstrated no deterioration to the water supply service that customers receive due to a loss of production capacity. Over the long term we plan to re-visit our strategy aligned with improved understanding the drivers in order to cost-effectively deliver a stable performance on this commitment.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests to the performance commitment *unplanned outage*

Ofwat Test	Outcome
Proposed 2024/25 target	0.8% (stable)
Comparative information	The one year of available comparative data indicates that UQ would be ~1.6%, and frontier position is 0.6%. As such, our current performance is upper quartile.
Historical information	We have no historical information regarding our performance against this metric. The closest metric we can use as a guide is total unplanned outage reported as part of our water resources management plan. We have then undertaken analysis to follow the new guidelines (but this will need to be developed further over the next year). Currently, this indicates a total of 0.8% of unavailable supply. We propose to further refine this data.
Minimum improvement	The minimum improvement in performance would be for our performance to remain stable. Our current proposal will ensure we are stable.
Maximum level attainable	The maximum theoretical performance commitment level is 0 or UQ. Our current performance indicates we are UQ and stable and we have demonstrated no deterioration to the water supply service that customers receive due to a loss of production capacity.
Cost Benefit Analysis (CBA)	Given this is an asset health metric, we have not undertaken a cost beneficial assessment.
Expert Knowledge	We will target stable performance on unplanned outage and propose to maintain our 2020 actual performance as an indicator of stable performance in AMP7, given at current levels of performance we have demonstrated no deterioration to the water service that customers receive due to a loss of production capacity.

2.6 Risk of severe restrictions in a drought (G06)

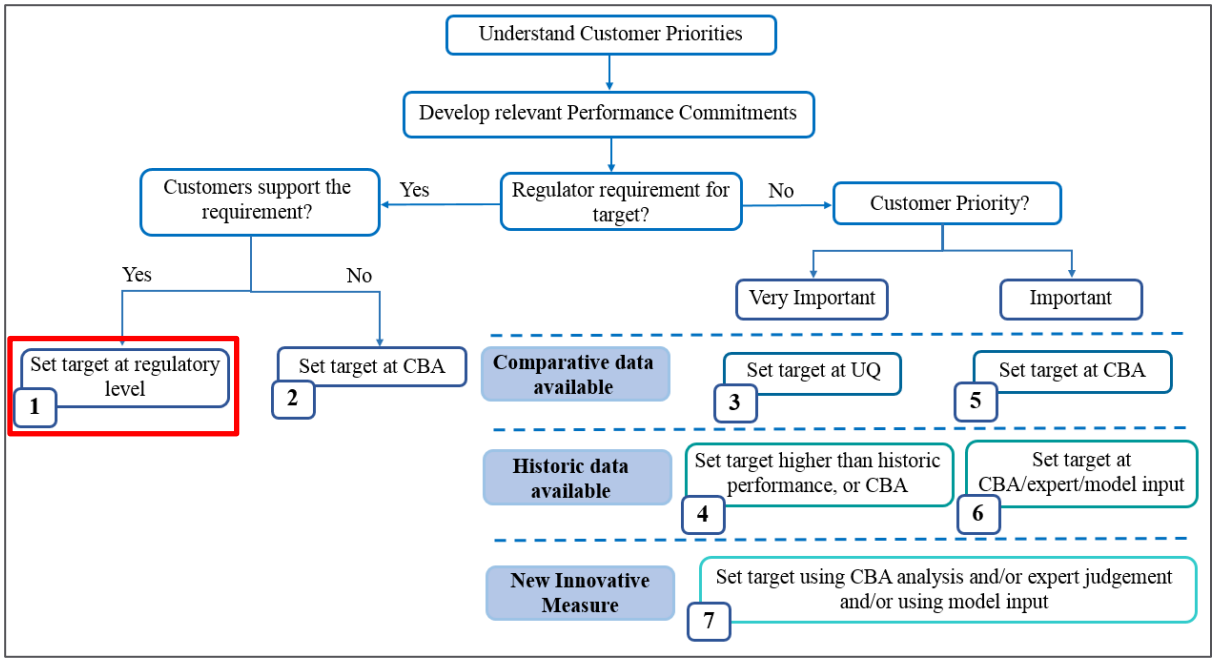
This is a common performance commitment required by Ofwat and defined as the percentage of the population the company serves that would experience severe supply restrictions (e.g. standpipes or rota cuts) in a 1-in-200 year drought. The Ofwat common definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf.

Our proposed targets for AMP7 and AMP8 will ensure that by 2030, 0% of our customers will be at risk of severe restrictions in a 1-in-200 year drought. We are delivering a number of schemes that will help us meet this goal, although most schemes will not provide beneficial use until AMP8 (2025-20). In AMP7 we are proposing an improvement of 5.5% and in AMP8 an improvement of 57.2%.

2.6.1 Position in the framework

While our customers have not listed this as a significant priority, they are supportive of the need for us to ensure resilience. Defra has indicated that it expects companies to invest so as to ensure compliance with drought risk.

There is no specific comparable data available. However, from our water resource management planning (WRMP) we have some historical data against which to benchmark our targets, as such, this measure belongs with Cohort 1 as shown in the performance framework in the figure below.



Location of the performance commitment in the framework

2.6.2 Regulatory guidance

This is a common performance commitment set by Ofwat to ensure resilience against severe drought restrictions (i.e. stand pipes or rota cuts). Defra has stated the expectation that performance should not deteriorate and companies should invest to ensure compliance where required.

2.6.3 Customer views

Customers accept and agree with the need for resilient supplies, however, they view this performance commitment as a low priority for improvement.

2.6.4 Historical performance

For previous WRMPs, we have ensured that we experience no more than 3 hosepipe bans every 100 years, and that we should never resort to emergency drought measures (for example, rota cuts). Since our previous WRMP, we have worked collaboratively with regulators and the wider industry, to assess our risk to drought, using historic drought events with advanced statistical techniques to simulate theoretical drought events that go beyond our historic experiences.

From this work, we have been able to assess that we are currently resilient to a 1 in 200 year drought event on an annual basis however over a 25 year average from 2020-2025 our performance is dominated by a potential shortfall in water available in our strategic grid which results in a 2020 baseline of 63.7% of the population at risk of severe supply restrictions (e.g. standpipes or rota cuts) in a 1-in-200 year drought.

2.6.5 Comparative information

We currently have one year of comparative data available however it should be noted that this commitment is reflective of a company's WRMP plans and thus not directly comparable. Currently we are projecting a higher proportion of population at risk of drought as compared to other companies.

2.6.6 Cost benefit analysis

For AMP7 we will seek to reduce the population at risk on a 25 year average basis by undertaking cost-beneficial water resource schemes as outlined in our cost exclusion investment claim. This will reduce our population at risk to 58.2% by the end of AMP7.

2.6.7 Rationale for target

Our target is to ensure that none of our customers are at risk of severe drought by 2030. This will require a number of interventions however most will not provide beneficial use until AMP8 (2025-20). In AMP7 we are proposing an improvement of 5.5% and in AMP8 an improvement of 57.2%.

The target is based on drought modelling through the WRMP process and is linked to the proposed interventions outlined in our supply demand cost factor claim needed to reduce the risk to customers.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Risk of severe restrictions in a 200-year drought*

Ofwat Test	Outcome
Proposed 2024/25 target	58.2% of the population we serve will be at risk of severe supply restrictions (e.g. standpipes or rota cuts) in a 1-in-200 year drought by AMP7 with a further reduction by 57.2% in AMP8. Thus ensuring only 1% of the population is at risk by AMP8.
Comparative information	We currently have one year of comparative data available however it should be noted that this commitment is reflective of a company's WRMP plans and thus not directly comparable. Currently we are projecting a higher proportion of population at risk of drought as compared to other companies.
Historical information	We have limited historical information as this performance commitment is based on stochastic modelling of drought scenarios.
Minimum improvement	Our minimum improvement is based on completing our AMP7 water resource schemes.
Maximum level attainable	The theoretical maximum level is 0% - we will be delivering the maximum level attainable for this commitment in the longer term circa by 2030.
Cost Benefit Analysis (CBA)	Interventions linked with commitment have been CBA assessed as outlined in our enhancement business case.
Expert Knowledge	Our WRMP drought modelling work has been used to define the interventions that will be needed to deal with the shortfall is water available in our strategic grid. Targets propose are linked with these interventions. Further details are provided in our WRMP.

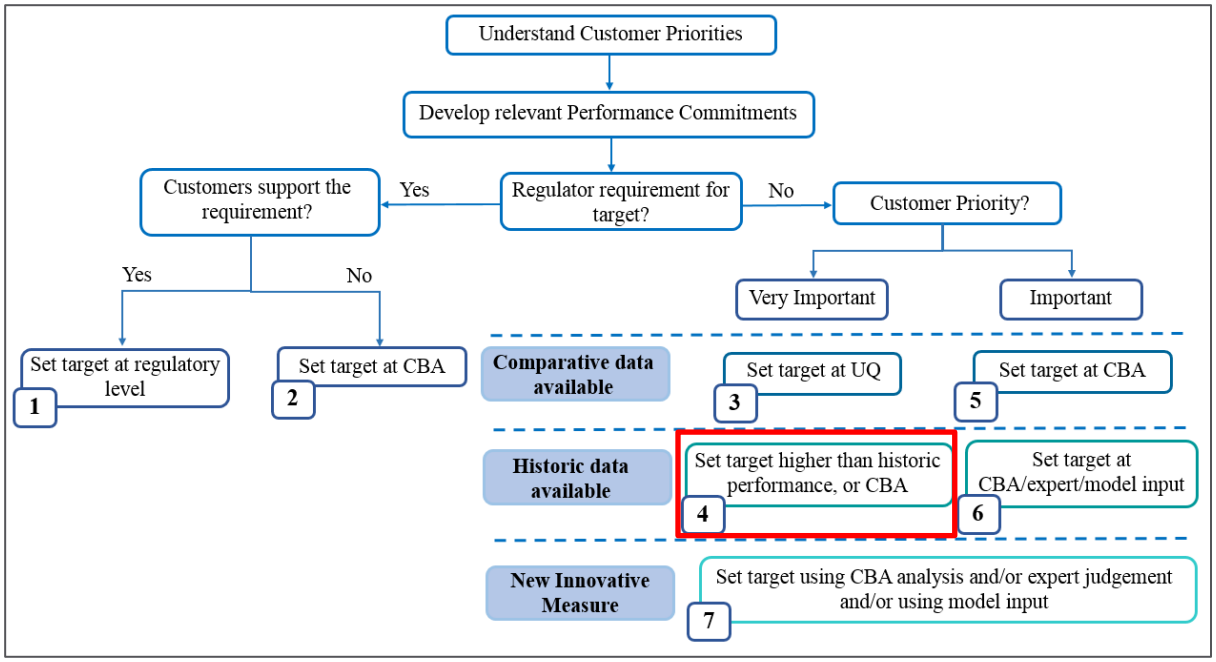
2.7 Speed of response to visible leaks (G07)

The average time taken to fix customer reported significant visible leaks on Severn Trent Water's network. This is a bespoke performance commitment.

Our proposed target represents a 50% improvement on our actual 2019/20 baseline position to fix significant customer reported leaks. In light of the improved definition, we will be developing a stable and assured baseline data set over the remainder of this AMP that can be used to set the target.

2.7.1 Position in the framework

This performance commitment is a revision of our current performance commitment W-B3: Speed of response in repairing leaks with historic data and strong customer support and therefore belongs in Cohort 4 within our performance framework as outlined in the figure below.



Location of the performance commitment in the framework

2.7.2 Regulatory guidance

As a bespoke performance commitment there is no regulatory guidance for this measure.

2.7.3 Customer views

Ongoing customer research continues to demonstrate that our speed of response to visible leaks is important to customers. Leaks are seen as a major priority for Severn Trent given the perceived scale of leakage. Our response to leaks is seen as an important component of reducing wastage and inefficiency.

2.7.4 Historical performance

We recognise that our performance against the current measure, which measures the percentage of leaks, visible and detected, which are fixed within 24 hours, has been below target as outlined in our PR14 business plan. From an initial AMP performance of 50%, performance has deteriorated to 23% in 2017/18. The fall in performance has been due to prioritisation of jobs and we also recognise some inefficiency regarding scheduling pressures.

Within the AMP6 commitment, the speed of response to a trickling leak had similar importance to that of a large burst, however, the consequences of the latter can be considerably more impactful than the former. To overcome this issue, we are proposing to adapt the measure slightly. We have elected to differentiate between the significance of leaks in terms of impact and thus we propose to specifically target leaks which can be fixed under a 2U notice. This means that our performance against this measure will not be limited by third parties, or awaiting council permissions. Through these changes we can monitor our performance in tackling the significant leaks which have the greatest impact on our customer's lives.

Furthermore, we have changed the definition to the average time taken to fix and reinstate leaks. By taking the average time, our performance will reflect a more representative repair time experienced by our customers, and it also encourages us to fix all leaks as fast as possible, as every leak will impact our target. We have also elected to include reinstatement in this time constraint, as we are aware of the inconvenience caused to our customers by the presence of barriers and traffic management.

2.7.5 Comparative information

Three other companies have performance commitments, which measure either the percentage of leaks fixed within a time constraint, or the average time taken to fix leaks. Two companies use a subset of leaks, defined as 'significant' leaks, and thus have tighter targets of % compliance fixing leaks within 2 days (South West Water) or within 24 hours (Wessex). Bournemouth, which considers all leaks, has a target of fixing 85% of all visible leaks within 7 days (see table below). It should be noted that the definition of significant leaks used by the companies is not available and thus could imply variation in what companies are delivering.

Comparison of other companies performance commitments dealing with speed of response

Company	AMP6 Definition	14/15 Actual	19/20 Forecast	Exclusions/Mitigations
South West	Average time taken to fix significant customer reported leaks. (Reputational)	2.83	<2	Only significant leaks, and those reported by customers are included in this measure.
Wessex	Customer reported leaks fixed within a day. (Reputational).	68%*	90%	Only significant leaks and those reported by customers are included. Wessex allow to the end of the next working day in their "24 hour" timescale.
Bournemouth	Percentage of visible leaks being repaired within seven calendar days of Sembcorp Bournemouth Water becoming aware.	54%	85%	Includes all visible leaks, with no exclusions.

*2015/16 performance

2.7.6 Cost benefit analysis

We have not undertaken a separate cost benefit analysis given costs associated with delivery will be linked with our leakage performance commitment.

2.7.7 Rationale for target

We are proposing to deliver a 50% improvement on our actual 2019/20 baseline position to fix significant customer reported leaks.

The outcome of assessments against the Ofwat recommended target setting tests are as outlined in the table below.

Application of Ofwat tests for the performance commitment *speed of response to visible leaks*

Ofwat Test	Outcome
Proposed 2024/25 target	-50% to the time it currently takes to fix all customer reported significant visible leaks.
Comparative information	South West Water has an AMP6 PC (average time taken to fix significant customer reported leaks) with a challenging target of <2 days, which they have not yet managed to achieve. Bournemouth has a target of 7 days.
Historical information	A 50% improvement from our forecast baseline offers a significant stretch.
Minimum improvement	A minimum improvement would be an approx. 20% reduction from our historical performance. We will be exceeding that to deliver 50% reduction
Maximum level attainable	Theoretical max is greater than 0 and the best performance to date is South West with an average time of 2.93 days. However there is no data available on their definition of significant. Given this is a bespoke commitment we propose to set the target based on improving upon our historical performance
Cost Benefit Analysis (CBA)	Not applicable due to common cost with leakage
Expert Knowledge	This commitment will ensure that all significant leaks are dealt with in a timely manner aligned with council permitting regulations thus ensuring customers are not adversely impacted. The target offers a 50% reduction on our historic performance.

2.8 Persistent low pressure (G08)

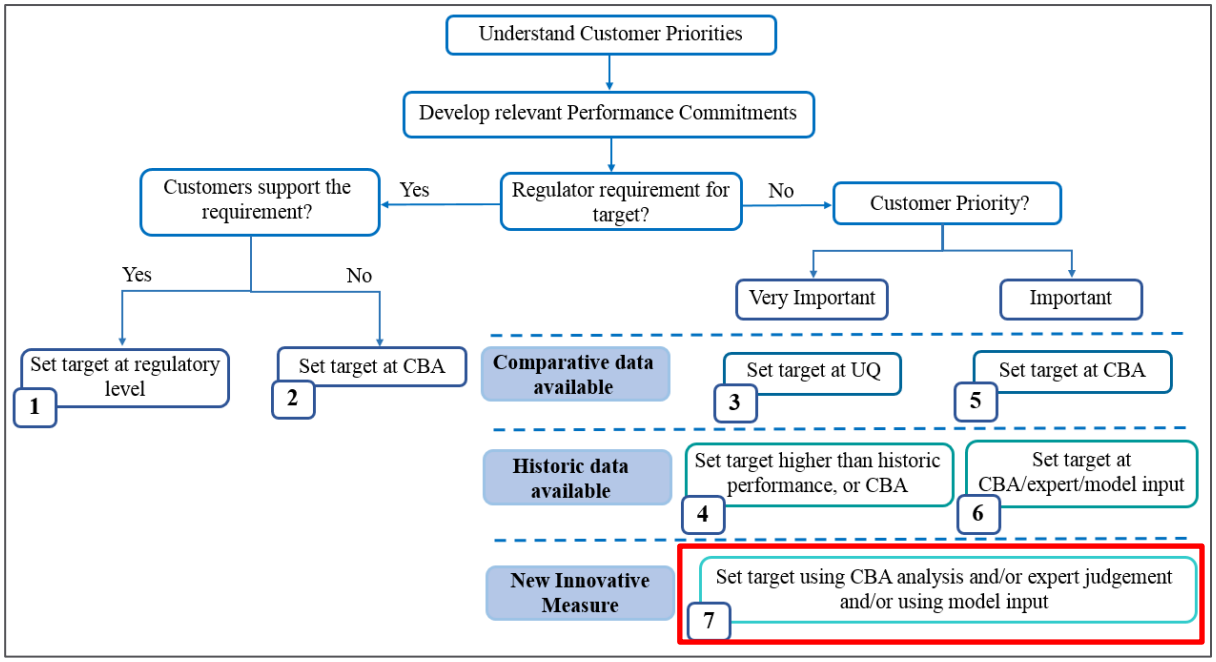
The number of low pressure days experienced by properties which have exceeded the persistent low pressure threshold. The persistent low pressure threshold is more than 25 days of low pressure in a five year rolling period. This is a bespoke performance commitment to reduce the number of customers experiencing persistent low pressure.

Our ambition for 2025, is to deliver 15% improvement from our 2019/20 baseline which is equivalent to circa.3000 property days or 147 properties at risk of experiencing 25 days low pressure across the AMP. This we believe will deliver UQ service to customers and under our new definition will incentivise us to tackle the most chronic low pressure issues.

2.8.1 Position in the framework

Given the strong customer feedback we have revised our AMP6 performance commitment, W-B7: Customers at risk of low pressure, to ensure further focus on customers that are affected by persistent low pressure.

As this is a bespoke performance commitment we have no comparative data and very limited historic data on low pressure to base our target. Therefore this performance commitment, belongs in Cohort 7 within our performance framework as outlined in the figure below.



Location of the performance commitment in the framework

2.8.2 Regulatory guidance

As a bespoke performance commitment there is no regulatory guidance for our targets against this measure.

2.8.3 Customer views

Low pressure is one of the most commonly experienced service failures across multiple research projects and evidence sources. Poor pressure can be a major cause of dissatisfaction to customers and as such, it emerged as an important issue which was not being addressed in AMP6. This importance has come through strongly in our Gilson Committee which investigates and addresses long running customer issues (and demonstrates that if left unaddressed, low pressure can cause serious dissatisfaction and loss of trust).

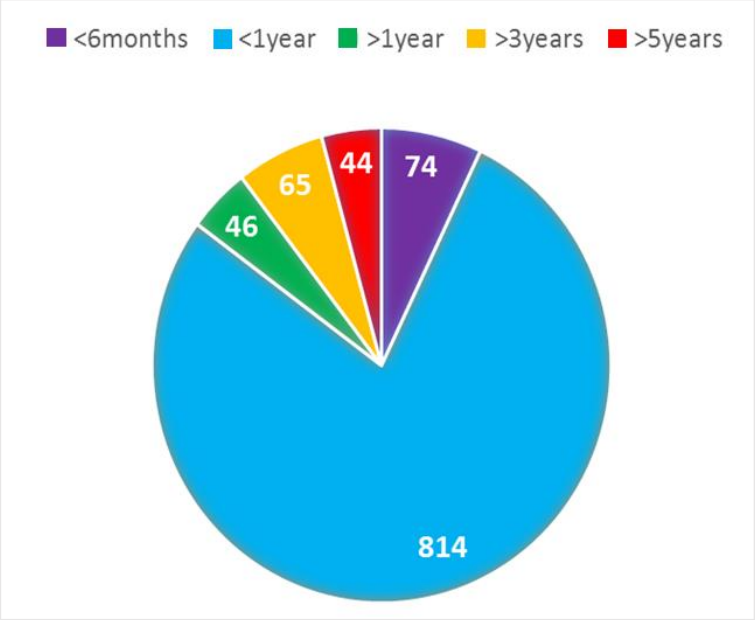
2.8.4 Historical performance

In AMP6 we have successfully delivered our PR14 business plan target consistently, year on year. The current AMP6 performance commitment for pressure is not very effective at differentiating between those customers who have short term pressure issues, such as those experienced during hot weather and those that suffer continually. To address both issues, for AMP7, we are proposing two performance commitments with respect to low pressure:

- **Low Pressure Complaints**, which aims to reduce poor supply complaints from customers. This predominantly covers the issue of temporary, transient or customer perception related low pressure concerns.
- **Persistent Low Pressure**, which tackles the issue of long-term, persistent pressure issues.

The latter performance commitment is detailed here. This is a revision of our AMP6 performance commitment W-B7: Customers at risk of low pressure - which followed the methodology of the DG2 serviceability indicator.

During AMP6, we have found that the number of properties coming onto the low pressure register, and off again, within the same year, is significantly larger than the number of properties which remain on the register for over a year (see figure below). In February 2018, there were 1,043 properties on the low pressure register, of which 85% have been on the register for less than 1 year, and 4% have been on the register for more than 5 years. The current measure gives the same weighting, or importance, to a property which has below regulatory pressure 6 days of the year, as a property which has below regulatory pressure 365 days of the year. As such, the AMP6 measure does not incentivise us to tackle the harder, more costly, but also, more persistent pressure problems.



Distribution of time length for which properties have been on the DG2 register

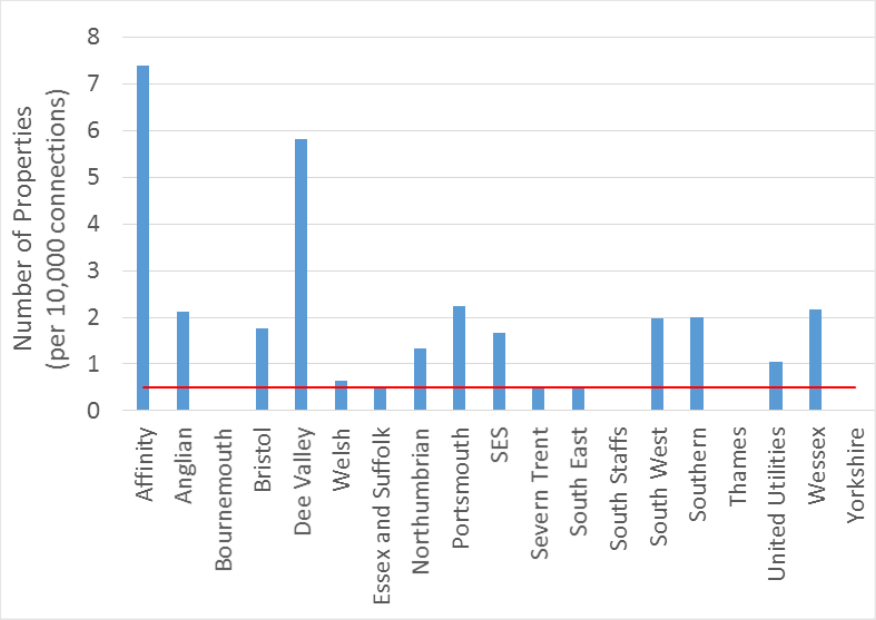
To address this, we have changed the unit of reporting against low pressure, so that properties are weighted by the number of days in a year that they experience below regulatory pressure. This will reprioritise the properties currently on our low pressure register, so that those suffering persistent low pressure for the most number of days in a year will be tackled first. We have maintained a qualification before we include properties in the count, so that we only include properties which have experienced 25 pressure breaches in the last 5-year rolling period. This should help exclude properties experiencing poor pressure due to abnormal demand, or other temporary events. Furthermore, we have removed the exclusion of properties which are within 10.5m of a service reservoir.

Our 2020 baseline for this bespoke commitment will be 20,073 property days. This has been developed based on currently available pressure data. As the number of properties on the low pressure register hasn't changed significantly in the last three years, we assume the number of property days to also remain relatively stable to the end of this AMP (2019/20). We have accounted for any variation in the baseline by proposing a percentage reduction as our 2024/25 target.

2.8.5 Comparative information

In AMP6 a number of companies (5: Thames, Southern, South East, Northumbrian and Anglian) had measures which covered some aspect of low pressure (often referred to as DG2). Over the AMP, Southern water has shown the most Improvement over AMP6, with a 23% reduction in properties from 2015/16 to 2016/17.

Furthermore, data on the number of properties experiencing pressure below the minimum standard in each company's area from 2016-17 was made available on the Discover Website, for the year 2016-17 (see below figure). The upper quartile based on this data is as highlighted by the red line below. Severn Trent has consistently delivered upper quartile performance against this metric and we aim to end AMP6 with an upper quartile performance.



Number of properties experiencing low pressure. Red line denotes upper quartile performance

2.8.6 Cost benefit analysis

The marginal cost exceeds the marginal benefit for the proposed target. Given this is a new bespoke performance commitment, we will need to think differently to provide robust cost effective solutions to balance the costs and benefits.

2.8.7 Rationale for target

We are proposing a 15% improvement on our 2020 baseline position. The design of our new measure also means we have a much stronger incentive to focus on chronic low pressure issues.

Our ambition for our customers is that all customers receive adequate pressure at all times of the day. However, it is also important that we balance the pressure which customers receive with the need for network calming and pressure management activities that will be integral to maintaining a stable asset base and thereon strong performance across a wide array of water measures, all of which are required in order to provide the level of service expected by our customers.

The target is based on the current number of schemes in the PR19 Business Plan to address persistent pressure issues, which will resolve 15% from our 2019/20 baseline which is likely to be equivalent to circa.3000 property days. We have removed a number of exclusions and caveats that were employed in AMP6 to exclude properties from being included in this measure, e.g. properties within 10.5 metres of a reservoir. Therefore the scope and definition of this commitment will also stretch us to think differently about resolving persistent low pressure issues.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Persistent low pressure*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing a 15% improvement from our 2020 baseline as our 2024/25 target given it: • Reflects our customer views to deal with persistent issues • reflects an improvement of circa. 3000 property days from our 2020 baseline
Comparative information	Against our AMP6 low pressure measure, our performance, compared to the industry, was within upper quartile at 0.5 properties per 10,000 connections. Thus our expectation is that our baseline AMP7 level would also be upper quartile, and our AMP7 commitment should move us towards frontier position, as the new measure incentivises us to target properties suffering with long term low pressure problems.
Historical information	Over AMP5 and AMP6 our performance has been relatively stable, with numbers fluctuating from 162 to 254 properties per year. Due to the way the new measure is calculated, based

Ofwat Test	Outcome
	on pressure breaches over the past 5 years, we have been unable to calculate historic data, however, we anticipate similar stability in this PC as in the current AMP6 PC.
Minimum improvement	Ofwat has listed low pressure against in the long list of optional asset health measures, and thus from an asset health perspective, we would pledge a minimum performance commitment level of 'stable'. However, as low pressure was one issue which resonated with our customers, we are pledging a more substantial 15% improvement from our 2020 baseline.
Maximum level attainable	0 is the theoretical max we could attain with respect to this measure; Our long term strategic direction would be to ensure that none of our customers are affected by low pressure issues. However given this is a new commitment with no exclusions for AMP7 we will aim to deliver 15% improvement over the next 5 years.
Cost Benefit Analysis (CBA)	Our proposed target is cost beneficial.
Expert Knowledge	The targets we are proposing are linked to schemes we will be undertaking in AMP7 to resolve persistent issues of low pressure. We will be pledging to schemes that deliver an improvement of ~3,000 property day's equivalent to a 15% improvement from our 2020 baseline.

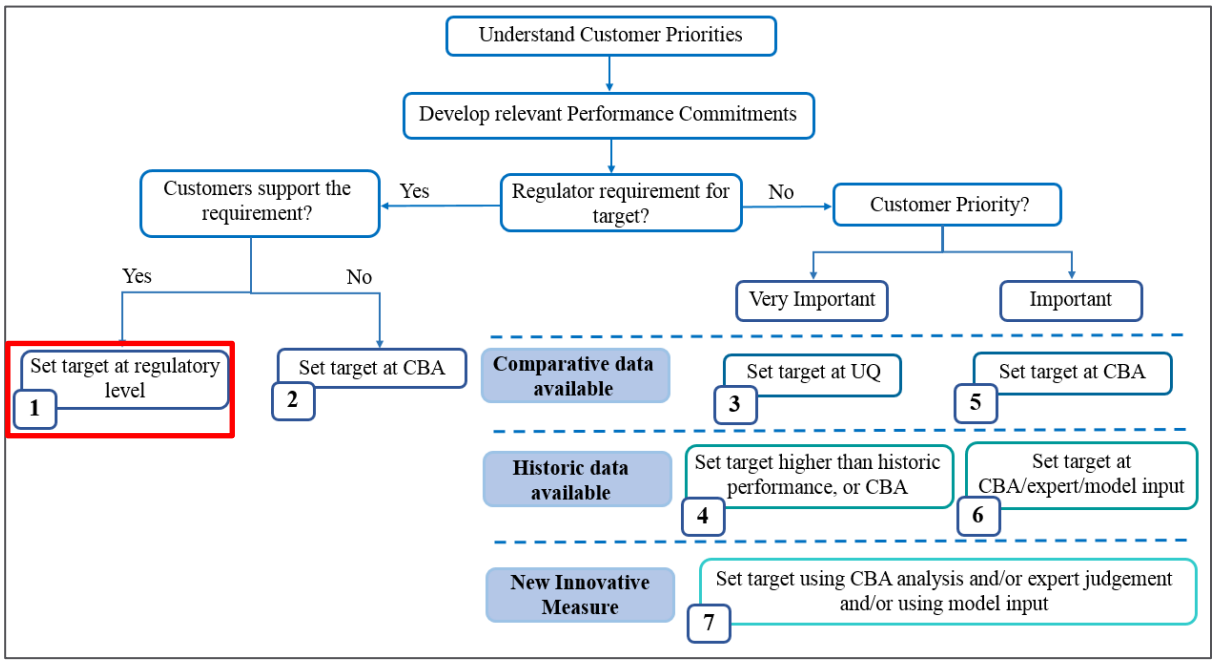
2.9. Abstraction incentive mechanism (G09)

This is a bespoke performance commitment to reduce abstraction at environmentally sensitive sites based on the methodology outlined by Ofwat.

The target of 0 Ml proposed will ensure environmental protection when groundwater levels have reduced to below the trigger threshold i.e. this would mean that we are abstracting 39.9% and 41.5% lower than our abstraction licence limits for [REDACTED] and [REDACTED], respectively in order to allow groundwater recharge.

2.9.1 Position in the framework

Our proposed AMP7 methodology and targets have been developed following the principals outlined by Ofwat, and the AIM sites were selected utilising WINEP (Water Industry National Environment Programme) outcomes, hence this commitment belongs to cohort 1 within our performance framework (see figure below).



Location of the performance commitment in the framework

2.9.2 Regulatory guidance

To develop our targets we have selected environmentally sensitive sites as outlined in WINEP and set their trigger levels and baseline daily average abstraction values based on the Ofwat AIM guidelines.

2.9.3 Customer views

As per the AIM methodology, consultation with our customers was required. Our water forum guidance was that given it will be difficult for customers to understand details linked with AIM, our targets should be based on expert judgment.

We have therefore inferred support for AIM from our wider customer research programme. We know that our customers value the environment. We also know, from multiple projects, that not wasting water, a precious resource, is seen as a high priority for customers so reducing the amount of abstraction at environmentally sensitive sites not only protects the environment but also aligns with customer views on conserving water.

2.9.4 Historical performance

We have no record of historical performance against this measure, as reducing abstraction at specific sites once trigger levels have been crossed has never been targeted. We have however undertaken analysis of past abstraction at times when the trigger threshold would have been crossed to understand what our baseline daily average abstraction should be set at. We recognise that abstraction at some sites can vary significantly based on demand, thus we anticipate there may be potential volatility in this performance commitment, for which during times when demand is high but the groundwater trigger threshold has been crossed at the selected AIM sites we will have to manage our network appropriately to ensure continuous supply to customers whilst also fulfilling our AIM obligations.

2.9.5 Comparative information

In AMP6 there are a number of companies who have bespoke performance commitments which cover aspects of AIM (Affinity, South East, Thames, United Utilities (x2) and Wessex). The table below outlines the commitments from the above companies for AMP6 (Note that the measures are not directly comparable).

Comparative assessment of AMP6 performance commitments dealing with AIM

Company	AMP6 Definition	PR14 FD starting level	2019-20 PCL
Affinity	AIM	TBC	TBC
South East	We will monitor our abstractions at low flows at environmentally sensitive sites (in line with AIM)	TBC	TBC
Thames	AIM (Ml/d)	N/A	Corrigendum to Thames Water PR14 plan
United Utilities	Contribution to river improved – water programme (NEP schemes and abstraction changes at 4 AIM sites (km river improved).	50.4 km	159.5 km
United Utilities	[REDACTED] transfer into West Cumbria (% project complete)	0	82
Wessex	Abstractions at [REDACTED] exported (Ml/a)	100	100

2.9.6 Cost benefit analysis

Target has been set at cost beneficial level.

2.9.7 Rationale for target

Our performance commitment levels for each year of AMP7 have been set at 0 Ml. This demonstrates a stretch as a 0 Ml target means committing to abstract no more than the baseline daily average abstraction rate when the groundwater trigger threshold has been crossed**.** This target will reduce the environmental impact of our abstraction at environmentally sensitive sites when the groundwater level reduces to below the trigger threshold. Information on the development of our baseline daily average abstraction rates and groundwater trigger thresholds for the identified sites can be found in the commentary for the AIM business plan table.

Our current baseline daily average abstraction values are lower than our permitted daily peak abstraction licence limits at these sites (39.9% lower for [REDACTED] 41.5% lower for [REDACTED]) and so our abstraction ability will be further constrained when the groundwater trigger threshold has been crossed. We will also have to implement operational changes to ensure water from elsewhere within the network can be deployed to the relevant area should it be needed.

Our proposed baseline daily average abstraction for AMP7 is 6.25% lower compared to our AMP6 recent actual abstraction at [REDACTED]. Our AMP6 recent actual abstraction for [REDACTED] is slightly lower (4.88%) than the proposed baseline daily average abstraction. This is a realistic baseline average abstraction rate as it allows for growth, headroom, and because we would need to utilise [REDACTED]if our [REDACTED]source went out. Moreover, during the 1990s and mid-2000s average daily abstraction was greater than the proposed baseline daily average abstraction. We believe that this is a realistic baseline abstraction rate as it represents what our daily average abstraction has been when the AIM would have been 'switched on' during 2007-2018 – our analysis indicates AIM would have been 'switched on' for 22% of the time at [REDACTED].

The selected AIM sites have been identified using Ofwat's AIM guidelines. Following the WINEP prioritisation work, we identified a number of sites (33 in total) that were potential AIM sites. These were then reduced to 17 sites once we removed the sites that were critical to public water supply. Further sites were removed by assessing each site using the sub-filters from Ofwat's AIM guidelines. Any site whereby the abstraction licence was a compensation licence was also removed as this abstraction already takes place for environmental benefit. Operational teams were then consulted internally to understand any supply issues in relation to water quality and whether one source relied on another for water quality blending for example – if they did then they were removed. Ultimately this resulted in the selection of four sites, however only two of these sites have suitable observation boreholes where a groundwater trigger level can be monitored ([REDACTED] and [REDACTED]).

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *AIM*

Ofwat Test	Outcome
Proposed 2024/25 target	0 megalitres per year (Ml/a). We are proposing that we will therefore abstract no more than the baseline average daily abstraction at times when the groundwater trigger levels for our two AIM sites have been crossed (i.e. the water levels falls to below the trigger level).
Comparative information	Most comparable measure from AMP6 are the abstractions at [REDACTED], which Wessex report against They had a baseline and target at 100 Ml/annum for AMP6, which is similar to our AMP7 proposal.
Historical information	Historical data on actual abstraction rates and groundwater levels have been utilised to set the baseline daily average abstraction rates and groundwater trigger thresholds at each of the AIM sites using Ofwat's guidelines (see the commentary included with the submission of the AIM business plan table). Our recent actual abstraction (AMP6) at [REDACTED] is 6.25% higher than the proposed baseline daily average abstraction rate. For [REDACTED] the AMP6 recent actual abstraction has been lower (4.88%) than the baseline however we believe it is a realistic baseline value as it represents our daily average abstraction when AIM would have been 'switched on' – 22% of the time period used for the analysis.
Minimum improvement	The minimum level of improvement would be to continue at our recent actual abstraction rates which are within our abstraction licence limits. Our proposed abstraction rates are 39.9% and 41.5% lower than the permitted abstraction licence daily limit for [REDACTED] and [REDACTED], respectively.
Maximum level attainable	The theoretical maximum level attainable would be achieved by completely turning off and shutting down the identified AIM sites when the trigger threshold is crossed. This would ensure no water is abstracted. This however is not practical in terms of maintaining customer supplies and not in accordance with guidelines.
Cost Benefit Analysis (CBA)	Target set at cost beneficial level.
Expert Knowledge	The baseline daily average abstraction values and groundwater triggers have been set using expert knowledge and data analysis. They have been set to ensure environmental protection at times of low groundwater levels. The target of 0 Ml proposed will ensure environmental protection when groundwater levels have reduced to below the trigger threshold i.e. this would mean that we are abstracting 39.9% and 41.5% lower than our abstraction licence limits for [REDACTED] and [REDACTED], respectively in order to allow groundwater recharge.

2.10. Resilient supplies (G10)

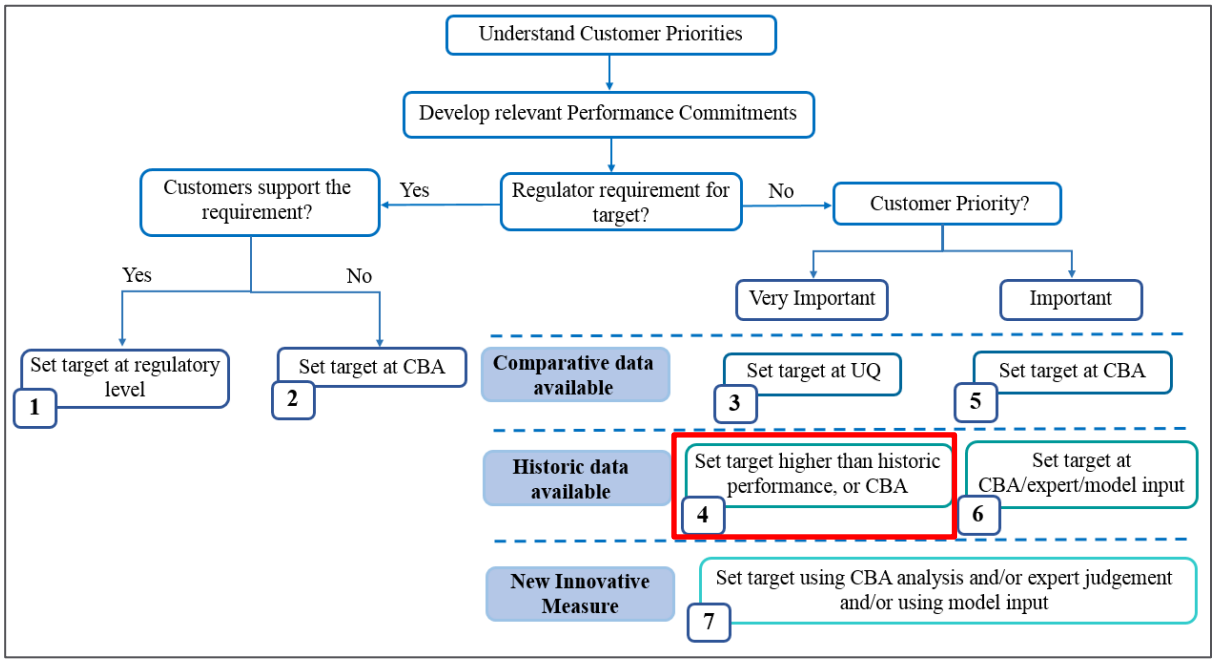
This is a bespoke performance commitment to improve the resilience capability of both our primary source of treated water and our network.

Our AMP7 target will ensure 96% of customers can have service to the tap restored within 24 hours of a single failure event in their normal supply route, with a long term ambition to reach 99% of our customer base by 2045. Our proposed commitment is designed to offer customers protection as part of our enhancement business case.

For further information on the enhancement business case please see Appendix 8.

2.10.1 Position in the framework

This performance commitment is a revision of our current performance commitment W-B5: percentage of customers with resilient supplies (those that benefit from a second source of supply), and therefore we have historic data. Additionally there is also strong customer support and therefore this commitment belongs in Cohort 4 in the performance framework shown in the figure below.



Location of the performance commitment in the framework

2.10.2 Regulatory guidance

Our proposals within this commitment are fully aligned with the four components of resilience (resistance, reliability, redundancy and response & recovery) published by the Cabinet Office 'Keeping the Country Running: Natural Hazards and Infrastructure' in October 2011.

2.10.3 Customer views

Increasing supply resilience is seen as a priority as interruptions due to single points of failure were deemed unacceptable by customers. A majority of residential and business customers are willing to invest in supply resilience, when presented with proposals within the context of bill impacts.

2.10.4 Historical performance

Historical context will be gained from the previous measure of resilience (W-B5 – percentage of customers with resilient supplies (those that benefit from a second source of supply)). This AMP6 Performance Commitment measured the percentage of customers for whom there is more than one source of water which can be used to provide supplies. The proposed AMP7 performance commitment is an improvement on the AMP6 performance commitment as it includes network resilience and is aligned with four components of

resilience (resistance, reliability, redundancy and response & recovery) published by the Cabinet Office 'Keeping the Country Running: Natural Hazards and Infrastructure' in October 2011.

From our AMP6 measure, we recognise that often the most straight-forward resolution to a resilience issue is not the most cost effective. For example, building a new water main to offer an additional source of water in the event of a burst is one response to resilience, however, it could be much more cost effective to arrange resilience through facilitating the tankering of water into the local reservoir to ensure their water supply is not affected by the burst. As such, a resilient network deployable within the required timescale includes:

- network failures forming part of the normal supply route that can be repaired in the time available; or
- sufficient network connectivity to allow the primary source of treated water to be delivered in the event of a network failure; or
- sustainable tankering / rapid response unit operation

Similarly, building an additional service reservoir to supply a region in the event of failure of the primary reservoir could be classed as resilience. However, again it may be more cost effective to arrange a transfer from another network, or tanker into the area. As such, a resilient source of water deployable within the required timescale includes:

- sufficient network connectivity to allow a second source of treated water to be delivered; or
- a primary source of treated water which is dual streamed (no single points of failure); or
- sustainable tankering options.

2.10.5 Comparative information

There are a number of companies that have resilience measures in AMP6. Anglian has a comparable commitment that measures the percentage of population supplied by a single supply system, and SES and Wessex have similar commitments but they measure the percentage of properties connected to more than one treatment works, and the number of properties supplied by a single source, respectively. The table below shows the comparative AMP6 committed performance levels.

Comparative assessment of AMP6 performance commitments dealing with resilience

Company	AMP6 PC definition	PR14 FD starting level	2019-20 PCL
Anglian	% population with single supply system	27.5%	24.7%
SES	% properties that can be supplied from >1 WTW	36%	56%
Wessex	No. of properties supplied by a single source	106,000 properties	42,000 properties
Severn Trent Water – AMP6	% of customers that benefit from a second source of supply	77%	77.7%

2.10.6 Cost benefit analysis

Our investment modelling approach has enabled us to test the costs and benefits of different capital schemes on the improved resilience of both our sources of water and our network. We could then understand which schemes provide the greatest benefit from a cost benefit perspective. Current proposed target indicates a stretching CBA.

2.10.7 Rationale for target

The target is based on the successful completion of specific schemes planned for AMP7, which have been deemed cost beneficial. These schemes include: removing single points of failure on critical process streams at water treatment works; removing single points of failure on a key aqueduct through network enhancements; and improving the water network interconnectivity to increase transfer flexibility to move water from area to area.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Resilient supplies*

Ofwat Test	Outcome
Proposed 2024/25 target	96.0% - based on AMP7 resilience schemes.
Comparative information	Based on the limited comparative data available, we believe that this target will put us at the forefront of resilience in the industry.
Historical information	Our AMP6 performance commitment target is 77.7% (this only looks at the benefit from a second source of supply). Our 2020 baseline will include the dual stream benefits of Birmingham Resilience – this means we know our baseline for the AMP7 will be 87% based on this inclusion and network resilience modelling. The target of 96.0% is then based on specific schemes proposed in our AMP7 plan.
Minimum improvement	Over an AMP we would expect to deliver a minimum improvement of approximately 1%, which is similar to what we proposed for AMP6. Thus we are proposing a 9% improvement over our 2020 baseline.
Maximum level attainable	100% is the maximum level attainable, however, due to the uncertainty in future changes in population growth and urban developments, and it would not be cost beneficial to maintain a target of 100%. The target for this measure is based on the completion of specific AMP7 schemes with a long term goal to target 99%.
Cost Benefit Analysis (CBA)	Marginal cost outlined exceeds marginal benefit.
Expert Knowledge	Target set based on the risk reduction we will achieve through schemes outlined within our plan - These include: removing single points of failure on critical process streams at water treatment works and a key aqueduct through network enhancements; and improving the water network interconnectivity to increase transfer flexibility to move water from area to area.

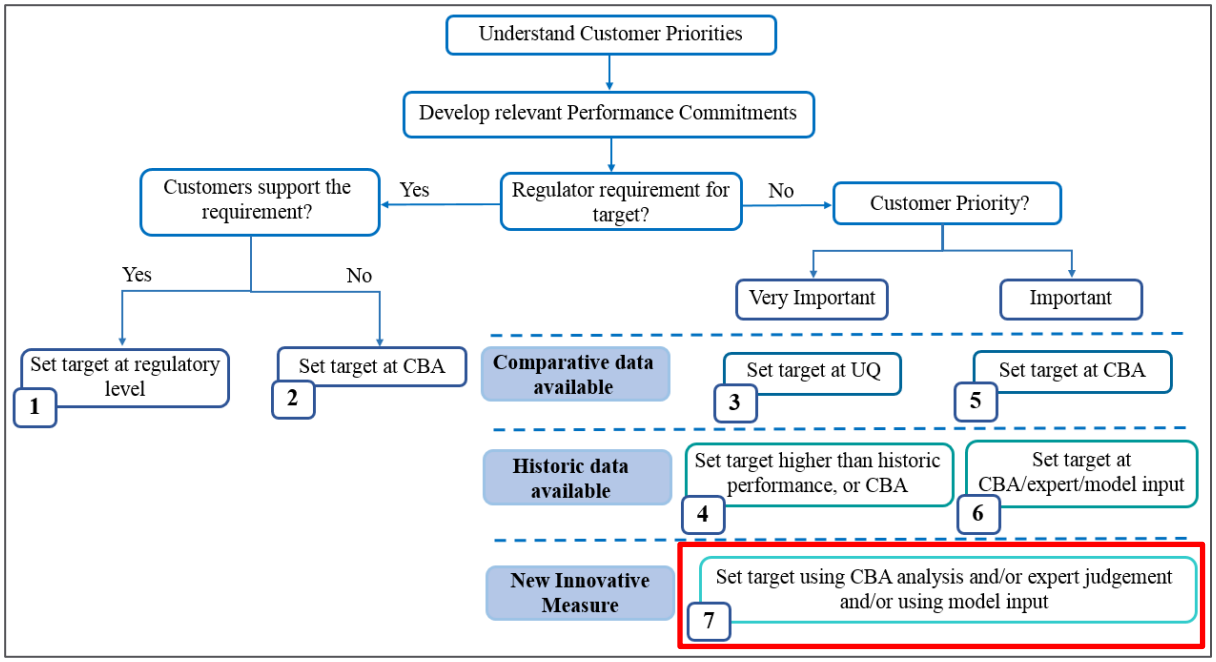
2.11. Resolution of low pressure complaints (G11)

The percentage of customers who report a low pressure or poor supply issue and have their complaint resolved without having to contact us for a second time.

We are proposing a target of 95% first time low pressure complaint resolution. To deliver this performance we will need to reduce our current unresolved complaints by 50%.

2.11.1 Position in the framework

This is a new performance commitment for PR19, which emerged from extensive customer research. The data on which we are basing this measure and targets, is data we have collected over the past years, as such, there is historical data available (figure below).



Location of the performance commitment in the framework

2.11.2 Regulatory guidance

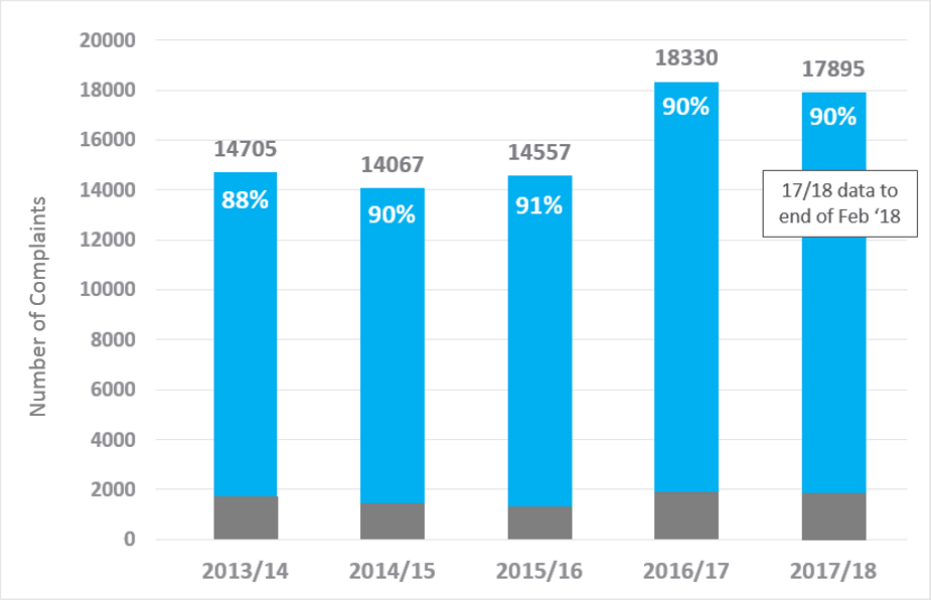
As a bespoke performance commitment, there is no regulatory guidance for this measure.

2.11.3 Customer views

Our customer insight and engagement has revealed that low pressure is one of the most experienced service failure. Historically our focus to-date has been to address properties on the DG2 register (which we continue to do through the persistent low pressure performance commitment). Through customer contacts and research we know that it is clearly more of an emotive issue for customers and our failure to address this is creating dissatisfaction. To this effect we have included this low pressure complaint resolution performance commitment to address this.

2.11.4 Historical performance

Historically, since 2011, we have recorded the number of calls we receive from customers complaining of low pressure (as poor supply is the manifestation of low pressure, we log the calls under the code WSPS – Water Supply Poor Supply). The reason for these calls ranges from no supply events, to blocked supply pipes, to problems within the property. The majority of calls are resolved quickly, and an average of only 10% of calls result in repeat calls. The percentage of repeat calls has remained relatively constant over the past five years, despite the total number of calls increasing (figure below, darker shade). As we anticipate the majority of single calls to be attributable to one-off events, we are targeting the customers who call in a second time, due to no resolution being achieve the first time.



History of low pressure complaints in Severn Trent

2.11.5 Comparative information

There is no directly comparable information for industry comparison against this measure. All of the AMP6 low pressure measures relate to persistent low pressure and the DG2 register rather than low pressure complaints. There is a relatively large uncertainty regarding this measure, as it has never been targeted before, and there are a number of complaints pertaining to perceived low pressure – where customers are dissatisfied with their pressure, but the network is above regulatory standard. In such cases, we will have to work with the customer to resolve the issue as pressure enhancement on the network will not be possible due to risk of bursts.

2.11.6 Cost benefit analysis

We have not undertaken a cost benefit assessment as costs will be common to ongoing activities on asset maintenance and call handling.

2.11.7 Rationale for target

This performance commitment will ensure a first time resolution of pressure complaints reducing customer dissatisfaction. A number of these will be targeted through undertaking site solutions such as resolving blockages and schemes in addition to educating our call centre staff to better identify potential issues over the phone, and also educating our customers, to understand what is indicative of internal problems (e.g. low pressure from the hot tap, not the cold tap will be related to the boiler) and how we can help them when they experience low pressure.

We are proposing a target of 95% first time low pressure complaint resolution. This is approximately a 50% improvement on our current unresolved complaints.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Resolution of low pressure complaints*

Ofwat Test	Outcome
Proposed 2024/25 target	95% of complaints resolved first time.
Comparative information	There is no comparative information pertaining to this performance commitment.
Historical information	Our best historical performance is 91%, against an average of 90%. We are thus offering a 5% improvement on our historical performance. However this improvement needs to be viewed in the context of unresolved complaints – whereby we will need to halve the number to deliver our performance improvement.

Ofwat Test	Outcome
Minimum improvement	We would aim to achieve at least our historical maximum of 91%.
Maximum level attainable	100% would be the maximum level attainable, whereby no customer would call in for a second time in regards to experiencing low pressure. However given a proportion of issues are linked to private problems, it is unlikely that we will be able to achieve 100% in AMP7.
Cost Benefit Analysis (CBA)	Target set at cost beneficial level.
Expert Knowledge	This a new PC, hence we are basing our target on providing an improvement over our historical performance. Currently we will be targeting 95% based on the uncertainty on the types of issues linked with pressure calls.

2.12. Increasing water supply capacity (G12)

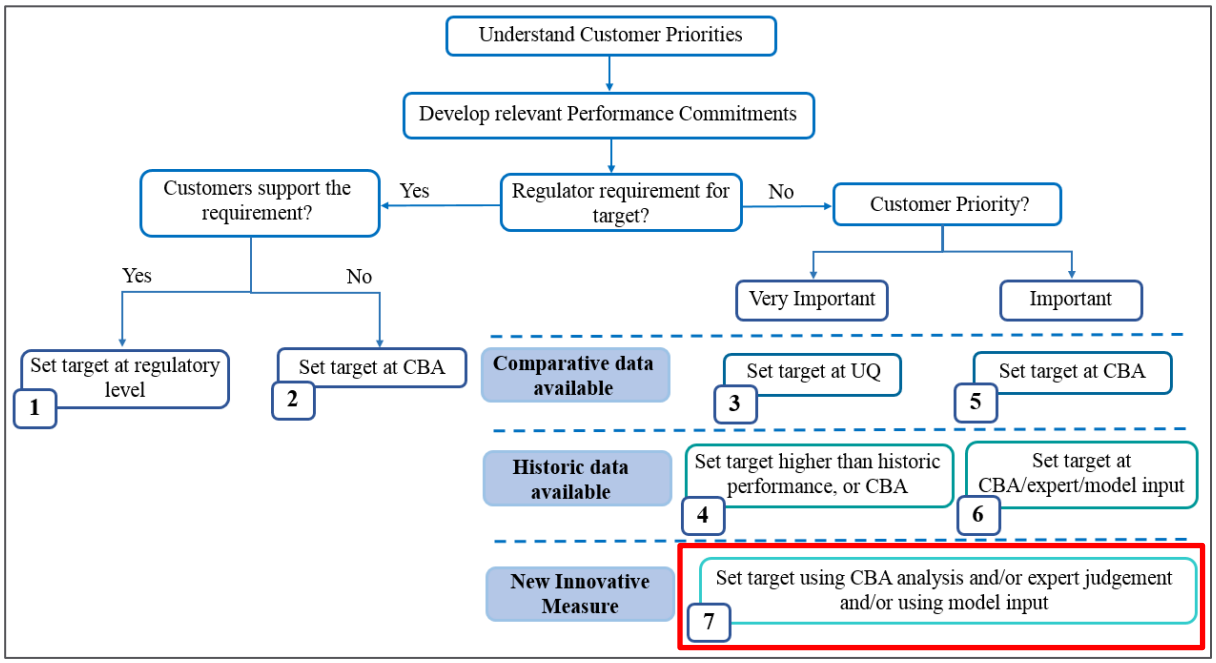
This commitment covers the increase in sustainable water supply capacity needed to maintain our projected end AMP8 supply / demand balance (SDB).

Our proposed commitment of 68.5ML/d is designed to offer customers protection as part of our enhancement business case for the supply demand balance. The target is based on the additional resource capacity required to ensure appropriate headroom is available in line with the Water Resource Management Plan.

For further information on the enhancement business case please see Appendix 8.

2.12.1 Position in the framework

This is a new performance commitment for PR19, aligned with our proposed enhancement business case and therefore it belongs in cohort 7 of our framework (figure below).



Location of the performance commitment in the framework

2.12.2 Regulatory guidance

We have a statutory duty to ensure the supply of water to our customers as laid out in our water resource management plan, and this commitment is guided by that expectation.

2.12.3 Customer views

It's vital that our customers have a constant supply of water, especially in times of drought. We never want to have to impose hosepipes bans, or similar usage restrictions, as having access to water is one of the core services we provide. The awareness of the supply / demand challenge is very low amongst customers. However customers expect us to provide a continuous supply of wholesome water, as this is a core service, regardless of any challenges that we face as we should plan and investment for the future.

2.12.4 Historical performance

There is no historical context as this is a new Performance Commitment to meet the supply / demand challenge we face.

2.12.5 Comparative information

We have not used the comparative test as this is a bespoke commitment designed to offer customers protection as part of the enhancement business case for the supply demand balance.

2.12.6 Cost benefit analysis

The cost benefit assessment for this commitment is linked with our enhancement business case for the supply demand balance.

2.12.7 Rationale for target

The targets proposed are based on the additional resource capacity required to ensure appropriate headroom is available in line with our Water Resources Management Plan requirements and reflects the certain schemes we are proposing in our plan:

Scheme	Benefit (Ml/day)
[REDACTED] **WTW to** [REDACTED] **pipeline capacity increase**	7.5
[REDACTED] **to** [REDACTED] **transfer solution**	25
[REDACTED] **asset and water treatment enhancements**	36

The 68.5 Ml/day benefit will be realised in 2025/26. In addition, a 2023/24 progress milestone has been included to enable progress to be assessed on these three schemes in terms of both scope (Ml/d delivered) and timing (beneficial use available from 1st April 2025).

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Increasing water supply capacity*

Ofwat Test	Outcome
Proposed 2024/25 target	68.5 Ml/d (megalitres per day) of additional supply capacity by 2025/26 through 3 schemes. A 2023/24 delivery milestone to track against the progress covering scope (Ml/d delivered) and timing (beneficial use available from 1st April 2025).
Comparative information	This is a bespoke commitment linked to the supply demand enhancement business case hence no comparative assessment has been applied to the target.
Historical information	This is not applicable as the target is based on our WRMP future scenario modelling.
Minimum improvement	This is not applicable as the target is based on our WRMP future scenario modelling.
Maximum level attainable	68.5 Ml/d (2025/26 delivery). This is the maximum level attainable in terms of additional supply capacity that we can create as per the three certain schemes outlined above. For the avoidance of doubt, the attainable additional capacity can only be measured in relation to these three schemes only
Cost Benefit Analysis (CBA)	CBA for this commitment is linked with our enhancement business case.
Expert Knowledge	68.5 Ml/d (2025/26 delivery) – this target has been based on the three confirmed supply schemes. This target has been developed through expert modelling of our network and the benefits in terms of additional supply that these three schemes will create.

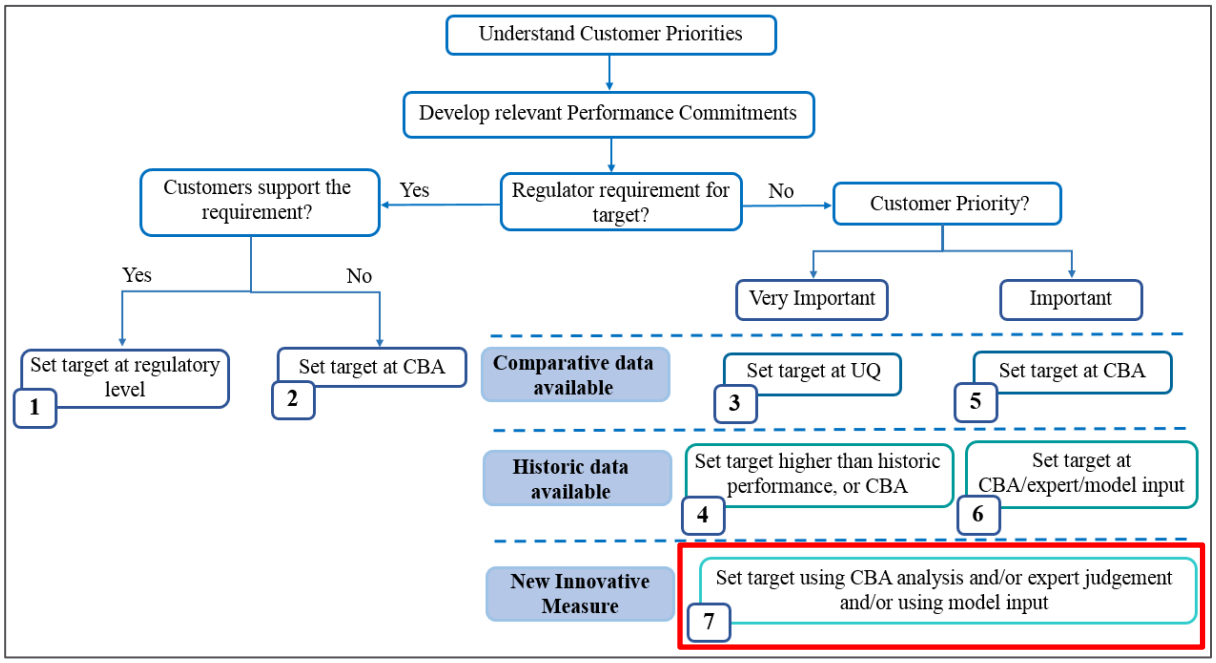
2.13. Security – reducing the risks to our sites (G13)

The commitment covers the number of our Category 2 sites brought up to a security standard to ensure compliance with the Protective Security Guidelines (PSG) (2020) as defined by Defra. Activities could range from enhancing CCTV, adopting thermal imaging, electronic access keys or physical hardening.

The targets proposed are aligned with our enhancement business case on security. For further information on the enhancement business case please see Appendix 8.

2.13.1 Position in the framework

This is a new performance commitment for PR19, which emerged from proposed significant investment to address Defra's security guidelines. Therefore it belongs in cohort 7 of our framework (figure below).



Location of the performance commitment in the framework

2.13.2 Regulatory guidance

The proposed target is aligned with Defra expectations on site security as outlined within the Protective Security Guidelines (PSG) (2020).

2.13.3 Customer views

We have not specifically discussed our security plans with our customers due to the confidentiality issues. It is fair to assume that customers would be supportive of any measures that improve the security of our sites/infrastructure.

2.13.4 Historical performance

This is a new performance commitment for AMP7 and as such we have no historical performance.

2.13.5 Comparative information

Two companies have security performance commitments in AMP6 – Thames and South East:

Thames has a penalty only commitment to comply with SEMD advice notes set at 100%. South East has a reputational measure to ensure compliance with national security obligations by measuring the number of SEMD compliance breaches with target set at 0 breaches each year of AMP6.

Our proposed AMP7 performance commitment is an underperformance penalty only measure covering the number 20.25 sites) of Category 2 sites that we have bring up to a PSG standards.

2.13.6 Cost benefit analysis

Cost benefit analysis is linked with our enhancement business case on security.

2.13.7 Rationale for target

Our target is based on an understanding of the number of Category 2 sites where we have to undertake certain work/action to bring them up to the correct standard as defined in the Protective Security Guidelines.

In developing the target, we have sought to create a single metric, even though the improvements relate to different types of sites – boreholes, distribution reservoirs and surface water treatment works. We have done this by normalising each improvement by site type, with reference to the cost of delivering an improvement for surface water treatment works as outlined below.

Site type	Sites	Cost %	Equivalent Units
Boreholes	132	3.6%	4.69
Distribution reservoirs	105	5.3%	5.56
Surface water treatment works	10	100.0%	10.00
			20.25

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Security – protecting our sites*

Ofwat Test	Outcome
Proposed 2024/25 target	20.25 sites.
Comparative information	Proposed PC and target is company specific hence comparative information has not been used.
Historical information	There is no historical information available.
Minimum improvement	Proposed PC and target is linked with our enhancement business case.
Maximum level attainable	Proposed PC and target is linked with our enhancement business case.
Cost Benefit Analysis (CBA)	CBA for this commitment is linked with our enhancement business case.
Expert Knowledge	Category 2 sites as outlined in our enhancement business case where we need to improve to meet the PSG.

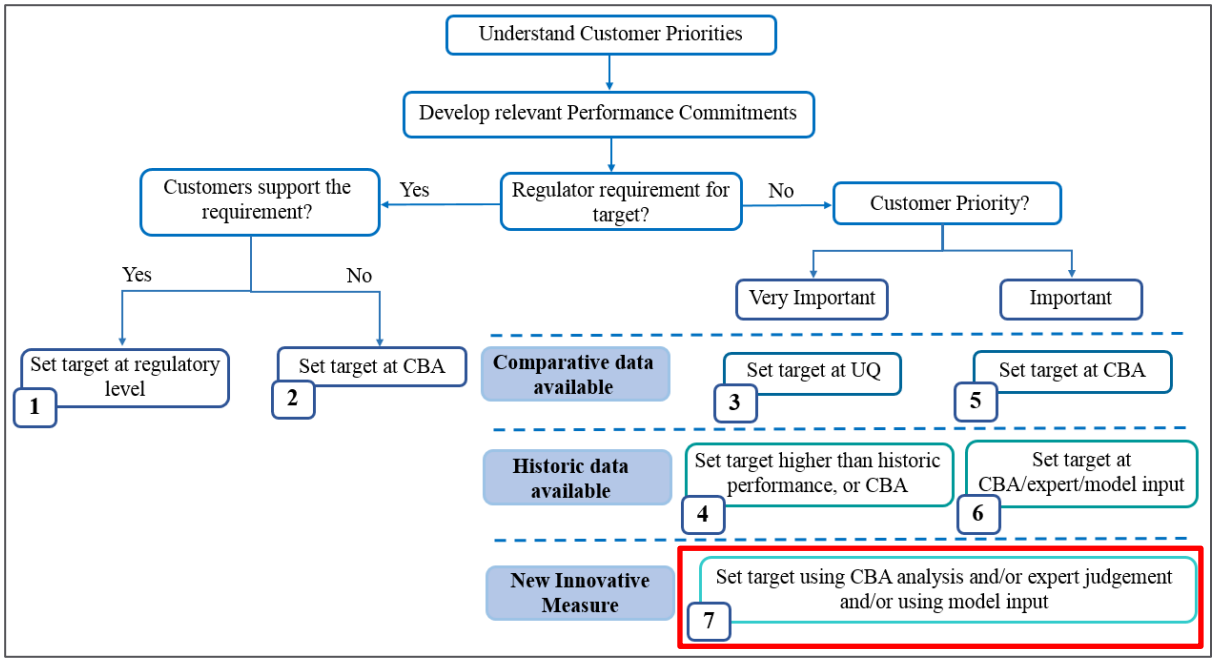
2.14. Number of water meters installed (G14)

This performance commitment will measure the number of water meters that are installed at customer properties each year.

For AMP7, we propose to double the number of new water meters installed, focussing on areas with greatest water scarcity. We plan to increase the number of metered customers from 45% now to 90% by 2030. For further information on the enhancement business case please see Appendix 8.

2.14.1 Position in the framework

As a new, innovative performance commitment, wherein our targets are based on our Water Resources Management Plan (WRMP), this performance commitment belongs in cohort 7 (figure below).



Location of the performance commitment in the framework

2.14.2 Regulatory guidance

There is no specific regulatory guidance for proactive or enhanced metering programmes, other than following WRMP planning guidance for selecting supply and demand options.

2.14.3 Customer views

Our customer research demonstrated that customers support more metering. At our Deliberative Workshops they expressed clear views that have helped shape our plan. Customers fed back to us that metering, in their experience, encourages behaviour change, through more personal responsibility and creates the opportunity to save money. They have told us they strongly support interventions that encourage responsible use of water, are sustainable in the long term, offer value for money and are good for the environment. When presented with the options to help manage the supply-demand challenge metering was the most favoured intervention. Customers also told us that metering is fairer and in line with other utilities they receive and pay for. At the deliberative research workshops customers also recognised the benefits metering can provide to us in terms of as we get a more accurate picture of usage and it will help us identify leaks. Customers with meters have told us they use water more responsibly than prior to a meter.

We recognise that some customers have concerns about metering, in part reflecting a misunderstanding. To ensure effective rollout of metering we will be addressing these issues.

2.14.4 Historical performance

Our previous plans have set out an ongoing approach to household metering that has been led by customer demand for the free meter option, with between 32,567 – 41,677 meters installed annually over the last three years, through this programme. As a result, currently around 45% of households in our region pay by meter.

2.14.5 Comparative information

Three companies - Southern Water, Thames Water and Affinity Water – have undertaken large scale metering programmes since 2010 and have reported demand reductions of between 8% and 16.5%. Their experience supports the benefits of metering.

Based on their experience, we plan to increase the proportion of metered households from 45% to 65% in 2020-25. This will require us to treble our current run-rate. Compulsory metering can still only be undertaken in areas classified by the Environment Agency as a seriously water stressed. So, we aim to achieve our targets by installing meters proactively and offering customers the opportunity to switch based on information on what their measured bill would be. We recognise that this is an ambitious target which involves real risk. Nonetheless, it is the best option for customers and we are content to include it in our plan. We will ensure that we do not invest customers' money unnecessarily and will reflect our actual expenditure through our ODI mechanism.

2.14.6 Cost benefit analysis

Our cost assessment for metering is as outlined in the enhancement business case.

2.14.7 Rationale for target

We plan to increase the proportion of metered households from 45% to 65% in 2020-25 delivering a target of 324,999 meters by 2025. This will require us to treble our current run-rate.

We aim to achieve our targets by installing meters proactively and offering customers the opportunity to switch based on information on what their measured bill would be. We recognise that this is an ambitious target which involves real risk. Nonetheless, it is the best option for customers and we are content to include it in our plan. We will ensure that we do not invest customers' money unnecessarily and will reflect our actual expenditure through our ODI mechanism.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat Tests for the performance commitment *Number of water meters installed*

Ofwat Test	Outcome
Proposed 2024/25 target	324,999 proactive meter installations.
Comparative information	Three companies - Southern Water, Thames Water and Affinity Water – have undertaken large scale metering programmes since 2010 and have reported demand reductions of between 8% and 16.5%. We plan to learn from their experience in delivering our ambitious target which will take us to UQ position by 2030.
Historical information	Our historic installation rate is around 36,043 meters annually. As a result, currently only around 45% of households in our region pay by meter. Our proposed target will increase coverage to 65% in 2025.
Minimum improvement	A minimum improvement would be to continue installation of 36,043 meters annually or improve that by 20% equivalent to 43,251 meters annually. The average improvement we are proposing is 65,000 meters per annum over the AMP.
Maximum level attainable	The maximum level attainable would be 93% as forecast by Southern for 2020. We propose to achieve a long term ambition of 90% by 2030, with a cumulative limit of 500,000 meters installed during AMP7.
Cost Benefit Analysis (CBA)	Our cost assessment for metering is as outlined in the enhancement business case.
Expert Knowledge	Our target of 324,999 meters aligns with the requirements of our WRMP and we expect the increase in meter coverage to deliver an average demand saving of around 10Ml/d by 2025. This is based on an assumed consumption saving of around 10% and includes benefits from finding and fixing leaking supply pipes.

3. Outcome: Wastewater safely taken away

In this section we summarise the Performance commitments and associated improvements we are proposing to deliver for the outcome Wastewater safely taken away. Given the potential impact on our customers we are suggesting nine performance commitments to cover this outcome (table below).

Performance commitments for the outcome Water Always There

Wastewater safely taken away	9 PCs		
Common PC	Pollution incidents	Internal sewer flooding	
	Risk of sewer flooding in a 50 year storm	Sewer collapses	
Revised	External sewer flooding	Sewer blockages	
New	Public sewer flooding	Collaborative flood resilience	Green communities
Rationale	Sewer flooding - customers expect us to prevent sewage flowing out of the sewers. Although the detriment is less severe as the impact moves away from homes, it still has a negative impact on lives. We are extending our coverage to the next level of impact whilst developing a longer term approach to address hydraulic issues		

A summary of the improvements we will be pledging for AMP7 is as below:

Proposed Improvements for the outcome Wastewater safely taken away

PC	Unit	Forecast (2019/20)	Target 2024/25	Improvement
Internal sewer flooding	Number of incidents per 10,000 connections	1.70	1.51	UQ performance
Pollution incidents (Category 1-3)	Number of incidents per 10,000 km's	27.41	22.49	UQ performance
Risk of sewer flooding in a 50 year storm	%	4.11	3.95	UQ performance
Sewer collapses	Number per 1000km of sewer	stable	stable	stable
External sewer flooding	Number of incidents	3692	3397	8%
Sewer blockages	Number	43,215	41,000	5%
Public sewer flooding	Number of incidents	2,035	-7.4% of baseline	7.4%
Green communities	£millions	n/a	£0.6m	n/a
Collaborative flood resilience	Number of properties/spaces	0	360	maintain

In the following sections, we summarise each performance commitment and our rationale for improvements we are proposing to deliver. Each performance commitment covers a:

- description of where the PC sits in our performance framework;
- description of regulatory expectations where relevant;
- customer views on the PC;
- historical evidence where possible;
- comparative information where possible;
- and our rationale for targets based on the six approaches outlined by Ofwat

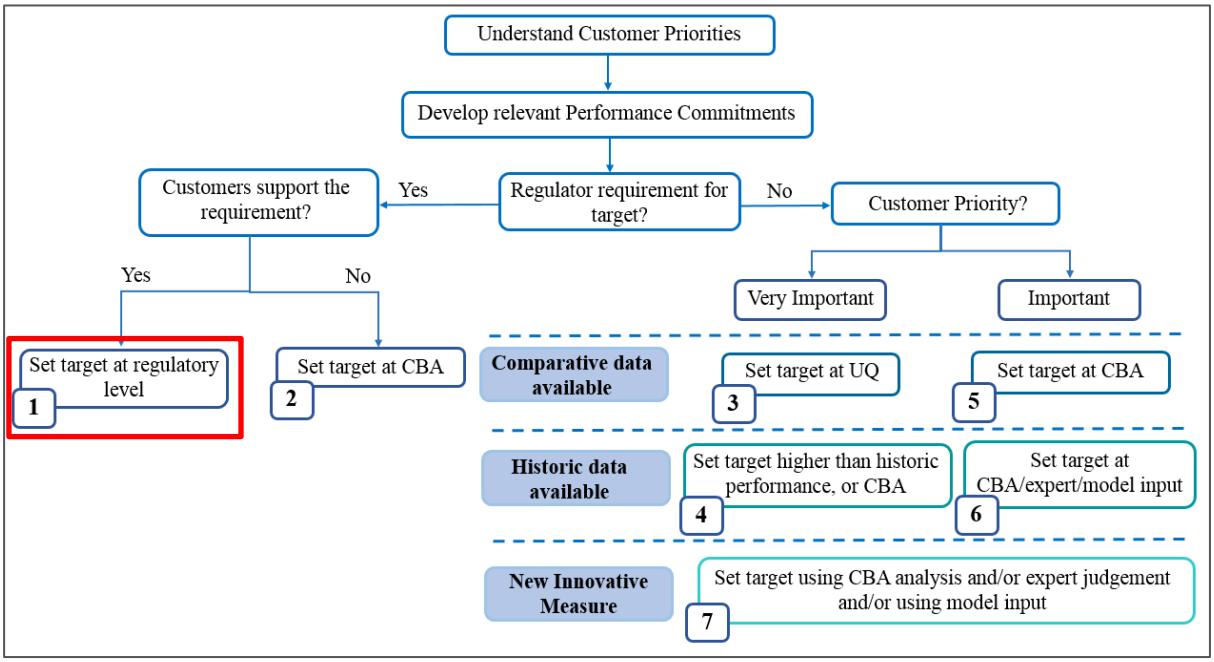
3.1. Internal sewer flooding (F01)

This is a common performance commitment outlined by Ofwat, and measures the number of incidents of internal sewer flooding. The Ofwat common definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf

Our proposed target of 641 incidents represents forecast upper quartile performance and offers customers a 9% improvement over 2020-2025.

3.1.1 Position in the framework

Ofwat have retained internal sewer flooding as a common performance commitment from PR14 because it is one of the most distressing service failures for customers, and reducing it is a very high customer priority. Ofwat have provided guidance on targets stating that companies should propose their commitment levels to be at least the forecast upper quartile for each year of the AMP. Therefore given that our target setting on internal sewer flooding performance commitment is effectively guided by Ofwat's methodology, this performance commitment belongs to cohort 1 in our performance framework, as outlined in the figure below.



Location of the performance commitment in the framework

3.1.2 Regulatory guidance

Given flooding is a high priority for customers, with availability of comparative data, Ofwat expect companies to pledge at least the forecast upper quartile for each year of the price control. However, there is no guidance provided to support how companies should estimate forecast upper quartile.

Additionally, in March 2018, Ofwat published standard consistent reporting guidelines for internal sewer flooding, following which all companies have shared data for 2016/17 and 2017/18 performance based on these consistent guidelines.

3.1.3 Customer views

It is no surprise that customer research has validated that internal sewer flooding is within the top three priority areas for customers (river pollution and leakage are the other two). A sewer flooding incident is the worst service failure that customers can experience. Whilst many customers have not had direct experience of flooding they do empathise with those that have, and reducing flooding has consistently (across time and multiple research projects) been a top priority for customers.

Customers demonstrate altruism with those suffering service failure. Severn Trent's current performance is upper quartile. Customers are content with a proposed target which maintains upper quartile performance over the next 5 years. They are happy for us to go further where it is cost beneficial to do so.

3.1.4 Historical performance

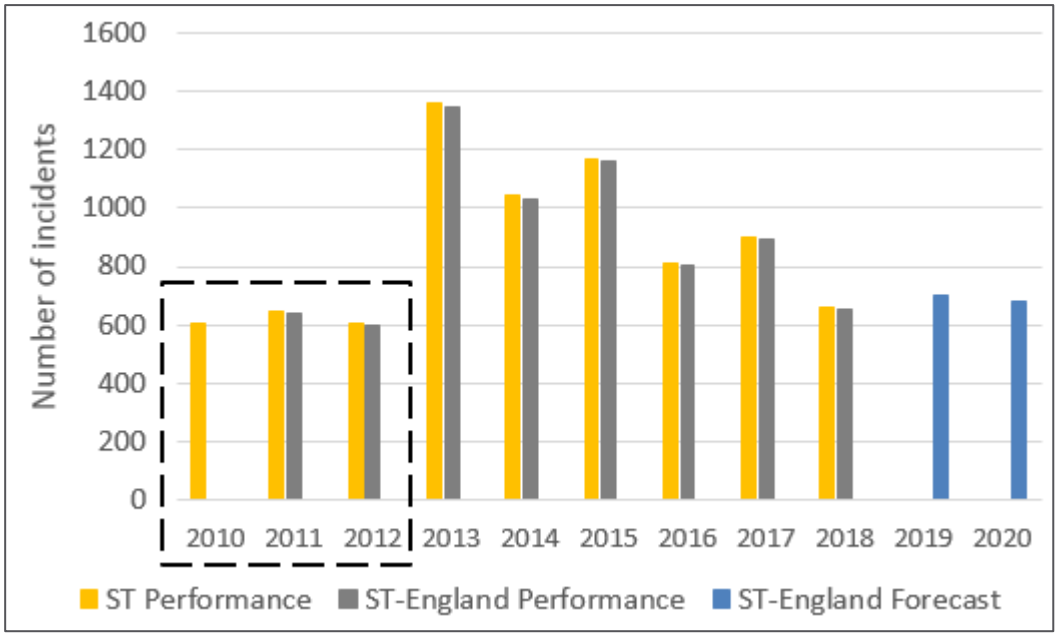
We are currently driving the industry benchmark on internal flooding and are forecasting to end AMP6 delivering UQ performance.

Historically we have shown fluctuating performance with respect to internal sewer flooding over the past decade. In AMP5 internal sewer flooding was part of the basket of six measures which formed the basis of assessment of a company's waste infrastructure serviceability performance, wherein our performance was deemed as Marginal by Ofwat from 2011 to 2015, primarily due to failures in blockages and pollutions.

The ODI structure that we proposed in our PR14 Business Plan, included annual rewards and penalties linked to revenue, and has driven us to out-perform against our commitments earlier in AMP6 than planned. This has meant our customers have seen the benefits of our investment right from year 1 (2015/16) rather than having to wait until near the end of the 5 year period to see the full scope of improvement.

Through greater, in-depth analysis of our data, we developed an improved strategy, covering proactive and reactive interventions. Proactive targeting of hotspots and repeats, in addition to ensuring all reactive failures are attended to within a 2 hour SLA and resolved to a robust standard to avoid repeat failures has led to a consistent year on year improvement in performance

Overall, we have delivered notable improvement in performance of approximately 52% since 2012/13 (see figure below). Note data prior to 2012/13 is not directly comparable due to PDAS.



Historical Severn Trent, and Severn Trent England performance against our AMP6 definition. The box represents data from pre-2012, which does not include flooding from the PDAS network, which was adopted in 2012.

Through AMP6, the industry has undertaken work to improve the consistency in reporting culminating in new consistent definitions published by Ofwat. The consistent definition varies from our previously reported commitment in two aspects:

- includes incidents from severe weather
- includes flooding from private pumping stations adopted in 2016

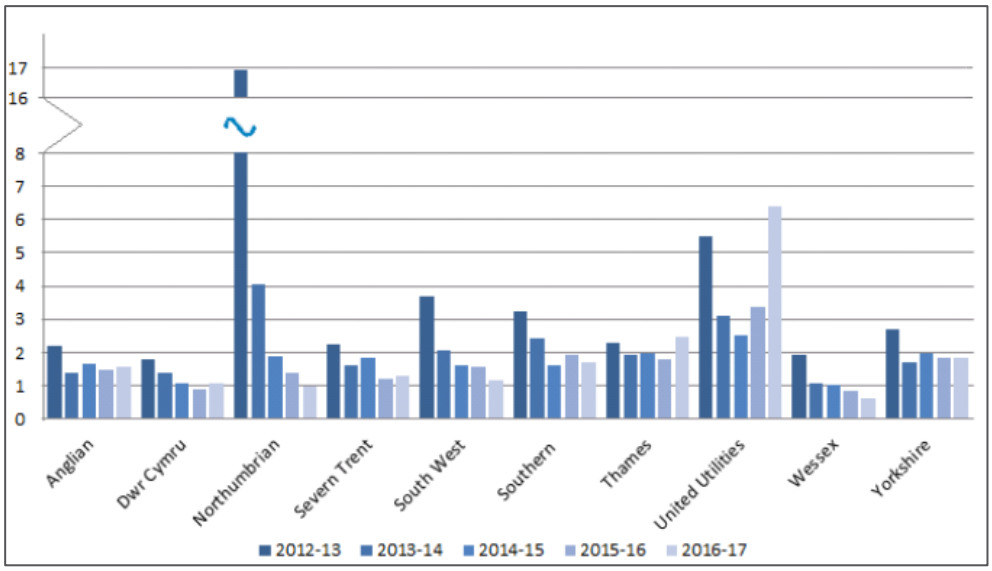
Based on the new consistent definition, our proposed 2020 baseline performance is 705 incidents.

Further improvements in performance through 2020-2025 will be tougher to deliver, reflecting diminishing returns. We recognise that improving our predictive capability and mitigation of severe weather incidents is key to delivering stretching performance in AMP7. This will require improvements in our overall resilience on flooding which requires long term planning and changes in how we manage surface water run-off during severe weather. We recognise that this cannot be achieved in the short term and thus in association with this measure, we are proposing an additional resilience commitment – Collaborative flood resilience, whilst recognising that improvements of a similar historic range in AMP7 is unlikely and not cost beneficial.

3.1.5 Comparative information

Whilst comparative data is available for all waste companies, there are inconsistencies in the way that companies reported internal sewer flooding in the past, which make it hard to draw conclusions over historic, comparative performance.

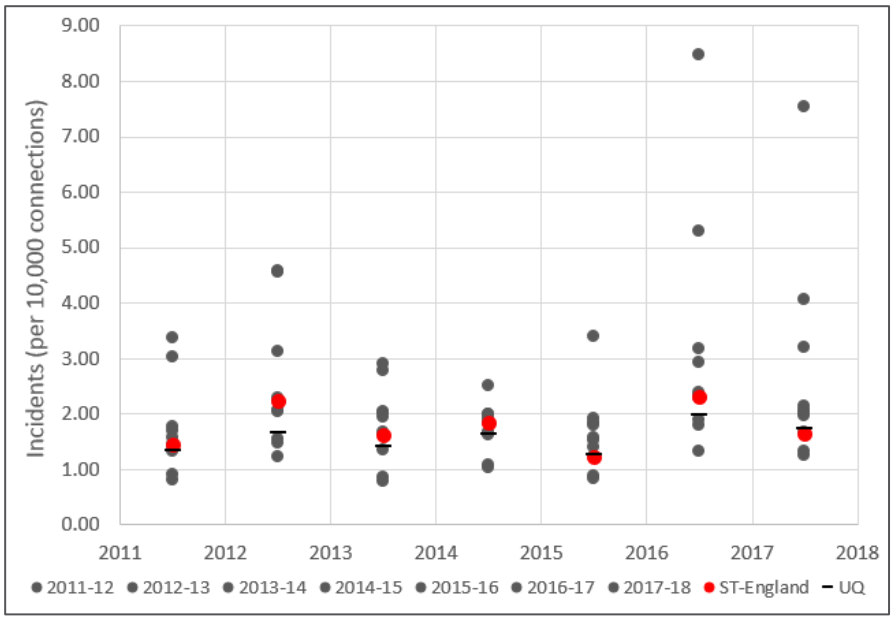
Numbers reported to the Consumer Council for Water (CCwater) are reflective of the number of properties which are flooded, normalised to 10,000 connections. This measure has seen gradual improvement with some variability from a few companies (see figure below; taken from https://www.ccwater.org.uk/wp-content/uploads/2017/11/Clear-way-forward-Delivering-a-resilient-sewerage-and-drainage-system-2016-17.pdf).



Industry comparison using CCW data

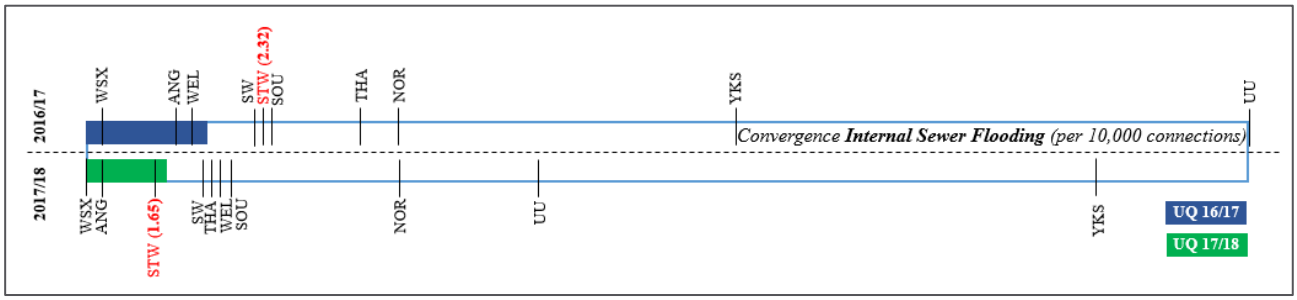
Prior to Business Plan submission at PR14 Ofwat used industry wide data to calculate UQ, and made this data publicly available. Since then, Discover Water has published the number of properties internally flooded by sewage, however, this number does not include flooding from all sewers that companies are now responsible for, or where the same property has flooded more than once. These datasets are displayed in the figure below.

Despite variations in reporting we can see that indusry performance over the past 6 years has shown gradual improvement, within which we have moved from a mid-quartile position in 2012 to UQ position in 2017.



Industry comparison using data from Ofwat (years 2011 – 2014), Discover Water (years 2014 – 2016), and convergence shadow reporting (years 2016-2018). Red dots denote ST-England performance; black horizontal lines represent UQ performance for the year in question

For the most current, and representative industry comparative data we have assessed the 2016/17, and 2017/18 shadow reporting which was submitted through the convergence project. This data represents the number of incidents of internal sewer flooding, including those attributed to severe weather (see figure below).



Industry comparison with convergence data for the years 2016-17 and 2017-18 (including severe weather incidents)

Our improving performance in this area over the last three years has driven improvements in the UQ industry benchmark and our forecast performance for 2020 will ensure that we continue to drive the upper quartile benchmark.

For AMP7, we recognise the need to target performance which represents upper quartile for each year.

3.1.6 Cost benefit analysis

Our cost benefit analysis indicates that delivery of the proposed forecast upper quartile target of 641 incidents, will be stretching beyond cost beneficial level. However given the importance of this commitment for our customers, we will propose a target at forecast upper quartile performance for each year of the price control.

Through AMP7, we will aim to further reduce the cost of delivering performance improvements in this area, to allow us to improve cost benefit levels for future price controls.

3.1.7 Rationale for target

In summary, our rationale for setting targets for internal sewer flooding is guided by Ofwat guidance and customer views - forecast upper quartile for each year of the price review.

Our current performance is within the upper quartile range and our proposed target, which outlines an improvement of 9% from our baseline, will ensure that we continue to give our customers upper quartile service every year of the next AMP. As discussed in Appendix A3 (Part 1, section 2.10) we have set our target at 9%. If AMP6 wastewater ODIs rae uncapped this would lead to a target of 641 (1.51 incidents per 10,000 connections), based on:

- customer views outlining acceptability of this level of performance
- the CBA being stretching and
- data uncertainty related with having only two data points of comparative data.

As our uncapping application is in process and the scale of the investment and therefore the outcomes we are able to drive over the coming two years is unknown, we are proposing an alternative target if the cap is removed. We would target the same demanding percentage improvement of 9% for internal floodings from our AMP6 actual exit rates for each measure. However if our waste ODIs were to be uncapped, we forecast our further investments could deliver a considerably improved outcome for customers in AMP6 and therefore potentially a lower start point for AMP7, which would be in the range of 63-105 fewer internal floodings.

The outcome of assessment against the Ofwat recommended target setting tests are outlined in the table below.

Application of Ofwat tests to the performance commitment *Internal sewer flooding*

Ofwat Test	Outcome
Proposed 2024/25 target	9% Under the capped scenario this represents 641 incidents (1.51 incidents per 10,000 connections) - future upper quartile based on consistency – circa. 9% improvement from 19/20 baseline
Comparative information	Current upper quartile, based on consistency – 706 incidents; Forecast upper quartile 2024/25 – 641 incidents (1.51 incidents per 10,000 connections).
Historical information	Historically Severn Trent's performance has ranged from 1359 to 809 incidents, however, the end of 17/18 came to 666 incidents based on current reporting guidelines and 674 based on consistency guidelines; given this is within the UQ range, we will aim to maintain this performance for 2020, with some allowance for severe weather. For 2025, we will target a reduction to 641 incidents which is within the forecast upper quartile level.
Minimum improvement	Targets set at forecast UQ.
Maximum level attainable	Theoretical level of 0 flooding incidents; Current frontier is at 1.24 (504 incidents). Based on guidance we are proposing a target at forecast UQ.
Cost Benefit Analysis (CBA)	CBA is stretching, i.e. non-cost beneficial at 641 incidents, however given importance to customers we will pledge performance at a stretching CBA.
Expert Knowledge	We have set a target 641 incidents, based on customer views outlining acceptability of this level of performance the CBA being stretching and data uncertainty related with having only two data points of comparative data.

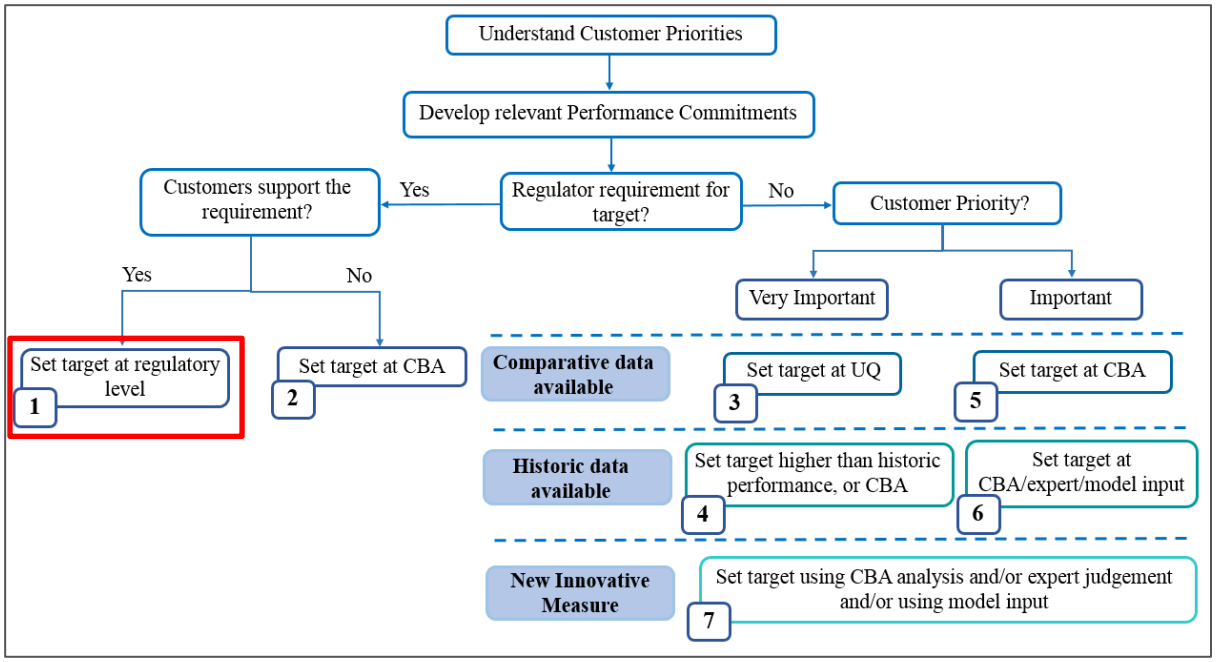
3.2 Pollution incidents (category 1-3) (F02)

This is a Common Performance Commitment outlined by Ofwat. It is a measure of the number of category 1 – 3 pollution incidents per 10,000km of wastewater network as reported to the Environment Agency / Natural Resources Wales and reported in the Environmental Performance Assessment (EPA). The Ofwat common definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf.

Our proposed target of 215 pollution incidents (22.49 incidents per 10,000kms), represents a 17% improvement and will ensure we continue to deliver EPA 4* performance and UQ performance on wastewater pollutions.

3.2.1 Position in the framework

Ofwat have also retained pollution incidents as a common performance commitment and provided guidance that companies should pledge at least the forecast upper quartile for each year of the price control. Given our rationale for setting targets for 2024/25, will be based on specific guidance from Ofwat, pollutions belongs to cohort 1 within our performance framework as outlined below in the figure below.



Location of the performance commitment in the framework

3.2.2 Regulatory guidance

Given pollutions is a high priority for customers and a key indicator of wastewater performance, with available comparative data, Ofwat expect companies to pledge at least the forecast upper quartile for each year of the price control.

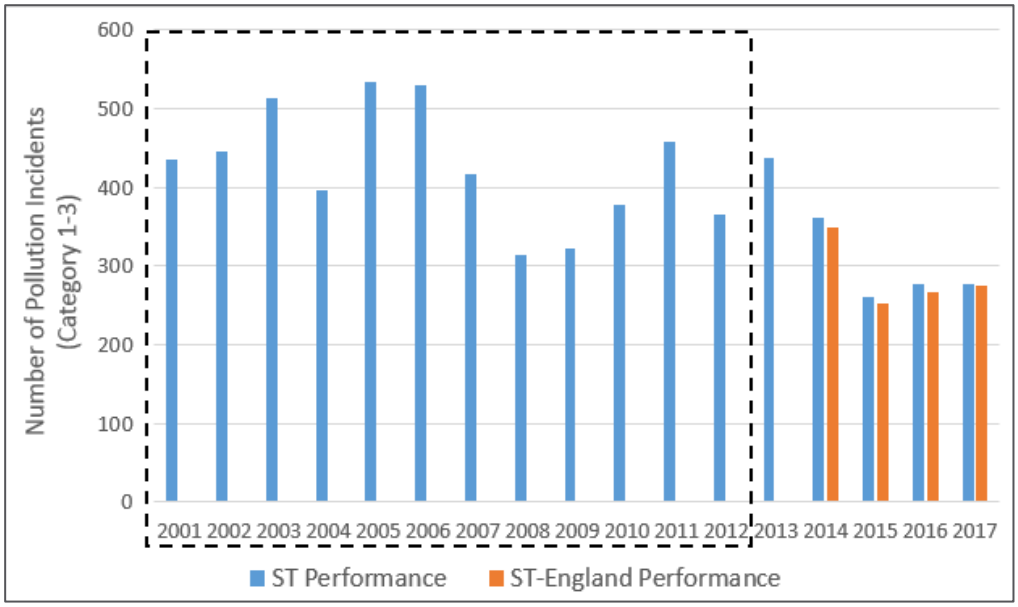
The EA have also published the Water Industry Strategic Environmental Requirements (WISER) in 2017 outlining their expectations. WISER is a joint EA / NE strategic steer to water companies on environment, resilience and flood risk for business planning purposes and replaces Defra's 'Statement of Obligations'. Within WISER, there is an expectation that companies should trend to minimise all pollution incidents (category one to three) by 2025 and there should be at least a 40% reduction compared to the number of incidents recorded in 2016.

3.2.3 Customer views

Customer research has validated that river pollution is one of our customer's top three priorities (leakage and internal sewer flooding are the other two). In our quarterly customer tracker survey, this was the second highest ranked priority for customers. Despite this, the choices research found that reducing pollution incidents is seen as important but that there was little motivation for significant improvement in performance as Severn Trent are already performing well, a target broadly in line with current performance is acceptable.

3.2.4 Historical performance

From 2000 to 2006, our performance against the number of category 1-3 pollutions was largely stable, before declining towards the end of AMP4. In 2012 there was a change to the EA's reporting guidelines and the adoption of public drains and sewers, which together with the increased focus on pollution reporting led to the increase in numbers through 2012 to the peak in 2013. However, this was addressed in AMP5 through increased monitoring across our combined sewer overflows and treatment works, accompanied by improved processes at a number of treatment works. This led to Severn Trent gaining 4* EPA status in 2015, 2013 and 2017 (see figure below).



Historical Severn Trent (old licence) and ST-England (new licence) performance. The black box represents the time period before PDAS were adopted

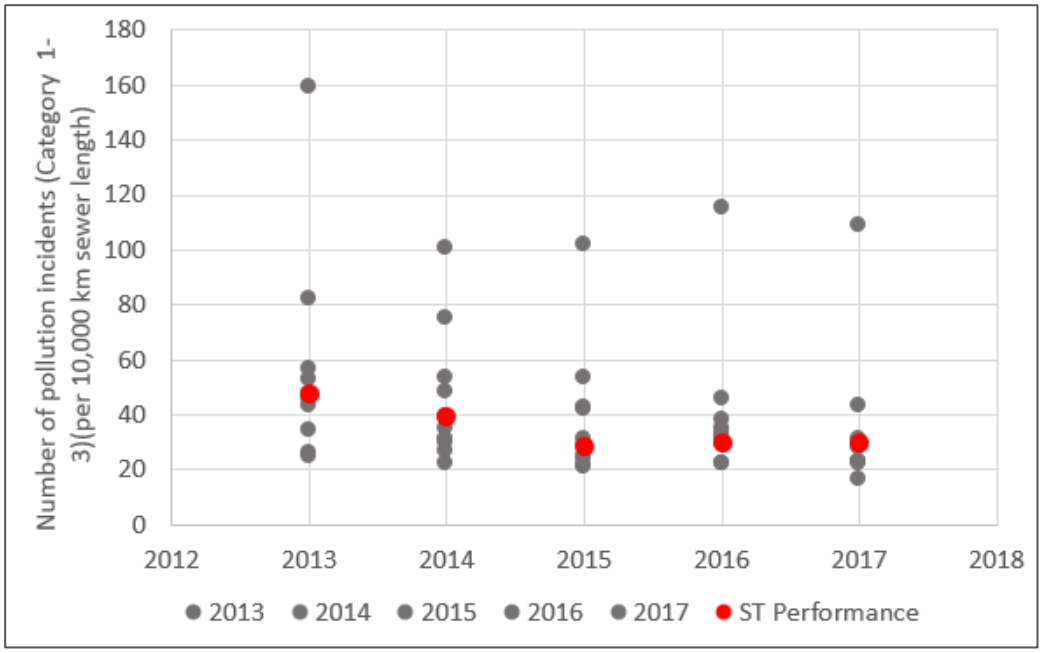
Key to achieving our pollutions target in AMP6 will also be to address pollutions caused by blockages, failure of equipment at pumping stations and burst on rising mains – the second biggest cause of pollutions.

Our proposed 2020 baseline based on the above work that we will be focusing on is 27.41 incidents per 10,000km.

3.2.5 Comparative information

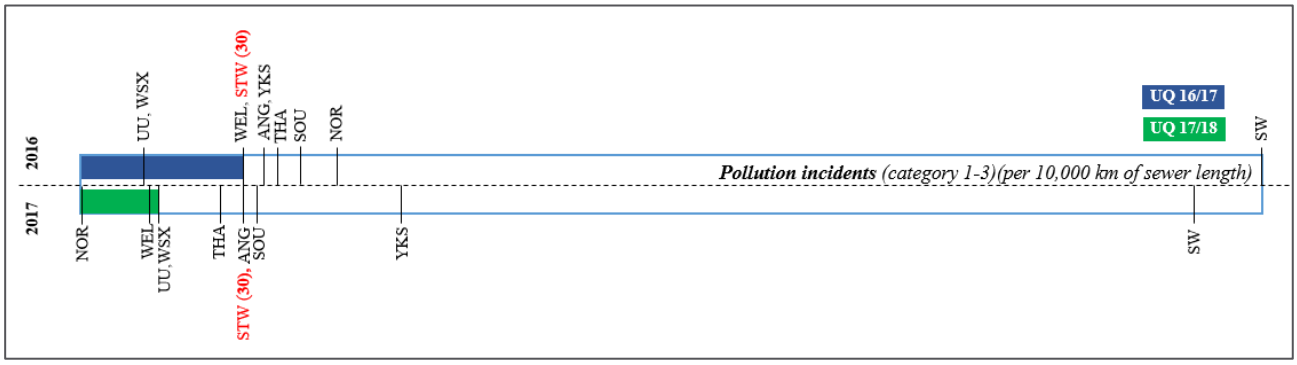
As the number of pollution incidents is recorded, and verified by the Environment Agency (EA) and reported annually in the Environmental Performance Assessment (EPA), there is directly comparable data covering all companies. The adoption of public drains and sewers in 2012 is likely to have contributed some variability over that time period, and therefore we have focussed our analysis on recent performance over the past four years. In addition to this, in January, 2013, the Environment Agency revised the guidance on recording and categorising self-reported pollution incidents. This approach was slightly different to the approach Severn Trent had locally agreed with the Environment Agency, and led to an increase in our numbers.

Over the past four years there has been a general improvement trend across the industry in performance. The upper quartile position moved from 61.5 incidents per 10,000 km in 2013 to 30 per 10,000 km in 2016, largely driven by the change in denominator to reflect the addition of PDAS sewer length (see figure below). The greatest performance improvement was made by Southern Water, whose performance reduced by 76% over the four years. With these improvements in performance, there has also been a notable decrease in the range of performances, from 219 incidents in 2013 to 93 incidents, per 10,000 km, in 2016. This is due, predominantly, to the significant improvements in the worst performers of the industry.



Industry comparison; data taken from the annual EPA and adjusted to include the length of adopted public drains and sewers prior to 2016 (this was already included in the 2016 and 2017 EPA methodology)

Severn Trent has consistently demonstrated above average performance, and over the past three years, we have been working to close the gap between our performance and UQ performance. In 2016, based on a ranking upper quartile methodology, Severn Trent was currently joint third in the industry with respect to performance on pollutions. However, due to static performance in 2017, our position has fallen outside of UQ (see figure below).



Industry comparison for 2016 and 2017

3.2.6 Cost benefit analysis

Our cost benefit analysis indicates that our proposed target is set a level where marginal cost exceeds benefit.

3.2.7 Rationale for target

We have sought to set our target at the forecast upper quartile level, which is a further 15% improvement from our anticipated 2019/20 baseline position. This will be Severn Trent's best ever performance, and this level of improvement is aligned with our customers' views.

We have set targets based on a forecast UQ as per Ofwat's methodology but this will not stop us working to outperform this metric beyond UQ and strive to achieve industry leading EPA4* and WISER ambitions each year. The ODI framework is critical in this regard.

Our proposed UQ methodology, as outlined in section 2.4, gives us a 2024/25 forecast UQ of 215 incidents. Additionally, in outlining our proposed target of 215 incidents (22.49 per 10,000 km), we have assessed target setting as per the different approaches outlined by Ofwat (see table below).

Application of Ofwat Tests for the performance commitment *Pollution incidents*

Ofwat Test	Outcome
Proposed 2024/25 target	215 incidents – 22.49 incidents per 10,000km; forecast upper quartile
Comparative information	Forecast upper quartile – 215 incidents (22.49 incidents per 10,000kms)
Historical information	Historically Severn Trent's performance has ranged from 28 to 48 incidents, per 10,000 km, after adjusted for the inclusion of PDaS. This equates to ~258 - 443 incidents per year. Average performance over past 4 years – 32 incidents per 10,000 km. Best ever performance – 28 incidents per 10,000 km (in 2015).
Minimum improvement	We anticipate diminishing increments of improvement in pollution performance throughout AMP7, due to the increasing difficulty of predicting and preventing pollution incidents. Over AMP6 the minimum average annual improvement has been 9%. As such, this would be the minimum improvement that we hope to affect over AMP7.
Maximum level attainable	Theoretical best performance of 0. Current frontier is 17 incidents per 10,000 km, equivalent to 156 incidents for STW. We are not proposing a target at this level as it does not align with our customer views and guidance of UQ targets.
Cost Benefit Analysis (CBA)	Stretching - Target is set at level where marginal cost exceeds benefit.
Expert Knowledge	Target set based on forecast UQ

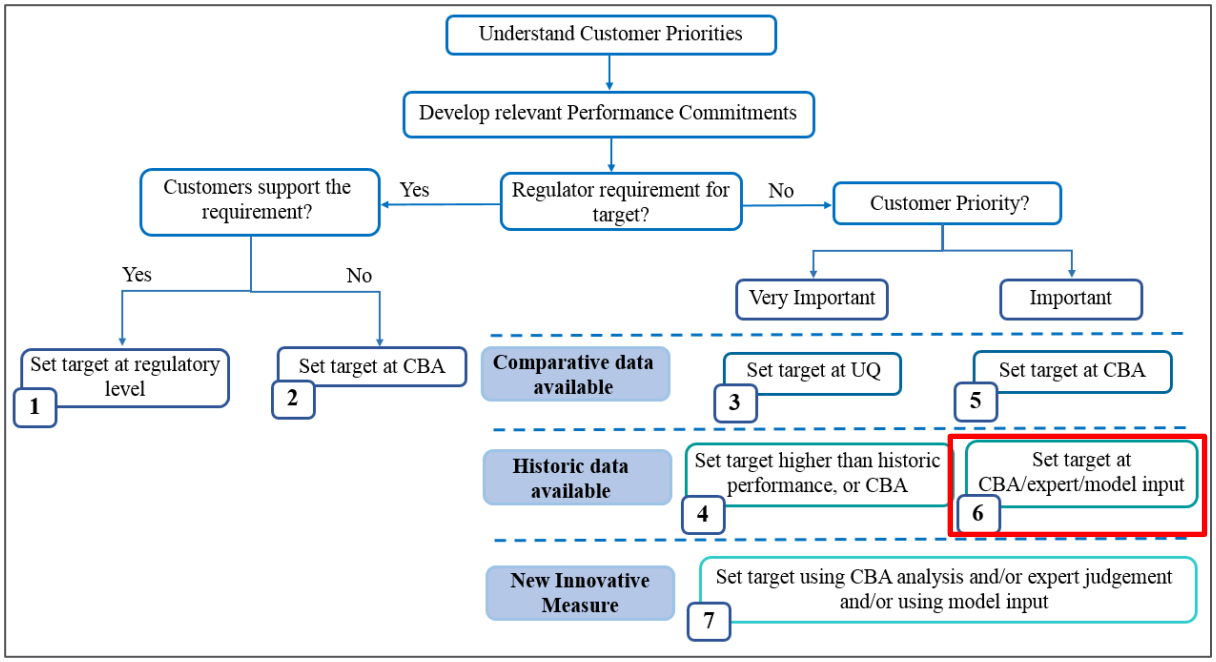
3.3 Number of sewer collapses (F03)

This is a common performance commitment outlined by Ofwat, which is a measure of the number of sewer collapses, per 1,000 km of all sewers, causing an impact on service to customers or the environment. The Ofwat common definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf.

We propose to deliver overall stable asset health performance within our historical performance range which is well below the stable reference level of 1000 sewer collapses historically used by Ofwat.

3.3.1 Position in the framework

Sewer collapses is a historic serviceability measure, and thus companies have been reporting data on this metric to Ofwat for a number of years. The presence of historic and comparative information with respect to this performance commitment means that it belongs to cohort 6 (see figure below).



Location of the performance commitment in the framework

3.3.2 Regulatory guidance

This is one of the four mandatory asset health metrics and whilst there is no specific guidance on target setting, it is important to maintain stable asset health.

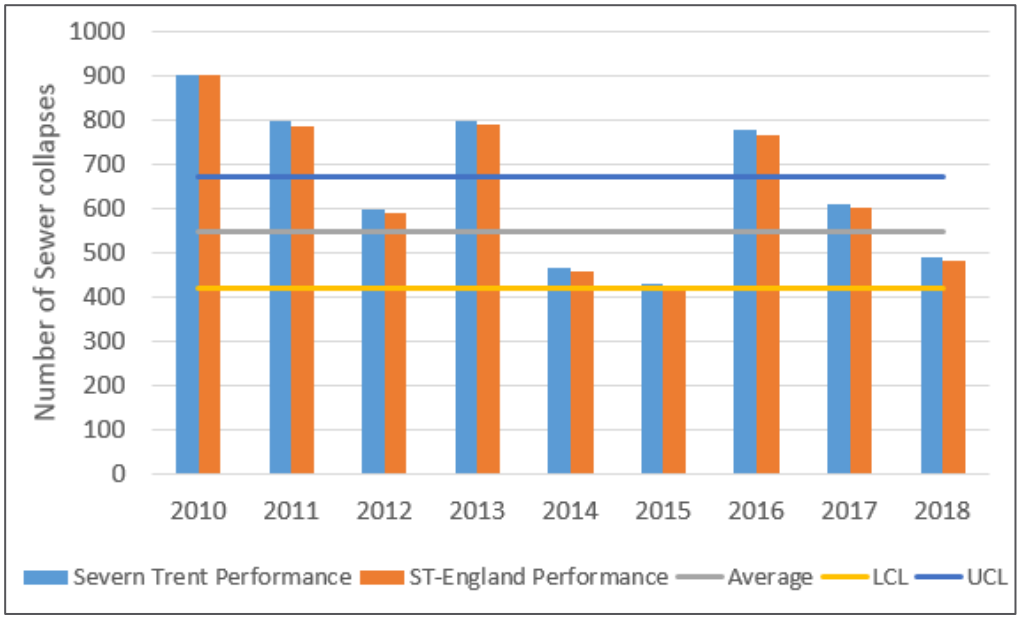
3.3.3 Customer views

Maintaining asset health is seen as a core area of performance for Severn Trent; the principle of investing to prevent future problems is widely held. Nevertheless, most customers are not aware of significant issues with current asset health, and collapses are not thought to occur frequently. Performing in the top 50% of companies, and maintaining the current level of collapses is seen as sufficient.

3.3.4 Historical performance

During AMP5, the number of sewer collapses on our network was a key serviceability performance indicator, against which we reported performance. Over this time period we delivered a 62% improvement from our worst performance of 1,049 collapses, in 2008/09, to our best performance of 429 collapses, in 2014/15 (see figure below).

Reported sewer collapses increased significantly in 2015/16, however, we believe this was at least partly due to less focus and rigour around data reporting given this was not an AMP6 measure. We have since reviewed our reporting process and rolled out additional training and assurance checks to improve data collection and assurance. This work has been done alongside current efforts towards consistent reporting for sewer collapses, headed by Water UK.



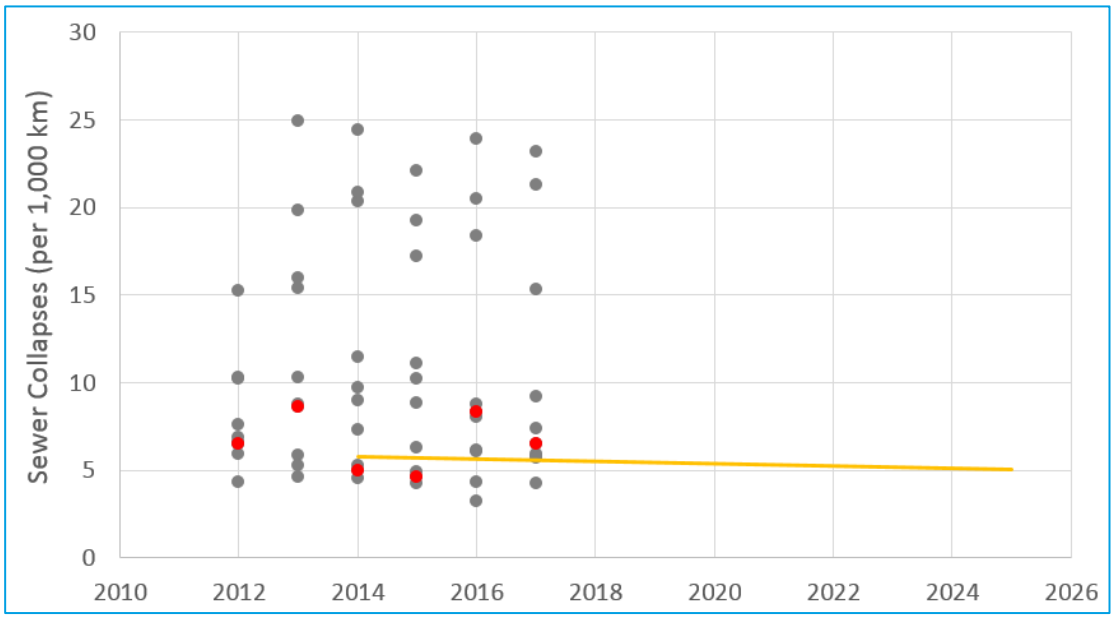
Historical Severn Trent and Severn Trent England performance with control limits

3.3.5 Comparative information

Sewer collapses have been recorded and reported over the previous 10 years by all water and waste companies in the industry, however, there has never been any work towards a consistent reporting methodology for this measure. Recent work towards consistency for PR19 reporting, led by Water UK, has highlighted notable discrepancies between how companies identify and classify sewer collapses. These discrepancies could be a contributing factor to the large variability observed in the industry performance (see figure below).

Irrespective of reporting discrepancies, it is clear that the number of sewer collapses reported by companies remains relatively stable over the past 10 years. The adoption of public drains and sewers in 2012 caused a notable increase in some company's performance, and also led to an approximate 30% increase in the number of sewer collapses on the Severn Trent network. Yet after just a few years, most companies returned to a performance level comparable of before the adoption. Over the past four years, the maximum improvement was 34%, made by Southern Water, however, the average improvement was 11%. Using three-yearly averages of upper quartile performance, there is an insignificant trend of improving performance.

Severn Trent demonstrated stable performance throughout, well below the upper control limit of 1000 collapses set in AMP5.



Industry performance; red dots denote Severn Trent England performance

3.3.6 Cost benefit analysis

Our cost benefit analysis indicates that the marginal cost exceeds the benefits for our sewer collapses target.

3.3.7 Rationale for target

Our key aim with this measure is to deliver stable performance, thereby reflecting an appropriate level of investment (recognising that any customer impact will be covered by other measures).

We recognise that there is little customer support for us to go beyond the cost-beneficial service level for this performance commitment, and therefore we proposed a target where we will deliver stable performance below the upper quartile set at AMP5 and within the top 50% of all companies by the end of the AMP.

New guidance on reporting released by Ofwat in March will lead to some fundamental changes in how we classify sewer collapses. We are in the process of improving our reporting on this metric aligned with new guidelines hence currently we are pledging stable performance and aim to reconcile to absolute data in 2019/20.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Sewer collapses*

Ofwat Test	Outcome
Proposed 2024/25 target	Stable performance. Given we are improving our reporting based on new guidelines, we will reconcile the stable performance to absolute numbers in 2019/20.
Comparative information	Current UQ – 518 collapses; forecast future UQ – 469 collapses (not taking into account changes to reporting guidance). Current frontier is currently 4.24 collapses per 1,000 km of sewer, which is equivalent to 394 sewer collapses for Severn Trent. However the comparative view is not based on companies reporting against a consistent definition. Thus the data was used as a guide to ensure our 2025 performance is above the median.
Historical information	Historically Severn Trent's performance has ranged from 429 to 799 sewer collapses. Our proposed target of stable performance will be within this range and is within the upper reference level of 1000 collapses set in AMP5. Our proposed target will ensure we maintain stable performance below the upper reference level.
Minimum improvement	As an asset health metric, we aim for stability in this measure, thus performance below our upper control limit of 1000 sewer collapses would be the minimum acceptable target.
Maximum level attainable	Theoretical maximum of 0 however this is unlikely given the age of the asset. Frontier performance is equivalent to 394 collapses for Severn Trent. Our proposed target will be bespoke to Severn Trent and linked with our asset condition.
Cost Benefit Analysis (CBA)	Target is more stretching than the cost-beneficial level based on past historic performance.
Expert Knowledge	As an asset health metric, our customers have indicated that they support Severn Trent remaining in the top 50% of all companies. As such, the target will ensure we are within the top 50% companies. We propose to use the AMP5 upper reference level of 1000 collapses as a guide and set targets at stable levels within the range of our historical performance of 429 to 799 sewer collapses. We will reconcile stable performance into absolute data in 2019/20 when we have improved data aligned with consistency guidelines.

3.4. Risk of sewer flooding in a storm (F04)

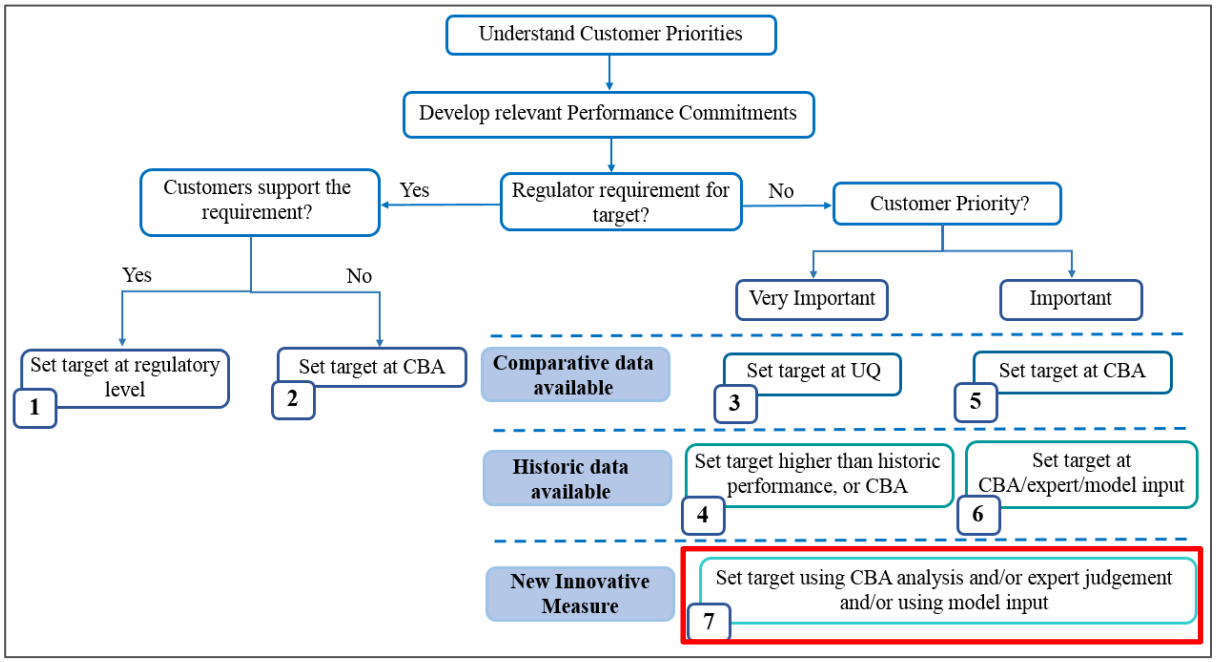
This is a common performance commitment outlined by Ofwat, which is a measure of the percentage of population at risk of sewer flooding in a 1-in-50 year storm. The Ofwat common definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf

Our proposed target of 3.95% will drive the UQ benchmark for the industry.

Given this a new metric and the sewer system is designed to deal with a 1-in-30 year storm events, we anticipate the commitment will evolve as companies publish their drainage plans. Our focus in AMP7 will be to ensure that we develop a better understanding of customers at risk of a 1-in-50 year storm and cost effective solutions that can implemented to build resilience.

3.4.1 Position in the framework

As a new performance commitment, there is no historical, and limited comparative data for this measure. As such it belongs to cohort 7 (see figure below).



Location of the performance commitment in the framework

3.4.2 Regulatory guidance

This is a new metric and the methodology is likely to develop as we understand the application of this metric better. As such, there is no regulatory guidance regarding targets for this performance commitment.

3.4.3 Customer views

The potential for sewer flooding in a storm is important to customers. This is due to the potential health risks and impact of sewage pollution. Customers understand, and support greater resilience in our networks, however, this is not seen as a priority.

3.4.4 Historical performance

As a new performance commitment, we have no historical data pertaining to this measure. This metric is aimed at understanding the number of properties that, based on best available hydraulic models, may be at risk of internal sewer flooding in an extreme 1-in-50 year rainfall event. The methodology applied to calculate the figure is based on an industry approach developed in conjunction with Ofwat that also takes into account catchment characteristics to identify properties determined to be at risk in the highest vulnerability bands. Due to the novelty of this methodology, we have no historic data regarding this measure. Furthermore, the methodology is likely to develop as we learn more through the Drainage and Wastewater Management Plan (DWMP) process.

3.4.5 Comparative information

As a newly developed performance commitment, we have only one year of comparative data shadow-reporting pertaining to this measure. Based on the year 2017/18, the upper quartile would be 7.61% of the population served being at risk of sewer flooding in a storm. The current performance of Severn Trent is 4.11%, making our current performance upper quartile. The current frontier is 3.63%, which is comparable to our end of AMP7 ambition of 3.95%.

3.4.6 Cost benefit analysis

Addressing the risks highlighted by this metric will be done predominantly through focus on surface water management and green infrastructure solutions through AMP7. As such, there will be potentially significant common costs, which make the cost-beneficial point difficult to determine.

3.4.7 Rationale for target

Our proposed target of 3.95%, will ensure that we drive the UQ benchmark for the industry.

Given this a new metric and the sewer system is designed to deal with a 1-in-30 year storm events, we anticipate the commitment will evolve as companies publish their drainage plans.

Our focus in AMP7 will be to ensure that we develop a better understanding of customers at risk of a 1-in-50 year storm and cost effective solutions that can implemented to build resilience. This will work with other external flood risk management bodies to understand the wider risks associated with general surface water management.

The findings of continuous AMP7 work will be a key input into the DWMP, which all companies will be required to produce in AMP7.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Risk of sewer flooding in a storm*

Ofwat Test	Outcome
Proposed 2024/25 target	An improvement from our baseline value of 4.11% to 3.95%.
Comparative information	We have one year of comparative information, which indicates our current performance is upper quartile. However, due to discrepancies between how compliant companies are against the reporting guidelines, we have used this data with caution. Our proposed target will ensure we are within UQ performance.
Historical information	There is no historic data for this performance commitment.
Minimum improvement	0% - or UQ performance. Based on shadow reporting data, our proposed target will ensure we are within UQ.
Maximum level attainable	Max attainable would be 0% of the population at risk. This is a long-term ambition, but requires better understanding of the risks to be addressed in the long-term.
Cost Benefit Analysis (CBA)	Not applied, due to significant common costs.
Expert Knowledge	Providing sewer capacity resilience does not mean we have to build ever bigger sewers. This metric will help drive strategies focussed on improved surface water management through the use of sewer separation initiatives and the use of sustainable drainage (SuDs). This is expected to underpin our future DWMPs. Our propose improvement is based on the wider work we will be doing to reduce hydraulic flooding through use of SUDs and working with other stakeholders.

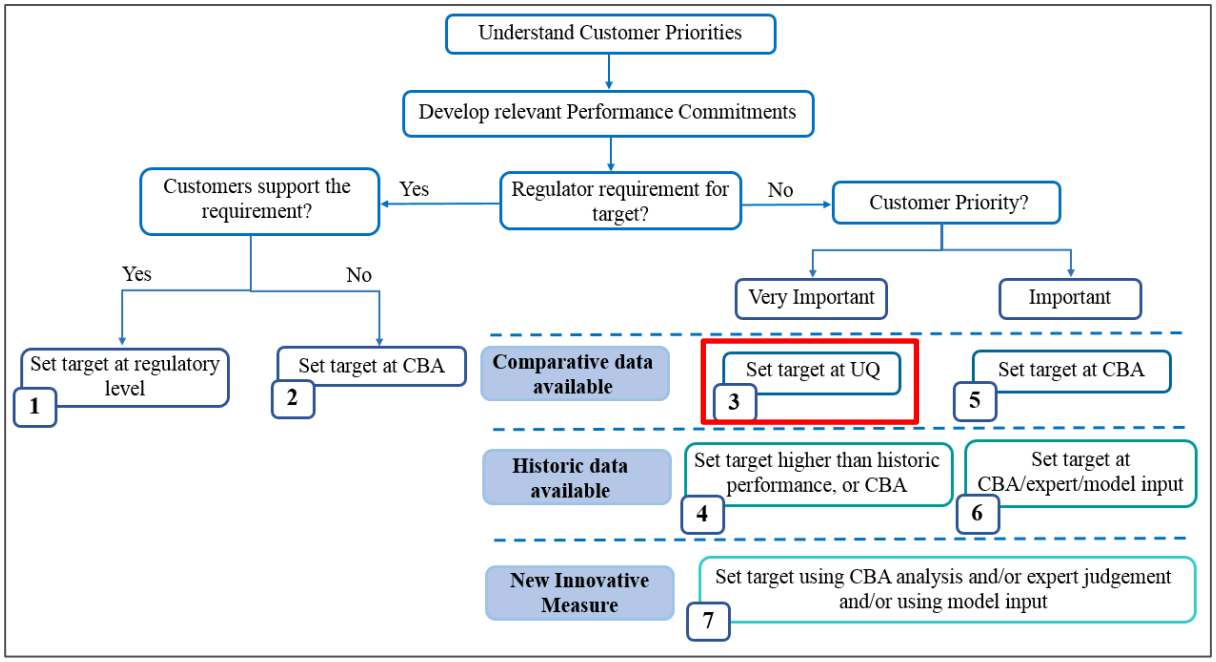
3.5. External sewer flooding (F05)

The number of external flooding incidents per year. This is a bespoke performance commitment, chosen from the long list of optional asset health metrics proposed by Ofwat, and thus is consistent with the definition as published on the Ofwat website. The Ofwat definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf

Our current performance for this measure is driving the industry benchmark. Despite this and the fact that marginal improvements will be much harder, we are proposing a further 8% improvement.

3.5.1 Position in the framework

External sewer flooding was a performance commitment which a number of companies reported against in AMP6, including Severn Trent. As such, there is both historic and comparative data for this performance commitment. This was also one of the performance commitments which our customers found to be a priority, thus it falls within cohort 3 (see figure below).



Location of the performance commitment in the framework

3.5.2 Regulatory guidance

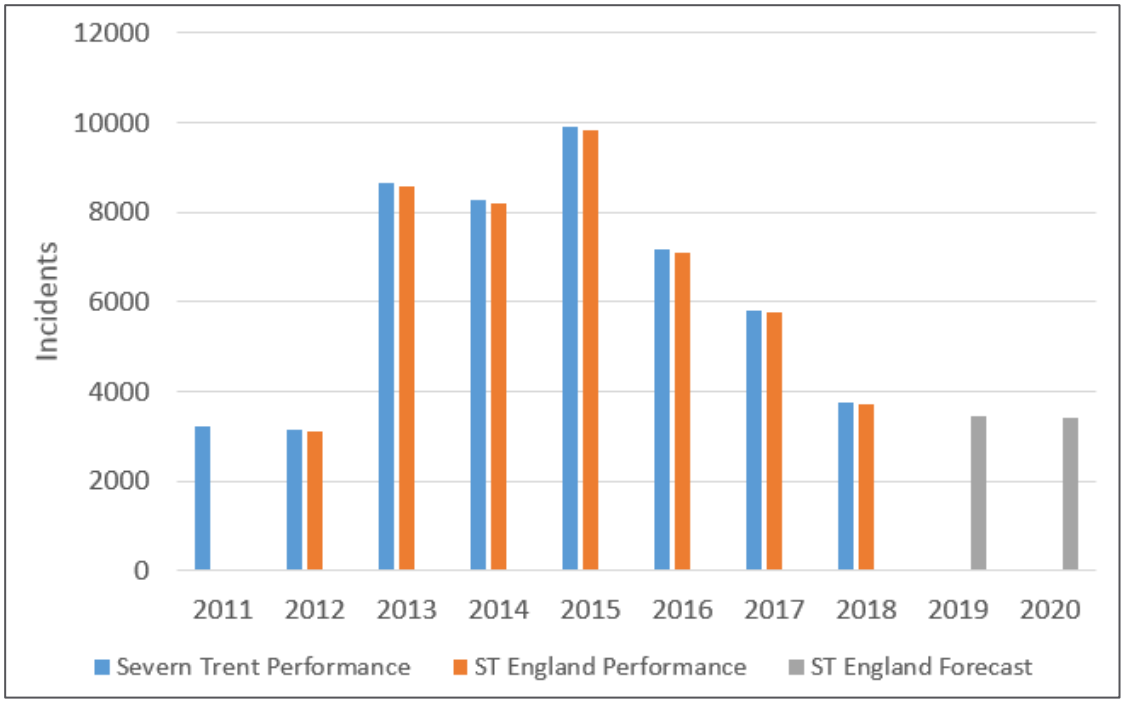
As a bespoke performance commitment there is no specific regulatory guidance to follow.

3.5.3 Customer views

It is no surprise that our customers still want us to tackle sewer flooding, and customers feel sewer flooding should have equal focus across roads and gardens. As with internal sewer flooding, external sewer flooding is considered an important priority due to potential health risks and the impact of sewage pollution. Again, customers demonstrate altruism with those suffering service failure, however, customers found maintaining Severn Trent's current position to be appropriate – due to both the high impact when it occurs, and the fact that Severn Trent demonstrates a high level of performance currently.

3.5.4 Historical performance

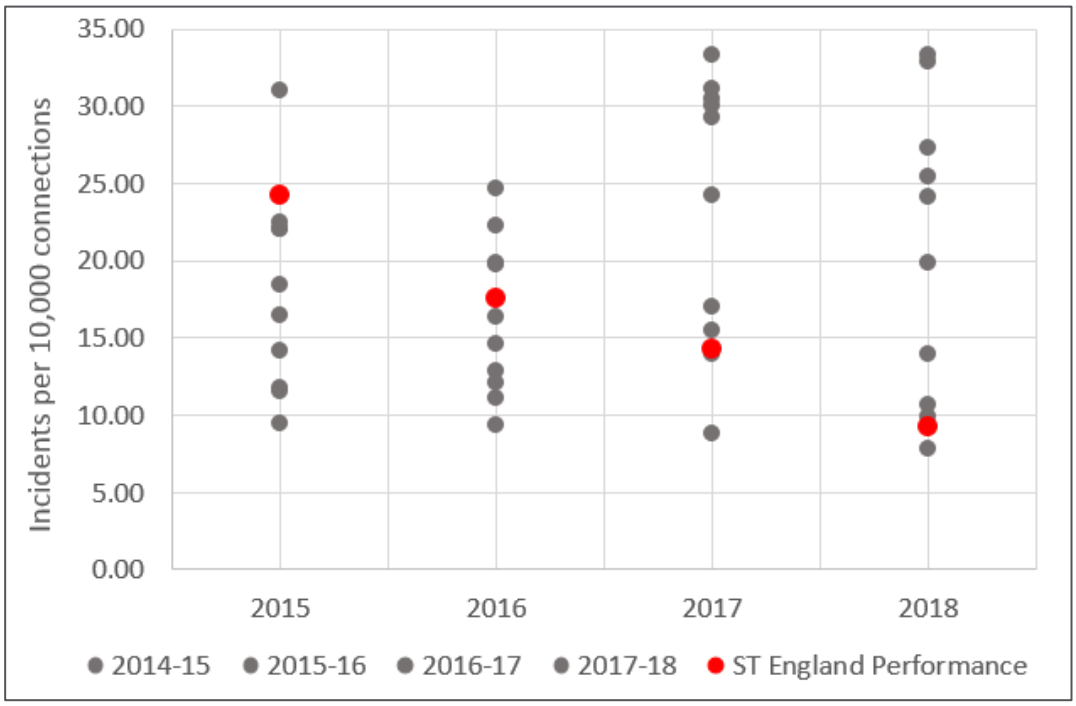
External sewer flooding is data we have collected and reported for the past decade (see figure below). The adoption of public drains and sewers in 2012 led to a notable increase in flooding incidents, from less than 3,141 in 2012 to 9,896 in 2015. Over AMP6 we have delivered a step change in our performance, with a recently achieved 2017/18 performance of 3,736 incidents. This represents a greater than 60% reduction over the AMP, which has been achieved through targeting repeat incidents. Since the start of AMP6 we have reduced repeat incidents by 60%, and this is a strategy that will continue into AMP7.



Historical Severn Trent performance and Severn Trent England performance

3.5.5 Comparative information

There is limited comparative data for this performance commitment. A number of companies took a performance commitment measuring the number of external sewer floodings in AMP6, making available a number of years of comparative data (figure below). However, there are significant differences in the reporting methodologies as some report the number of areas, and others report the number of incidents of flooding (Severn Trent reporting the latter).



Industry comparison; red dots denote Severn Trent England performance

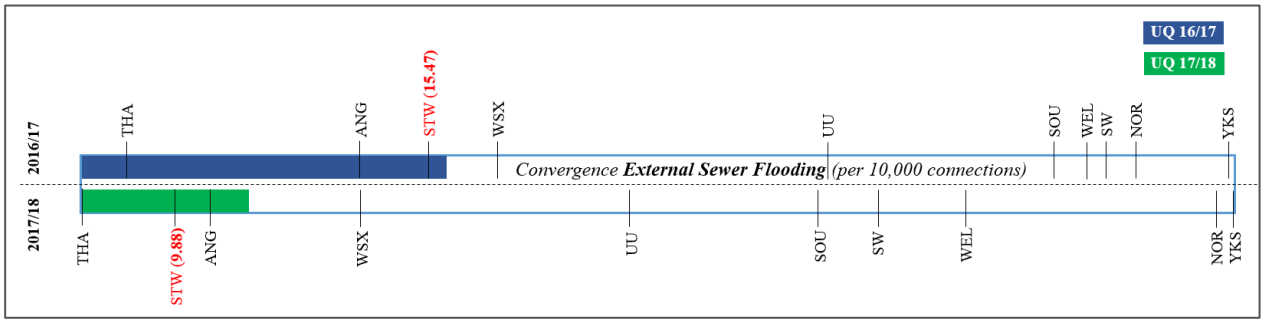
Data has also been submitted to CCWater historically (see table below). Whilst this data allows direct industry comparison, it is neither consistent with our current AMP6 measure nor the proposed AMP7 commitment, as it does not take into account the adoption of public drains and sewers, and also includes highways. Despite these discrepancies, the broad order of performance between companies remains similar, and as such, Severn Trent was just shy of UQ performance until 2016-17.

External sewer flooding data as reported to CCWater

Company	2012-13	2013-14	2014-15	2015-16	2016-17
Anglian	25.83	20.74	21.92	19.53	18.33
Dwr Cymru (Welsh)	33.69	26.81	22.28	22.17	17.08
Northumbrian	20.39	12.67	9.37	9.27	6.02
Severn Trent	17.90	15.13	18.43	14.63	12.90
South West	27.65	24.89	21.97	19.73	16.39
Southern	40.94	40.26	31.05	24.64	22.61
Thames	13.39	12.50	11.72	10.98	8.70
United Utilities	17.87	12.07	11.55	12.07	12.82
Wessex	23.04	18.39	14.09	12.78	11.57
Yorkshire	21.62	15.78	16.44	16.35	15.62

As part of the consistency work, being led by Water UK, companies have been shadow reporting against a consistent definition, following the same methodology. This has given us two years of indicative, comparative data with which to work (see figure below).

For the last two years Severn Trent's performance has been upper quartile (see figure below). This performance is something we aim to maintain for the remainder of AMP6 and into AMP7. The move to consistent reporting methods in AMP7 will mean that external flooding caused by severe weather will now be included, which we have previously excluded. Historical analysis indicates that this can vary from 0 to 122 incidents per annum, and adds an element of uncertainty to our annual target.



Industry comparison of 2016-17 and 2017-18 data

3.5.6 Cost benefit analysis

External sewer flooding is set at a level where marginal cost exceeds benefit level. Customers support this performance commitment, but feel that Severn Trent's performance is already satisfactory, as such there is not much support for great improvements.

3.5.7 Rationale for target

Our current performance for this measure is driving the industry benchmark. Despite this and the fact that marginal improvements will be much harder, we are proposing a further 8% improvement.

As an asset health metric, we would aim for stable performance, however this is different to other asset health metrics since there is a direct customer impact. This is why we are proposing an 8% reduction. The 2016/17 and 2017/18 shadow reporting against the consistent Ofwat definition indicates that our reported numbers will undergo an 8% uplift, as such, we must also apply this uplift to get our target.

Maintaining our current performance will be challenging given that we will need to embrace more predictive solutions. This is further compounded by the additional variability of inclusion of severe weather, thus the further proposed reduction represents a challenge.

As explained in Appendix A3 Part 1 (section 2.11), our target takes into account two potential scenarios – AMP6 ODIs are uncapped and AMP6 ODIs remain capped.

In each scenario we would target the same demanding percentage improvement of 8% for external flooding from our AMP6 actual exit rates for each measure. If our waste ODIs were to be uncapped, we forecast our further investments could deliver a considerably improved outcome for customers in AMP6 and therefore potentially a lower start point for AMP7, which would be in the range of 766-1277 fewer external floodings.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests to the performance commitment *External sewer flooding*

Ofwat Test	Outcome
Proposed 2024/25 target	8% improvement Under the capped scenario this equates to 3,397 incidents; 8% improvement from 19/20 forecast of 3,692 incidents.
Comparative information	Current UQ based on convergence measure – 15.85 incidents per 10,000km – equivalent of 6,466 incidents. Anticipated forecast 2024/25 UQ range of 5.13 – 9.25 incidents per 10,000 connections, which is equivalent to 2,092 – 3,773 incidents. Given the AMP7 commitment includes severe weather which has the potential to have a significant effect and uncertainty on this measure, current UQ is an appropriate comparator.
Historical information	Historically performance has ranged from 1,342 incidents (before the adoption of PDaS) to 9,896 incidents post PDaS. Our best ever performance since 2015 – 3,763 (3,990 post convergence) incidents. Thus we will be offering circa. 8% improvement on our best ever performance.
Minimum improvement	As an indicator of asset health, we would anticipate maintaining stable performance should be a minimum improvement. However, given sewer flooding is a key priority for customers because of the direct impact, we are proposing a target to maintain our position within UQ.
Maximum level attainable	Theoretical best possible performance of 0. Frontier performance of convergence measure, is currently held by Thames, with 7.86 incidents per 10,000 km (although given Thames has a high proportion of population with apartments its leading position is more nuanced). The frontier position would be equivalent to 3,206 incidents for Severn Trent.
Cost Benefit Analysis (CBA)	Target has been set above cost-beneficial levels guided by UQ range.
Expert Knowledge	Target has been set based on comparative and historic data aligned with customer expectations. Target has been set within current UQ range and our estimation of forecast UQ. We recognise that performance at this level is non cost beneficial and the inclusion of severe weather will require improved resilience and response interventions.

3.6. Sewer blockages (F06)

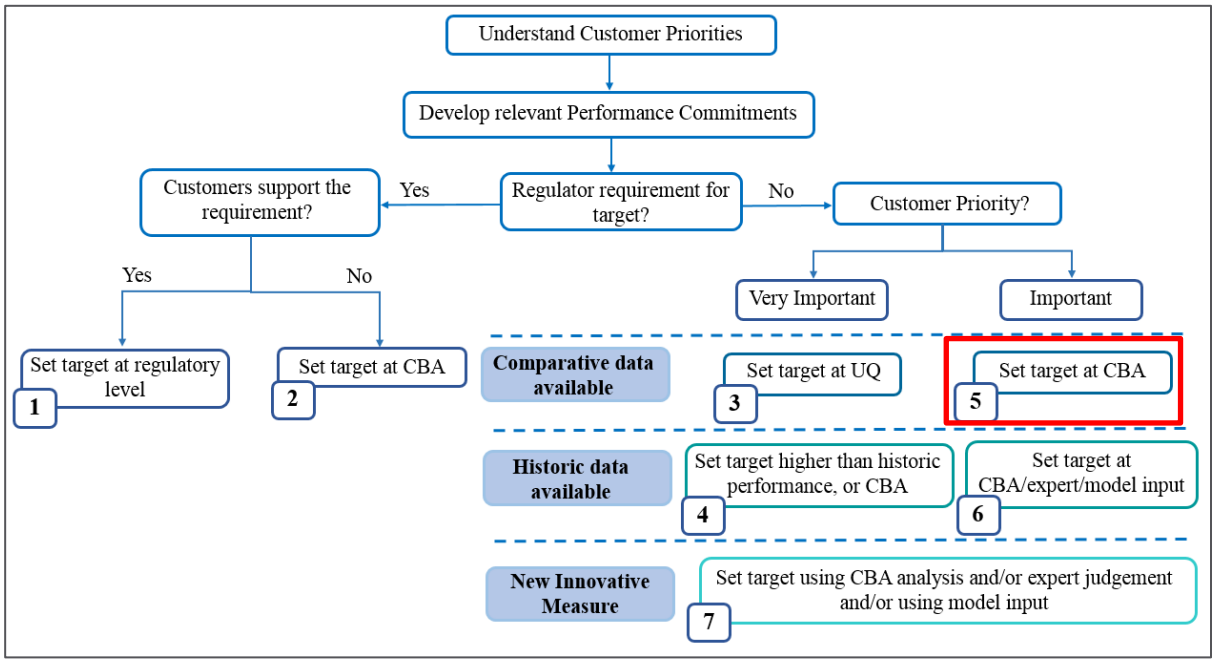
The total number of sewer blockages on the Severn Trent sewer network (including sewers transferred in 2011) reported on a financial year basis. This performance commitment was selected from the asset health long list proposed by Ofwat, and thus is consistent with the definition published on the Ofwat website. The Ofwat definition can be found here: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf.

To ensure that we meet our customers' expectations of remaining in the top 50% of companies, we have targeted an improvement of approximately 5% which will give us upper quartile performance over the next five years (2020-25).

3.6.1 Position in the framework

Sewer blockages is a historic serviceability measure and as such there is historical and comparative information to draw insight and guide targets.

Asset health is important to customers but does not have the same priority as flooding. Thus based on the level of importance to customers and the availability of historic and comparative data, this performance commitment belongs in cohort 5 (see figure below).



Location of the performance commitment in the framework

3.6.2 Regulatory guidance

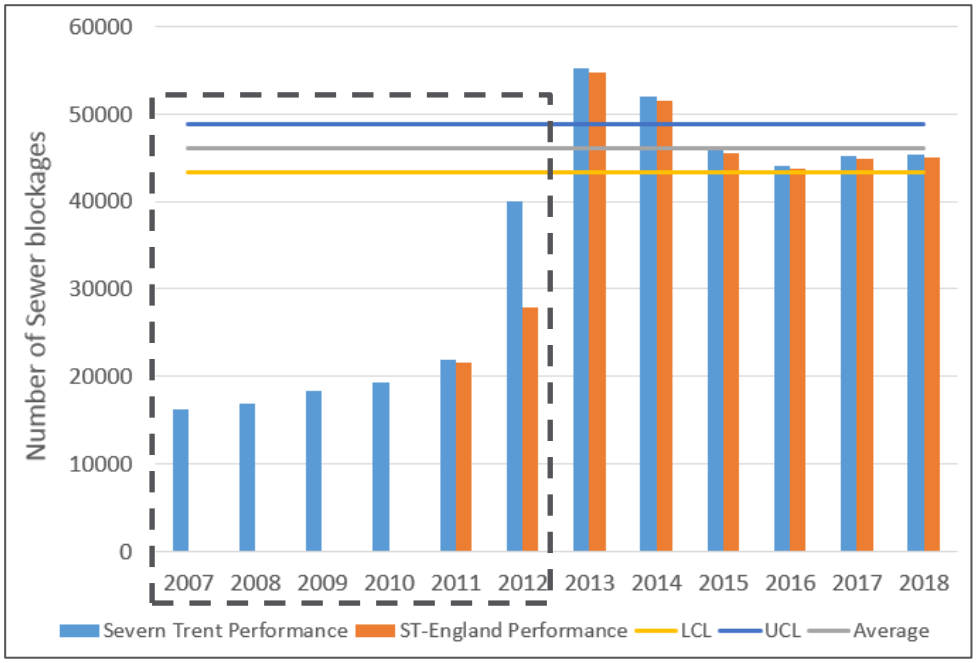
As a bespoke performance commitment there is no specific regulatory guidance for this measure. Given this is an asset health metric, companies would be expected to deliver stable performance.

3.6.3 Customer views

Sewer blockages are seen as important, as there is thought to be a clear link with sewer flooding, odour issues and blockages. Customers felt it important to maintain our assets, and our current performance, however, there was little motivation to improve performance further. The target is felt to be appropriate – a more ambitious target may be hard to achieve given the difficulty inherent in creating behaviour change.

3.6.4 Historical performance

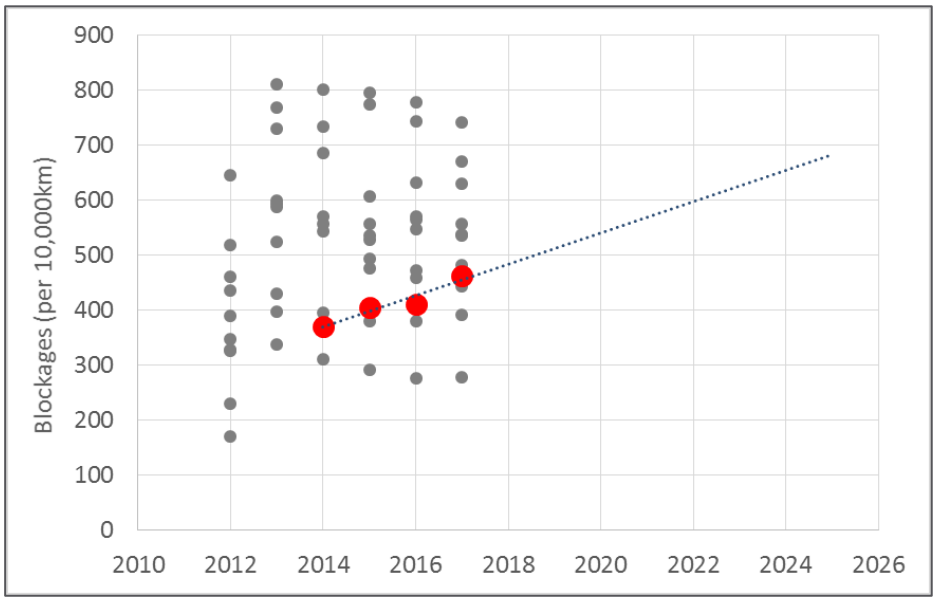
Sewer blockages is a historic serviceability measure, and as such, we have historic data monitoring performance against this metric. Over AMP5 performance was gradually deteriorating, and after the adoption of public drains and sewers (PDaS) performance peaked at 55,167 blockages in 2013. Since then, performance has improved towards the end of AMP5 and through AMP6 (see figure below), thought to be due to our education campaigns – which target helping customers to use our sewers responsibly. Over the last three years we have achieved greater stability in this measure, with the upper and lower control limits approximately 5% either side of the average.



Severn Trent and Severn Trent England historical performance with control limits based on the previous 5 years data. The black box denotes the period before PDaS were adopted

3.6.5 Comparative information

Industry wide data is available for comparison over the past six years (see figure below). The worst performers in the industry have improved, as have the industry leaders, however, within the median companies, there has been an overall deterioration, leading to an increasing upper quartile position over the recent past.



Industry comparison using annual data. Red dots denote the rolling three-year average upper quartile position (current UQ of 453; extrapolation of UQ trend to 2024/25)

3.6.6 Cost benefit analysis

Cost benefit analysis has not been undertaken on this PC as given it's an asset health metric, thus targets are set at stable levels and driven by levels of improvements required for service failures such as flooding and pollutions.

3.6.7 Rationale for target

Blockages in the sewer network do not often directly impact customers, however, it is often linked to other more severe failures, such as sewer collapses, sewer flooding and pollutions. As such, it is not only the failure that is important, but also our response to the failure. For this reason, we feel a target which represents stability is suitable. To ensure that we meet our customers' expectations of remaining in the top 50% of companies, we have applied an approximate 5% improvement to the average past 4 years performance which will give us upper quartile performance.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Sewer Blockages*

Ofwat Test	Outcome
Proposed 2024/25 target	41,000 blockages - circa. 5% improvement.
Comparative information	Current UQ is 42,123 blockages; forecast UQ cannot be accurately predicted using historic data, which shows a deteriorating trend – so we will assume a constant UQ.
Historical information	Historically Severn Trent's performance has ranged from 44,107 to 55,167 blockages, after the adoption of PDAS.
Minimum improvement	As an asset health measure, we target stability in this measure. Over the past 5 years we have had an average of 46,158 blockages (+/- 2,766). A minimum improvement would be to maintain this average, particularly in light of sector data showing deterioration. Our approach is to target better than minimum, reflecting the additional strength of feeling that customers have about this particularly measure.
Maximum level attainable	Theoretical best performance of 0. Current frontier performance would be 25,856 blockages. We will not be targeting this performance as this level of stretch does not align with our customer expectations.
Cost Benefit Analysis (CBA)	Not applicable.
Expert Knowledge	Targets set at level to ensure we achieve UQ performance on flooding and pollutions.

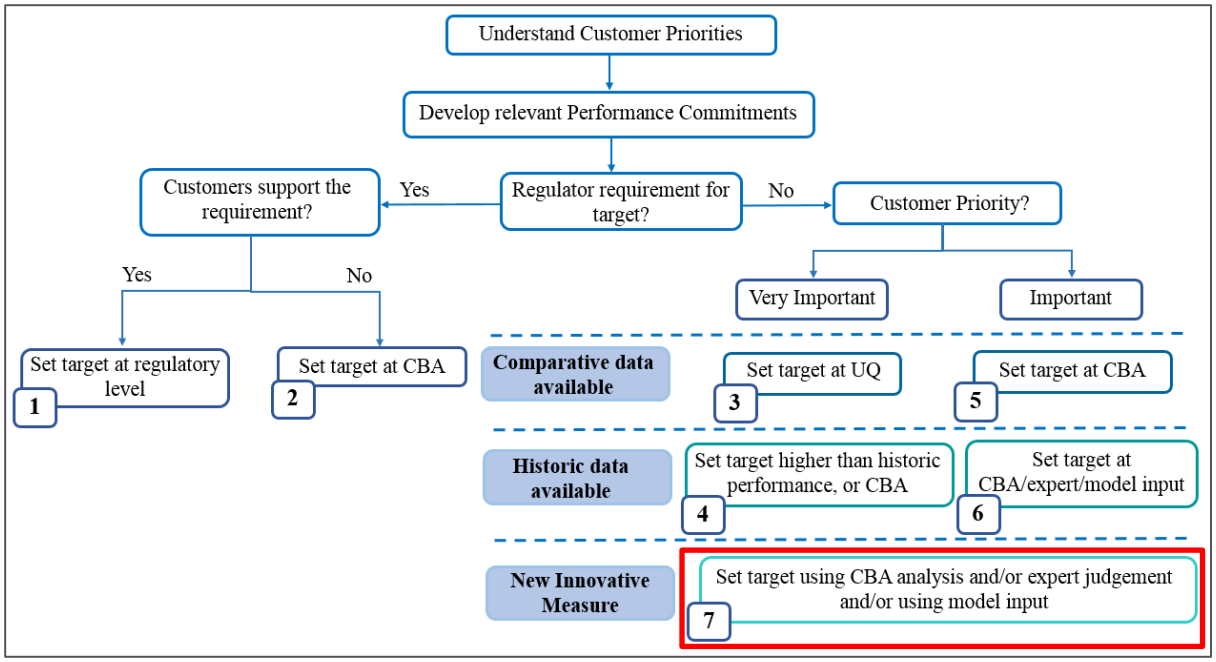
3.7. Public sewer flooding (F07)

This is a new bespoke performance commitment. It is the number of sewer flooding incidents caused by equipment failures, blockages or collapses (collectively grouped as other causes) affecting public highways and road.

For AMP7, we have targeted upper quartile performance offering customers an improvement of circa. 7.4%.

3.7.1 Position in the framework

Public sewer flooding is a new performance commitment for AMP7 and thus it belongs to cohort 7 (see figure below).



Location of the performance commitment in the framework

3.7.2 Regulatory guidance

As a bespoke performance commitment there is no regulatory guidance for our targets against this measure.

3.7.3 Customer views

Sewer flooding is a service failure which customers, understandably, feel strongly about. Customer research carried out with respect to internal and external sewer flooding revealed that customers demonstrate altruism with those suffering service failure, and thus generally feel more should be done to avoid this result. Customers also feel sewer flooding should have equal focus across roads and gardens. It is considered an important priority regardless of the location which floods due to potential health risks and the impact of sewage pollution.

3.7.4 Historical performance

As a new performance commitment, this is not something we have reported or measured historically, however, from the data we collect through other flooding measures we can estimate, retrospectively, the number of incidents attributed to other causes affecting highways/footpath as outlined in Table App1.

3.7.5 Comparative information

As an innovative, new performance commitment we have no direct comparative data as this has never been addressed by any other company. The closest comparator is the CCWater external flooding definition, which includes highways, but excludes PDAS assets. Industry comparison of the CCWater external flooding definition is shown in the table below, where Severn Trent ranks 4th out of 10 companies. Our relative position in the industry has not changed notably in the past 5 years, maintaining an average performance.

Historical industry data of the CCWater external flooding definition

Company	2012-13	2013-14	2014-15	2015-16	2016-17
Anglian	25.83	20.74	21.92	19.53	18.33
Dwr Cymru (Welsh)	33.69	26.81	22.28	22.17	17.08
Northumbrian	20.39	12.67	9.37	9.27	6.02
Severn Trent	17.90	15.13	18.43	14.63	12.90
South West	27.65	24.89	21.97	19.73	16.39
Southern	40.94	40.26	31.05	24.64	22.61
Thames	13.39	12.50	11.72	10.98	8.70

Company	2012-13	2013-14	2014-15	2015-16	2016-17
United Utilities	17.87	12.07	11.55	12.07	12.82
Wessex	23.04	18.39	14.09	12.78	11.57
Yorkshire	21.62	15.78	16.44	16.35	15.62

Analysis of historical trends in our proposed public sewer flooding performance commitment broadly mirrors trends in both the CCWater external flooding measure and our current AMP6 External flooding performance commitment. There is closer comparability between public sewer flooding and CCWater external sewer flooding (the former is consistently between 38 - 48% of the latter), compared to the AMP6 external flooding measure (where public sewer flooding ranges from 27 – 42% of the external flooding numbers). We suggest it is the large number of highway floodings which makes the CCwater measure most comparable with public sewer flooding, thus we have used the CCWater measure to infer industry comparison.

Upper quartile performance for the CCWater measure is 11.88 flooding areas per 10,000 connections. This equates to 4,845 areas for Severn Trent, compared to our 2016/17 performance of 5,232. To reach upper quartile we would need to affect a 7.4% change in the CCWater measure. As such, we assume that we would similarly need a 7.4% decrease in our public sewer flooding number to reach UQ for this measure. This aligns well with the level of improvement we are targeting in our other flooding measures.

3.7.6 Cost benefit analysis

There is no history of cost data against activities targeting this measure, and we anticipate a significant number of common costs with other activities on improving external flooding and blockages.

3.7.7 Rationale for target

We selected this performance commitment following challenge from our Water Forum who support this measure in recognition of the focus to tackle all forms of flooding. In many circumstances, a highway flooding in front of a customer's house is just as distressing as an external flooding in the garden. Research carried out for PR19 also confirmed that our customers support this measure to a similar degree to our external sewer flooding measure. As such, we have targeted upper quartile, using the CCWater data as a proxy to infer industry comparison.

The outcome of assessment against the Ofwat recommended target setting test are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Public sewer flooding*

Ofwat Test	Outcome
Proposed 2024/25 target	7.4% reduction on 2019/20 baseline.
Comparative information	As a new, innovative, bespoke performance commitment, we have limited industry comparative data. Using the CCWater external flooding data which covers flooding on highways as a proxy, we estimate that we are currently average in the industry and a 7.4% reduction would deliver UQ performance.
Historical information	Severn Trent has demonstrated historic range of performance between 1,389 to 2,510 incidents per year. Given this is new metric we are pledging a 7.4% improvement against our reported 19/20 baseline.
Minimum improvement	We could seek to maintain stable performance for this measure, given its asset health focus. However we consider it is necessary to go further than the minimum due to the customer impact and are pledging to deliver UQ performance in AMP7.
Maximum level attainable	Theoretical best performance of 0. Similar to internal and external flooding, work will become more challenging as flooding numbers decrease. However, this is the first time we will be targeting this, hence this challenge is unquantified.
Cost Benefit Analysis (CBA)	No CBA analysis carried out given costs will be common to work we do internal and external flooding. Hence we have mirrored similar levels.
Expert Knowledge	Target of 7.4% improvement proposed is based on estimation of UQ performance in AMP7.

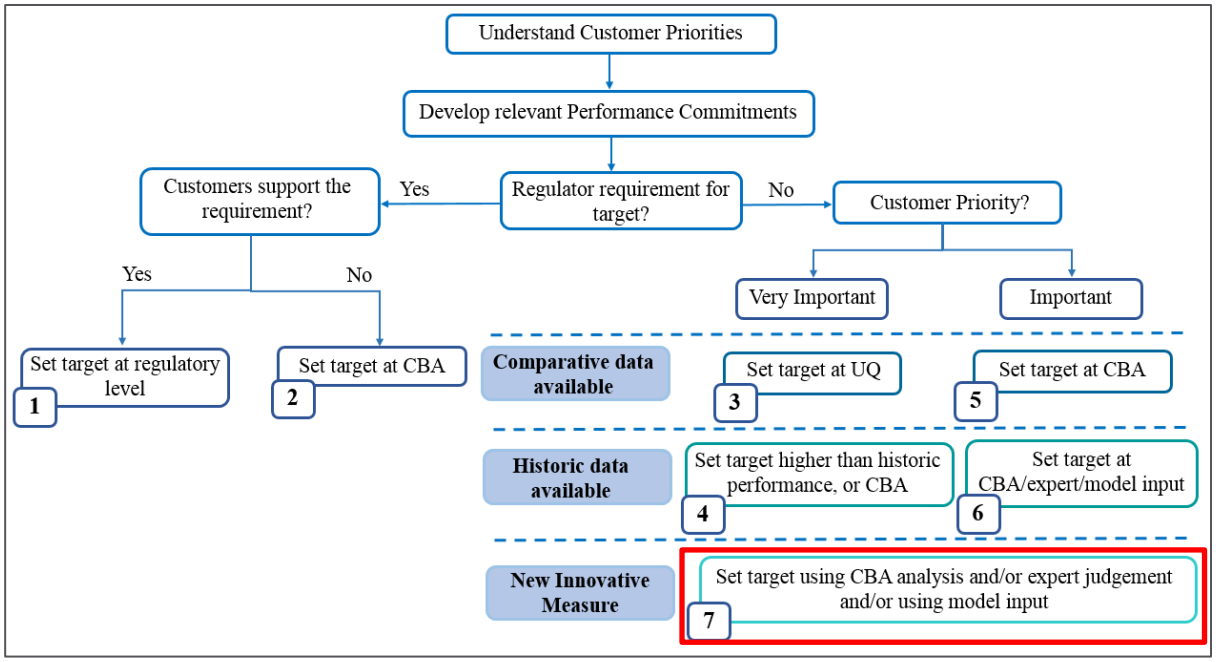
3.8. Green communities (F08)

This is a new bespoke performance commitment for PR19, designed to strengthen our commitment towards accounting for the benefits of natural and social capital in our decision making. It is the amount of natural and social capital value that we create for local communities through the construction of sustainable drainage and water management features. Natural capital is the element of nature that directly or indirectly produces value (or benefits) for people. Social capital is the value created through improved individual or societal wellbeing and prosperity.

We are proposing to deliver £0.6m value, based on our assessment of Thame's AMP6 performance. This represents an improvement of more than 50% on our estimated historical performance of £0.256m benefits.

3.8.1 Position in the framework

This is a new performance commitment and thus belongs in cohort 7 (see figure below).



Location of the performance commitment in the framework

3.8.2 Regulatory guidance

As a bespoke performance commitment there is no regulatory guidance.

3.8.3 Customer views

Sustainable drainage schemes were addressed in one of two targeted pieces of research, in which customers demonstrated clear support for us to consider community flooding initiatives, such as sustainable drainage schemes. Customers also considered sustainability as important for businesses and individuals alike.

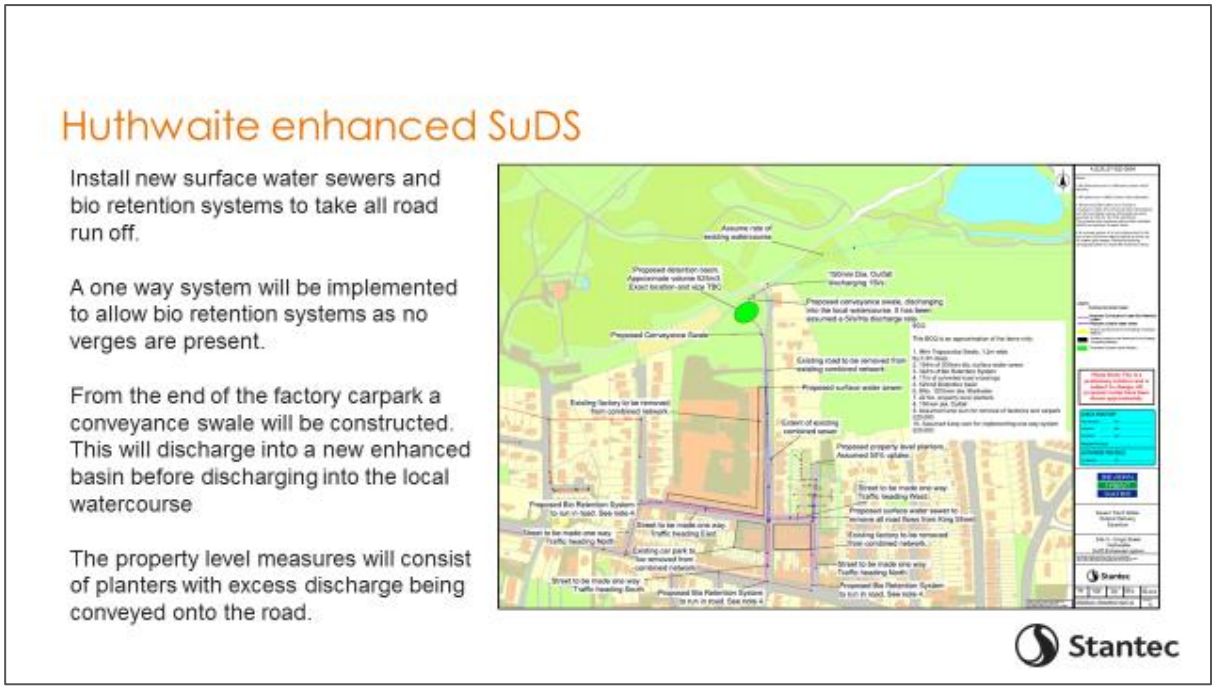
3.8.4 Historical performance

To measure the value of natural and social capital created we are using a tool called B£ST (Benefits of Sustainable Drainage system (SuDs) Tool). The B£ST Tool was first created in 2015 through a project commissioned by CIRIA (the Construction Industry Research and Information Association – an independent, member based, not-for-profit research organisation) and delivered by Stantec (previously MWH - a major global specialist consultancy). The B£ST tool was developed through understanding the potential range of benefits that a SuDS could provide. These benefits were then quantified as a monetary equivalent value using a range of potential valuation data sources and methods.

The B£ST tool is being updated by CIRIA and Stantec during 2018/19 to take account of the latest information on benefit values. We will use this updated version for the calculation of our performance commitment. The B£ST tool is widely recognised in the UK and globally as being a robust and comprehensive way of valuing the benefits from SuDS. It is widely used in both the public and private sectors and is available for free on the Susdrain website www.susdrain.org/resource/best.

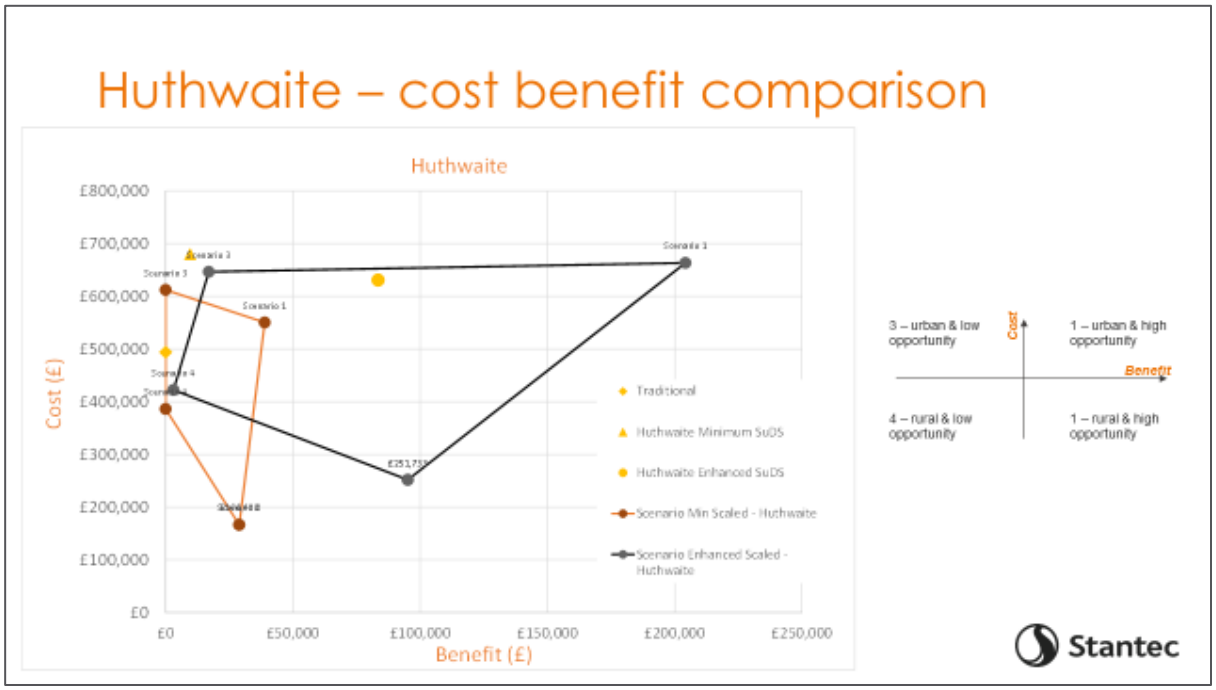
This is a new performance commitment so there is no reported historical performance. As part of the development of this performance commitment we have sought to consider projects we have delivered in AMP6 that could have contributed to the measure if we had chosen to install a sustainable drainage feature as opposed to a more traditional sewer upsizing or storage option. As an example one of these projects is included below.

The indicative SuDS option that we could have installed to provide enhanced natural and social capital is shown in the figure below.



Example of a scheme we would have claimed against for the Green Communities performance commitment

We have then calculated the natural and social capital benefits of such an option through the use of the B£ST tool. If we had implemented the enhanced SuDS option we would have claimed an equivalent benefit value of £0.083m on the Green Communities performance commitment (see figure below).



Cost benefit comparison of a potential SuDS scheme using the B£ST tool

In total, for the examples we considered, there was a total benefit value of £0.256m. A caveat to this is that in some of these examples, the additional costs of building the enhanced SuDS outweighed the additional benefits and therefore we wouldn't have chosen the option.

3.8.5 Comparative information

There is limited directly comparable information as this is a new and innovative measure. We have looked across other company's performance commitments from PR14 and the closest comparator we can find is Thames Water's commitment to disconnect 20 hectares of impermeable area from the combined sewers and drain via a SuDs (see table below).

We have assessed the range of benefits that could be expected from installing 1 hectare of SuDs features in different scenarios. We used these scenarios to calculate indicative benefit valuation for each scenario to create an expected benefit envelope per hectare as shown below. A midpoint of these benefit calculations is approximately £30,000 per hectare. If we multiply this by 20 hectares (Thames Water's commitment for disconnecting impermeable area) then we get a comparator of £0.6m.

Comparative assessment of AMP6 performance commitments dealing with SuDs

Company	AMP6 Definition	Unit	14/15 (actual)	19/20	Improvement	Comparable to ST AMP7 proposal
Affinity	Percentage of sewerage capacity schemes incorporating sustainable solutions, for example, SuDs	%	n/a	25	25	Most comparable
Thames	The number of hectares of contributing area (that would normally contribute to surface water run-off into a combined sewer) disconnected from the combined sewers by fitting sustainable drainage measures.	Cumulative hectares	n/a	20	20	Addresses SuDS in area.
Welsh	The completion of schemes to reduce the amount of surface water entering the company's systems.	Volume of surface water removed from the system (expressed in no of properties equivalent)	1,000	25,000	24,000	This measure does not necessarily refer to SuDs, however, it does address the same issue.

3.8.6 Cost benefit analysis

The measure is based on a cost benefit analysis methodology and therefore it will incentivise us to select the most cost beneficial option through taking into account the value of natural and social capital created.

3.8.7 Rationale for target

This is a new metric that we have proposed for AMP7 to introduce natural and social capital across our region. We are proposing a target of 0.6m across the AMP with an aim to challenge us to deliver solutions which create natural and social capital within our local community.

The assessment against the Ofwat recommended target setting tests are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Green communities*

Ofwat Test	Outcome
Proposed 2024/25 target	£0.6m
Comparative information	Estimated £0.6m value from Thames work in AMP6. Note assumptions made to estimate value as no direct comparative data available.
Historical information	Estimated historical data indicates we have previously delivered £0.256m benefits against this performance commitment.
Minimum improvement	As a new performance commitment, any delivery against this measure will represent an improvement in performance. As we estimate previous performance of approximately £0.256m, this would be our proposed minimum improvement for PR19.
Maximum level attainable	Theoretically, there could be a number of cost-beneficial schemes which could be undertaken towards this measure, however, this will be will need to be balanced with considerations on deliverability and overall affordability of the plan.
Cost Benefit Analysis (CBA)	This performance commitment is cost-beneficial by nature.
Expert Knowledge	We are proposing a target of 0.6m across the AMP with an aim to challenge us to deliver solutions which create natural and social capital within our local community.

3.9. Collaborative flood resilience (F09)

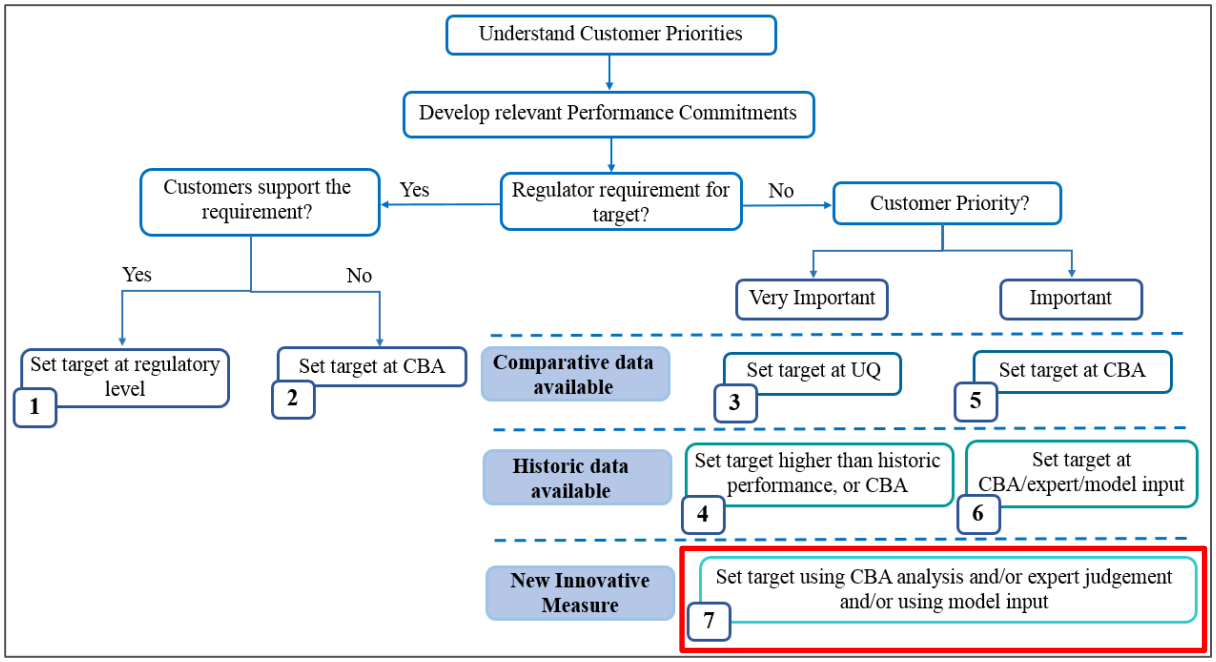
This performance commitment is a revision of the S-A3 - Partnership Working performance commitment following engagement with our local partners, to take on board lessons from AMP6. Moving to a number of properties at reduced risk of flooding rather than measuring the number of delivered schemes is more aligned to how other partnerships measure flood risk reduction and is more customer outcome focused rather than a more traditional inputs-outputs based measure.

This performance commitment covers the number of properties and areas benefitting from a reduced risk of flooding from our sewer network achieved by working in collaboration with other Risk Management Authorities (RMAs) or other organisations.

We propose to maintain our AMP6 performance of 360 properties. This will be challenging as we have identified only 154 properties linked with 5 locations where we can collaboratively work with other stakeholders to reduce flood risk and the significant risk of future funding for our partners.

3.9.1 Position in the framework

Due to the limited historical context and comparability of the proposed AMP7 measure to our AMP6 and other companies' performance, we consider this performance commitment to belong to cohort 7 in our framework (see figure below).



Location of the performance commitment in the framework

3.9.2 Regulatory guidance

As a bespoke performance commitment there is no regulatory guidance towards the development of a target for this measure. However, there is regulatory guidance (Flood and Water Management Act 2010) which directly supports this measure and provides the framework for working with organisations, increasing the resilience of our network and dealing with flood risk when sewers are either the source or pathway of flooding. There are additional relevant statutory drivers for working with other organisations to reduce flood risk, and our own flood risk management duties, as set out in the Water Industry Act 1991, both of which support the basis for this measure.

3.9.3 Customer views

Customer research revealed that customers do not care about the source of flooding or who has responsibilities; they expect everyone to work together to manage it and deal with it. This topic was featured in a deliberative workshop with customers, who favoured organisations working in partnership to resolve issues. However, customers also recognise this can be hard to achieve, and felt that it was important that each partner pays according to their level of responsibility. Intuitively this is felt to be slightly less important than floods and resilience, but the low cost of improvements is not a barrier.

3.9.4 Historical performance

There is limited comparability with the current AMP6 performance commitment S-A3: Partnership Working, for which we anticipate to deliver 21 schemes by the end of 2019/20. If we convert this into equivalent number of properties and areas benefitting, using the proposed new definition, this is equal to 360 properties or areas as outlined in the table below. Achieving this number of properties will be difficult due to the nature of working in partnership with third parties.

Comparative assessment of AMP6 performance commitments dealing with resilience

Year	1	2	3	4	5	Total
Number of PW ODI schemes	0	0	8	8	5	21
List of schemes			[REDACTED]	[REDACTED]	[REDACTED]	

Year	1	2	3	4	5	Total
			[REDACTED]	[REDACTED]	[REDACTED]	
Actual/Forecast	Actual	Actual	Actual	Projection	Projection	
Cumulative total	0	0	8	16	21	
Equivalent properties and areas for AMP7	0	0	138	112	110	360

3.9.5 Comparative information

A number of other companies have undertaken work for AMP6, on delivery of flood risk reduction schemes through partnership working. However, only Anglian and Yorkshire water have specific measures on joint working to reduce flood risk (see table below).

Comparative assessment of AMP6 performance commitments dealing with Collaborative flood resilience

Company	AMP6 PC definition	Unit	PR14 FD starting level	2019-20 PCL	Improvement	Comparison to ST AMP7 proposal
Severn Trent	Partnership Working	Number of schemes	0	21	21 (360 props)	
Anglian	Percentage of sewerage capacity schemes incorporating sustainable solutions	%	0	25	25%	Reputational only measure to encourage sustainable practices
Yorkshire	Solutions delivered by working with others	Number of interventions	0	4	4	Measures the number of multi-agencies intervention solutions that Yorkshire water contribute. Broadly comparable to our Severn Trent AMP6 PC.

3.9.6 Cost benefit analysis

This performance commitment has been set at a stretching level, beyond cost-benefit level.

3.9.7 Rationale for target

In AMP6, we are forecasting to deliver 21 schemes against our partnership working measure. To provide a comparable baseline for AMP7, we have estimated the number of properties benefitted via the 21 schemes which is equivalent to 360 properties as outlined in the historical section above.

In setting our ambition for 2024/25, we have followed 3 key steps:

1. Identifying AMP 7 investment needs:

- Risk Mapping – We have mapped our known sewer flood risk locations against fluvial & surface water flood risk zones to identify areas of multiple responsibilities.
- Collaborative Mapping Tool – In partnership with the EA, we have developed an on-line shared map of current and potential pipeline schemes and risk areas, to help identify collaborative opportunities in AMP7 between EA, LLFAs and ourselves.
- Engagement with partners – In addition to our regular engagement with the other Risk Management Authorities, we have run flood specific AMP7 workshops with Lead Local Flood Authorities (LLFAs), Environment Agency (EA) teams in our area. We have also carried out a formal consultation with RMAs to identify locations for collaborative schemes in AMP7.
- Review of our programme – We have specifically reviewed schemes already in our potential AMP7 programme for opportunities for collaboration.

2. Developing AMP7 investment needs:

- Pre-feasibility – We have carried out pre-feasibility work on some potential AMP7 schemes.
- Bids for funding – We have been working with other Risk Management Authorities (RMAs) to support RMA led bids or bidding ourselves for Flood Defence Grant in Aid (FDGIA) funding and Local Levy funding. This is to help align priorities and funding to deliver joint schemes in AMP7.
- AMP6 schemes – Some opportunities initially being developed for AMP6 delivery have now been moved to AMP7 delivery to align with programme timescales for partners and in recognition of the additional time required to develop and deliver a scheme to reduce complex flooding from multiple sources.

3. AMP7 potential schemes – Having progressed the identification and development work, all potential AMP7 collaborative flood risk schemes that would deliver benefits were then assessed for likelihood of progression and delivery. This was based on an understanding of the risks to dates, partner willingness and ability to co-fund and co-deliver. We also considered the rate of drop-outs experienced this AMP when converting 'potentials' at an early stage into 'delivered' schemes. Schemes were assessed as high, medium or low in terms of confidence to progress from potential to delivery. The number of properties and areas for each schemes was then assessed and this gave us a high confidence on 154 properties and areas.

Additionally, we carry a significant risk on this programme as the current 6 year DEFRA programme runs out in 2021 and many of the AMP7 locations where third party investment is needed will be relying on the UK government agreeing a future 6 year programme with associated investment. This is a significant source of funding and thus in the unlikely scenario it is still possible to get a minimum of zero collaborative schemes. We will start next AMP at zero and need to work up towards our target

We are therefore proposing a target of 360, in line with our current AMP but also reflecting the uncertainty in delivery we have experienced due to the nature of partnership working.

The assessment against the Ofwat recommended target setting tests are as outlined in the table below.

Application of Ofwat tests for the performance commitment *Collaborative flood resilience*

Ofwat Test	Outcome
Proposed 2024/25 target	360 properties
Comparative information	No directly comparable information. In AMP6 Yorkshire pledged 4 interventions; we proposed 21 schemes equivalent to 360 properties. For AMP7 we are seeking maintain this performance due to the uncertainties in delivery we have experienced in AMP6 however we will still be delivering more schemes than other companies.
Historical information	Throughout AMP6 we anticipate delivery of circa 360 properties or areas with reduced flood risk. For AMP7, we are proposing to deliver a similar level (360 properties). This target carries significant risk due to our understanding of the issues on funding for partners and given currently we have only been able to identify schemes equivalent to 154 properties/areas.
Minimum improvement	Our minimum target would be to deliver 154 high confidence properties in AMP7 as currently identified. We are exceeding this to maintain our forecast AMP6 performance of 360 properties, despite significant risk to the programme given the current 6 year DEFRA funding programme completes in 2021 and there is no further 6 year programme currently agreed. This is a significant source of funding for partners and thus risks their ability to deliver collaborative schemes.
Maximum level attainable	The best theoretical performance level would be a reduction to all properties with a risk of flooding. However we will not be targeting this • given we need to align our programme with that of other stakeholders to deliver this performance • the uncertainty on how our partners will be funded to reduce flood risk and thus work collaboratively with us (and our customers expect other parties to pay their fair share)
Cost Benefit Analysis (CBA)	Stretching – beyond cost-benefit level.
Expert Knowledge	We have followed a robust process as outlined above. In brief we have sought to understand flood risk from multiple areas by collaborating with partners such as the EA and local councils. Followed by which we have undertaken desktop feasibility assessments to develop a list of schemes where partners would be willing to work with us next AMP. This has resulted in high confidence schemes equivalent to 154 properties. Given our AMP6 forecast is 360 properties we propose to maintain this performance. We note there is significant uncertainty on DEFRA funding which will impact on the ability for partners to work collaboratively on flooding.

4. Outcome: A Service for everyone

In this section we summarise the performance commitments and associated improvements we are proposing to deliver for the outcome 'A Service for Everyone'. We are proposing two performance commitments to cover this outcome.

Performance commitments for the outcome A Service for Everyone

A Service for Everyone	2 PCs
Revised	Help to pay when you need it
New	Supporting our Priority Service customers during an incident
Rationale	Ensure all customers can access and benefit from our services no matter their individual circumstances We will be delivering a step change in the number of customers we support and expand our service offering We will tailor support to meet their needs

A summary of the improvements we will be pledging for AMP7 is as below:

Proposed Improvements for the outcome A Service for Everyone

Performance commitment	Unit	Forecast (2019/20)	Target 2025	Improvement
Help to pay when you need it	%	30%	43%	Increasing the number of customers supported to 43% which is a 43% increase in customers supported
Supporting our priority service customers during an incident	%		100%	Deliver a step change in service offering for 2020 and maintain performance at 100% to 2025

Our A Service for Everyone outcome is underpinned by the results of extensive customer and expert stakeholder engagement. Our research consistently shows that customers feel it is important that we support customers in vulnerable circumstances, both financial and service. It has also enabled us to understand the differing circumstances and needs of both financially and service vulnerable customers. We have also been able to develop a view of how many customers might need additional support and how we can identify those customers, including proactively, who need this support or are at risk. We have developed propositions that will deliver service offerings and support to meet the different circumstances and needs of our customers, including those with transient vulnerabilities. This tailored support will enable our approach to be effective, efficient and targeted – we get the right support to the right customers at the right time.

Following a late Customer Challenge Group challenge we also explored the option of having a specific performance commitment to support transient vulnerable customers during a water supply incident – promoting support, opening up priority accessible channels and providing support to transient vulnerable customers during a water supply incident. We recognise this group is difficult to identify and would not necessarily be included in the scope of the PSR performance commitment. We would need to cover all three areas of the offering to ensure it is effective and this would result in a compound measure which we recognise is prohibited. We are therefore developing shadow measures next AMP and more details of this can be found in Chapter 14: A Service for Everyone. We will measure the effectiveness of this offering through shadow internal measures to ensure we deliver against transient vulnerable customer needs.

These targets should be reviewed alongside our Appendix A2 – Addressing Affordability and Vulnerability and Chapters 10 and 14.

4.1. Help to pay when you need it (E01)

Ofwat states that companies can propose bespoke performance commitments on affordability that reflect specific challenges. We have decided to build upon our AMP6 commitment to have a bespoke performance commitment in relation to financial vulnerability to demonstrate and deliver a step change in our support to this group of customers and it effectively holds us to account as customers feel it is an important area of focus.

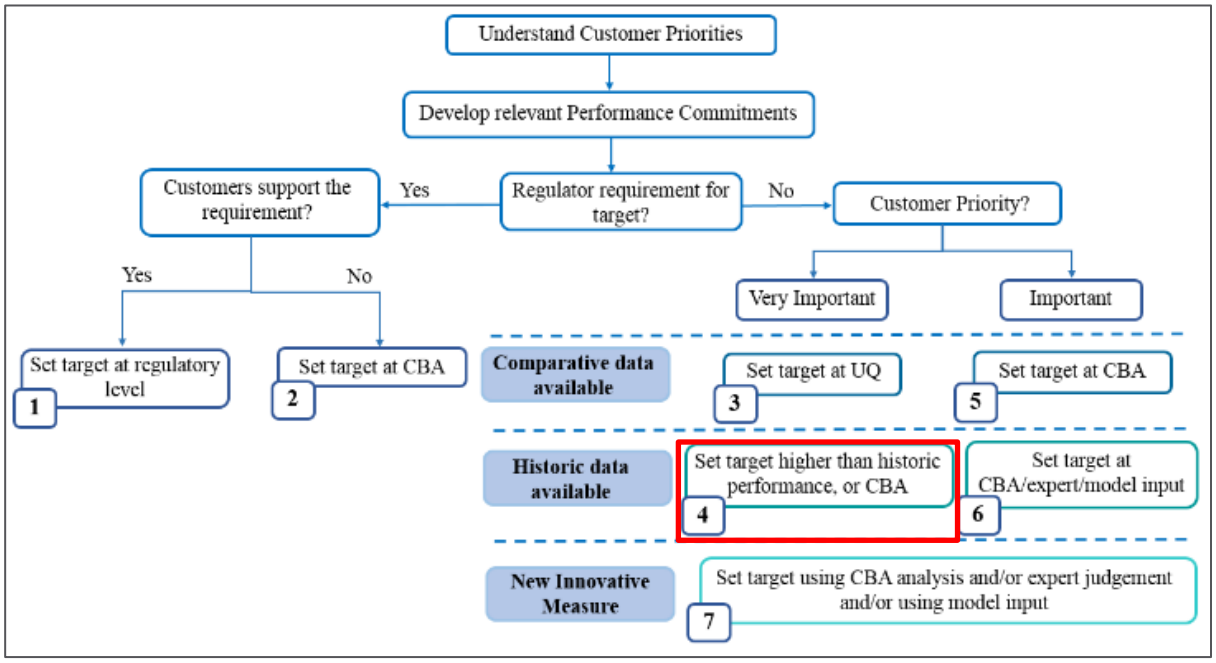
We have made great strides to support our customers who are financially vulnerable throughout AMP6. With money becoming tighter for struggling to pay customers in the future we feel it is vital we keep this focus. We need to support this group of customers

effectively as it is core to delivering trust and a service for everyone, therefore we are proposing to continue to have a bespoke performance commitment for financial vulnerability.

We are committing to a 43% increase in the proportion of customers supported who are struggling to pay.

4.1.1 Position in the framework

Research has confirmed that customers expect us to support those who are struggling to pay as a priority. The targets we have set are based on historic performance data and economic forecasting. Therefore under our performance framework as outlined below, this performance commitment belongs to Cohort 4 (see figure below).



Location of the performance commitment in the framework

4.1.2 Regulatory guidance

Ofwat note that affordability is a key concern for water customers. Consumer Council for Water (CCWater) research records that one in eight residential customers find their water bill unaffordable across England and Wales. Both the UK and Welsh Governments' strategic policy statements for Ofwat recognise the need for fair and affordable bills and support for customers in circumstances that make them vulnerable. The UK Government's strategy policy statement sets a priority for Ofwat to challenge the water sector to go further to identify and meet the needs of customers who are struggling to afford their charges. It then sets Ofwat an objective to challenge companies to improve the availability, quality, promotion and uptake of support to low income and other residential customers in circumstances that make them vulnerable.

Ofwat's 'Affordability for All' report states that across England and Wales approximately 5.4m households (23%) are spending more than 3% of their income on water and sewerage charges and 2.6m households (11%) are spending more than 5% of their income on water and sewerage charges. We have modelled the number of households who spend more than 5% of their income after housing costs on their water bill. This involved us comparing our customers' bills with different income measures across each of the local authority districts (LADs) in the Severn Trent region. We then aggregated these comparisons in proportion to the number of households in each of the LADs in our area to give a balanced view across our region. And, to make sure we explored water poverty as fully as possible, we made sure to take account of both the lower end of the income distribution and households on income-based benefit payments (such as Job Seekers Allowance and Income Support). Finally, to investigate the potential for changes in water poverty over the AMP, we assumed that, in real terms, customers' bills in each of the LADs would move in line with the total average forecast bill through to 2025 and that the different earnings measures would remain fixed in real terms unchanged over this horizon.

Our analysis suggests that at 2020 we will have approximately 226,000 customers in water poverty spending more than 5% of their income on water and sewerage charges, based on the Ofwat and CCWater definition. We also examined the proportion spending 3% of their income after housing costs on water bill and this suggests 800,000 customer in our region. By 2025, we expect these numbers to fall markedly – by 30%, – purely as a result of the reduction in bills enabled by our PR19 Business Plan.

Whilst there is no common performance commitment required by Ofwat, the measures used should be effective and maximise customer benefits. We recognise that it is not just income and a water bill which might mean a customer is struggling to pay, some customers find bills unaffordable due to their wider circumstances, for example they may have a large family to support or have accrued debts across a number of bills. **Therefore we have chosen to go beyond the water poverty definition and consider all customers who find bills unaffordable.**

We believe it is important that all customers receive services that are affordable and provide value for money. Our focus on lowest possible bills helps drive affordability for general customers and also those customers who struggle to pay. Customers who are struggling to pay or who are at risk of struggling to pay their bills need easy access to assistance. Companies need to be proactive in raising awareness of the financial assistance that they offer, and in getting that assistance to the right customers.

We have chosen to have a bespoke performance commitment focussing on delivering a range of support to ensure we meet different customer group needs. The flexibility to introduce additional affordability schemes into the scope of the performance commitment during AMP7 if we introduce them supports the UK Government's thinking of improving availability and quality – we have made steps to enhance our offering ready for the start of AMP7 but want to ensure we can continue to deliver an improving level of service. Our performance commitment will go a long way to eliminating water poverty in our region.

4.1.3 Customer views

Outcomes from our broader social tariff and debt research told us that the journey to water debt is complex but typically relates to health issues, unemployment or income reduction and significant life events. Through this research and engagement with experts we have identified five key customer groups who we need to provide support for in different ways due to their different circumstances. These groups are:

- Long Standing'
- Borderline
- Sudden and Severe
- Struggles with Finances
- New to Country

For further detail on the needs and circumstances of these customer groups see Appendix A2: Addressing affordability and vulnerability. We need to ensure our support offering helps all of these groups with both in year bills as well as arrears. Therefore we need to offer a range of affordability measures.

Customers in water debt want the opportunity to explain their circumstances to us, and receive a human, empathetic response. They want to negotiate a payment plan that is manageable for them and not to feel like they are in an inflexible, uncaring process.

Customers have told us they value the support we provide. Although water bills are of comparatively low concern to many (other utilities and mortgage/rent more important), being on a reduced tariff clearly leads to positive outcomes for recipients. The financial support provided improves customers' short and long-term financial situation and improves general wellbeing.

The level of support offered by the Big Difference Scheme is welcomed by most and helps recipients get back on their feet but others may need to be on a reduced tariff scheme long-term due to their circumstances. Many customers stated the level of reduction exceeded expectations (72% of social tariff customers surveyed stated the reduction was more than expected). We therefore believe that we can use this to reduce the charges for more rather than be unnecessarily generous.

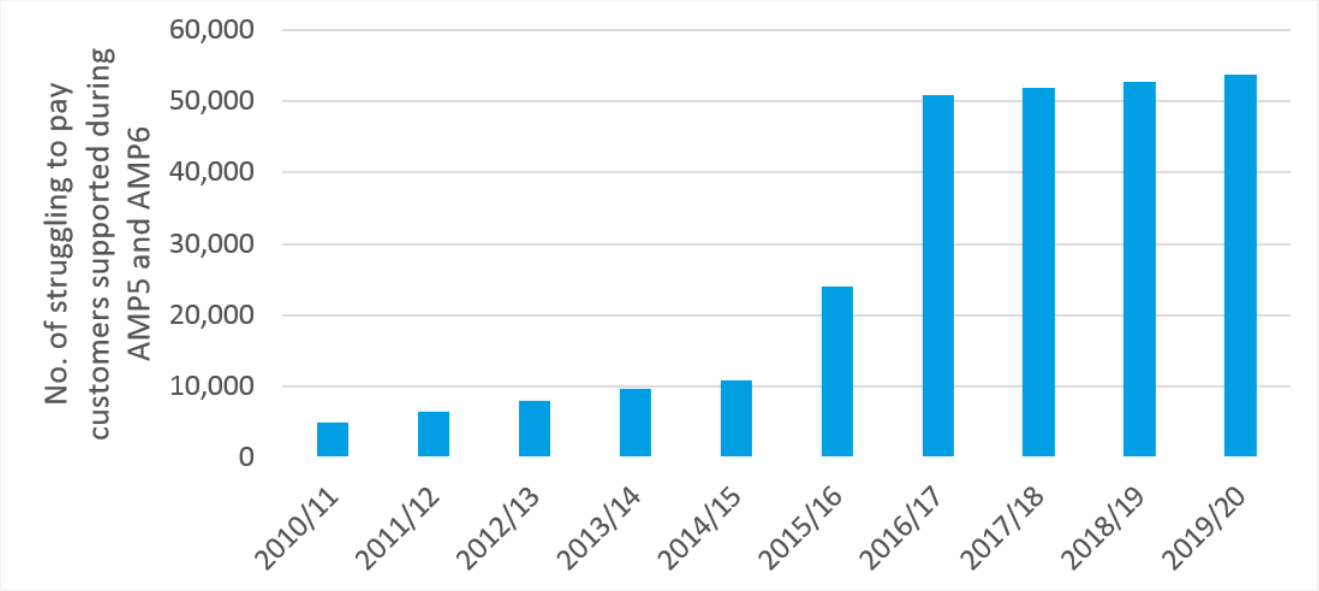
As part of our social tariff cross subsidy willingness to pay research customers informed us that they were in favour of supporting those in need. 86% of customers are willing to contribute through their bills to help support struggling to pay customers through the social tariff scheme.

Recognising these findings from customers and experts our performance commitment is designed to take these into account and:

- We are focussing on delivering impactful help rather than spreading support thinly and not making a difference to customer lives
- It is made up of a range of schemes with flexibility to add in further schemes as we identify new needs and new best practice
- It focusses on the proportion of customers we support rather than quantifying the number of customers per scheme offered so we ensure we listen to changing needs and don't just target numbers on different schemes
- We have redesigned our social tariff scheme so we can support more customers through this but still be impactful

4.1.4 Historical performance

In 2015 we introduced our Help When You Need It performance commitment which includes four projects aimed at supporting 50,000 customers each year who may be struggling to pay – this has helped us drive a fivefold increase in the number of customers we support (see figure below).



Number of struggling to pay customers supported during AMP5 and AMP6

Our Watersure, social tariff and proactive metering schemes can help reduce customer bills, whilst water health checks provide valuable community engagement to make hard to reach customers aware of our schemes and services and ensure they are on the most appropriate scheme for their circumstances. We have built a robust platform in AMP6 which we aim to further build on in AMP7.

We have reviewed the effectiveness of these schemes and identified improvements for the social tariff scheme. We have also identified that the proactive metering affordability assistance scheme is not proving as effective as other schemes due to the effort to engage and persuade customers that it would be of benefit to them. Therefore we propose to not continue this scheme from 2020 under the affordability assistance programme but will continue to offer meters through the free meter option programme which is available to all customers. We also will be proactively installing meters for all customers in priority water deficit areas and using persuaded optant approaches to engage customers to transfer to a measured bill where it benefits them, this will include engaging customers who are struggling to pay in these areas and promoting schemes that might support them. Therefore we will not be including the proactive metering affordability assistance scheme in the scope of the AMP7 help to pay when you need it performance commitment.

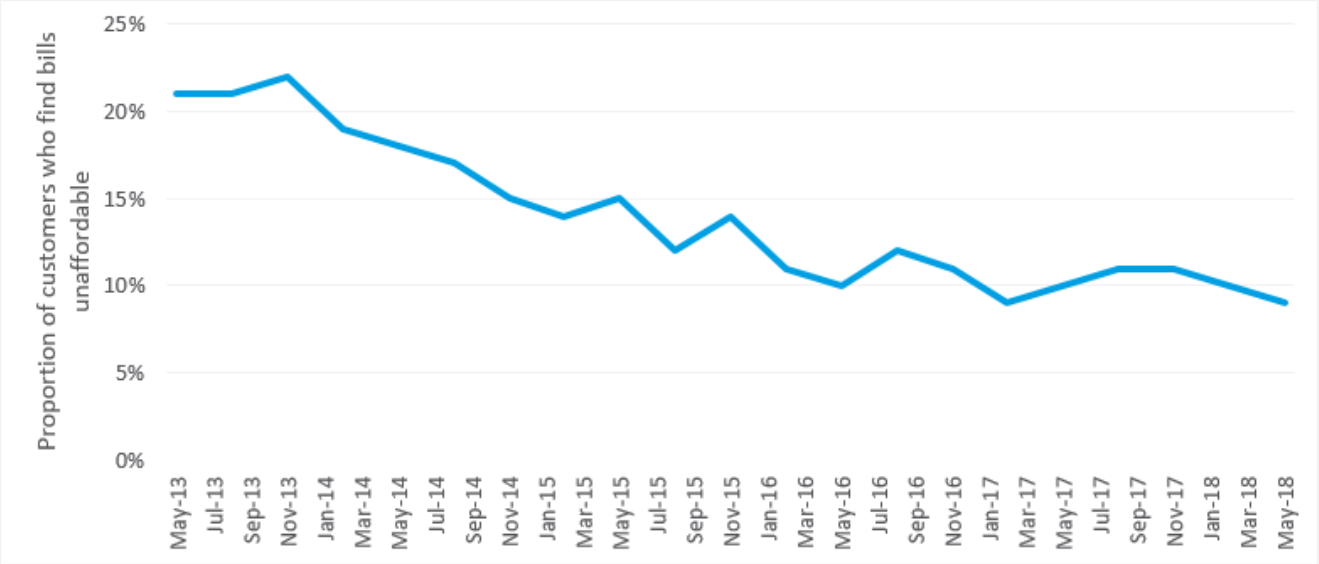
Throughout AMP6 we have introduced additional affordability assistance support for customers beyond that which we committed to:

- Payment plan concessions – short term payment plan offered where customers cannot afford the standard plan amount. The plan amount can be negotiated and is reviewed every 13 weeks.
- Home water efficiency checks, including for customers in social housing to help reduce customer bills and drive water efficiency.

We have also continued our charitable donation to the Severn Trent Trust Fund which includes the provision of water grants to help customers with their water bills.

With the inclusion of these three affordability assistance schemes and the exclusion of the proactive metering scheme we will have a forecast 2019/20 baseline performance of supporting 135,000 customers who are struggling to pay.

Every quarter we run an online tracker survey which asks at least 4,000 customers annually questions to understand their views on a range of topics, including affordability. From this we understand that the proportion of customers who find their bill ‘unaffordable’ is 11% as at 2017/18 - approximately 440,000 customers. This aligns to the Ofwat ‘Affordability for All’ report figures. The proportion of customers who find bills unaffordable has gradually been reducing since 2014.



Proportion of customers who find bills unaffordable

***Survey question*: How much do you agree or disagree that the water and sewerage charges you pay are affordable to you?**

***Response options* – Strongly agree, agree, neither agree/nor disagree, disagree, strongly disagree, don't' know**

***Unaffordability* defined as response of disagree or strongly disagree.**

Our AMP6 performance commitment target of supporting 50,000 customers translates that we would be supporting 11% of the 11% of customers who find bills unaffordable. If we also include the additional schemes now offered to customers since the start of the AMP which we plan to include in our new performance commitment definition (excluding the AMP6 proactive metering affordability assistance scheme), we forecast the increased support to 135,000 customers equates to supporting 30% of customers who find bills unaffordable by 2019/20.

4.1.5 Comparative Information

We have assessed who, for PR14, were the affordability top performers for supporting customers who are struggling to pay were (2019/20 performance commitment).

Target volumes of customers supported in AMP6

Company	Volume of customers supported		% customers find bills unaffordable*3	Proportion customers supported who find bills unaffordable (2019/20)	Proportion of HH customers supported (2019/20)
	2016/17 actual *1	2019/20 annual committed target			
Southern	194,726	217,000 *2	14%	81%	11%
Welsh Water	65,461	100,000 *2	15%	47%	7%
Severn Trent	50,903	50,000 (commitment) 135,000 (forecast)	11%	11% 30%	1.2% 3.1%

*[1]Data source – relevant water company APR 2016/17
*[2]Data source – PR14 FD outcome, PC and ODI base data
*[3]Data source – ST quarterly tracker nationwide survey 2017

Southern Water include a wide range of schemes in their AMP6 performance commitment, including Water Direct, which we are not proposing to include. As at 31st March 2018 we were supporting 36,000 customers through the Water Direct scheme. We feel this is more of a payment option rather than a help to pay scheme so do not propose to include it in the scope of the performance commitment.

Some of the water companies did not commit to a performance commitment relating to supporting customers who are struggling to pay in AMP6.

The below table shows comparable data across water companies for the number of customers supported through social tariff schemes in 2016/17 and how this translates into the proportion of their customers who find bills unaffordable that they are supporting.

Social tariff and affordability assistance customers supported as at 2016/17

Company	Social tariff band cap	Customer cross subsidy amount	Volume customers on social tariff*1	% of customer base on social tariff*2	% of customers who find bills unaffordable (2017)*3	% customers who find bills unaffordable supported by social tariff	Total volume of customers supported through affordability assistance schemes*4	% customers who find bills unaffordable supported by affordability assistance schemes
Welsh	cap at £187.86 pa	£15	20,811	3.62%	15%	23.6%	65,461	31%
Southern	90%		27,337	1.86%	14%	13.2%		
Wessex	89%		13731	1.16%	14%	8.3%		
United Utilities	Cap at £250	86p (43p matched by UU)	30,607	2.29%	15%	15.7%	68,000	16%
Severn Trent	90%	£3	35343	0.89%	11%	8.0%	50,903	11%
South West	50%		5,772	1.34%	27%	5.0%	28,409	14%
Yorkshire	Cap £368		12943	0.60%	14%	4.3%	27,000	9%
Thames	50%	£4 (£6 from 18/19)	30,877	1.02%	12%	8.2%		
South Staffs/ Cambridge*	80%		4066	0.62%	10%	6.3%	23,000	36%
Anglian	80%	£2 (£3 from 18/19)	6,162	0.24%	16%	1.5%		
Northumbrian	50%		2,374	0.16%	14%	1.1%		

Data source:

*1 CCWater data appendices 2016/17

*2 No. of household customers sourced from Ofwat SIM calculation report

*3 Severn Trent Customer Satisfaction Tracker Survey – Nationwide 2017

*4 Water company Annual Performance Reports 2016/17

For PR19 we do not have much visibility on what other companies are doing. Northumbrian Water has announced a commitment to eradicate Water Poverty in their supply areas by 2030 – challenging all of its causes and making the necessary investment to make a difference to the lives of the most vulnerable customers. The scope of how they will deliver this commitment is unclear, but we believe it is broader than struggling to pay scheme support, it also includes elements of addressing social mobility.

A Thames Water draft plan option proposed to increase the number of customers they help each year from 85,000 to 300,000. This proposal is the equivalent to supporting c.45% of their customers who find bills unaffordable. Thames Water's proposal would require all customers not on the discounted tariff to pay £11 towards helping these low-income customers. We are unsure as to whether they have been successful in securing this level of support.

Our customers have shown strong support for our social tariff through their willingness to pay cross subsidy of £8 each. We believe this will make us competitive against other water companies. Our broader struggling to pay offering puts us in-line with other leading water companies.

We have proposed a specific performance commitment for AMP7 and a longer term ambition of developing a performance commitment for AMP8 that will focus on water poverty or a rehabilitation outcome for customers. We will further develop this thinking throughout AMP7.

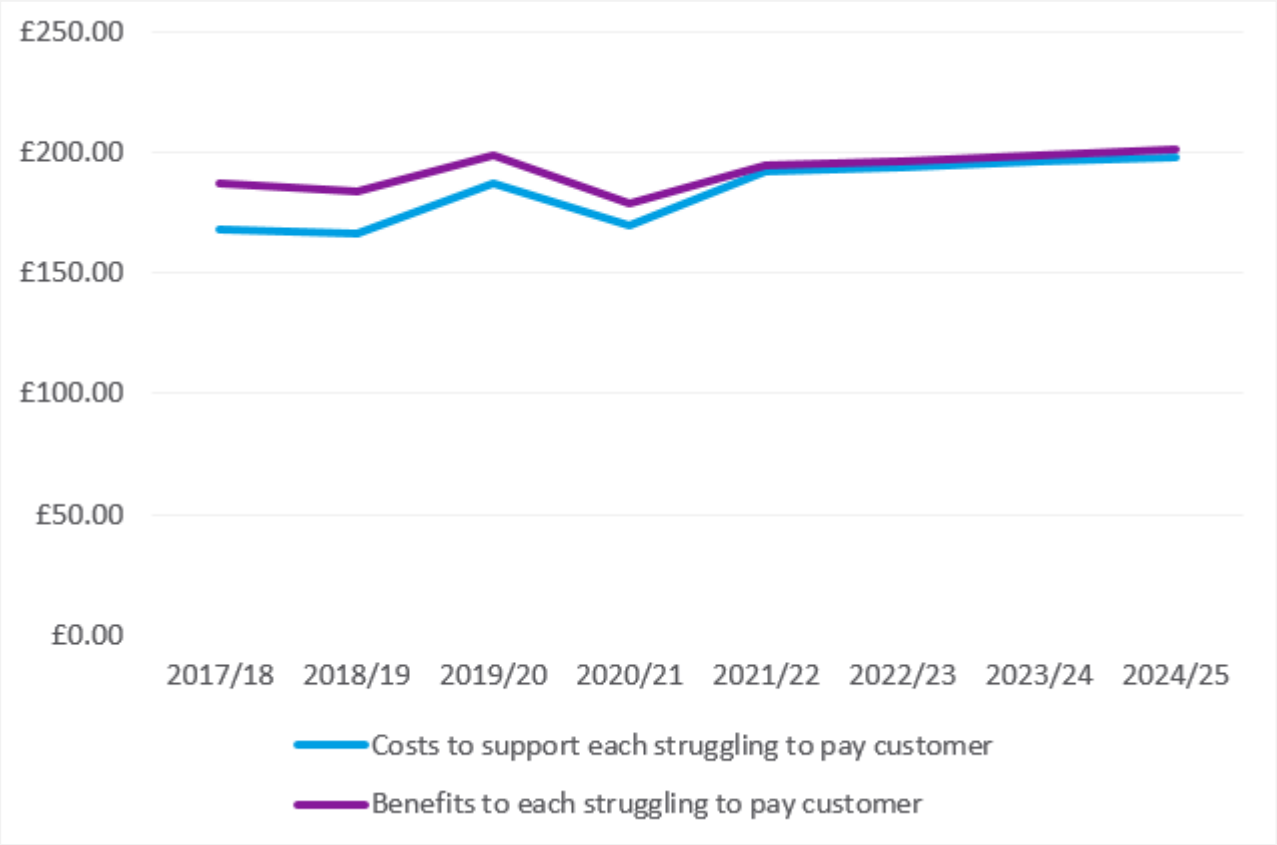
4.1.6 Cost benefit analysis

Due to the nature of affordability assistance support it is not possible to use a traditional cost benefit analysis (CBA) approach to forecast appropriate targets as the average cost of affordability assistance generally increases at the same rate benefits increase until you support 100% of customers who find bills unaffordable.

However we have undertaken a cost benefit analysis for providing our affordability support based on the seven schemes already in place or trialled in the scope of our performance commitment, using the forecast volumes of customers supported per scheme (we have not included proactive metering in the scope of the analysis as we will not be including this scheme in our new performance commitment). We have taken two views for this cost benefit analysis:

- Costs and benefits of supporting each struggling to pay customer from a customer viewpoint
- Cost and benefits from a Severn Trent business perspective

The below figure illustrates the output of the first cost benefit analysis assessment approach where we have calculated the costs of providing the support and struggling to pay customer benefits and translated to a per customer helped figure for each scheme on offer. This has been translated into an overall cost and benefit per customer by proportioning individual scheme costs or benefits based on the number of customers we forecast to support on each scheme each year. For example in 2017/18 we supported 116,577 customers in total, 35,991 of these were supported through our social tariff. Therefore social tariff costs and benefits made up 31% of the overall costs and benefits per customer for this year. In 2024/25 we propose to support 43% of customers who struggle to pay, which equates to supporting c.199,000 customers.



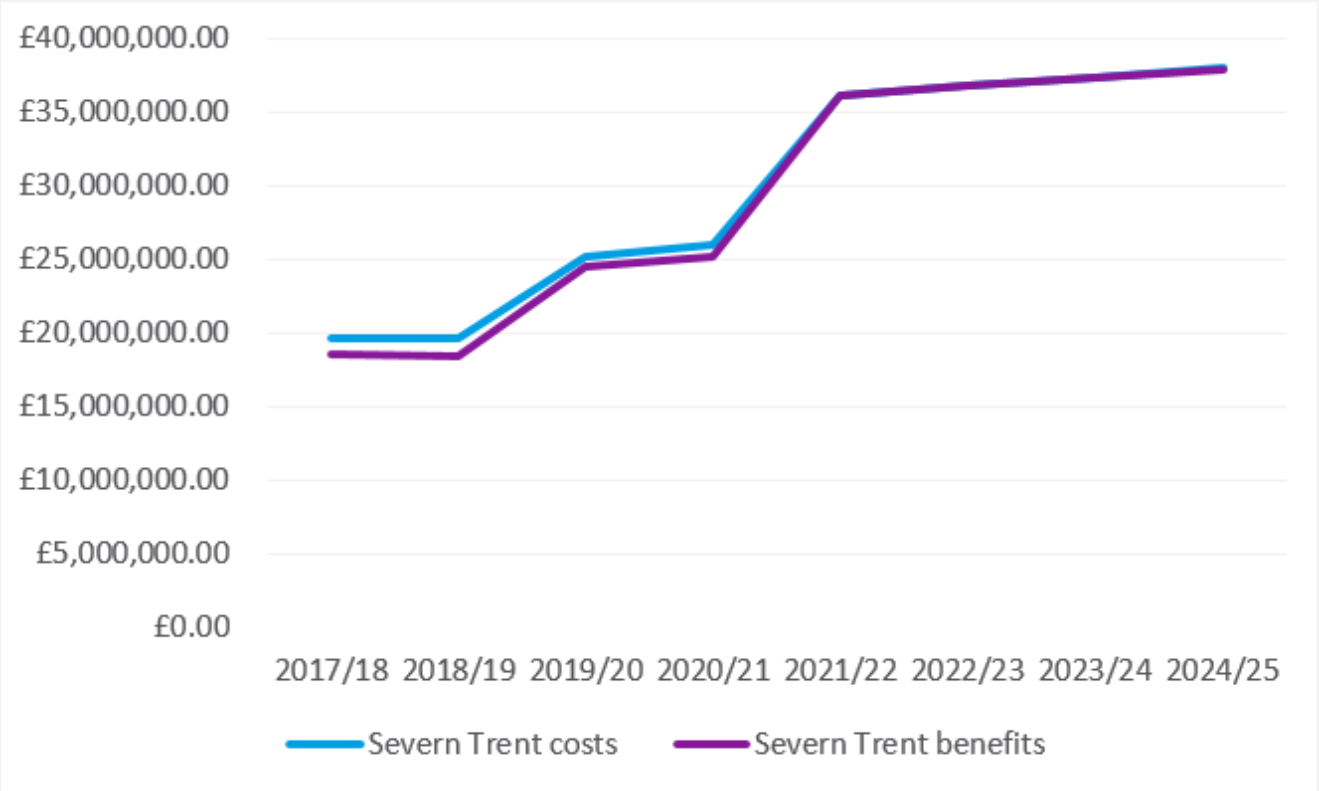
Cost benefit analysis of struggling to pay support in scope of performance commitment from a struggling to pay customer perspective

We are unable to calculate a customer financial benefit associated with water health checks (WHC) and payment plan concessions as the benefit to customers is often not financial and instead is about providing advice and/or support. We have therefore assumed a £1 benefit per struggling to pay customer for each of these two schemes in the calculation. There are also numerous other customer benefits that are non-financial and not quantifiable, for example health and well-being benefits, which are additional to those in the above calculations.

The costs and benefits vary due to the changing proportion of customers supported on each scheme, for example the social tariff scheme has one of the highest costs and benefits due to the up to 90% bill cap and the proportion of customers on this scheme compared to the overall number of customers supported increasing from 31% in 2017/18 to 50% in 2019/20.

The chart shows that benefits for each struggling to pay customer outweighs the costs incurred to support each of these customers. Due to the nature of this performance commitment we are not able to use the cost benefit analysis to help set our target. However the chart does show how the performance commitment targets will provide stretch and how the benefit per customer will continue to grow throughout AMP7.

The below figure illustrates the cost benefit analysis assessment from a business perspective – costs incurred to support affordability assistance schemes and benefits realised as a result. We have included costs associated with third party contracts, manpower, administration, systems, postage/mailshot, customer contact, bill reductions, meter installation and charitable donation covering water grants. Benefits include cross subsidy revenue and reduction in specific activities resulting from customers being on the schemes, for example reduction in debt activity, billing contact and payment transactions.



Cost benefit analysis of affordability assistance in scope of performance commitment from a Severn Trent perspective

From a business viewpoint it appears that costs outweigh benefits until 2021/22. However there are additional benefits that are not included in the calculation as the data is not readily available and difficult to quantify, for example improvement in customer satisfaction and reduction in water treatment costs due to reduced water usage as a result of the home water efficiency checks. There are also benefits associated with the in period finance charge avoided through reduction in bad debt which has not been included as the information was not readily available. We are therefore confident from a business perspective our affordability assistance is effective and efficient. See Appendix A2 for further cost benefit analysis on wider affordability assistance available to customers outside the scope of the performance commitment.

4.1.7 Rationale for target

Forecasting unaffordability levels

We believe that 11% of our customers currently find bills unaffordable – this equates to approximately 440,000 customers who struggle to pay charges.

In order to try to understand potential forecasting of unaffordability levels we have undertaken some econometric modelling. Our quarterly tracker survey unaffordability information has been used in conjunction with the following variables in order to calculate a forecast percentage of customers who may find bills unaffordable:

The probability of customers defaulting is determined by two variables:

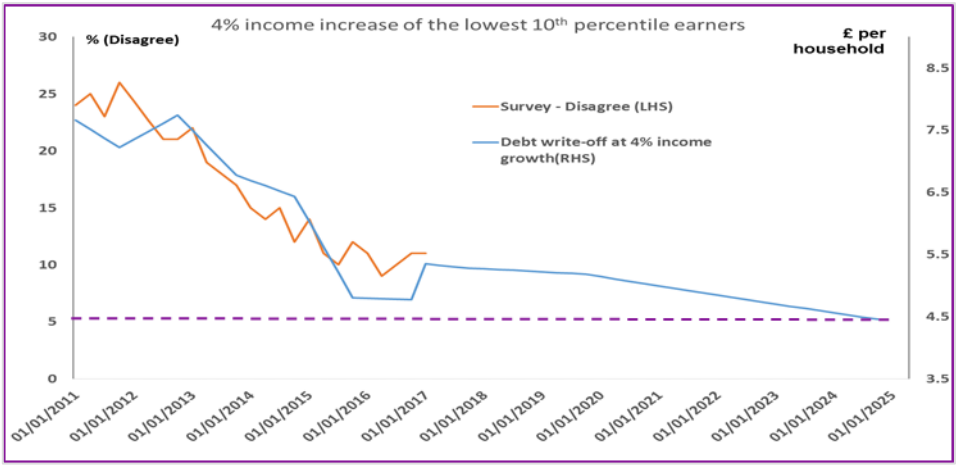
1) The bill relative to 10th percentile income accounts

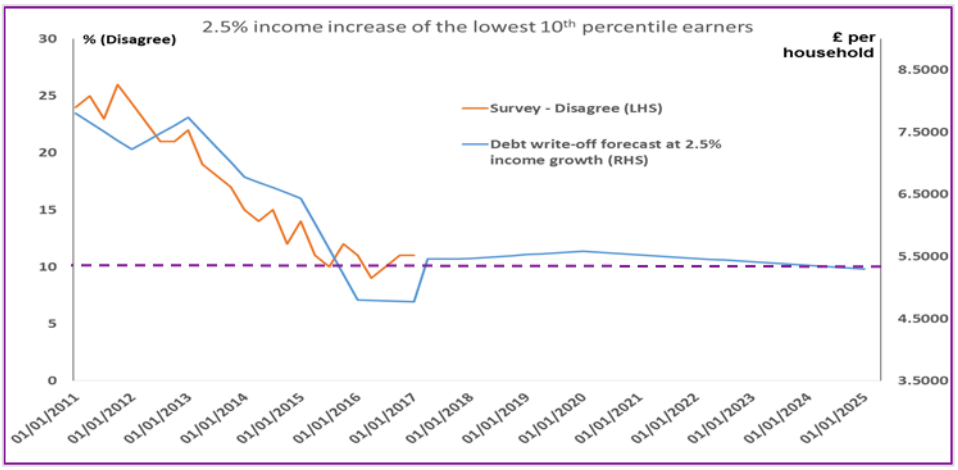
2) A measure of default risk constructed by Equifax

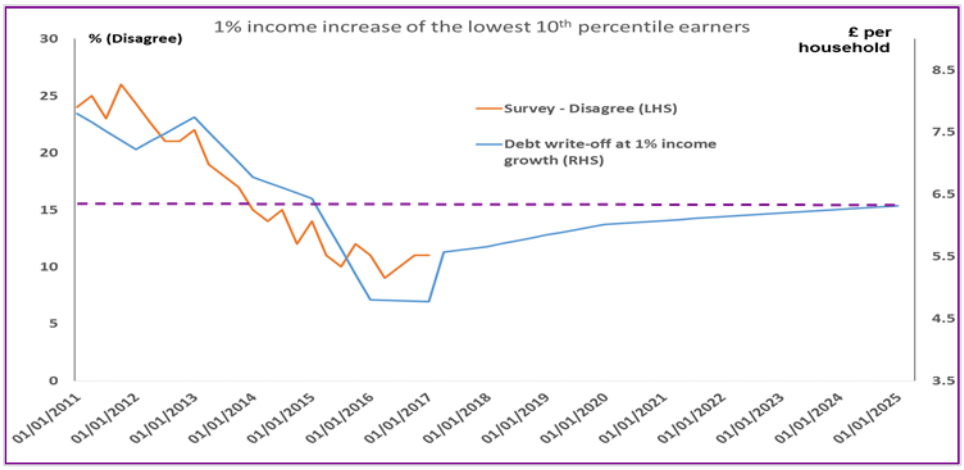
The total number of customers is the scale variable. The proportion of private rental properties and the proportion of metered properties are included as control variables

We have undertaken several simulations of our affordability bad debt model, changing only the income of the lowest 10th percentile earners, which is by far the most significant driver in the model.

Historic and unaffordability levels







The simulations show that:

- If income growth rises to 4%, which wouldn't have been unusual in the pre-crisis years, the unaffordability levels should improve significantly to 5% by 2025.
- If growth is expected to remain at the current rate, then our 2% or 3% growth level simulations show where the survey measures can be expected to come in.
- Unaffordability levels would forecast to be in the range of 7.5% - 10.5%.
- While if growth slows to 1% the results will deteriorate somewhat and unaffordability levels increase to 14.5% by 2025.

For our struggling to pay performance commitment we have assumed that income levels will continue to grow at their current 2.5% and taken the current unaffordability levels at 11%. We plan to review unaffordability levels after year 3 of AMP7 to assess whether our forecast levels of unaffordability remain on track. Should there have been a significant change we will undertake a full review of our service offering and performance commitment to ensure we are still meeting the expectations of both customers and regulators.

Scale of support

We propose to increase the proportion of customers we support who are struggling to pay to 43% by 2024/25 through our performance commitment, compared to supporting 30% in 2019/20. This means we will be supporting an additional 64,000 customers compared to 2019/20 which is a 43% increase in the number of customers supported.

We propose to do this by:

- Increasing the number of customers supported by the social tariff by launching our redesigned scheme in 2020/21 and increasing the customer cross subsidy from £5 to £8 in 2021/22 – taking us to c.97,750 customers supported each year.
- Introducing a debt write off scheme to help customers with large arrears.
- Introducing a payment breaks scheme to give customers 'breathing space' to allow them to seek financial advice.
- Undertaking home water efficiency checks for customers in social housing to help them reduce their bills.
- Fix private issues (water and wastewater private issues) free of charge for financially vulnerable customers.
- Support customers through water grants via the Severn Trent Trust Fund.
- Continue to grow our Watersure support for customers.
- Continue to support customers with water health checks and payment plan concessions.

In addition to the schemes in the scope of the performance commitment we will be supporting customers through other assistance mechanisms, for example Water Direct to support customers in receipt of benefits and through our dedicated Care and Assistance team who can provide advice and support. We will also proactively engage customers through enhanced data sharing to help prevent them falling into arrears in the first instance. We have not included these additional activities in the scope of the performance commitment as these are forms of support available to the 11% of customers who find bills unaffordable and may resolve their circumstances.

Summary of our stretching target rationale

The outcome of assessment against Ofwat's recommended target setting tests are as outlined in the table below. The targets are stretching in that we are delivering a 43% increase in the proportion of struggling to pay customers we will be supporting (moving from 30% in 2019/20 to 43% in 2024/25). The breath of our schemes means we will be providing support that covers the needs of the five different customer groups. We will also be proactively identifying customers who might need support so helping them before they get into debt.

Application of Ofwat tests for the performance commitment *Help to pay when you need it*

Ofwat Test	Outcome
Proposed 2024/25 target	Support of 43% of struggling to pay customers which is a 43% increase on our 2019/20 forecast out-turn.
Comparative information	Bespoke performance commitment not directly comparable to other water company measures. There is limited information available on other company PR19 proposals. However the range of support offered is in-line with the top performing water companies. We believe we have strong support from our customers to help those struggling to pay evidenced in their willingness to pay £8.00 each.
Historical information	AMP6 target was to support 50,000 customers (equivalent to 11% struggling to pay customers) however forecast outturn expected in 2019/20 is c.135,000 (30%).
Minimum improvement	AMP6 commitment was to support 50,000 customers, this equates to 11% of customers who are struggling to pay. A 20% improvement would be supporting 13% of customers. We have chosen to increase our support throughout AMP6 and introduced additional schemes rather than waiting until AMP7. Therefore we forecast to be supporting 30% of customers who are struggling to pay by 2019/20. A 20% improvement would be supporting 26% of customers.
Maximum level attainable	100% of customers who are struggling to pay are supported through the schemes in scope of the performance commitment. However this target is unrealistic due to costs. Also we have a wider range of additional support not in scope of the performance commitment which will help a proportion of those struggling to pay, including the Water Direct scheme and proactive messages to help remind them a payment is due; both off these help prevent customers going into debt.
Cost Benefit Analysis (CBA)	Cost benefit analysis illustrates how the proposals are stretching in that benefits outweigh costs from a customer perspective. However the analysis is not appropriate for setting targets.
Expert Knowledge	Experts were supportive of the range of schemes offered. In our social tariff research customers were supportive of the level of reductions offered. CCWater are supportive of the AMP7 forecast volumes for Watersure. All targets have been shared with Water Forum and they believe the targets are stretching. Our expert analysis and econometric modelling suggests that 11% of customers may continue to find bills unaffordable. Some analysis indicates that this number might reduce, for example if income levels increase, however we have proposed to continue with this level of customers requiring support, ensuring the performance commitment targets are stretching.

We propose to change how we measure our struggling to pay support from 2030 to focus on measuring rehabilitation outcome from our affordability offering or eliminating water poverty. We will look to start looking at this during AMP7 and may propose in PR24 that we run our existing performance commitment at the start of AMP8 and evolve this into a new performance commitment during the AMP. We have therefore proposed our longer-term targets to 2030.

4.2. Supporting our priority service customers during an incident (E02)

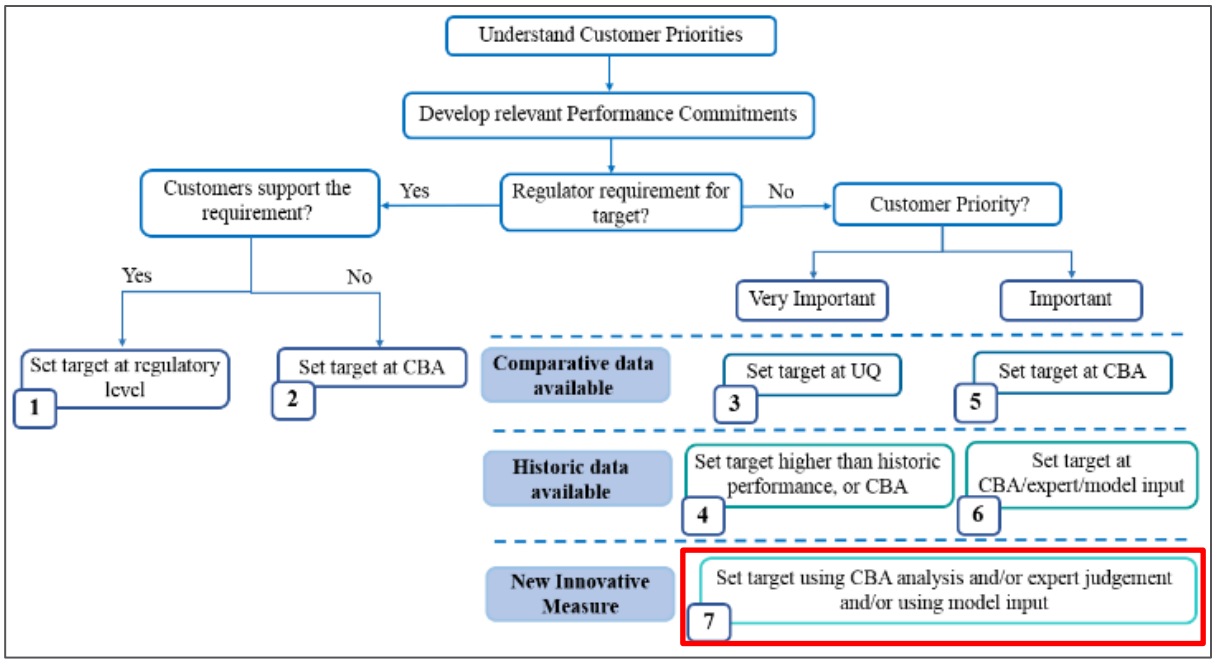
Ofwat require companies to include bespoke performance commitments for addressing vulnerability in their business plans after engagement with customers and challenge from their Customer Challenge Group.

This is a new area of focus for the water sector. We have previously supported customers in vulnerable circumstances but recognise there is more we can do to really meet the differing circumstances and needs of our service vulnerable customers.

We will deliver tailored support to 100% of our 409,500 customers during a water supply incident. Further information about this commitment is set out in Appendix A2.

4.2.1 Position in the framework

Our research shows that our customers feel it is very important that we provide additional support to those customers whose circumstances might mean they do not have equal access to our service. Customers in vulnerable circumstances said that for the most part they do not see themselves as having specific needs but share one top priority for Severn Trent to provide its customers - fresh, clean drinking water. We have therefore chosen to develop a performance commitment against the provision of fresh, clean drinking water. As a result the new measure is an innovative one as we currently do not have a measure in this area. Through engagement with experts, other water companies and companies in the utility sector (for example energy companies) we have not been able to identify any other companies who have a similar measure in place. Our target has therefore mainly been developed based on customer and expert input. Therefore under our performance framework as outlined below, this performance commitment belongs to Cohort 7 (see figure below).



Location of the performance commitment in the framework

4.2.2 Regulatory guidance

Ofwat state in their 'Delivering Water 2020' report that they require water companies to have at least one bespoke performance commitment for addressing vulnerability that reflects their specific challenges in their business plans, after engaging with customers and taking on board challenges from their Customer Challenge Group.

Ofwat's '2016 Vulnerability Focus' report stated that there is a need for companies to move away from just applying simplistic labels of vulnerability, and to listen to their customers and understand their circumstances. This intelligence will then allow companies to intervene at an early stage and assist the 'struggling silent', acting before a customer becomes more deeply entrenched in a situation that leaves them vulnerable. We will be actively promoting the support available to customers and illustrating what context they might become vulnerable due to water and waste services so we can help identify customers before events occur. This will allow us to ensure we have customers registered on our priority service register and therefore provide the right support to meet the customer needs during an incident.

CCWater has also published a 'Priority Services Progress Review' paper in February 2018. Within this there is a recommendation that a consistent level of core assistance is offered to customers, including during an incident/event. To inform the review CCWater hosted a seminar on 1st February 2018 and the outputs of this shared ideas on how companies could proactively plan during an operational incident.

Our proposed performance commitment covers the guidance as above and offers support during an incident to customers registered on our priority service register (PSR) and our wider support offering includes a commitment to support those not yet registered but raise a need during an incident. We also have a continuous supply focus during incidents to try and remove the need for alternative supplies.

We are proposing that our support for customers in vulnerable circumstances during a water supply incident is tailored to their needs. Today we deliver bottled water to all customers on our priority service register which is manageable as we only have 39,000 customers registered on it. However not all of these customers have a need for us to deliver the bottled water to them and as our priority service register grows we will tailor our support and only deliver bottled water to those that require this due to their circumstances. We are expanding our support offering to meet wider needs during an incident.

4.2.3 Customer views

Through our customer needs research customers with health and wellbeing vulnerabilities told us they are very happy with the service we provide, and trust us to do a good job. For the most part, these customers do not see themselves as having specific needs. As such, they don't have hugely different priorities to 'general' customers, nor do they want to be made to feel 'different'.

Customers with health and wellbeing vulnerabilities share one top priority for Severn Trent to provide its customers - fresh, clean drinking water.

There are mixed views about how much contact this audience would like from Severn Trent; some welcome greater awareness of their needs, but others see it as intrusive. In the main, if customers find themselves having specific needs, they would take it upon themselves to get in touch with Severn Trent directly. That said, there is clearly room for more communication about the services and support we offer to customers with health and wellbeing vulnerabilities, including the priority service register.

Customers who have specific needs who feel that Severn Trent could be addressing them better include those with mobility issues (who worry about access to water during service disruption) and those with mental health conditions, for whom there is a current perception of limited provision.

In November 2017 we hosted a service vulnerability expert event where 23 experts from across charities, local emergency planning teams and health communities came together to help us explore priorities and needs for customers in vulnerable circumstances. Four key themes came out of the conversations:

- Focus on where people may be vulnerable e.g. not in day to day but in an incident
- PSR categories should be output based
- Be aware of transient vulnerabilities – some may only last for a set period of time
- Some customers may have multiple vulnerabilities – these can span categories e.g. physical and mental/emotional

As a result of our customer research and expert event we have chosen to focus our performance commitment on ensuring customers in vulnerable circumstances have the required level of support and service during a water supply event.

We explored two other options:

1) customer awareness of our PSR, and

2) volume of customers on our PSR.

We tested these options with our key expert stakeholders but they were seen to be a 'numbers game' and not output and outcome driven. With initiatives already underway across the water and energy sectors and with the common metric requirement, our experts and we felt that there was already a focus in this area. We also discussed the performance commitment options with our Customer Challenge Group and they resoundingly supported the water supply event outcome driven performance commitment.

Customers and our experts have helped develop and validate our service offering propositions that we will be providing to support customers in vulnerable circumstances. We have also looked at best practice across other sectors to ensure our offering is in-line with what customers experience elsewhere.

Our matrix approach where we can map support offering to circumstances ensures we can deliver the support each customer needs. We are able to adapt the standard support offering to meet individual needs.

Delivering a service offering during a water supply incident is therefore where our performance commitment will be stretching and challenging.

4.2.4 Historical performance

This is a new innovative measure and therefore we do not have historic performance data available as a baseline.

During a water supply event, we currently only supply bottled water to customers in vulnerable circumstances and a proactive contact to dialysis customers but there is no specific commitment to deliver this. We deliver bottled water to all customers registered on our PSR and do not tailor the service. The proactive communication and nominee communication will be additional service offerings we will be making available prior to 2020.

In order to estimate our baseline performance we have engaged our employees to gain their views on our past performance. We have also analysed customer feedback we have received during and following an incident. These infer that we do generally provide bottled water to customers in vulnerable circumstances already registered on our PSR during a water supply event and contact dialysis customers in a reasonable timeframe. However there is no measurement process in place to specifically quantify this.

When reviewing past events, there have been occasions where severe weather has limited our ability to access local communities and deliver bottled water. For example, during the Gloucestershire Flood event in 2007 we were not able to physically access areas and therefore had to prioritise alternative supplies. In the event of severe snowfall with a water supply event and access to areas are closed off we may not be able to deliver bottled water to customers. In these instances we will make contact with customers registered on the PSR to understand the best way to support them until either the event is resolved and safe supply restored or access can be gained.

For strategic level incidents, we have found a need to consider prioritising service based on the potential impact on the wellbeing of these customers. For example we would contact dialysis customers prior to deaf customers as the impact of no water would have more of an immediate impact on the wellbeing of these customers.

Through reviewing customer feedback from historic events we have identified that there are some occasions where it would not be in the best interest of the customer to provide tailored support in line with the standard and therefore we will adapt our processes. For example if a supply event occurred at 3am then customers do not appreciate proactive messaging whilst they are asleep or a delivery of bottled water to their doorstep as it would wake them and cause anxiety there is a burglar or disturb their family. Also if a supply interruption occurred at 11:30pm and supply was restored at 5am then most customers would not require communication or an alternative supply of water during this time as they would be asleep. If a customer does require additional support during these scenarios then this will be provided. For incidents where we do not provide support due to this best interest of customers we will classify this as compliant in terms of measurement, and so will not impact against our performance negatively. This will be reviewed through our audit process to ensure fair compliance.

4.2.5 Comparative Information

Our performance commitment is an innovative measure and through our investigations and engagement with experts - such as Emergency Planning Teams and Coventry & Warwickshire Association for the Deaf, we have not been able to identify any other organisations who have an existing measure the same or similar to this. Therefore we have no direct comparative information specifically on the performance commitment.

The basis of the performance commitment is providing the right service to meet specific customer needs. This can be benchmarked to ensure we have the right service offering and that the performance commitment is stretching in this respect.

As noted above we have used the CCWater 'Priority Services Progress Review' (extract below; see table) to assess our service offering compared to other water companies during a water supply event and in all areas, except one, will be delivering all the service offerings that any other water company is or will be. The one exception is the provision of priority reconnection if supply is interrupted. We have a continuous supplies focus during supply events and look to minimise the times that we do affect a customer's supply and look to restore supply as soon as possible for all customers. Also supply events can impact a number of district metered areas, therefore is

it usually not realistic to specifically restore individual customer supplies, especially with the plans to grow our priority service register volumes.

Summary of other water company support related to water supply events reported in the CCWater 'Priority Service Register Review'

Company	Affinity Water	Anglian Water	Bournemouth Water	Bristol Water	Cambridge Water	Dŵr Cymru	Essex & Suffolk Water	Hartlepool Water	Northumbrian Water	Portsmouth Water	Severn Trent & Dee Valley	South East Water	South Staffs Water	South West Water	Southern Water	SES Water	Thames Water	United Utilities	Wessex Water	Yorkshire Water
Advance supply interruption notice	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	y	Y	Y	y
Priority reconnection if supply interrupted	N	Y	N	N	N	Y	Y	Y	Y	Y	N	Y	N	N	Y	Y	y	Y	Y	y
Personal supply interruption notice	N	Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	N	Y	Y	y
Emergency water supply for consumers who medically need it	Y	Y	y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	y	Y	Y	y	Y	Y	y
Emergency water supply for consumers who need to take lots of medication	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	y	Y	Y	y
Emergency water supply for consumers unable to leave the property due to illness/recovery from illness	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	y	Y	Y	y
Emergency water supply for consumers who have mobility restrictions	Y	Y	Y	Y	Y	Y	y	Y	y	Y	Y	Y	Y	Y	Y	Y	y	y	y	y
Emergency water supply for consumers unable to leave the property due to experiencing mental or emotional distress such as social agoraphobia	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	y	Y	Y	y
Emergency water supply for consumers with a cognitive disorder who are unable to leave the property	Y	Y	Y	Y	Y	Y	y	Y	y	Y	Y	Y	Y	Y	Y	Y	y	y	y	y
Emergency water supply for nursing mothers or who have children living in the house	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	y

Company	Affinity Water	Anglian Water	Bournemouth Water	Bristol Water	Cambridge Water	Dŵr Cymru	Essex & Suffolk Water	Hartlepool Water	Northumbrian Water	Portsmouth Water	Severn Trent & Dee Valley	South East Water	South Staffs Water	South West Water	Southern Water	SES Water	Thames Water	United Utilities	Wessex Water	Yorkshire Water
who need regular bottle feeds																				
Emergency water supply for those who have children under 5 living in the house	Y	Y	Y	N	Y	y	Y	Y	Y	Y	IP	Y	Y	Y	N	Y	Y	Y	Y	y
Accessible and Adaptable website	IP	IP	Y	IP	IP	Y	Y	IP	Y	IP	Y	y	IP	IP	IP	N	IP	Y	Y	IP
Nominated contact (e.g. friend, relative or carer) for incidents	IP	Y	Y	Y	Y	Y	Y	Y	Y	y	Y	y	Y	Y	Y	Y	N	Y	Y	IP
Sign language/ subtitled videos on website	IP	Y	Y	N	N	Y	IP	Y	IP	IP	IP	N	N	Y	N	N	N	Y	Y	IP
Do you have a specialist team for assisting customers in vulnerable circumstances?	Y	IP	Y	Y	IP	Y	Y	IP	Y	Y	Y	Y	IP	Y	Y	N	Y	Y	Y	N

We have also undertaken an assessment of what support energy companies provide during an event to ensure we are meeting best practice across sectors. The common elements between energy events and water supply events are proactive communication and alternative supply and we have both these elements built into our proposals.

The principle of the performance commitment is also about supporting the increased number of customers we forecast to be on our PSR. In terms of the number of customers who we will need to support, we are proposing a step change in the number of customers registered on our PSR from 39,000 in 2017/18 to 409,500 by the end of 2024/25 – this will further make our performance commitment stretching. We have assessed the volume of customers on the energy sector PSR, specifically working with Western Power Distribution as they are the Distribution Network Operator in our region. They have shared anonymised postcode data for all their customers. We have mapped our regions postcodes and our water sector need codes to identify those customers currently on their PSR who would possibly want to be and need to be on our PSR. We have also reviewed the rate of increase of the energy sector PSR over recent years. Since June 2017 Western Power Distribution have asked those customers joining their PSR online or via their app to consent to them sharing with other utilities – 66% of those registering online consented to data sharing. The energy sector endeavour to contact their PSR customers every two years to check and update their records. In the 12 months ending March 2018 they contacted 49% of their PSR customers and were able to successfully update 34% of their records. This data share and our promotion activity will enable us to deliver the step change in performance.

There is no formal data available on how many customers other water companies are forecasting to have on their PSR. Thames Water and United Utilities have referenced in publications that they are potentially forecasting 600,000 and 400,000 PSR customers respectively which is comparable to our forecast when considering household connection volumes; however these numbers are not confirmed and they have not shared how they will actually support these customers.

The service offering in the scope of the performance commitment therefore aligns to best in class and with the proposed growth in our PSR volumes makes the performance commitment stretching with the target of meeting our commitments 100% of the time.

4.2.6 Cost benefit analysis

It is not possible to attribute a financial value to the benefit that customers in vulnerable circumstances get from the support provided during water supply incidents. The benefit is qualitative in that they are able to live their lives as normal as possible in the event of the incident. The support provided aims to ensure customers can still access our services and still enjoy its benefits. It is therefore not appropriate to conduct a cost benefit analysis to determine performance commitment targets.

4.2.7 Rationale for target

Our proposed target of 100% is supported by our expert stakeholders and Customer Challenge Group.

Our AMP7 performance commitment covers:

- Making our four service offerings during a water supply event available to customers registered on our PSR ready for April 2020.
- Increasing the number of customers on the PSR by promoting the support available ourselves and working with trusted partners which will help target hard to reach customers.
- Increasing the number of customers on the PSR by participating in data share activity, initially with the energy sector.

We will be using our matrix approach to ensure we deliver the tailored service to the different circumstances, as detailed in Chapter 14: A Service for Everyone.

The below table shares our forecast PSR customer numbers which shows how the performance commitment will be stretching in terms of expanding the number of customers we will need to support to achieve a 100% compliance rate. For the remainder of AMP6 we have proposed a forecast based on the current trend to allow us to implement our new PSR system and therefore ensure we can capture the right information to deliver the right service. From 2020 we will be participating in data share activity with the energy sector. We have worked with Western Power Distribution to forecast the number of customers who might be shared through this activity.

Historic and forecast number of customers registered on the Severn Trent priority service register

2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
24,926	28,122	31,392	35,673	39,497	43,827	52,503	88,204	213,158	302,410	373,812	409,513

Our service vulnerability performance commitment will be reputational only as this is a new focus area and similar to our financial vulnerability performance commitment it would not be right to gain reward for supporting customers in vulnerable circumstances.

The outcome of assessment against Ofwat's recommended target setting tests are as outlined in the table below.

Application of Ofwat tests for the performance commitment Supporting our Priority Service customers during an incident

Ofwat Test	Outcome
Proposed 2024/25 target	Support 100% of customers registered on our PSR during a water supply incident. Any deviation from 100% would be aiming to fail our customers and putting them at risk. This sits alongside an improved tailored service and a step change in customers registered on our PSR from 39,000 in 27/18 to 409,500 by the end of 2024/25.
Comparative information	Support proposed for customers in vulnerable circumstances during a water supply event aligns to best in class support. Volume of PSR customers registered is informed by the energy sector PSR. It has not been possible to identify any other companies who have the same or a similar measure to enable us to set specific targets comparatively, including assessing organisations outside the water sector.
Historical information	This is a new measure and so has not previously been measured. Two of the four support offerings proposed in the scope of the performance commitment are not currently offered but will be available prior to 2020. Support will be tailored to meet customer needs.

Ofwat Test	Outcome
	We will be delivering a step change in PSR registered customers from 39,000 in 2017/18 to 409,500 by the end of 2024/25.
Minimum improvement	No AMP6 commitment or baseline. 95% to allow for exceptions around for example strategic level incidents and severe weather.
Maximum level attainable	100% - providing support to all customers on the PSR as agreed with the customer in a timely manner. Prioritised support delivered first during strategic incidents and severe weather.
Cost Benefit Analysis (CBA)	N/A – not appropriate to undertake cost benefit analysis for this performance commitment as benefit of support to customers in more qualitative.
Expert Knowledge	Both experts who attended our expert workshop and our Customer Challenge Group are supportive of the range of support being offered to customers during a water supply incident. The experts did not identify any gaps in the service proposition. Both also felt that it was only appropriate to set a target to support 100% of customers already registered on the PSR otherwise we would not be meeting the needs of our customers, recognising the need to prioritise the delivery of support during certain circumstances. This target along with the forecast increase in the volume of customers registered on the PSR also ensures the performance commitment is stretching.

5. Outcome: Thriving environment

In this section we summarise the performance commitments and associated improvements we are proposing to deliver for the outcome Thriving environment.

Our Thriving Environment outcome is underpinned by the results of extensive customer consultation wherein, we have sought to build up a detailed picture of how our customers view their environment and what role they want us to play in protecting and enhancing it.

Our research consistently shows that customers value the natural environment, and in particular derive enjoyment from personal interactions with their local green spaces. Customers also recognise the importance of protecting the environment and ensuring that it is there for future generations. In our deliberative research people felt that we should be seeking to do as much as we can to protect and improve the environment, statutory or not.

Thus for the outcome – Thriving environment, we are proposing five performance commitments.

Performance commitments for the outcome Thriving environment

Thriving environment	5 PCs	
Mandated	Treatment works compliance	
Retained/Revised	Improvements in WFD criteria	Biodiversity (water) and Biodiversity (waste)
New	Satisfactory sludge use and disposal	
Rationale	Customers want the value from our investments maximised and see benefit in delivering wider social benefits reflective of biodiversity and WFD PC. Sludge PC – challenge from water forum to include a specific PC to cover the bio-resource price control. Our measure replicates the EA's measure.	

A summary of the improvements we will be pledging for AMP7 is as below:

Proposed improvements for the outcome Thriving Environment

PC	Unit	Forecast (2019/20)	Target 2024/25	Improvement
Treatment works compliance	%	99.61	100.00	UQ performance
Compliance with sludge disposal standard	%	100	100	Maintain full compliance
Improvements in WFD criteria	Points	0	211	13%, based on the total environmental programme of 296 points compared to AMP6
Biodiversity (water) – hectares of land under biodiversity action plan	Hectares	0	952.6	100%
Biodiversity (waste) – hectares of land under biodiversity action plan	Hectares	0	138	100%

In the following sections, we summarise each performance commitment and our rationale for improvements we are proposing to deliver. Each performance commitment covers a:

- description of where the PC sits in our performance framework;
- description of regulatory expectations where relevant;
- customer views on the PC;
- historical evidence where possible;
- comparative information where possible;
- and our rationale for targets based on the six approaches outlined by Ofwat

5.1. Treatment works compliance (C01)

Treatment works compliance is a common waste performance commitment required by Ofwat. It effectively holds us to account to ensure compliance from our waste non-infrastructure assets whilst covering some water treatment sites.

The definition for treatment works compliance we have used is as published on the Ofwat website: https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-2-Outcomes-FM-final.pdf.

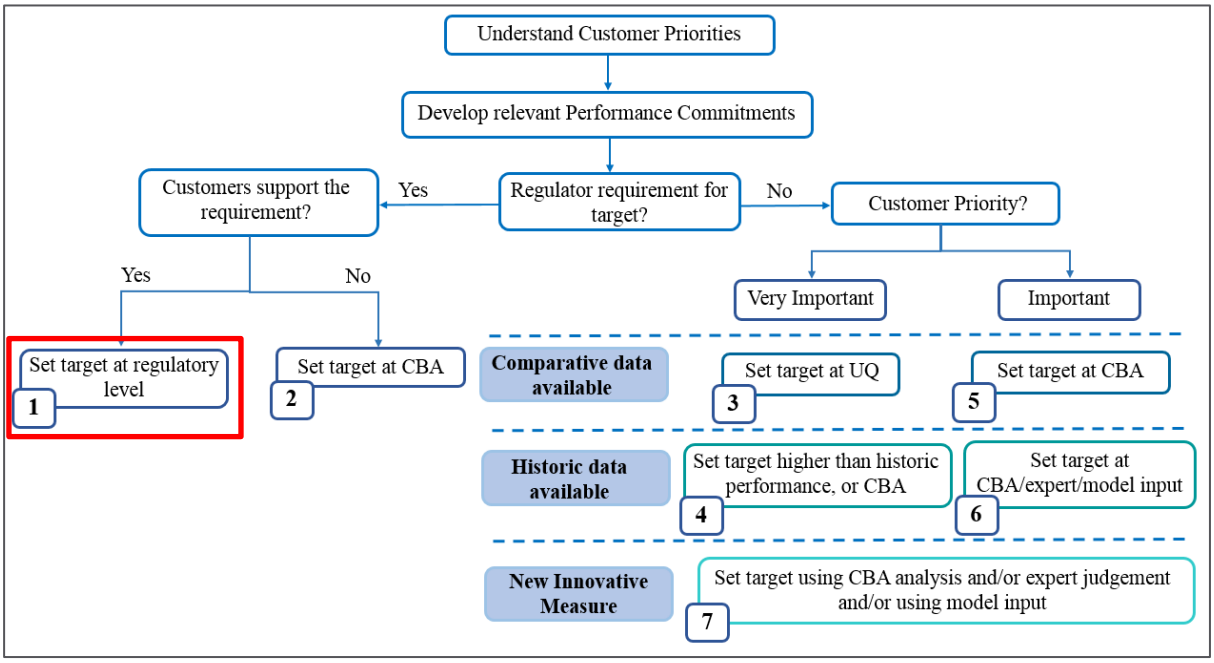
We will be targeting 100% compliance and continue to deliver industry frontier performance.

5.1.1 Position in the framework

Treatment works compliance is an Ofwat proposed common performance commitment outlined to enable monitoring of asset health performance on waste non - infrastructure. We consider that this requirement is supported by customers, since our research consistently shows that customers value the natural environment and expect us to ensure our actions comply with statutory obligations and avoid any environmental harm.

This commitment is also part of the Environmental Performance Assessment (EPA) suite of measures outlined by the Environment Agency.

As such, there is a regulatory expectation our performance target will be set to achieve full compliance and thereon, under our performance framework as outlined below, treatment works compliance belongs to Cohort 1, where targets will be guided by the Environment Agency (see figure below)



Location of the performance commitment in the framework

5.1.2 Regulatory guidance

The Environment Agency has issued guidance on the compliance levels that companies need to achieve on treatment works within the Environmental Performance Assessment. The Environment Agency expect companies to achieve performance within the green range as outlined below:

- > 99% - green performance within EPA
- 97% - 99% amber performance within EPA

Additionally at PR14, the Environment Agency outlined an expectation that companies should aim to achieve 100% compliance on permit conditions.

5.1.3 Customer views

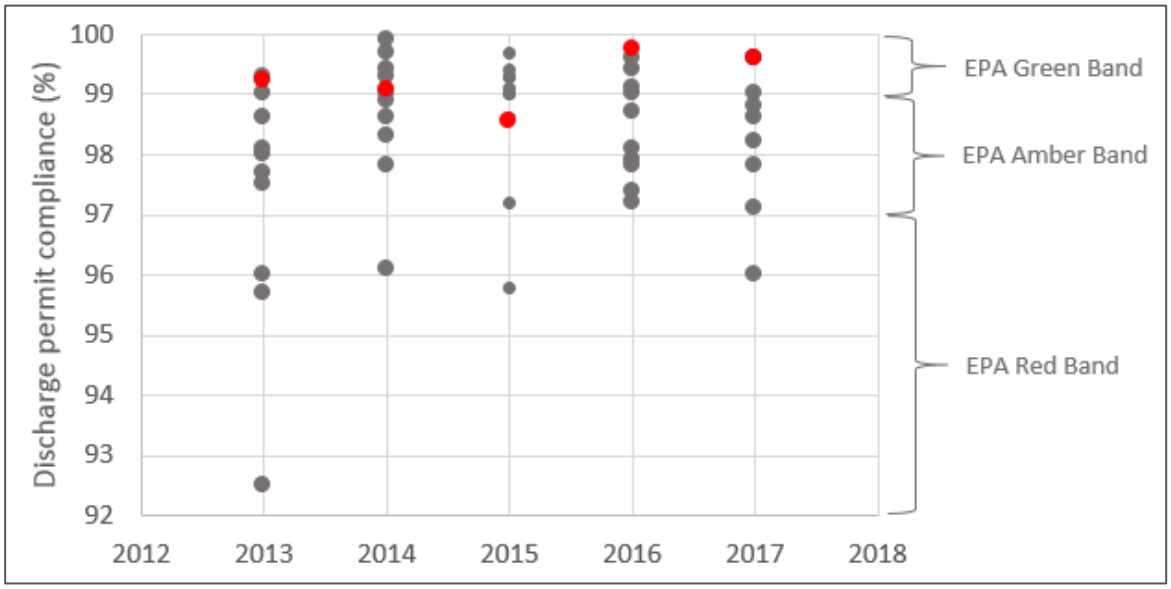
Whilst the environment runs through all levels of the hierarchy of needs, this measure falls firmly in the basic needs category. Fulfilling basic needs will meet customers' expectations but will not improve satisfaction, whereas failing to meet these needs could drive dissatisfaction.

Our research consistently shows that customers value the natural environment. Perhaps despite this, the environmental impact of our actions can be far from customers' spontaneous understanding. However, in our deliberative research we found that customers expect us to comply with our statutory obligations (in relation to the environment).

The theme of responsibility comes across in multiple research projects, whether that is in terms of responsibility for protecting the environment for future generations (deliberative research on the environment) or in terms of investing in infrastructure. Our "Choices" research found that customers feel that Severn Trent has a responsibility to act in a particular way, which includes taking a long term view and maintaining infrastructure and ensuring asset health now, rather than waiting until there is a problem (even if there is little tangible immediate impact).

5.1.4 Historical performance

We are starting from a base position of industry-leading discharge permit compliance performance. Whilst historically our performance has shown some variability (ranging between 99.0 – 99.9), we have consistently delivered performance within the EPA green band. Our treatment works were designed to operate above a 97% compliance threshold, thus our performance reflects the optimisation of these works beyond what they were designed to deliver (see figure below).



Industry comparison of percentage compliance as reported by the EPA; red dots denote Severn Trent England performance

5.1.5 Comparative information

We have consistently delivered upper quartile performance for the past 4 years wherein in 2013, 2014, 2016 and 2017, Severn Trent was the frontier company (see table below). Through AMP7 we aim to continue this frontier performance.

Industry comparison of discharge permit compliance, as reported in the Environmental Performance Assessment (EPA)

Environmental Performance Assessment – Discharge Permit Compliance							
Company	2013	2014	2015	2016	2017	Average	Rank
Severn Trent Water	99.3	99.9	99.0	99.6	99.6	99.48	1
Wessex Water	99.0	99.7	99.7	99.4	99.0	99.36	2
Anglian Water	97.5	98.6	99.0	99.1	98.6	98.56	3

Environmental Performance Assessment – Discharge Permit Compliance							
Company	**2013**	**2014**	**2015**	**2016**	**2017**	**Average**	**Rank**
Yorkshire Water	98.0	99.3	99.3	97.2	97.8	98.32	4
Southern Water	96.0	99.0	99.3	98.7	98.2	98.24	5
Thames Water	95.7	98.9	99.1	97.9	99.6	98.24	5
Northumbrian Water	98.1	99.4	99.4	97.8	96.0	98.14	7
United Utilities	98.6	98.3	97.2	97.4	98.8	98.06	8
South West Water	92.5	96.1	95.8	98.1	97.1	95.92	9

5.1.6 Cost benefit analysis

Given this is a regulatory requirement targeted at 100% compliance levels, we have not undertaken a cost benefit assessment.

5.1.7 Rationale for target

For 2024/25, we are proposing a stretching target of 100% compliance and a deadband of 99% based on forecast UQ and historical deviations (see table below).

Accompanying the target of 100% we are proposing a stretching dead band of 99% which is reflective of:

- Customer feedback indicating maintenance of our assets and the environment is important.
- Our ambition to maintain our long-standing frontier performance.
- Forecast upper quartile – the deadband will be higher than the forecast upper quartile for AMP7.
- Green performance threshold proposed by the Environment Agency within the EPA.
- An improvement against our AMP6 deadband of 95.3%.

Application of Ofwat tests to the performance commitment *Treatment works compliance*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing a target of 100%, with a penalty deadband of 99.0% reflecting the forecast UQ. This is maximum level attainable as per Ofwat's tests.
Comparative information	Current upper quartile is 97.8% compliance. Our estimation of forecast upper quartile for 2024/25 is 99% compliance. Our proposed target is higher than the forecast upper quartile with a deadband reflective of forecast upper quartile.
Historical information	Historically Severn Trent's performance has ranged within 99.0 – 99.9% compliance with an • average performance of 99.45%; • and best ever performance of 99.9%; • proposed AMP7 target -100% compliance
Minimum improvement	We will target 100% compliance which is an improvement over our best ever performance. For the accompanying penalty deadband we are proposing an improvement from 95.3% to 99% which is our estimated forecast UQ.
Maximum level attainable	Our estimation of the maximum level target is 100% target with no deadband. We are stretching the deadband from 95.3 in AMP6 to 99% in AMP7. We are setting the deadband at 99% reflective of the forecast upper quartile and the green performance threshold outlined by the Environment Agency.
Cost Benefit Analysis (CBA)	Not applicable as compliance measure.
Expert Knowledge	Our expert knowledge has been applied to select our final proposal for a target of 100% and deadband of 99% which is also supported by the Environment Agency.

5.2 Water framework directive improvements (C02)

The number of Water Framework Directive (WFD) classification improvements attributable to interventions delivered by Severn Trent Water to improve river water quality and/or quantity. This is a points based metric that takes account of the level of improvement being delivered to rivers and the number of parameters being improved.

Our total proposed environmental improvement of 296 point equivalent to a 13% improvement over AMP6 includes 211 points within our performance commitment target and 85 points is covered by real options. This is reflective of expectations outlined by the Environment Agency within the Water Industry National Environment Programme (WINEP) and will require further deployment of our novel phosphorus removal technologies, enhancing 2,100km of river - a proportionate increase from the 1,500km delivered in AMP6.

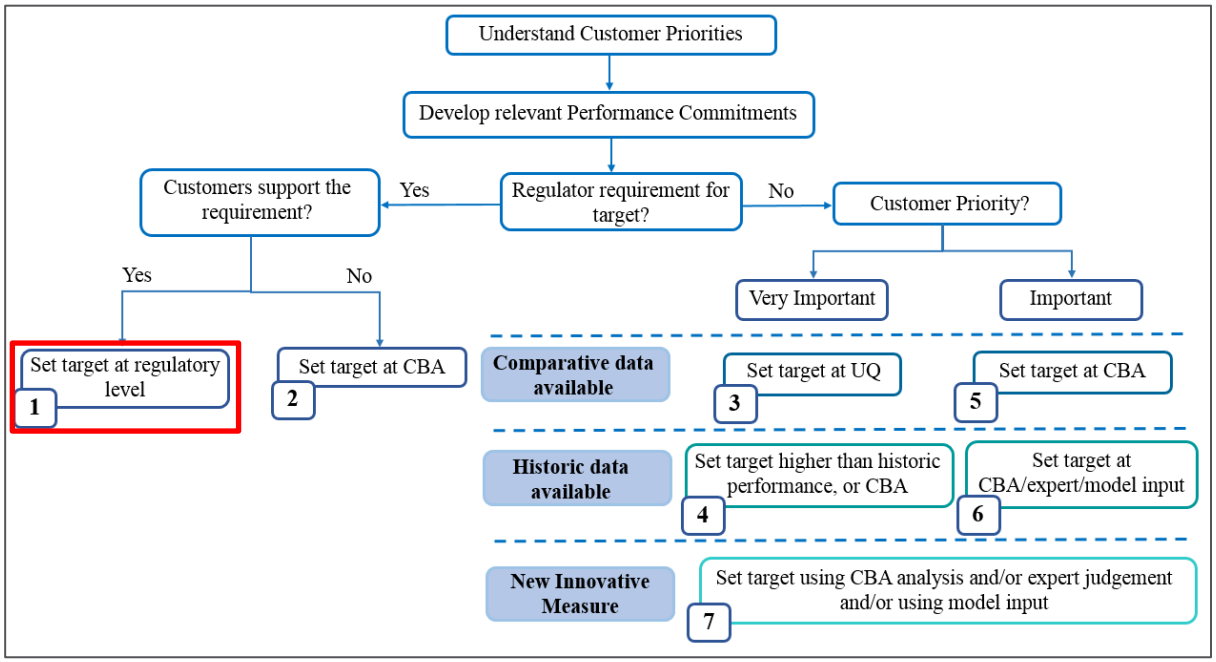
The targets proposed are aligned with our enhancement business case, with progress against these targets measured only in terms of the points accumulated under the WINEP framework. For further information on the enhancement business case please see Appendix 8.

5.2.1 Position in the framework

Our customers have indicated that environmental improvements are important.

The WFD has also set an objective of bringing every river up to Good Ecological Status by 2027, where this is cost beneficial and technically achievable.

Target setting on the WFD is guided by the Environment Agency via the WINEP. Therefore under our performance framework as outlined below, WFD commitment belongs to Cohort 1, where targets will be guided by the Environment Agency (see figure below).



Location of the performance commitment in the framework

5.2.2 Regulatory guidance

This performance commitment is driven predominantly by WINEP, as published by the Environment Agency, which sets out what water and wastewater companies must do to meet environmental obligations.

5.2.3 Customer views

Customers consistently support sustainable practices and value the environment. Our willingness to pay research finds that customers do value river water quality improvements, although in terms of general (prompted) priorities then improving river water quality emerges across multiple research projects as of medium importance.

Our customers have told us that we should prioritise tackling the worst rivers first, as well as prioritising locations which will affect the greatest number of customers. For some this meant focusing on urban rivers rather than rural ones, although there was a sense there should be a fair balance of investment across the region.

In some of our research customers supported a faster pace on water framework directive improvements, provided it did not impact the quality of work, however when considering the full range of performance commitments as a whole (in the Choices research) customers did not see the need for faster progress, providing statutory obligations were met.

In light of the uncertainty associated with amber schemes we undertook two pieces of research – deliberative research and informed online polls. This engagement was designed to understand customer views about how we should respond to investment requirements where there is some uncertainty. The key themes that emerged from this customer research was that customers:

- support investments where schemes are confirmed with clear benefits; and
- where there is uncertainty **they would prefer to pay for** such investments only once confirmed (ie, rather than paying in advance and having futures bills reduced if the investment wasn't needed**).**

5.2.4 Historical performance

WFD was a new performance commitment that we proposed in AMP6. We proposed two commitments, one covering the Water price control and one covering the Waste price control.

We are on track to outperform against our AMP6 WFD performance commitment. Our AMP6 WFD programme will deliver our fair share of the improvements required to achieve Good Ecological Status in 1500km of river in our region, putting us on target to meet the government's 25 year objective for improving at least three quarters of our waters to good status. We anticipate that our AMP7 and 8 programmes will enable us to deliver our share of this objective on time by 2027.

On water, we are forecasting to outperform our AMP6 proposed targets delivering 32 WFD points against a target of 31 points. On waste, we are forecasting to outperform our AMP6 proposed targets delivering 231 WFD points against a target of 202 points.

In AMP7 we are proposing a combined waste and water WFD performance commitment with an enhanced scope to cover chemical investigations and eels, starting with a 2020 baseline performance of 0 points to reflect the new commitment for AMP7. We have combined the two performance commitments, for ease of reporting, and to give customers a more holistic view of the work we are doing.

5.2.5 Comparative information

Given companies proposed varying bespoke performance commitments in AMP6 based on their required obligations within the WINEP, we have no direct comparative data.

5.2.6 Cost benefit analysis

The WFD is a statutory requirement, with an objective of bringing every river up to Good Ecological Status by 2027, where this is cost beneficial and technically achievable.

Thus each scheme within the WINEP is subject to a cost benefit assessment endorsed by the EA, and thereon within the WFD targets proposed for AMP7.

5.2.7 Rationale for target

To deliver our fair share of WFD river quality improvements, we will improve the condition of 2100 km of our rivers equivalent to 296 points over the next five years (2020-25). This assumes Ministerial confirmation of all amber schemes. We recognise that there is a degree of uncertainty about some amber schemes. Reflecting on feedback from our customers we have separated our WFD programme into two components:

- The green and 'certain' amber schemes account for 211 points and have been included in our business plan assumptions as a performance commitment.
- The remaining 85 points relating the 'uncertain' amber projects will be accounted for using real option mechanisms (with any funding occurring upon confirmation)

For further information about our real option mechanisms see Appendix A1 (customer engagement) and Appendix A8 (wholesale costs).

The total programme if confirmed represents an improvement (13%) on our current PC target. It will enable us to deliver our fair share of the government's 25 year objective for improving at least three quarters of our waters to good status by 2027.

Our proposed target has been developed in close collaboration with the Environment Agency and other stakeholders, to ensure that it is cost-beneficial and affordable to our customers. All investment are underpinned by three basic principles.

- there must be unambiguous evidence of a failure to meet WFD river quality standards.
- there must be evidence that the failure in question is clearly attributable to our actions or activities.
- there then must be evidence that it's fair and proportionate for us to contribute to resolving the failure within the timeframe of PR19.

We have worked collaboratively with the Environment Agency to develop river catchment level solutions where these three evidence tests were met. Technically viable solutions were then progressed through to cost benefit analysis, with non-cost beneficial measures being excluded from our plan. We have also worked closely with the Environment Agency to find synergies between the WFD and other environmental requirements, and prioritised inclusion of such multiple benefit schemes into WINEP. These schemes would deliver maximum benefit to both our customers and the environment.

Additionally we sought to test the target against the methods for target setting outlined by Ofwat as shown in the table below.

Application of Ofwat tests to the performance commitment *WFD improvements*

Ofwat Test	Outcome
Proposed 2024/25 target	The total points included in environmental programme equal 296 points. Due to the uncertainty about some amber schemes we have proposed a target of 211 points, with the remaining 85 covered under our real option mechanism. In total the 296 points cover: expectations as outlined in WINEP 13% stretch against our AMP6 performance an improvement of 2100km of river to Good Status
Comparative information	We have not applied the comparative test for this commitment as performance for different companies will be driven by the bespoke WFD improvement need outlined by the Environment Agency.
Historical information	Our best past performance is – 263 points against an AMP6 2020 target of 232 points.
Minimum improvement	The minimum we could consider are the green schemes within WINEP. We are including all green schemes and a number of amber schemes.
Maximum level attainable	As above, our maximum attainable performance improvement will be linked to cost beneficial schemes endorsed within WINEP – 296 points of which 211 points are linked with certain schemes and thus included within target.
Cost Benefit Analysis (CBA)	211 points aligned with cost beneficial green schemes within WINEP.

Ofwat Test	Outcome
Expert Knowledge	This is a commitment wherein our targets are aligned with EA expectations as outlined within WINEP. The schemes have been selected on a cost beneficial basis, ensuring that they are reflective of our fair share of responsibility to get rivers in our region to Good Ecological Status. Thus our maximum improvement based on green and certain amber cost beneficial schemes listed within WINEP is a target of 211 points for 2020-2025. The remaining 85 points linked with uncertain amber schemes will be covered under real option mechanism.

5.3 Biodiversity - water and waste (C03 and C04)

We are proposing two Biodiversity AMP7 performance commitments – one for water (C03) and one for waste (C04). Both are a revision our AMP6 performance commitment which relates only to sites of special scientific interest (SSSI) and special areas of conservation (SACs).

For AMP7 we are aiming to undertake an ambitious biodiversity improvement programme, committing to a net improvement of 1,090 hectares across water and waste – more than 14 times the commitment in AMP6, whilst continuing to maintain the improvements delivered in AMP6.

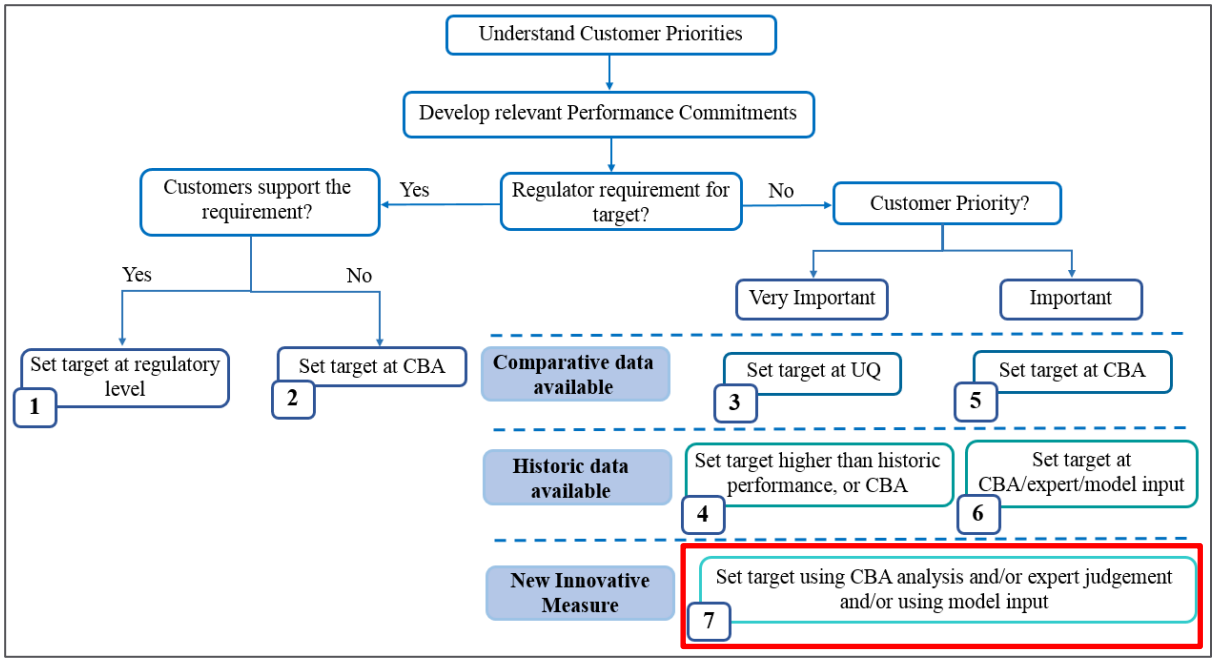
5.3.1 Position in the framework

We have expanded the scope of the AMP6 performance commitment based on feedback from our customer research and improved knowledge of our estate. We have conducted both quantitative and deliberative research with our customers who told us that they would like to see a broadening of our approach to improving biodiversity - given the importance of the issue and the benefits for the environment from biodiversity, such as regulation of our climate, purification of our water and pollination of our crops.

Therefore our proposed AMP7 biodiversity performance commitments expands the scope of our biodiversity enhancing activities to cover:

- all Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SAC) that we own – guided by Natural England;
- biodiversity related activities within the WINEP – statutory as deemed by the Environment Agency;
- areas that we improve through implementation of agreed action plans for biodiversity on the land that we own – non-statutory; and
- delivery of biodiversity enhancements on land that we can influence through our grant schemes, such as catchment management schemes, which simultaneously benefit biodiversity and water quality rather than purely focusing on the water quality element – non-statutory.

Given the proposed performance commitment covers both statutory and non-statutory guided biodiversity improvements, under our performance framework as outlined below, both commitments belong to Cohort 7, where targets will be guided by various sources (see figure below).



Location of the performance commitment in the framework

5.3.2 Regulatory guidance

The commitment covers actions as outlined by the Environment Agency. Overall c.60% of the targeted commitment will be driven by WINEP guidance.

In addition to our work with the Environment Agency, we have also engaged with Natural England, the Wildlife Trusts within our region and representatives of Blueprint for Water (a coalition of 16 leading environmental and fishery NGOs) to discuss their expectations, especially regarding activities on the Biodiversity outcome. Many of the discussions with Natural England have focused around the interventions required to deliver favourable conservation status at Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SACs).

5.3.3 Customer views

Customers support a broadening of the scope on biodiversity which has been reflected in our proposed commitment.

Spontaneously, biodiversity is not a front-of-mind issue for customers, and they often struggle to see its relation to our activities. It tends to be associated with areas of natural beauty, and the link to declining species numbers is not necessarily made. Customers rarely make the link to our activities or even consider it to be our responsibility.

When prompted, information about biodiversity and our involvement and activities is received very positively, with customers wanting further communications and awareness around this topic. It resonates with instinctive beliefs about the importance of protecting the environment for the future. After taking time to reflect on the importance of biodiversity, participants supported us developing a more stretching strategy.

In the research, there was an overall sense that we should prioritise our own sites, but that we should not stop promoting biodiversity elsewhere if it was achievable. This covered taking action on land as well as water. Participants weren't concerned about us taking action on sites where they would not have direct access to visit (e.g. operational sewage treatment works) and therefore wouldn't be able to see the results. Partnerships with NGOs and wildlife trusts welcomed the approach as pragmatic. It was felt that we would be more effective in promoting biodiversity if we worked in partnership with experts.

5.3.4 Historical performance

We are on track to outperform our AMP6 target which is aimed at improving biodiversity on Sites of Special Scientific Interest (SSSIs) & Special Areas of Conservation (SAC) sites and are expecting to outturn at 585ha against our 409ha target (an overall AMP6 increase of 251 hectares from the baseline).

The AMP7 performance commitments across water and waste are a revision of the AMP6 performance commitment as they have been expanded in scope. Hence the 2020 baseline has been outlined based on the revised performance commitment definition as 0 hectares baseline for the waste and water measures.

5.3.5 Comparative information

In AMP6, a number of other companies proposed bespoke measures which covered biodiversity. While the definition and units are not consistent, a comparative view of the level of stretch we are proposing can be demonstrated.

The table below outlines a comparative view across the industry overlaying our proposed AMP7 commitment scope and target.

Comparative assessment of AMP6 performance commitments concerning biodiversity

Company	Performance Commitment	Unit	14/15 Actual	19/20 Forecast	Improvement	Comparison to ST proposal
Anglian	% SSSIs with favourable status	%	49	50	1%	100% of SSSIs pledged at favourable status
Bristol	Biodiversity index	index	17,596	TBC (improving)	n/a	n/a – index measure
Portsmouth	% (completion of agreed actions)	%	20 (in 15/16)	90	70%	100% of agreed actions within commitment target else penalty is applicable
South Staffs & Cambridge	Cumulative total hectares of land	Number	65	116	51ha	1090.6ha improvement across water and waste
Severn Trent	Number of hectares improved	Number	334	409	75 ha	1090.6 ha improvement across water and waste
Wessex	% landholding assessed and managed for biodiversity	%	47	100	53%	n/a – unclear what land holding
Yorkshire	Number of hectares of land conserved and enhanced (cumulative)	Number	11,466	11,736	270 ha	1090.6 ha improvement across water and waste

Based on the above, on a comparative basis we believe we are proposing a significant stretch, encompassing favourable status for all SSSIs we own (for parameters under our control), 100% of agreed actions completed to achieve target and 186% increase in hectares of land improved for biodiversity.

5.3.6 Cost benefit analysis

The CBA on the biodiversity commitments indicates that we could potentially do more on these performance commitments. However, it is important this is viewed in context with the overall deliverability of the plan.

The volume of biodiversity (water) improvements that can be achieved, and therefore used to set the PC, has physical limits. At a higher level, it risks necessitating the purchase of additional land just to meet the target – land that would have no other purpose for the business. It is worth noting that on the waste side, the marginal cost is 0.35 greater than the benefit, meaning that across the two commitment a there is both a reasonable CBA balance and challenging commitments.

5.3.7 Rationale for target

For AMP7 we are aiming to undertake an ambitious biodiversity improvement programme, committing to a net improvement of 1,090 hectares across water and waste – more than 14 times the commitment in AMP6, whilst continuing to maintain the improvements delivered in AMP6.

This will be underpinned by delivery of a biodiversity action plan wherein 100% of required improvement actions will be completed, all our SSSI's and SACs will be maintained at favourable status and we will deliver two flagship projects Bamford Moorlands and Clough Woodlands which will enhance over 700 hectares of habitat in the catchment area surrounding our [REDACTED] reservoirs. Comparatively across the industry and historically based on our past performance, this represents a significant stretch on work that is being undertaken on biodiversity.

To deliver this commitment we will work with our partners, such as the Environment Agency, Natural England and the local Wildlife Trusts ensuring that we deliver biodiversity improvements aligned with standards expected by our partners.

We have assessed our proposed target against the relevant methods for target setting as outlined by Ofwat in the table below.

Application of Ofwat tests to the performance commitment *Biodiversity*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing a target of 1090.6 hectares for both commitments combined (our water commitment target is 952.6 hectares, and our waste commitment is 138 hectares), given they • align with customer views and stakeholders such as Natural England and Environment Agency. • stretches us beyond regulatory expectations in WINEP • represent a combined 186% improvement over our best ever performance (forecast AMP6 improvement of 251 hectares) • comparatively represents a significant stretch as outlined below
Comparative information	Our assessment as outlined in the comparative section, indicates that our AMP7 commitments will deliver 1090.6 hectares (water and waste combined) improved compared to the largest improvement 270ha pledged by a company in AMP6. It will also cover 100% actions and ensure all our SSSIs and SAC are maintained at favourable status.
Historical information	Our best ever historical performance is – 585 ha in AMP6. Our proposed water target will be a 163% stretch over this best ever performance. Our proposed waste target will be a 100% improvement.
Minimum improvement	A 20% improvement over our best ever performance is 722 ha as per the test. We will be exceeding this minimum improvement significantly by 952.6 ha on water, and 138 hectares on waste. A combined improvement of 1090.6 ha.
Maximum level attainable	The CBA for biodiversity indicates we could do more. However there are physical limits on how much land we can cover hence we have set our commitment based on our ability to deliver.
Cost Benefit Analysis (CBA)	The CBA for biodiversity indicates we could do more. However there are physical limits on how much land we can cover hence we have set our commitment based on our ability to deliver.
Expert Knowledge	We have outlined both targets (952.6 ha for water, and 138 ha for waste) based on customer research, engagement with the Environment Agency and Natural England and our ability to deliver. Comparative and historical tests indicate this is a significant stretch.

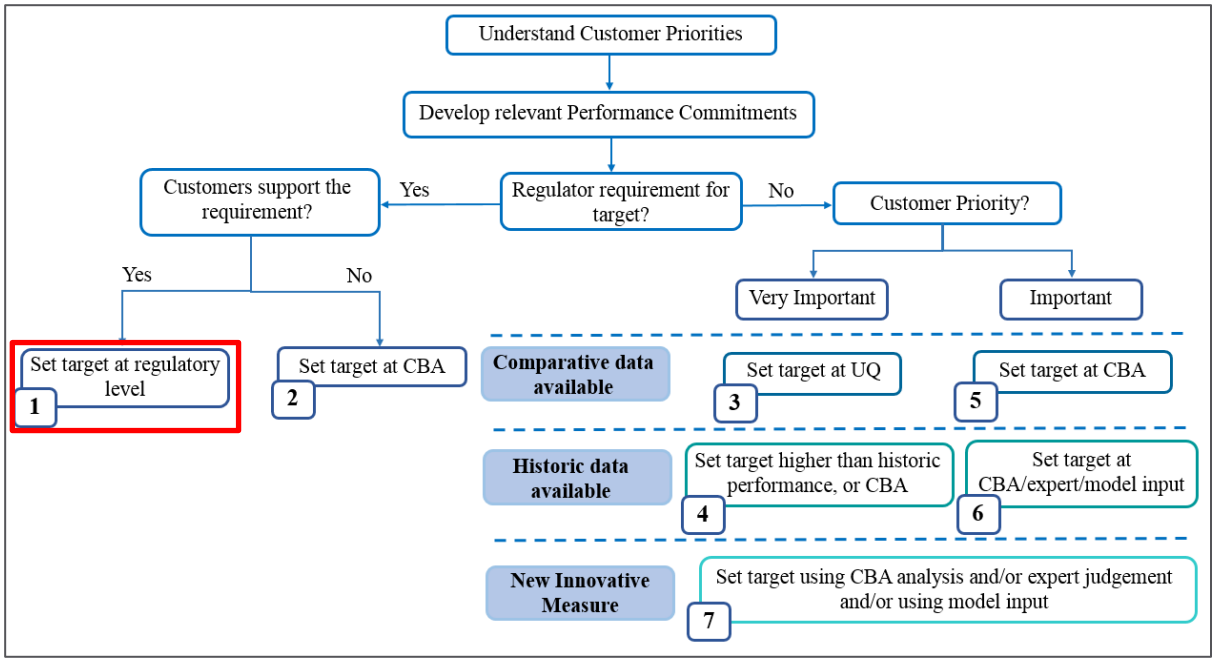
5.4. Satisfactory sludge use and disposal (C05)

This commitment was proposed following challenge from the Water Forum to propose a performance commitment specific for the sludge price control.

Our proposed definition and target of 100% with no penalty deadband will deliver industry leading performance aligned with regulatory expectations.

5.4.1 Position in the framework

There is a regulatory expectation that our performance target will be set to achieve full compliance by the Environment Agency. Therefore under our performance framework as outlined below, satisfactory sludge use and disposal performance commitment belongs to Cohort 1, where targets will be guided by the Environment Agency (see figure below).



Location of the performance commitment in the framework

5.4.2 Regulatory guidance

The Environment Agency has issued guidance on the compliance levels that companies need to achieve on treatment works within the EPA. The Environment Agency expect companies to achieve performance within the green range as outlined in the EPA:

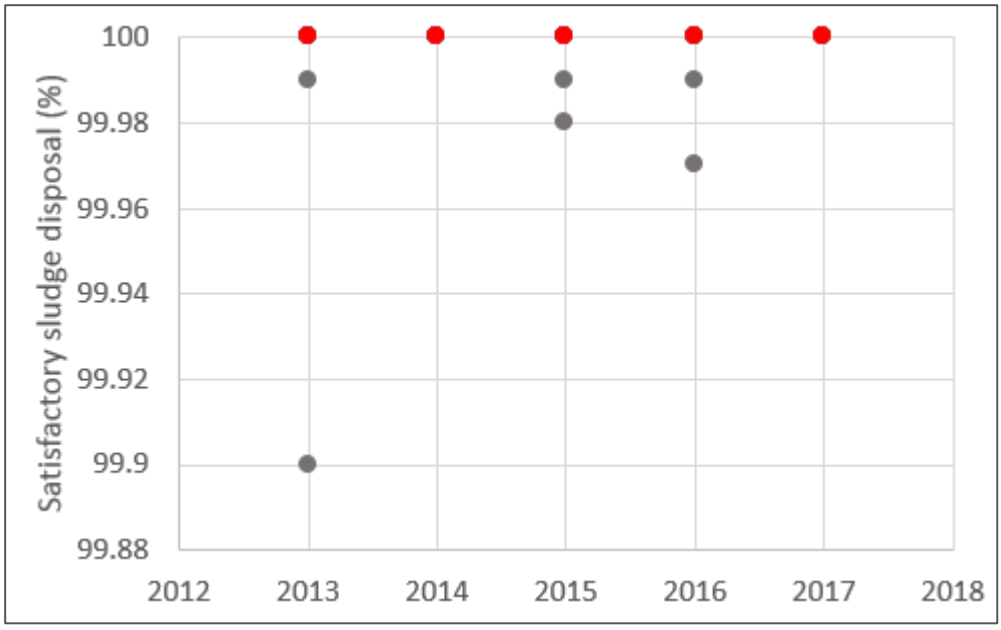
- 100% deemed as green performance within EPA
- > 98% deemed as amber performance within EPA
- <=98 deemed as red performance within EPA.

5.4.3 Customer views

Customers consistently support sustainable practices and investment towards protecting the environment. Furthermore, compliance on this performance commitment is a key requirement by the Environment Agency.

5.4.4 Historical performance

Over the last five years, Severn Trent has consistently delivered 100% performance on this commitment within the EPA green performance band as outlined below (see figure below).



Severn Trent's historical performance. Red dots denote Severn Trent performance; grey dots denote the performance of other water and waste companies

We aim to continue with our strategy of replacing life expired conventional sludge digestion with technologies that deliver additional biogas generation and an enhanced end product for recycling. In total we are planning to build three new advanced digestion plants in Coventry, Nottingham and Gloucester.

This strategy should enable us to maintain 100% performance through AMP6 and therefore our 2020 forecast performance is 100%.

5.4.5 Comparative information

Given the importance of complying with regulatory guidance on sludge, the industry has demonstrated stable performance levels with only two companies delivering performance below 100% in 2016 (see figure above).

5.4.6 Cost benefit analysis

Given this is a regulatory requirement targeted at 100% compliance levels, we have not undertaken a cost benefit assessment.

5.4.7 Rationale for target

The core objective of our Bioresources price control will be to ensure the safe disposal of treated sludge (biosolids), therefore we are proposing a target of 100% compliance with no penalty deadband (see table below). This will be the first time where we are proposing a target of 100% compliance with no dead band.

Application of Ofwat Tests for the performance commitment *Satisfactory sludge use and disposal*

Ofwat Test	Outcome
Proposed 2024/25 target	We are proposing a target is 100% compliance as it Reflects the maximum level attainable as per Ofwat tests Reflects regulatory guidance Reflects our past industry leading performance where we have delivered 100% compliance for the past 4 years
Comparative information	Industry performance has ranged 99.7% - 100%; with majority companies achieving 100% compliance.
Historical information	Severn Trent have delivered 100% compliance over last 4 years. Our proposed target will continue to deliver this ambition and given our historical performance we have chosen to propose no penalty dead band.
Minimum improvement	We will continue to target 100% compliance as we have delivered since 2012.

Ofwat Test	Outcome
Maximum level attainable	We will deliver the maximum attainable level - 100% with no accompanying penalty dead band.
Cost Benefit Analysis (CBA)	Not applicable given we will be targeting 100% compliance; our plan will ensure we adopt a cost effective delivery strategy.
Expert Knowledge	Based on our Bioresources plan, we will continue to deliver 100% compliance on this commitment.

6. Outcome: A positive difference

In this section we summarise the performance commitment and associated improvements we are proposing to deliver for the outcome - A positive difference.

Our research consistently shows that customers value proactive engagement and education. They recognise the importance of education on the key themes of using water wisely, what not to put down the toilet and sink, and choosing water for a healthy lifestyle.

Thus for the outcome – A positive difference, we are proposing one performance commitment which relates to the education of our customers.

Performance commitments for the outcome A positive difference

A positive difference	1 PC
Retained/Revised	Inspiring our customers to use water wisely
Rationale	Customer research data shows us that customers value engagement and education throughout the entire customer lifecycle via different channels. This revised performance commitment looks to capture not only the face-to-face engagement but also the digital engagement

A summary of the improvements we will be pledging for AMP7 is as below:

Proposed Improvements for the outcome A positive difference

PC	Unit	Forecast (2019/20)	Target 2024/25	Improvement
Inspiring our customers to use water wisely	Number of customers	N/A	155,250	155,250 customers

In the following section, we summarise the planned performance commitment and our rationale for the improvements we are proposing to deliver. The performance commitment covers a:

- description of where the PC sits in our performance framework;
- description of regulatory expectations where relevant;
- customer views on the PC;
- historical evidence where possible;
- comparative information where possible;
- and our rationale for targets based on the six approaches outlined by Ofwat

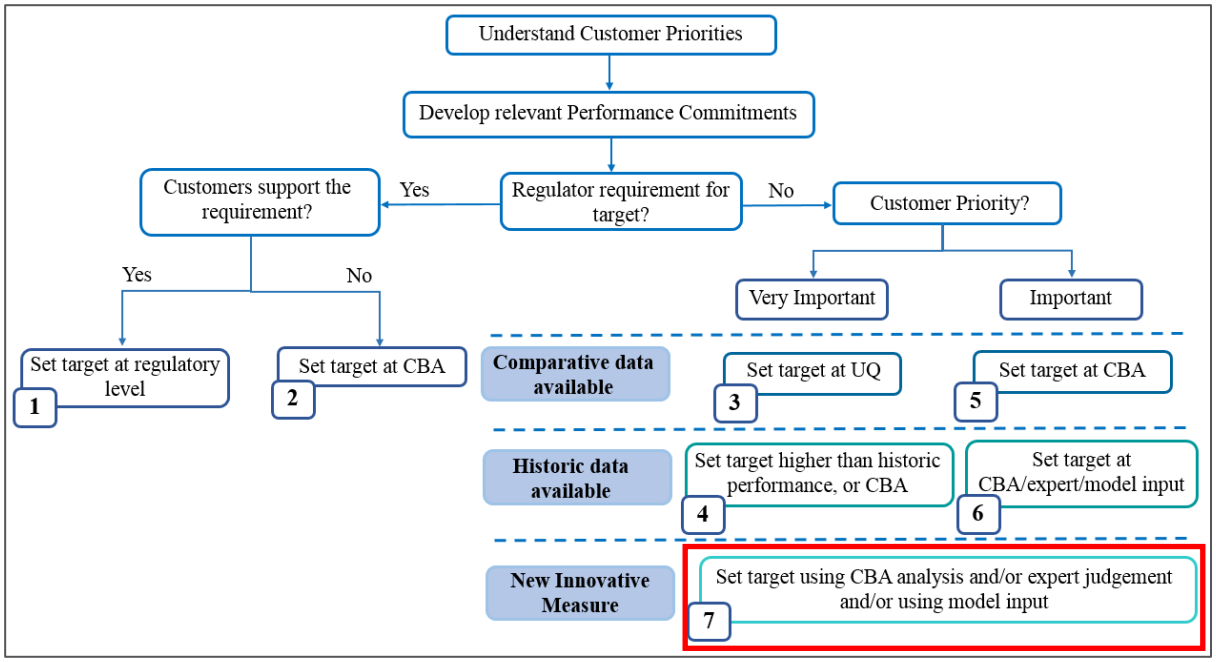
6.1. Inspiring our customers to use water wisely (B01)

This is a bespoke Performance Commitment that will be measure the number of people who have agreed to change their behaviour as a result of our educational activities. These activities will support the following behaviour changes:

- Using wonderful water wisely (not wasting water)
- Knowing what not to put down the toilet and sink
- Choosing tap water for a healthy you and a healthy environment (reducing plastics)

6.1.1 Position in the framework

Inspiring our customers to use water wisely is a bespoke performance commitment. This Performance Commitment is a revision of our AMP6 education commitment and has been revised to move from outputs (number of people engaged) to outcome (behaviour change). Given the proposed performance commitment covers non-statutory improvements, under our performance framework as outlined below, the commitment belongs to Cohort 7 (see figure below).



Location of the performance commitment in the framework

6.1.2 Regulatory guidance

No regulatory guidance for this measure.

6.1.3 Customer views

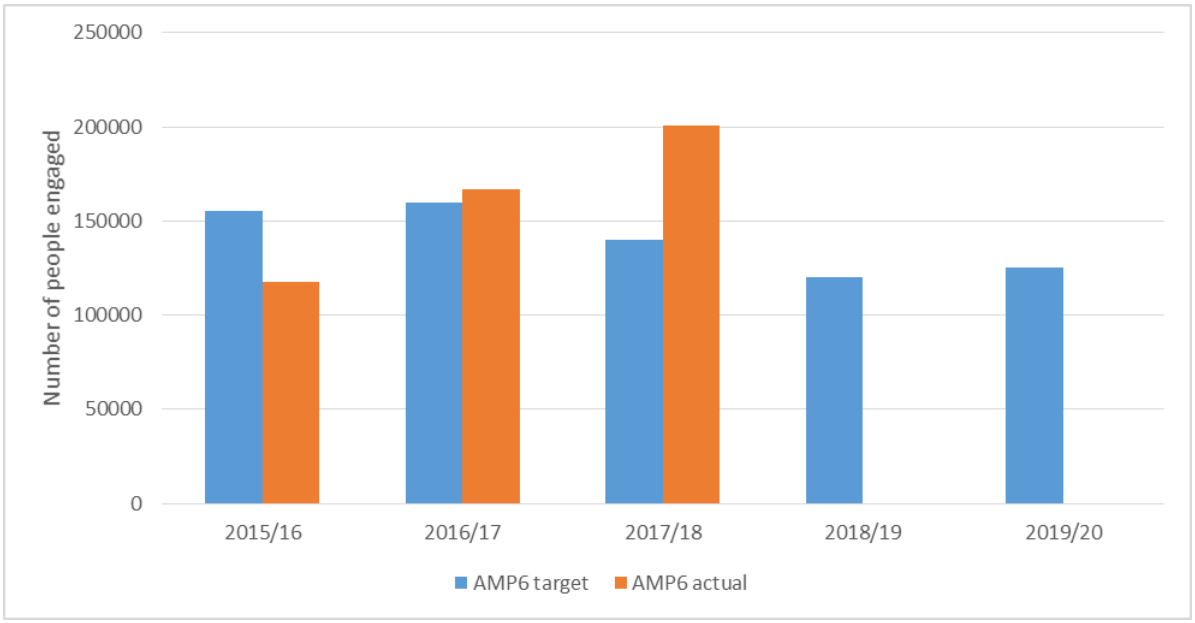
Our research shows that our customers would like to see education playing a key part in our future, and they would like us to do more to increase awareness on positive water and wastewater behaviours. We have therefore completely overhauled our education programme and created an immersive, innovative experience that will better embed behaviours.

Across all our customer research one common theme emerges – customers expect us to be more proactive in our communications to engage and educate them. This includes more effective education about water efficiency and sewer use. It is clear that for many customers, as a company we are expected to operate 'at arm's length' on a day-to-day basis but we can do more to target them with the right information, at the right time, to benefit their lives. Education and engagement was also seen to be a key way to get customers more excited and interested in water and waste.

6.1.4 Historical performance

Our current AMP6 performance commitment is an output commitment that measures the number of people engaged rather than the number of customers who have pledged to change their behaviour as a result of our education activities. Over the course of AMP6 our performance has been steadily improving each year and over the five years we will have educated circa. 700,000 customers, with around 575,000 educated by school activities.

Industry guidance, provided by UKWIR, suggests that through delivering the type of engagement that we currently deliver to school children and community groups, 18% of people will change their behaviour as a result. As such, industry guidance suggests that in the 2015-2020 period, 103,500 people will have converted their behaviour.



Severn Trent's AMP6 performance on educating customers

6.1.5 Comparative information

In AMP6, a number of other companies proposed bespoke measures which covered education related activities. While the definitions and units are not consistent, a comparative view of the level of stretch can be demonstrated. The table below outlines a comparative view across the industry for AMP6.

AMP6 industry comparison of engagement related commitments

PC	Company	Unit	14/15 actual	2019/20 forecast	Improvement
Improved understanding of our services through education	Severn Trent	Number	75,000	125,000	66%
Number of children and adults engaged in environmental education activities	SES	Number	6,221	>10,000	60%
% of customers aware of avoidance measures for blocked drains	Southern	%	N/A	80	Unknown
Community engagement	South Staffs	Employee days	300	400	33%
Number of children directly engaged	Thames	Number	14,000	20,003	43%

6.1.6 Cost benefit analysis

The target has been set at a cost beneficial level (see Appendix A3, Part A Section 2.5).

6.1.7 Rationale for target

Compared to our existing commitment, our new performance commitment 'inspiring customers to use water wisely' has a much greater focus on schools (although not exclusively, given the 'pester power' potential of school children to influence their families' behaviours when they return home). In addition, it uses outputs that measure the number of people who commit to change, rather than number of people reached – making it more stretching to deliver.

Our proposed target stretches us to increase the number of commitments converted to behavioural change by 50% (155,250). At 27%, this would be a higher conversion factor than any of the activities in UKWIR's report.

Thus, we will continue to engage with 575,000 school children as we did in AMP7 but enhance this service to ensure a higher conversion of people pledging a behaviour change.

Application of Ofwat tests to the performance commitment *Inspiring our customers to use water wisely*

Ofwat test	Outcome
Proposed 2024/25 target	155,250 customers pledge to change their behaviour based on our education programme covering 575,000 school children
Comparative information	Approx. five companies proposed bespoke performance commitments on education in AMP6 targeting number of customers. Our proposal to educate 575,000 customers and thereon elicit a behaviour change from 155,250 customers represents a stretch both in terms of scope of commitment and proposed target.
Historical information	Through AMP6 we propose to engage and educate circa 575,000 school children. Based on the industry best practise (UKWIR) we predict that 104,000 people should have converted their behaviour change. Our proposed AMP7 target of 155,250 people is a 50% improvement on assumed historical performance.
Minimum improvement	A 20% improvement over our assumed AMP6 performance of customers that would have pledged a behaviour change is 124,800 customers. We will be exceeding this minimum improvement significantly by another 30% to 155,250.
Maximum level attainable	Based on industry guidance from UKWIR approx. 18% customers educated choose to make a behaviour change. Thus based on our proposed education programme the max customers that would adopt a behaviour change is 103,500. We are proposing a 50% increase in the conversion of customers educated who adopt a behaviour change. This equates to 155,250 customers.
Cost Benefit Analysis (CBA)	We have set the level at a cost beneficial level.
Expert Knowledge	Our education programme will seek to educate 575,000 customers based on which we have outlined an ambitious target of 155,250 customers that pledge a behaviour change. Comparative and historical tests indicate this is a significant stretch of 50% based on our forecast end of AMP6 position.

7. Outcome: Lowest possible bills

In this section we summarise the performance commitments and associated improvements we are proposing to deliver for outcome lowest possible bills.

This outcome focusses on delivering overall affordability of bills to our customers - and is in line with Ofwat's affordability business case. One method of achieving this is by ensuring that we are billing the correct number of properties - all properties which are in receipt of water and/or wastewater services from us. This will allow us to spread our costs over a larger number of customers thus reducing bills and improving affordability for our billed customers.

We will focus on two key areas, void properties and gap sites. Both are properties which are connected to our network and are in receipt of water/waste water services from us but are not being billed. Void properties are thought to be unoccupied (this may not always be the case) whilst gap sites are unknown to us; we don't know where they are and the quantity of these and thus are unaware of the scale of the problem. The design of these PCs and ODIs are designed to mitigate the significant financial incentive effects associated with the revenue cap (known as the Wholesale Revenue Forecasting Incentive Mechanism (WRFIM)) alongside the significantly heightened debt risk associated with these types of properties.

We are proposing three performance commitments:

- Reducing residential void properties
- Reducing residential gap sites
- Reducing business void and gap site supply points

A summary of the improvements we will be pledging for Lowest Possible Bills for AMP7 is outlined below:

Performance commitments for the outcome Lowest Possible Bills

PC	Unit	Forecast (2019/20)	Target 2024/25	Improvement
Reducing residential void properties	Number	168,211	167,380	841
Reducing residential gap sites	Number	0	3440	3440
Reducing business void and gap site supply points	Number	0	250	250

7.1. Reducing residential void properties (A01)

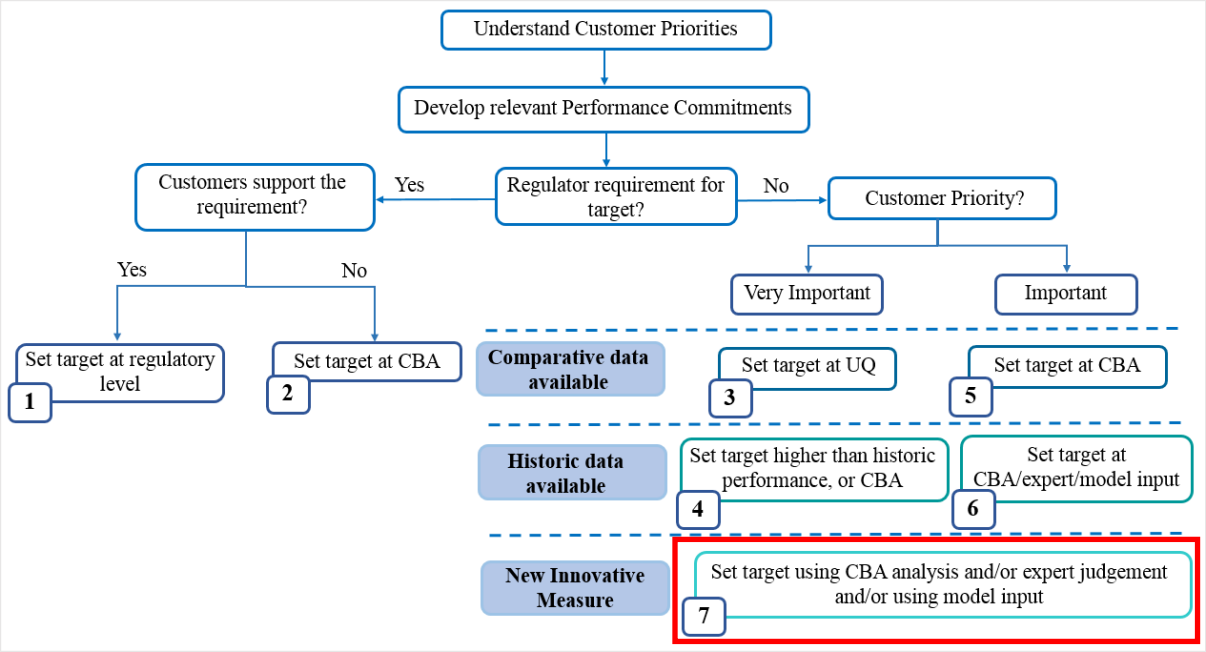
Ofwat has signalled that it expects companies to propose bespoke performance commitments to manage their voids and gap sites. The first performance commitment we are proposing for this outcome is "Reducing residential void properties."

A void property is defined as one connected for water/wastewater services that is thought to be unoccupied and is therefore not billed. The number of billable voids is measured on an annual basis for each financial year (i.e. 1st April – 31st March). The performance commitment will thus measure the change in residential void properties year on year which are billed by Severn Trent.

We are proposing to reduce void properties by 5% from 2017/18 performance.

7.1.1 Position in the framework

This is a new performance commitment - we have no historic or comparative context. Thus within our performance framework this performance commitment belongs to cohort 7 within our performance framework (see figure below).



Location of the performance commitment in the framework

7.1.2 Regulatory guidance

Ofwat has outlined their expectation that water companies are responsible for ensuring their bespoke performance commitments are designed in an appropriate way. The guidance on voids & gap sites is as follows:

"The company will explain their level of voids; and their plan will make proposals to identify and manage voids and gap sites".

Ofwat (Dec 2017), "Delivering Water 2020: Our methodology for the 2019 price review – Appendix 13: Initial assessment of business plans," page 18.

7.1.3 Customer views

Our research consistently shows that customers place a high value on receiving value for money; having the lowest possible bills is one component of this. Due to the complexity of what void and gap sites are, we have not engaged with customers around what level of performance they would expect in this area, we are working towards the best position possible for customers which is a low level of genuine void properties.

7.1.4 Historical performance

We are starting from a position at 2017/18 where we have seen the number of residential voids increase over the last 2 years (see table below).

We aim to stem this increase during the remainder of AMP6, achieving stable performance by 2019/20. Our target is to then deliver further improvements through AMP7 leading to a reduction in the number of void properties.

The target set for AMP7 takes into account the significantly heightened bad debt risk that we face by bringing these properties into charge. We will balance this risk with ODI incentives thus allowing us to improve our performance whilst ensuring we make a real difference for customers.

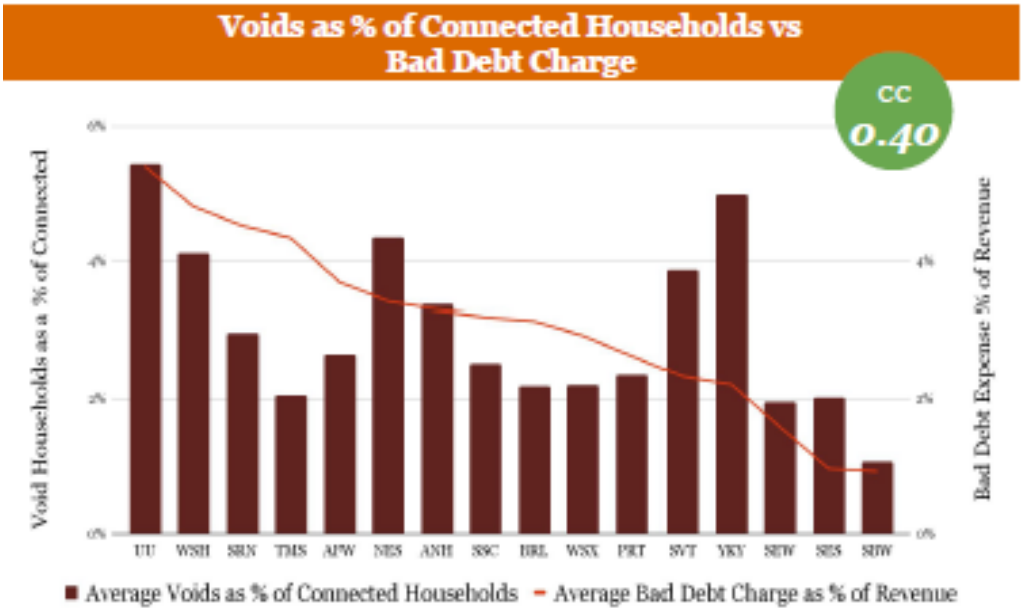
Historical performance and future forecast targets

	Residential connected (Nr)	Residential voids actual / forecast (Nr)	Residential voids actual / forecast (%)	Target – annual movement (Nr)
2015/16	3,948,246	148,503	3.76	
2016/17	3,979,812	160,248	4.03	11,745
2017/18	3,989,382	168,221	4.22	7,973
2018/19	4,049,475	168,221	4.15	0
2019/20	4,071,312	168,221	4.13	0
2020/21	4,094,686	168,053	4.10	-168
2021/22	4,118,488	167,885	4.08	-168
2022/23	4,143,757	167,716	4.05	-168
2023/24	4,169,454	167,548	4.02	-168
2024/25	4,195,580	167,380	3.99	-168

7.1.5 Comparative Information

The only source of comparative information available to us can be found in the 2017 debt report prepared by PWC for Ofwat (see figure below). This gives us a comparative view for 2015/16 and indicates that at this point Severn Trent's performance of 3.8% was lower quartile.

Our AMP7 target has been based on improving our historical performance. This will start to improve our position comparatively but it is difficult to establish a conclusive view given we only have a single year's worth of historical comparative data.



Comparative 2017 bad debt report prepared by PWC for Ofwat

7.1.6 Cost benefit analysis

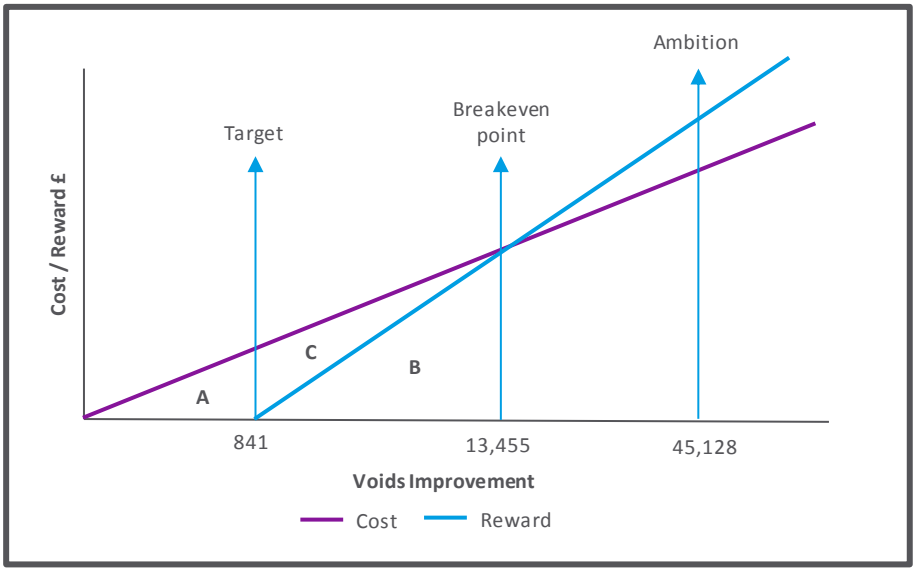
The reduction in voids delivers a benefit to customers through lower bills, as any additional revenue brought into charge is recycled through the wider customer base (via WRFIM).

From a company perspective the benefit of bringing voids into charge is equal to the additional retail revenue (circa £30per customer) and the incentive rate of £159 per site.

The most significant costs associated with delivering this performance relate to a significantly heightened level of bad debt risk. Although our bad debt rate is amongst the lowest in the sector, the bad debt risk associated with void properties is much higher. Recent trials indicate an 85% bad debt risk with billing void properties, which equates to approximately £281 per customer.

Thus the proposed reduction of 841 void properties over the AMP incurs this additional bad debt cost, offset by the retail revenue, leaving a cost burden within Severn Trent. Any reduction in the voids pot over 841 will attract the ODI reward, however to get to a breakeven point Severn Trent will need to reduce the voids pot by 13,455 over the AMP (illustrated below) so whilst the target is relatively low this results in Severn Trent needing to reduce the voids pot by 13,455 which is a significant & stretching target. Additionally it is also important to note that given we are targeting a net reduction of 841 properties, hence we will have to ensure that new additions are reduced for example in 2017/18 we had 268,000 properties that were added as voids.

Performance beyond the breakeven point of 13,455 will deliver marginal gains to Severn Trent, however will still deliver benefits to customers by spreading costs over more properties (see figure below).



Cost/reward breakdown of voids improvement

7.1.7 Rationale for target

The target has been set based on a balance of:

i) Costs associated with bringing these properties into charge; and

ii) The process improvements that can be implemented at no significant additional costs to ensure we are meeting this target without increasing the costs for our customers.

The target also takes into account the additional bad debt risk associated with bringing void properties into charge (see table below). To mitigate this, we have proposed an outcome delivery incentive payment for this performance commitment. The incentive rate is set lower than the bad debt rate which means customers strongly benefit from any voids brought into charge (average bill less £159) whilst giving us a strong incentive to identify more effective ways to reduce bad debt risk of voids.

Application of Ofwat tests to the performance commitment *Reducing residential void properties*

Ofwat Test	Outcome
Proposed 2024/25 target	Total AMP7 reduction of 841 void residential properties which will ensure we have 167380 void properties remaining
Comparative information	We only have 1 years' worth of historic data and have therefore decided that this is not an appropriate measure for setting our target
Historical information	We have seen an increasing position in the last 2 years, and therefore our target has been set based on stopping this increase and then reducing from this baseline to deliver an improved position.
Minimum improvement	Maintain at 17/18 performance.

Ofwat Test	Outcome
Maximum level attainable	Reach Upper Quartile – we are working to improving our performance without significantly increasing operating costs and therefore upper quartile during AMP7 is not feasible without significantly increasing costs.
Cost Benefit Analysis (CBA)	The target exceeds the cost beneficial level
Expert Knowledge	Our target has been based on actual bad debt performance we have seen historically when completing previous trials on bringing residential void properties into charge.

7.2. Reducing residential gap sites (A02)

The second performance commitment we have proposed under our lowest possible bills outcome is "Reducing residential gap sites".

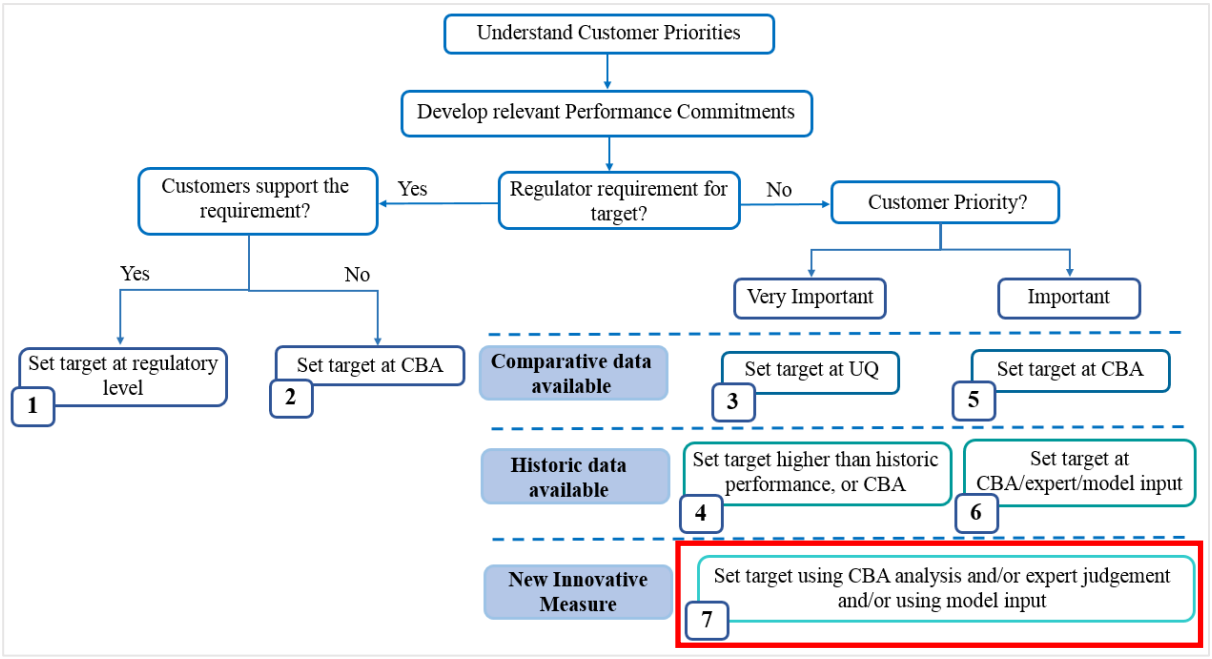
A gap site is defined as a property connected for water services that is not known to us and therefore not billed. The performance commitment will be expressed as the number of residential gap sites brought into charge.

The performance commitment addresses the current issue of us not having visibility on the number of gap sites. We will utilise credit reference agency data to cross-reference properties which appear to be connected to an electrical supply point but not connected to our network.

Our proposed target is to bring 3,440 into charge ensuring fairer bills.

7.2.1 Position in the framework

This is a new performance commitment - we have no historic or comparative context. Thus within our performance framework this performance commitment belongs to cohort 7 within our performance framework (see figure below) – "new innovative measure with targets being set based on expert judgment".



Location of the performance commitment in the framework

7.2.2 Regulatory guidance

Ofwat has outlined their expectation that water companies are responsible for ensuring their Bespoke Performance Commitments are designed in an appropriate way. The guidance on Voids & Gap Sites is as follows:

"The company will explain their level of voids; and their plan will make proposals to identify and manage voids and gap sites'.

Ofwat (Dec 2017), "Delivering Water 2020: Our methodology for the 2019 price review – Appendix 13: Initial assessment of business plans," page 18.

7.2.3 Customer views

Our research consistently shows that customers place a high value on receiving value for money; having the lowest possible bills is one component of this. Due to the complexity of what void and gap sites are, we have not engaged with customers around what level of performance they would expect in this area, we are working towards the best position possible for customers which is a low level of gap sites.

7.2.4 Historical performance

We do not currently have visibility of the number of gap sites we have. However, we do have a view of the number of residential gap sites we have brought into charge over the last 7 years (see table below).

Historical Severn Trent performance

Year	Number of properties
2011/12	1,038
2012/13	1,162
2013/14	997
2014/15	1,197
2015/16	1,184
2016/17	920
2017/18	625

This shows a decline in 2017/18 but without understanding how many gap sites there are we cannot understand the reasons for this. Therefore our proposed performance commitment focusses on better understanding our gap sites by the end of AMP6 and subsequently reducing numbers through AMP7.

7.2.5 Comparative information

This number of gap sites is not something that has previously been measured and therefore there is no comparative information.

7.2.6 Cost benefit analysis

The main cost associated with this performance commitment is associated with developing an understanding of the scale of the problem. This is a one-off cost that does not increase with the number of properties brought into charge; the customer benefit is also a linear amount for every gap site brought into charge. We have therefore not undertaken a cost benefit analysis for this performance commitment.

7.2.7 Rationale for target

The target of bringing 3,440 gap sites into charge during AMP7 is based on a 10% improvement from our 17/18 performance (see the two tables below).

Annual targets for AMP7

Year	Number of gap sites brought into charge
2020/21	688
2021/22	688
2022/23	688
2023/24	688
2024/25	688

Through AMP7 we will continue to work to refine our understanding and processes to enable a more stretching target to be set in AMP8 in this area.

Application of Ofwat tests to the performance commitment *Reducing residential gap sites*

Ofwat Test	Outcome
Proposed 2024/25 target	3,440 residential gap sites to be brought into charge during AMP7
Comparative information	This number of gap sites is not something that has previously been measured and therefore there is no comparative information.
Historical information –	Historically we have brought on average 1,000 gap sites a year into charges, however we are unable to benchmark this against the total number of gap sites so cannot track if this represents strong performance. We have therefore committed to a 10% improvement on 17/18 performance which reflects our latest performance.
Minimum improvement	Maintain at 17/18 performance.
Maximum level attainable	Ensure there are no gap sites – as we currently don't have a view of the number of potential gap sites, we cannot commit to reducing this to zero at this time. We expect there to always be a small amount of gap sites but the aim will be to ensure we understand these and bring them into charge in a timely manner.
Cost Benefit Analysis (CBA)	CBA has not been undertaken as the main cost associated with this performance commitment is with developing an understanding of our gaps sites which is likely to be a one-off cost; the customer benefit is also a linear amount.
Expert Knowledge	Our target has been based on historical performance with a 10% improvement.

7.3 Reducing business void and gap site supply points (A03)

The third performance commitment we have proposed under the lowest possible bills outcome is "Reducing business void and gap site supply points".

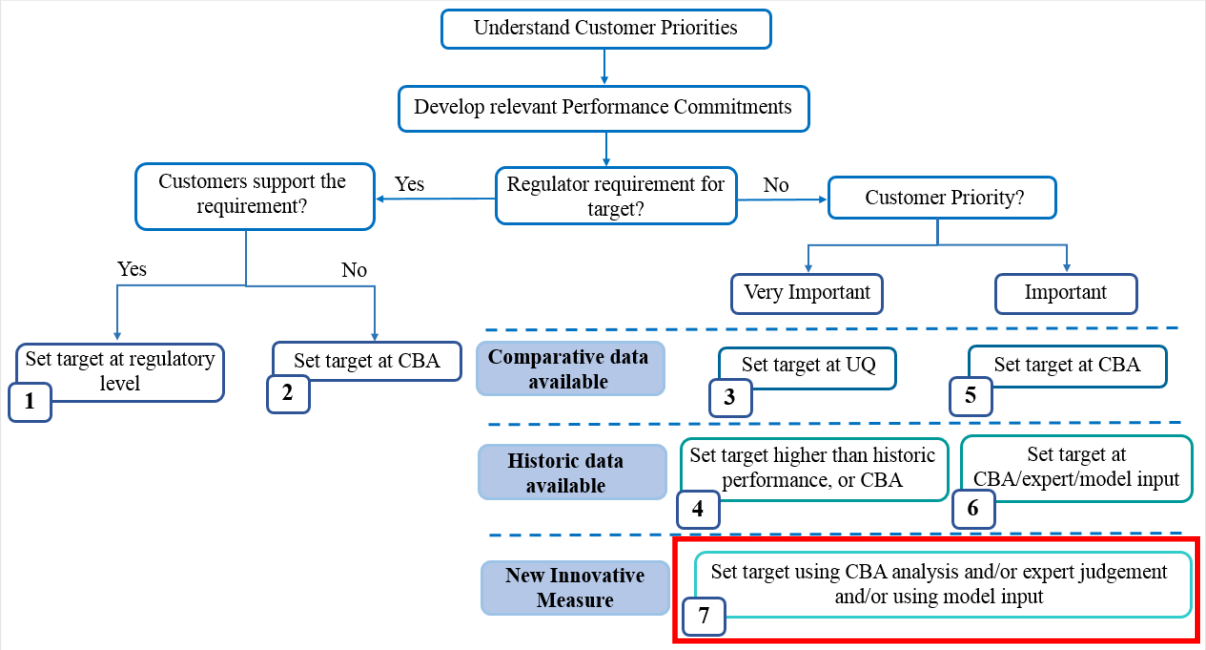
A void property is defined as one connected for water/wastewater services that is thought to be unoccupied and is therefore not billed. A gap site is defined as a property connected for water services that is not known to us and therefore not billed. The performance commitment will measure the number of business voids and gap sites brought into charge and reported on an annual basis for each financial year (i.e. 1st April – 31st March) that are within the Severn Trent region, excluding those in the South Staffs Water region.

Through this performance commitment, we will incentivise the business retailers by offering them revenue per void brought into charge (property that has been void for over six months) and revenue per gap site brought into charge.

Our proposed target is to work with business retailers to reduce void properties by 250.

7.3.1 Position in the framework

This is new performance commitment and hence we have no historic or comparative context. Thus within our performance framework this performance commitment belongs to cohort 7 within our performance framework (see figure below) – "new innovative measure with targets being set based on expert judgment".



Location of the performance commitment in the framework

7.3.2 Regulatory guidance

Ofwat has outlined their expectation that water companies are responsible for ensuring their bespoke performance commitments are designed in an appropriate way. The guidance on Voids & Gap Sites is as follows:

"The company will explain their level of voids; and their plan will make proposals to identify and manage voids and gap sites".

Ofwat (Dec 2017), "Delivering Water 2020: Our methodology for the 2019 price review – Appendix 13: Initial assessment of business plans," p 18.

7.3.3 Customer views

Our research consistently shows that customers place a high value on receiving value for money; having the lowest possible bills is one component of this. Due to the complexity of what void and gap sites are, we have not engaged with customers around what level of performance they would expect in this area, we are working towards the best position possible for customers which is a low level of business void properties and gap sites.

7.3.4 Historical performance

Up until 2016/17 Business voids were managed by the individual water companies, then post market opening we measure them based on supply points and therefore the starting point for reviewing Business voids has reduced (see table below).

We know that business retailers are not currently incentivised to bring voids into charge and therefore we will put in place an incentivise mechanism in AMP7 to stem the increase in business voids.

Historical business voids

Year	Business connected (Nr)	Business voids (Nr)	Business voids (%)
2014/15	287,453	31,397	10.9
2015/16	283,674	37,604	13.3
2016/17	251,477	40,971	16.3
2017/18	189,809	22,578	11.9

We do not currently have visibility of the number of gap sites. However, we do have a view of the number of Business gap sites we have brought into charge historically when STW were responsible for bringing Business gap sites into charge (see table below). Previously the number of business gap sites brought in varied significantly as the process followed was largely reactive, e.g. based on customers contacting us and additional research taken from there.

Number of business gap sites Severn Trent has historically brought into charge

Year	Number of gap sites
2011/12	755
2012/13	594
2013/14	444
2014/15	672
2015/16	1,129
2016/17	281

We will put in place an incentive mechanism with business retailers in AMP7 to ensure they continue to bring gap sites into charge.

7.3.5 Comparative information

We currently do not have any comparative information on business voids and the number of gap sites given this is a new PC.

7.3.6 Cost benefit analysis

The costs of reducing business voids & gap sites is the incentive payment that Severn Trent will offer to business retailers to bring voids greater than 6 months and gap sites into charge; the customer benefit is also a linear amount for every void or gap site brought into charge. We have therefore not undertaken a cost benefit analysis for this performance commitment.

7.3.7 Rationale for target

The target has been set based on a balance of costs associated with incentivising business retailers so that we are not driving a large increase in costs for customers (see table below).

Application of Ofwat tests to the performance commitment *Reducing business void and gap site supply points*

Ofwat Test	Outcome
Proposed 2024/25 target	250 voids > 6 months old & gap sites brought into charge during AMP7
Comparative information	We do not have comparative information for Business voids or gap sites.
Historical information	Historically we have varied performance for Business voids & gap sites, but we do not know how successful the incentive mechanism for NHH Retailers will be going forward and therefore historical information is not appropriate for setting this target.
Minimum improvement	AMP6 performance is not directly comparable for setting a target as the market set up has changed. A minimum improvement could be seen to be maintain at 17/18 performance as the non-household competitive market was live but there was a lot of data cleansing activity. Our target is improving upon our 17/18 position.

Ofwat Test	Outcome
Maximum level attainable	Reach Upper Quartile on Business Voids. We will not be targeting this as we are reliant on NHH retailers to improve our performance during AMP7. It is important we establish a suitable incentive mechanism model and then target UQ. Ensure there are no current gap sites – as we currently don't have a view of the number of potential gap sites we cannot commit to reducing this to zero at this time. We expect there to always be a small amount of gap sites but the aim will be to ensure we understand these and bring them into charge in a timely basis.
Cost Benefit Analysis (CBA)	CBA has not been undertaken as the main cost associated with this performance commitment is the cost of incentivising the NHH Retailers which increases in line with the number brought into charge; the customer benefit is also a linear amount.
Expert Knowledge	Given the change in how Business voids & gap sites are managed post the market opening we have not been able to rely on past performance that STW have driven. We have therefore set a target that starts to reduce Business voids in AMP7 and will allow us to work with the Business retailers to understand how successful an incentive payment will be. The risk with this approach is that the incentive payment is too complicated to apply so won't allow which is why a lower target has been applied whilst we understand how this will work in practice.