

BUSINESS PLAN 2025 TO 2030

PRT05 DELIVERING OUTCOMES FOR OUR CUSTOMERS



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1. AT A GLANCE

This document provides details on proposed performance commitment levels for PR24. The document sets out the ambitious targets that we will deliver, with justification of why they are both stretching but achievable, and considers improvements expected from enhancement and base expenditure.

Our approach to setting performance commitment levels aligns with our 25-Year Vision, Water Resources Management Plan (WRMP), and Long-Term Delivery Strategy. Our targets are guided by our customer and stakeholder priorities, are mindful of the cost-of-living crisis and associated customer affordability challenges and are based on the most cost-effective investment pathway. They also reflect challenges to maintaining performance such as weather, climate change, rising population, and economic growth.

Through delivery of our performance commitment levels and price control deliverables, our customers can expect a company rooted in excellence that provides industry-leading efficiency and performance they can trust, whilst still paying the lowest water bill in the industry.

Targets have been set to maintain our sector-leading position in supply interruptions, mains repairs and water quality contacts, as well as set us on course to deliver our long-term 25-Year Vision.

The one area where our performance is lagging, is per capita consumption. Reducing consumption through our smart metering programme is one of the core objectives of this plan and the targets are consistent with our WRMP. Our long-term ambition is consistent with meeting Defra targets on reducing customer use.

A summary of our performance commitment levels is set out in Table 1:

Table 1: Performance Commitment Level Targets for PR24

Performance Commitment	Unit	2022-23 Performance	2029-30 Target	Ambition Justification
C-MeX	Industry Position	2 nd	Industry Leader	Maintain industry leading performance
D-MeX	Industry Position	2 nd	Upper Quartile	Maintain industry leading performance
BR-MeX	Industry Position	N/A	Upper Quartile	Provide same level performance as have achieved for developers on this new metric
Interruptions to Supply	Interruption per property	2 mins 21 secs	2 mins 5 secs	Maintain industry leading performance, where industry average for 21/22 was almost 12 minutes
Compliance Risk Index	Numerical Score	1.24	1.50	Reduction from PR19 industry target of 2, to align with improvements through base expenditure. Industry average for 21/22 was 3.54.

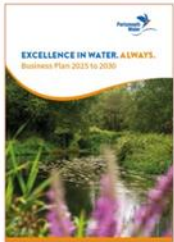
Water Quality Contacts	Contacts per 1,000 population	0.42	0.41	Maintain industry leading performance, industry average for 2021-22 was 1.33.
Biodiversity Net Gain	Units per 100km of land owned	N/A	0.62	Target aligns with maximum biodiversity net gain expected.
Operational Greenhouse Gas Emissions (Water)	Tonnes CO2e	8439	6597	Stretching reduction through ambitious level of base expenditure. Aligns with net zero strategy to achieve net zero by 2040.
Leakage	MI/d (three-year average)	27.6	21.1	To achieve 50% reduction since 2017-18 by 2040, ten years ahead of government targets. This is supported by customers and offers most cost-effective commitment.
Per Capita Consumption	Litres per person per day (three-year average)	161.1	146.0	Aligned with WRMP and enhancement expenditure. Consistent with long-term government targets.
Business Demand	MI/d (three-year average)	29.9	27.3	Aligned with WRMP and consistent with long-term government targets
Serious Pollution Incidents	Number	0	0	Target equates to no incidents
Discharge Permit Compliance	% of sites compliant with permits	100	100	Target equates to no incidents
Mains Repairs	Repairs per 1,000km of mains	83.3	62.2	Maintain industry leading performance, industry average for 2021-22 was 126.
Unplanned Outage	% of peak week production capacity	10.93	1.69	Significant reduction aligned to enhancement and base expenditure.

This document should be read in conjunction with the following documents:

- PRT01: Excellence in Water. Always
- PRT03: Engaging and Understanding our Customers and Communities
- PRT04: Delivering for Our Customers and Communities.
- PRT05.01: Artesia Review of PCC
- PRT07: Our Investment Plan
 - PRT07.01: Security Resilience and eCAF Compliance at Operational Sites
 - PRT07.02: Raw Water Resilience Enhancements (Disinfection)
 - PRT07.03: Raw Water Deterioration and Drought Capacity Enhancements
 - PRT07.04: The Isolation and Recovery of Service Reservoirs
 - PRT07.05: WINEP and Protecting the Environment
 - PRT07.06: Reducing Customer Side Demand (Universal Smart Metering)
 - PRT07.07: Lead Strategy Implementation
- PRT08: Delivering Our Investment Plan
- PRT10: Innovation to Enhance Our Service Delivery.
- PRT11: Addressing Affordability and Vulnerability
- PRT12: Accounting for Past Performance
- PRT15: Board Assurance
- PRT16: Our 25-Year Vision (Consultation)
- PRT17: Water Resource Management Plan
 - PRT17.18 rdWRMP24 Appendix 4D – Portsmouth Water Non-Household Demand Forecast Update
 - PRT17.38 rdWRMP Appendix 10B – Water Efficiency Strategy
 - PRT17.39 rdWRMP Appendix 10C – Leakage Strategy
- PRT18: Long-Term Delivery Strategy 2025-2050

2. DOCUMENT MAP

Business Plan to 2030



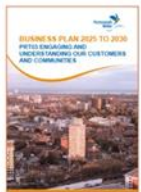
PRT01
EXCELLENCE IN WATER. ALWAYS.
 Business Plan 2025 to 2030

For the full navigation plan and documents visit
portsmouthwater.co.uk/business-plan-2025-2030

Supporting Documents



PRT02
 Delivering Havant Thicket Reservoir for Our Customers and the Region



PRT03
 Engaging and Understanding Our Customers and Communities



PRT04
 Delivering for Our Customers and Communities



PRT05
 Delivering Outcomes for Our Customers



PRT06
 Managing Our Resilience in the Long Term



PRT07
 Our Investment Plan



PRT08
 Delivering Our Investment Plan



PRT09
 Securing Value for Money



PRT10
 Innovation to Enhance Our Service Delivery



PRT11
 Addressing Affordability and Vulnerability



PRT12
 Accounting for Past Performance



PRT13
 Aligning Risk and Return



PRT14
 Our People



PRT15
 Board Assurance

Vision and Our Long-Term Plans



PRT16
 Our 25-Year Vision (consultation version)



PRT17
 Water Resource Management Plan (revised)



PRT18
 Long-Term Delivery Strategy 2025-2050

3. DELIVERING OUTCOMES FOR OUR CUSTOMERS

A. Customer Measure of Experience (C-MeX)



The customer measure of experience (C-MeX) is a mechanism designed to incentivise water companies to provide residential customers with excellent levels of service. It came into effect as a common performance commitment from 1 April 2020.

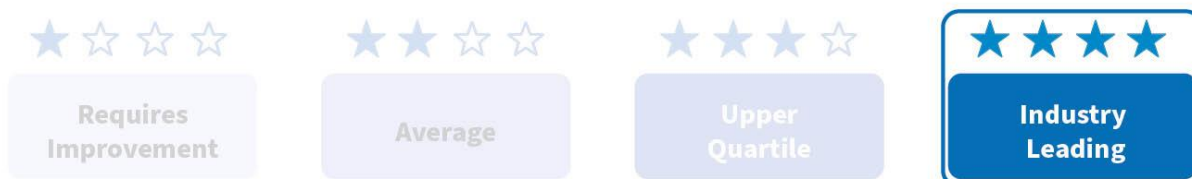
Each company receives a C-MeX score based on the results from two surveys:

- The customer service survey – a customer satisfaction survey of a sample of residential customers who have contacted their company, which asks them how satisfied they are with how the company has handled their issue.
- The customer experience survey – a customer satisfaction survey of a randomly selected sample of a company's overall residential customer base which asks them how satisfied they are with their company.

Both survey scores contribute equally to the overall C-MeX score for each company. The score is out of 100.

Ofwat publish an annual league table of the overall annual C-MeX scores for all companies. Each company can receive outperformance payments or incur underperformance payments based on its annual C-MeX score compared to other companies.

Current and Past Performance



Rating = Upper quartile position in every year

Table 2 sets out our recent performance. We have performed very well on C-MeX to date, always within the Upper Quartile within the industry.

More information on our current and past performance is set out in PRT12: Accounting for Past Performance.

Table 2: C-MeX performance in AMP7

C-MeX	2020-21	2021-22	2022-23
Score	86.22	83.76	83.17
Industry position	1 st	3 rd	2 nd

Challenges to Maintaining Performance

Rolling out our Universal Smart Metering programme for all household and non-household customers, and transforming their connection with us and their water, is a fundamental cornerstone of this business plan and our long-term resilience strategies. It's our ambition to become the first fully smart water company in the country within 10 years.

Currently, about a third of homes we supply have a water meter and this will increase to around 95 per cent by 2035, with 43,300 meters installed between 2025 and 2030. The benefits of a smart metering programme and smart network for our customers and our environment are multiple, as outlined in **PRT01: Excellence in Water. Always** and other sections of this document.

Overall, customers support the introduction of smart meters. However, through extensive engagement, customers and stakeholders have raised concerns that we will address to meet customer expectations and maintain our C-MeX performance. Key concerns include:

- Not disadvantaging vulnerable customers.
- Considering the needs of hard-to-reach customers.
- Setting realistic expectations on usage reduction.
- Addressing existing views on the smart energy meter experience.
- Installing meters in a non-intrusive manner.

More details on how we will address these concerns are included in PRT07.06: Reducing Customer Side Demand (Universal Smart Metering) and more details on our how we engaged with customers are included in PRT03: Engaging and Understanding Our Customers and Communities.

As well as our Reducing Customer Side Demand (Universal Smart Metering) programme, other schemes outlined in our long-term plans to ensure sustainable water supplies have the potential to cause concern if not correctly communicated with customers. The recent examples of the incorrect information on Southern Water's wastewater recycling proposals at Havant Thicket Reservoir, and confusion over our role in sewer overflows, show that miscommunication can result in a direct impact on our C-MeX score.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

We have identified several opportunities where our proposed PR24 activities will improve customer satisfaction, predominantly related to our Reducing Customer Side Demand (Universal Smart Metering) programme enhancement investment case.

We have regular conversations with our customers and stakeholders, both as part of paid-for insight programmes, statutory consultations and day-to-day operations and interactions. This includes national research projects and covers different generations, bill payers and non-bill payers, non-household customers, vulnerable and hard-to-reach customers, as well as key stakeholders.

Our customers have increasing expectations of their service providers and expect continuing value for money and the maintenance of our current high standards as a minimum. As we introduce our Reducing Customer Side Demand (Universal Smart Metering) programme, we will make sure we continue to meet our customers' service expectations, coupled with robust support around affordability, vulnerability, and accessibility.

More information on how we will address affordability and vulnerability can be found in our PRT11: Addressing Affordability and Vulnerability document.

The introduction of our new CRM and billing platform, Kraken, will connect our customers with their water use through data visualisation and messaging, and opening access to their personal use, bills and water saving through a range of engagement. Combined with the introduction of our support hub, extensive programme of home audits and extension of our customer side services offering, we will be able to provide a high level of support to help our customers reduce their consumption, resulting in lower water, wastewater, and energy bills.

We do recognise some of our customers do not wish to engage digitally or are not able to for reasons including vulnerability, data poverty or access to technology or skills. Customers can also elect to engage with us using more traditional methods and can access and utilise data in similar ways to those digitally enabled. To retain this capability for our customers our local customer service agents will have full access to information and data to allow them to either discuss these with customers directly on the phone or send information through non-digital channels. We will also be proactively messaging our customers through non-digital channels and utilising our retail field services team to undertake face-to-face visits with customers who need them.

We will also be enhancing our data analytical capabilities through internal improvements, maximising the benefits of open data, and increasing the level of engagement and communication with customers and stakeholders. The additional insight we will obtain from this analysis will help us to better understand our customers' needs and adapt our services accordingly.

We know that customers can get frustrated with water efficiency communication during summer months. Customers expect to be able to use water to maintain gardens and for leisure, and often see messages to preserve water during hot periods as a failure to provide this expected service.

In AMP7 we have improved our water efficiency messaging and have received a positive response from customers and stakeholders over the revised tone and content. Through access to improved information from data analytics and customer insight, we will be able to further tailor our messaging to different customer demographics to better target impactful messages with our customers. Improved communication with all our

customers will also help us to ensure that customers are better informed on all aspects of both their water and wastewater services.

Whilst we do not expect any of our other enhancement investment cases to materially impact C-MeX we do believe there will be some benefit from our lead strategy, where our prioritised programme will replace customer lead pipes for schools and nurseries in our area. We also expect our continued high service performance to be viewed positively by our customers.

More information on our lead strategy is in PRT07.07: Lead Strategy Implementation.

We will also continue to look to innovate to make further improvements in C-MeX and are actively involved in several innovation projects. Improving customer satisfaction features heavily in our Innovation Roadmap, which is shown in Figure 8 in the Leakage section.

For more information on our innovation strategy, see PRT10: Innovation to Enhance Our Service Delivery.

PR24 Performance Commitment Level



Target = Be the leader in the industry and achieve 1st place in C-MeX

As C-MeX is a relatively new measure, Ofwat are currently reviewing the effectiveness ahead of PR24. There is an ongoing consultation and Ofwat will publish an updated methodology as part of PR24 final determinations in December 2024.

Nonetheless, we pride ourselves on our excellent customer service, and perform well against a range of other customer metrics, including the number of complaints and complaint handling. We understand the challenges we face to maintain performance, as set out above, but are confident that through the innovative improvements outlined we can maintain upper quartile performance in PR24 irrespective of methodology changes. We have therefore set an ambitious target of being the industry leader in C-MeX.

Our proposed performance commitment levels for PR24 are set out in Table 3:

Table 3: Proposed Performance Commitment Level: C-MeX

C-MeX	2025-26	2026-27	2027-28	2028-29	2029-30
Proposed PCL	Industry leader	Industry leader	Industry leader	Industry leader	Industry leader

B. Developer Measure of Experience (D-MeX)



The developer services measure of experience is designed to incentivise us to provide an excellent customer experience to developer services customers, including small and large property developers, self-lay providers and those with new appointments and variations (NAVs). These customers can also include residential customers that have new mains connections installed.

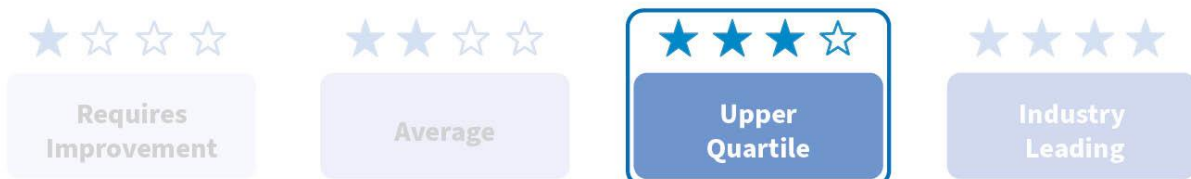
It came into effect as a common performance commitment from 1 April 2020.

Each company receives a D-MeX score based on two components:

- A qualitative component – a score measuring the performance of the company in a satisfaction survey of developer services customers.
- A quantitative component – a score measuring the performance of the company across selected Water UK metrics.

Both survey scores contribute equally to the overall D-MeX score for each company. The score is out of 100.

Current and Past Performance



Rating = Upper quartile position in every year

Table 4 sets out our recent performance. We have performed very well on D-MeX to date, always within the Upper Quartile within the industry.

More information on our current and past performance is set out in PRT12: Accounting for Past Performance.

Table 4: D-MeX performance in AMP7

D-MeX	2020-21	2021-22	2022-23
Score	89.20	90.56	91.96
Industry position	3 rd	3 rd	2 nd

Challenges to Maintaining Performance

We are proud to have delivered Upper Quartile performance for D-MeX throughout AMP7 and expect to perform well in AMP8. However, we also expect other water companies to look to improve, making maintaining our Upper Quartile position an ambitious challenge.

We will also make sure we clearly understand any changes to the D-MeX methodology, so that we continue to target our high performance towards the areas of service that developers, self-lay providers (SLPs) and New Appointments and Variations (NAVs) feel are most important.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

In a dedicated developer engagement session, held collaboratively with other South-East water companies, developers were generally happy with the service we provide, but recommended the following improvements to enhance our service:

- Increased staff numbers to provide uninterrupted service.
- A more user-friendly application process and portal, including real-time self-service.
- Improvements to the Wall-Mounted Meter Box that need to be installed on all new properties.

To ensure that we continue to meet the needs of developers, SLPs and NAVs, we are starting to hold account management meetings to understand their concerns and where service can be improved. Responding to feedback from the recent developer engagement session we will be:

- Upgrading our website and online portal to allow customers to make informed decisions.
- Streamlining the application process, including enabling customers to self-serve if desired.
- Improving the inspection and connection process to remove unnecessary duplication and wasted time, building upon industry best practice and advice from customers.
- Increasing staffing levels, through both additional resources and multi-skilling staff from other areas of the business to provide a more resilient service.
- Developing an effective environmental incentive that promotes water efficiency and allows developers to build sustainable new homes that benefit society and enhance their reputation, without financial concern.
- Improving the Wall-Mounted Meter Box (an innovation that reduces leaks on fittings connecting properties to our water mains) through discussions with the current provider and exploring alternative options.

We do not expect any enhancement investment expenditure to improve our D-MeX score.

PR24 Performance Commitment Level



Target = Maintain our upper quartile position in D-MeX

As D-MeX is a relatively new measure, Ofwat are currently reviewing the effectiveness ahead of PR24. There is an ongoing consultation and Ofwat will publish an updated methodology as part of PR24 final determinations in December 2024.

Nonetheless, we pride ourselves on our excellent customer service, and perform well against range of other developer service metrics. We are therefore confident of upper quartile performance in PR24 irrespective of methodology changes and improvements expected from other water companies.

Our proposed performance commitment levels for PR24 are set out in Table 5:

Table 5: Proposed Performance Commitment Level: D-MeX

D-MeX	2025-26	2026-27	2027-28	2028-29	2029-30
Proposed PCL	Upper quartile	Upper quartile	Upper quartile	Upper quartile	Upper quartile

C. Business Customer and Retailer Measure of Experience (BR-MeX)



The opening of the business retail market in April 2017 afforded around 1.2 million eligible business customers in England the ability to choose their provider of water and wastewater retail services.

Since market opening the role of wholesalers in the business sector has changed, with retailers taking on the provision of retail activities. Retailers are now responsible for customer-facing activities but wholesalers have retained responsibility for providing wholesale services to business customers. This means we continue to play a key role in facilitating the delivery of a good business customer experience.

Ofwat’s PR24 final methodology set out its decision to include BR-MeX as a new common performance commitment for the English (wholesale) water companies to capture both the experience of end business customers and the experience of retailers when engaging with wholesalers. BR-MeX will focus on incentivising wholesalers to provide an excellent customer experience to business customers and to retailers in the market.

Ofwat, in collaboration with MOSL, will pilot all aspects of the B-MeX and R-MeX surveys in 2023-2024, followed by a shadow run in spring 2024 to ensure the incentive mechanism is robust for implementation and commencement from April 2025.

Current and Past Performance



Rating = n/a (new measure)

Challenges to Maintaining Performance

Our main challenge will be business customers not understanding the retail market and who is responsible for the wholesale and retail aspects of their water supply. Since the opening of the retail market, several businesses have mistakenly thought Portsmouth Water was their retailer, and this has led to confusion and inefficient query resolution. We expect this to be a challenge for all companies, however our relatively low profile as a smaller water only company means this issue is more prominent to us.

There is currently a significant disparity in the number of complaints per business between retailers, with the most prominent retailer in our area (Castle Water) scoring poorly on both written complaints and complaints to CCW in CCW's Business Customer Complaints report 2022-23. As business customers often confuse us with their retailer, the poor performance of retailers in our area is likely to result in businesses scoring us low through misunderstanding our role as a wholesaler.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

To mitigate against business customers not understanding the retail market, we have started a communications campaign to advise on the difference between the wholesale and retail service. This has included exhibiting at local business conferences among a range of additional communication.

We will also be maximising the benefit of our Reducing Customer Side Demand (Universal Smart Metering) programme, by sharing data obtained through the deployment of smart technology on to all business customers' meters. This will enable both retailers and business customers to benefit from a greater understanding of usage, resulting in both water efficiency and cost savings. In addition, we are also considering enhancing our leak allowance offering to business customers to help businesses who are financially struggling. Before AMP8, we will have completed a water efficiency and leakage reduction pilot with 20 high-use businesses to inform our smart metering offer for AMP9 and beyond.

We also expect our lead strategy will positively impact views from our local school customers.

More information on our Reducing Customer Side Demand (Universal Smart Metering) programme is in PRT07.06: Reducing Customer Side Demand (Universal Smart Metering) and more information on our lead strategy is in PRT07.07: Lead Strategy Implementation.

We have also listened to recent retailer feedback obtained through ongoing meetings and yearly consultations and will be offering alternative credit arrangements and working hard to improve our query response times through additional resourcing, two areas where retailers have specifically asked for improvements to be made.

PR24 Performance Commitment Level



Target = Become a consistent upper quartile performer in this new metric

Whilst the BR-MeX methodology has yet to be established, and we expect challenges through low retail market understanding, we pride ourselves on our excellent customer service to all our customers. We therefore set ourselves a stretching target of upper quartile performance.

Our proposed performance commitment levels for PR24 are set out in Table 6:

Table 6: Proposed Performance Commitment Level: BR-MeX

BR-MeX	2025-26	2026-27	2027-28	2028-29	2029-30
Proposed PCL	Upper quartile	Upper quartile	Upper quartile	Upper quartile	Upper quartile

D. Water supply interruptions



This performance commitment is designed to incentivise us to minimise the number and duration of supply interruptions to customers.

This performance commitment measure is the average number of minutes lost per customer for the whole customer base, for interruptions that lasted three hours or more.

The measure has been used for several years; however, a consistent methodology was used to report from 2016-17 onwards.

Current and Past Performance



Rating = 1st place in industry in past three years

Table 7 sets out our recent performance. We have performed very well on Water Supply Interruptions to date, always at least Upper Quartile within the industry and with best performance in the sector for the past three years.

More information on our current and past performance is set out in PRT12: Accounting for Past Performance.

Table 7: Water supply interruptions performance in AMP7

Interruptions to Supply	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Score	04:09	04:17	03:54	03:22	02:49	02:21	02:21
Industry position	2 nd	2 nd	1 st	3 rd	1 st	1 st	1 st

Challenges to Maintaining Performance

Historic investment in the network has put us in a strong position regarding the distribution of water from our service reservoirs, but we have identified resilience concerns should we need to isolate service reservoirs in future. We have mitigation in place to protect customers in the event of a service reservoir needing to be isolated, but we expect these measures to be insufficient after 2030 as our water supply headroom reduces due to abstraction reductions and additional water supplies to Southern Water.

Without further enhancement investment in the provision of service reservoir bypass facilities, customers could experience increased interruptions to supply, as we would not have the ability to maintain supplies whilst certain service reservoirs were isolated for a long period of time. Through our assessment of the risk, we have calculated that interruptions to supply could increase by 44 minutes and 41 seconds from 2030 onwards.

More information on the need for service reservoir by-pass facilities can be found in PRT07.04: The Isolation and Recovery of Service Reservoirs and PRT18: Long Term Delivery Strategy 2025-2050.

Our previous investment in renewing mains and network resilience has helped us reach industry leading performance. However, we do still have some areas of vulnerability where a burst main or water quality incident could result in a large area going without water for over three hours. We have assessed that interruptions to supply could increase by one hour in a reasonable worst-case scenario where a large urban area is without water for six hours. Whilst this risk is very low it cannot be completely removed.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

In recent years, we have benefited from the installation of three large Pressure Reduction Valves (PRVs), each optimising pressure in our largest urban areas of Portsmouth, Gosport, and Bognor Regis. Optimising pressure has numerous benefits to the network and customers, with increased asset life, lower leakage, and fewer interruptions to supply.

Optimising pressure for a large area through a single valve has significant installation, logging and maintenance cost savings compared to the installation of multiple valves. The disadvantage of this strategy is that in the rare occurrence that the PRV fails, a larger area is affected at one time. PRV failures can lead to sudden changes in pressure, known as pressure transients, which can lead to bursts on the network.

The three PRVs have now reached the end of their viable working life and have begun to fail more frequently. Replacing these PRVs is a difficult task that requires careful planning and risk mitigation. One PRV will be replaced in 2024-25, whilst the other two are planned for 2025-26 and 2026-27. It is calculated that the replacement of each PRV will result in a reduction in our interruptions to supply figure of two seconds, resulting in a total benefit of six seconds.

As well as PRV replacements, we can also expect an 18% reduction in bursts from our calmer networks strategy, facilitated through our Digital Twin. This will result in a total reduction to our interruptions to supply

figure of 24 secs. We expect the full benefit to be realised by 2034-35 and most of that benefit to be backloaded into AMP9; however, we forecast a benefit of 3 seconds in AMP8.

We have also recently introduced a collaborative, co-located, agile repair contract with Cappagh. This has integrated the repair function into a wider infrastructure programme and resulted in improved planning of work that reduces costs and customer disruption. The collaborative partnership is also expected to result in a step forward in repair innovation in the future, with benefits expected to be realised from 2030 onwards.

PR24 Performance Commitment Level



Target = Maintain our position as industry leader in all years

We are proud of our industry leader performance in this area, which has been supported by historically high level of mains renewal (compared to other UK water companies) and significant investment in network resilience. This investment has resulted in comparatively low levels of bursts, whilst also enabling us to restructure the network to ensure only a minimum number of customers are affected when bursts do occur.

In our “Your Choices for our Future” consultation, customers and stakeholders told us that they support spending more to keep our interruptions to supply levels as the most reliable in the country, with a service comparable to today.

For more information on this research, see PRT03: Engaging and Understanding our Customers and Communities.

We have therefore set our proposed performance commitment as maintaining our industry leading service in this area whilst also continuing to maximise benefits from base expenditure. This aligns with our 25-Year Vision to maintain our leadership position in network management through the lowest mains repairs, the best interruptions performance, low leakage and a genuine smart network supported by a Digital Twin.

We forecast that improvements through base expenditure will result in a reduction of 10 seconds by 2029-30, against an already industry leading target. Further reduction is expected in 2030-31 onwards from innovative new repair techniques adopted as part of the collaborative partnership with Cappagh.

Our proposed performance commitment levels for PR24 are set out in Table 8:

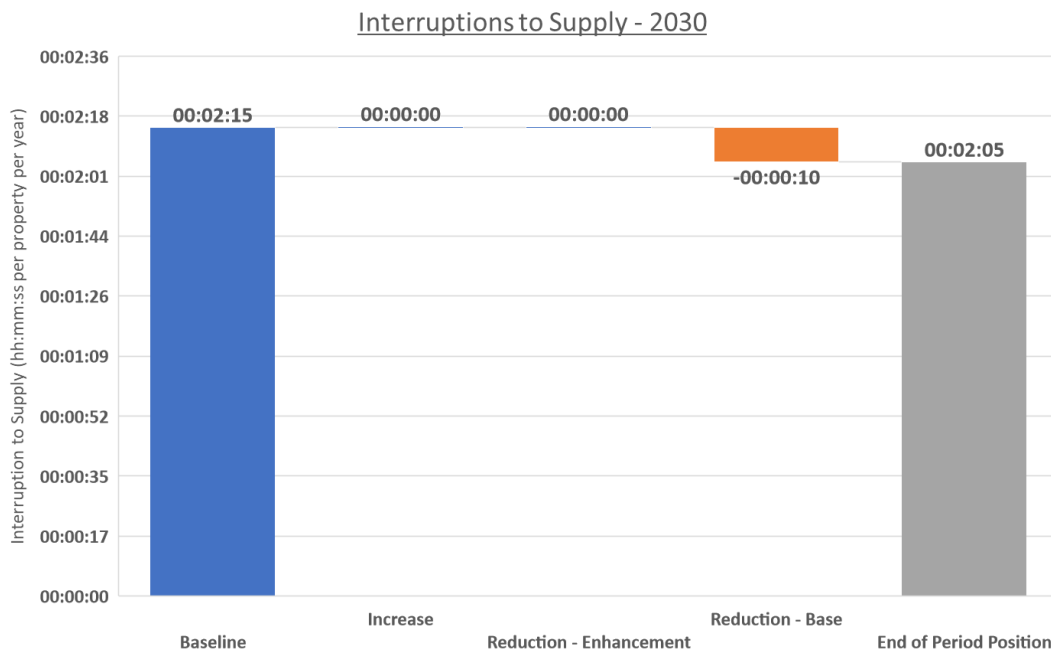
Table 8: Proposed Performance Commitment Level: Interruptions to Supply

Interruptions to Supply	2025-26	2026-27	2027-28	2028-29	2029-30
Baseline	02:15	02:15	02:15	02:15	02:15
Reduction through Base Expenditure – PRV Renewals	00:04	00:06	00:06	00:06	00:06

Reduction through Base Expenditure – Digital Twin	00:00	00:00	00:01	00:03	00:04
Proposed PCL – Interruption per property	02:11	02:09	02:08	02:06	02:05

Figure 1 outlines improvement in performance attributed to enhancement and base expenditure. For interruptions to supply, all improvements will be through base expenditure.

Figure 1: Performance Improvement through Enhancement and Base Expenditure



E. Compliance Risk Index (CRI)



The Compliance Risk Index (CRI) is a measure designed to capture the risk arising from treated water compliance failures, and it aligns with the current risk-based approach to regulation of water supplies used by the Drinking Water Inspectorate (DWI).

It came into effect as a common performance commitment from 1 April 2020, however reporting first started with the DWI in 2017-18.

All compliance failures are assessed by DWI using the provisions of the Water Industry Act 1991. In doing so, DWI has regard to its published Enforcement Policy, and it also follows the principles of “better regulation” to scrutinise company performance based on their risk of failing to meet the requirements of the Regulations.

The CRI measure includes elements relating to:

- The significance of the parameter failing the standards in the Regulations (the Parameter score).
- The cause of the failure; the manner of the investigation of the failure by the company; and any mitigation put in place by the company (the Assessment score).
- The location of the failure within the supply system considering the proportion of the company’s consumers affected.

Current and Past Performance



Rating = Better than industry average in most years

Table 9 sets out our recent performance. Over the past six years, we have achieved upper quartile performance three times, including the best industry performance in 2019-20.

Table 9: CRI performance in AMP7

CRI	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Performance	0.01	1.78	0.03	0.57	3.74	1.24
Industry position	2 nd	5 th	1 st	2 nd	10 th	5 th

We have a high CRI score for 2018-19 due to six compliance failures outlined in Table 10. The zonal score was impacted by the fact that the failure was determined by the DWI to impact the whole zone rather than a single property for two of the failures.

Table 10: 2018-19 performance breakdown

CRI	CRI Score	Details
Zonal	0.95	Northbrook Supply Zone (Odour); Portsmouth North Supply Zone (Lead); Bognor Supply Zone (Coliform)
WTW	0.53	Lovedean Treated (Coliform)
Reservoir	0.30	Whiteways Lodge Reservoir (Coliform); Whiteways Lodge Reservoir (E. coli)
Total CRI	1.78	

A high CRI score for 2021-22 was due to nine compliance failures outlined in Table 11. The zonal score was impacted by the fact that failure was determined by the DWI to impact the whole zone rather than a single property for two of the failures. In addition, we had a DWI Notice covering Aluminium in the zones served by the River Itchen Treatment Works, which also impacts the CRI score through the application of a multiplier. We subsequently invested an additional £3.5m to deliver reductions in Aluminium in 2022-23.

Table 11: 2021-2 performance breakdown

CRI	CRI Score	Details
Zonal	3.74	Hoads Hill East Supply Zone (Aluminium); Nelson Supply Zone (Aluminium); Nelson Supply Zone (Nickel); Hoads Hill East Supply Zone (Odour); Farlington South Supply Zone (Nickel); Farlington South Supply Zone (Nickel); Nelson Supply Zone (Odour); Littleheath Supply Zone (Coliform); Littleheath Supply Zone (Coliform)

WTW	0
Reservoir	0
Total CRI	3.74

A high CRI score for 2023-24 is expected due to eight compliance failures outlined in Table 12. The WTW score has been impacted by the fact that failure was observed at our largest treatment works which has a significant impact on the CRI score. The output from Farlington WTW represents approximately 30% of the total daily volume supplied by the company. This incident did not affect any customers and mitigation has been put in place, with further mitigation as part of AMP8 expenditure.

Table 12: 2023-4 forecast performance breakdown

CRI	CRI Score	Details
Zonal	1.08	Hoads Hill North Supply Zone (Coliform); Hoads Hill North Supply Zone (E. coli); Hoads Hill North Supply Zone (Lead); Lavant South Supply Zone (Coliform); Walderton Supply Zone (Coliform); Littleheath Supply Zone (Coliform)
WTW	4.56	Farlington Treated (Turbidity); Eastergate Treated (Turbidity)
Reservoir	0	
Total CRI	5.64	

Challenges to Maintaining Performance

The CRI measure is heavily dependent on the location of any failure and therefore the number of customers affected. We have a highly interconnected network, which enables customers to be supplied using water from different sources, thus minimising the risk of interruption of supply. The risk with an interconnected water supply is that if there is a water quality failure, a higher proportion of customers might be affected.

Within our Lovedean catchment, nitrate levels have risen and are expected to continue to rise such that we will not be able to supply drinking water below the prescribed and statutory limit of 50 mg/l. To reduce risk of high levels of nitrates at our Lovedean Water Treatment Works, the most cost-effective solution is to install further connectivity between areas and blend water from Lovedean with water from other areas that have much lower levels of nitrates. The blended water is safe to drink, and the solution is significantly cheaper than installing nitrate removal at Lovedean instead. However, whilst the increased network connectivity will improve water quality and provide further mitigation against loss of supply, it will increase the risk of a higher CRI score should there be a water quality failure.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

We can expect improvements in our CRI score after completing investment through base expenditure on replacing and optimising our sampling pipes at our water treatment works. To ensure the highest level of water quality, we constantly monitor and sample water at our works through dedicated connected sampling pipes. This sampled water is tested to ensure it is compliant and fit to drink. In very rare occurrences, the conditions within our sampling pipes can lead to bacteria growth and result in a failed water quality test. Whilst there is no risk of non-compliant water being put into supply, the works are paused as a precaution and further tests completed before the works is restarted. Investment into improving the sampling pipes is expected to be completed by the end of 2028-29.

We have also identified a variety of process and procedure improvements through our Pure Excellence programme. This has been a major project for us with investment of £3.6m in AMP7 and AMP8, which includes a newly created team of industry specialists, demonstrating how seriously we consider improvements to water quality. Key benefits of Pure Excellence include:

- A revised production operating model based on the Drinking Water Safety Plan approach which sets out the direction and requirements for the production and supply of wholesome water to our customers.
- Improved job descriptions for all in production and support services to capture what they do and what their specific responsibilities and accountabilities are.
- Fully documented details of the required levels of knowledge, skills and competencies for each role and a programme of training and support to help all existing and new staff achieve and demonstrate the identified competencies required for their role.
- A new induction programme for new starters or staff who have new roles within the business, ensuring they receive the identified training for the role.
- The transformation of existing policies and procedures to ensure they provide support for the end-to end process flow for each activity and are up to date and fit-for-purpose.
- The provision of a document control system to provide access to all policies, procedures, and other essential documentation.

We expect the benefits of the programme to help us in consistently achieving a CRI score below our current deadband of 2, before improving performance further towards the end of AMP8. In customer research from both us and Ofwat, our customers rated water quality as an important area where they expect high quality water but had no concerns about existing quality. They supported investment in improvements to maintain the current reliable level of water supply.

For more information on this research, see PRT03: Engaging and Understanding our Customers and Communities.

We will also continue to look to innovate to make further improvements in water quality and mitigate against future risks and are actively involved in several innovation projects. Improving and maintaining water quality features heavily in our Innovation Roadmap, which is shown in Figure 8 in the Leakage section.

For more information on our innovation strategy, see PRT10: Innovation to Enhance Our Service Delivery.

PR24 Performance Commitment Level



Target = Upper quartile performance in all years

We fully understand the importance of maintaining high-quality water and are proud of our strong previous performance in this area. However, we know that even a single compliance failure is too many and therefore target a CRI score of zero.

Whilst we aim for zero water quality compliance failures, we agree with Ofwat's position to introduce a deadband to mitigate against an unacceptable level of downside risk. For PR19, the deadband was set at 2. As Drinking Water Safety Plans (DWSPs) drive continual improvements to water quality, we feel it is reasonable to expect the deadband to reduce. We have identified investment for the early years of AMP8 which will result in improvement to our CRI performance in 2028-29 and 2029-30.

We estimate that improvements through base expenditure will result in a reduction of 0.5 by 2029-30, against the current CRI deadband of 2. Further reduction is expected in AMP9 onwards through further DWSP improvements.

We do not expect performance improvements through enhancement expenditure.

Our proposed performance commitment levels for PR24 are set out in Table 13:

Table 13: Proposed Performance Commitment Level: CRI

CRI	2025-26	2026-27	2027-28	2028-29	2029-30
Baseline	2	2	2	2	2
Reduction through Base Expenditure – DWSP Improvements	0	0	0	0.25	0.35
Reduction through Base Expenditure – Sampling Pipes	0	0	0	0	0.15
Proposed PCL Deadband	2	2	2	1.75	1.5

Figure 2: Performance Improvement through Enhancement and Base Expenditure



Figure 2 outlines improvement in performance attributed to enhancement and base expenditure. For compliance risk index, all improvements will be through base expenditure.

F. Customer Contacts about Water Quality



This performance commitment incentivises us to reduce the number of water quality contacts from customers relating to taste, odour, and appearance.

A reduction in the number of contacts relating to appearance, taste, and odour of drinking water indicates an increase in the acceptability of water to customers and a reduction in disruption and other negative social impacts for customers.

The number of times the company is contacted by consumers due to the taste and odour of drinking water or because the drinking water is not clear, is reported per 1,000 population.

Current and Past Performance



Rating = Top 2 in industry in all previous years

Table 14 sets out our recent performance. We have had the lowest number of contacts related to water quality in the industry for the past five years. This is due to historically high levels of mains replacement that have included targeting mains at risk of producing poor water quality, and optimising our network to minimise conditions where poor water quality can occur.

Table 14: Industry Performance for Water Quality

Customer Contacts about Water Quality	2017-18	2018-19	2019-20	2022-21	2021-22	2022-23
Performance (contacts per 1,000 population)	0.57	0.44	0.39	0.42	0.40	0.42
Industry position	2 nd	1 st	1 st	1 st	1 st	2 nd

More information on our current and past performance is set out in **PRT12: Accounting for Past Performance**.

Challenges to Maintaining Performance

Closed valves can lead to poorer water quality, as there is more chance of stagnated water accumulating next to a valve which is closed. Valves are closed to create District Meter Areas (DMAs), which are a specific section of a water distribution network used for the purpose of measuring and monitoring water flow, consumption, and other relevant parameters. These DMAs track the amount of water entering and leaving the area. The smaller the DMA the more effective it is for finding leaks, but this results in greater number of closed valves on the network.

Historically we have optimised the size of DMAs to facilitate the most effective balance between finding leaks and minimising the number of closed valves. To reduce leakage, it has been identified that the installation of additional DMAs is the most cost-effective solution to maintain water supplies in the future. Whilst the new DMAs will be designed to minimise the number of closed valves, any new closed valve provides a challenge to performance. Although it is expected that the new DMAs will not increase contacts due to good design and flushing processes, this remains a risk to performance.

Our Reducing Customer Side Demand (Universal Smart Metering) programme will likely result in additional contacts to the business, as we proportionally get a higher frequency of contact from metered customers. Whilst we expect that the additional contact to be predominantly related to billing queries, we do expect a potential impact to water quality.

More information on our Reducing Customer Side Demand (Universal Smart Metering) programme can be found in **PRT07.06: Reducing Customer Side Demand (Universal Smart Metering)**.

Efficiencies, Innovations and Alignment to Enhancement Cases

Since 2011 there has been a reduction in both taste and odour contacts, and appearance contacts which has resulted in our industry leading performance.

Taste and odour contacts have reduced by 21% since 2011 and we now have only 2.0 contacts per 1,000 people compared to industry average of 2.5. Our reduction has been achieved through mains replacement and network optimisation. Almost all contacts we now see are related to customer side plumbing issues, and we do not expect to make any further improvements without costly replacements of customer assets that are not included in our plans.

Appearance contacts have reduced by 18% since 2011 and we now have only 1.7 contacts per 1,000 people compared to an industry average of 8.5. This has been achieved through improved flushing programmes and equipment that has helped technicians understand and mitigate the impact of network operations. Most contacts we now see are related to air, resulting from low pressure caused during periods of peak demand. The

introduction of our Reducing Customer Side Demand (Universal Smart Metering) programme, especially the potential for innovative tariffs that disincentivise water usage at peak times, will enable a small reduction in contacts related to air. This will offset potential increased in contacts outlined in the challenges to maintaining performance above.

PR24 Performance Commitment Level



Target = Be the industry leader in all years

We fully understand the importance of maintaining high-quality water and are proud of our strong previous performance in this area.

In customer research from both us and Ofwat, our customers rated water quality as an important area where they expect high quality water but had no concerns about existing quality. They supported investment in improvements to maintain the current reliable level of water supply.

For more information on this research, see PRT03: Engaging and Understanding our Customers and Communities.

We have identified further improvements we can make in this area through base expenditure that will mean that contacts will not increase, despite higher population. This will result in a reduction of 0.01 contacts per 1000 population by 2029-30, against our current industry leading performance of 0.42.

Our proposed performance commitment levels for PR24 are set out in Table 15:

Table 15: Proposed Performance Commitment Level: Water Quality Contacts

Water Quality Contacts	2025-26	2026-27	2027-28	2028-29	2029-30
Baseline	0.42	0.42	0.42	0.42	0.42
Reduction through Base Expenditure – Efficiency (no increase in calls despite increased population)	0.00	0.01	0.01	0.01	0.01
Proposed PCL - Number of Water Quality Contacts per 1,000 population	0.42	0.41	0.41	0.41	0.41

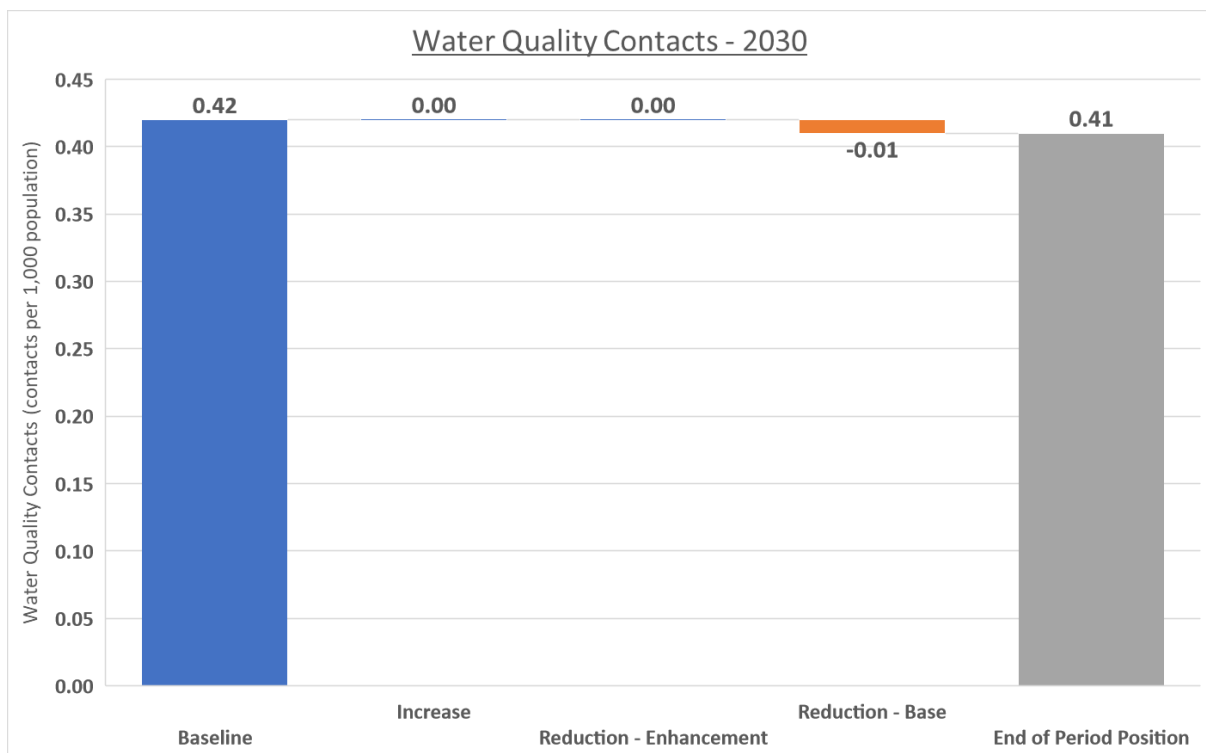
Figure 3: Performance Improvement through Enhancement and Base Expenditure

Figure 3 outlines improvement in performance attributed to enhancement and base expenditure. For water quality contacts, all improvements will be through base expenditure.

G. Biodiversity



This performance commitment is designed to incentivise us to conserve and enhance biodiversity in the exercise of its functions.

The benefits of improved biodiversity are reduced extinction risk, increased resilience to climatic and water resource changes, and enhancements in ecosystem service provision such as water quality, localised climate regulation, pollination, clean air, and physical and mental health benefits.

This performance commitment measures the net change in the number of biodiversity units on nominated land per 100km² of land in the company's area. We can, in consultation with relevant stakeholders, nominate areas of company-owned land as well as other land where habitat is improved in the process of us carrying out our functions.

Current and Past Performance

Rating = n/a (new measure)

Biodiversity is a new common performance commitment for PR24. However, when considering past biodiversity metrics, we have performed strongly and this means that a high proportion of our land, especially sites designated as priority habitat, are in good ecological status.

We positively manage all our priority habitat sites to encourage and enhance biodiversity, which is documented and driven by Biodiversity Management Maps (BMMs). Each year, both BMMs and sites are audited to demonstrate that through good stewardship, positive management and completion of actions, there has been no reduction in biodiversity. In 2022-23 we completed 99.7% of actions required, significantly higher than our 90% target.

In 2020-21 we introduced a Biodiversity Grant Scheme, which provides £50,000 per annum towards environmental improvement projects in the habitat network surrounding our land, such as biodiversity and habitat improvements, invasive non-native species control, and species and habitat survey projects. After three years, we had granted £148,565.50 and we expect to reach our target of £250,000 by 2024-25. Our website has details of successful case studies which encourage future applications and to continue to support biodiversity in the wider community we will increase our Biodiversity Grant Scheme to £100,000 per annum through base expenditure from 2025-26.

More information on our current and past performance is set out in PRT12: Accounting for Past Performance.

Challenges to Maintaining Performance

The challenges to achieving biodiversity net gain (BNG) are very much based on the success of planting, maintenance, and the weather.

Inspections will be carried out in successive years and if any planting has failed, this will need to be re-done and there will be a set back with any gains that year.

The four-year cycle to undertake baseline and report BNG metrics is a very short period to create identifiable net gain. BNG was developed for planning applications and the period for identifiable gains is a minimum 10 years. The short cycle represents a risk to performance, as exogenous factors such as weather will have a significant impact on BNG between one year and the next.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

All our inspections and maintenance work are currently carried out by internal resources. In future we propose to use external companies to bring in improved efficiencies and innovative thinking, as certain skills and equipment required are only currently available from external experts.

We have many priority habitats already which are all in good condition and under the performance commitment we will be maintaining them as no-deterioration, along with all other sites. However, where possible we will go above no-deterioration and improve our sites where it is cost-effective to do so.

We are also looking at decarbonising the equipment we use by having battery operated machinery where it is financially beneficial to do so. We will also use drones to carry out surveys on our larger sites.

We do not expect any BNG from our enhancement investment programmes but through including a member of the biodiversity team on projects, we will ensure that these schemes do not cause deterioration to biodiversity at our sites. This will also enable us to adapt quickly and achieve biodiversity net gain should the opportunity arise.

PR24 Performance Commitment Level



Target = Achieve maximum biodiversity net gain potential on sites proposed, whilst ensuring no deterioration in biodiversity at all sites

As outlined in the current and past performance section, we have a history of good management on our sites that has promoted biodiversity. The selection of sites for the PR24 performance commitment is therefore focused on a small number of sites in need of improvement and which would benefit from feasible interventions.

Selection criteria considered included:

- **Size** – small sites under one hectare were excluded due to the lack of impact expected from interventions.
- **Operational use requirements** – many water treatment works are not suitable for certain interventions as they are in constant operational use, for example those that are regularly dug will be unsuitable for planting.

- **Management constraints** – existing management on some of our sites would limit the opportunity for biodiversity enhancement; for example, hatches and covers that need to be routinely cleared of vegetation and accessed.
- **Potential for enhancement** – the overall potential for enhancement was considered at the possible sites. Those sites with more potential, such as lack of past management, or opportunity for intervention were prioritised.
- **Connectivity** – those sites with good connectivity to wildlife corridors and other sites were prioritised due to the multiple benefits to biodiversity of good connectivity.
- **Feasibility** – the logistical feasibility of each site was considered. This included the potential to get machinery access for interventions to be managed and implemented.

All sites have been assessed through surveys, using information gathered from site visits conducted at appropriate times by an appropriately qualified person. The initial surveys used the baseline pre-intervention assessment of the Natural England joint publication Biodiversity Metric 4.0 of March 2023. These surveys have also been audited by Natural England.

Following the criteria outlined above, three sites were selected to take forward for biodiversity improvements for PR24. The three sites selected are Littleheath Reservoir, Soberton Water Treatment Works, and Walderton Water Treatment Works. The selection of these sites was supported by Natural England.

All sites will continue to be evaluated against these criteria and further sites might be selected in future. However, at this stage sites were not chosen due to the following reasons:

- Assessed to be already in good ecological status and have very limited opportunity for additional biodiversity net gain. We commit to maintaining the good status of these sites, ensuring no deterioration through ongoing maintenance regimes that are regularly audited.
- Assessed to be not in good ecological status, but improvements would not result in biodiversity net gain. Whilst not considered for the Performance Commitment, we commit to enhancing biodiversity at these sites where there is a benefit to do so, in line with our 25-Year Vision commitment to improve biodiversity at all sites.

To ensure that the Performance Commitment is based on accurate information, our proposed target only includes the biodiversity net gain from the three sites surveyed. We will therefore provide additional updates to Ofwat after further site surveys so that our Performance Commitment can be updated accordingly.

Each site selected has a list of interventions that will be completed within four years of the baseline survey being completed, with all costs determined as base expenditure. A summary of interventions that will be completed at the three sites are outlined below:

- Cut and collect grassland management (all three sites).
- Reseeding grassland (all three sites).
- Growing local provenance seeds for plug planting (all three sites).
- Hedgerow improvements (all three sites).
- Orchard planting (Soberton only).

The biodiversity net gain for each site is set out in Table 16, which show that for the three sites chosen, we expect an average biodiversity improvement of 19.5%.

Table 16: Biodiversity Net Gain per Site

Biodiversity Net Gain	Littleheath Reservoir	Soberton WTW	Walderton WTW	TOTAL
Year Surveyed	2022	2023	2023	
Area Size (km ²)	0.027	0.019	0.012	0.058
Base Biodiversity Units	10.17	10.76	6.37	27.30
Target Biodiversity Units	12.53	11.56	8.53	32.62
Target Biodiversity Unit Net Gain	2.36	0.80	2.16	5.32
Biodiversity Improvement from Baseline	23.2%	7.4%	33.9%	19.5%
Target Biodiversity Unit Net Gain / 100km ² of land in the water supply area (864 km ²)	0.27	0.09	0.25	0.62

The different survey years mean that we expect the biodiversity net gain to be staggered over the first three years of AMP8.

Our proposed performance commitment levels for PR24 are set out in Table 17:

Table 17: Proposed Performance Commitment Level: Biodiversity

Biodiversity Net Gain	2025-26	2026-27	2027-28	2028-29	2029-30
Proposed PCL - Target Biodiversity Unit Net Gain / 100km ² of land in the water supply area (864 km ²)	0.38	0.53	0.62	0.62	0.62

Figure 4: Performance Improvement through Enhancement and Base Expenditure

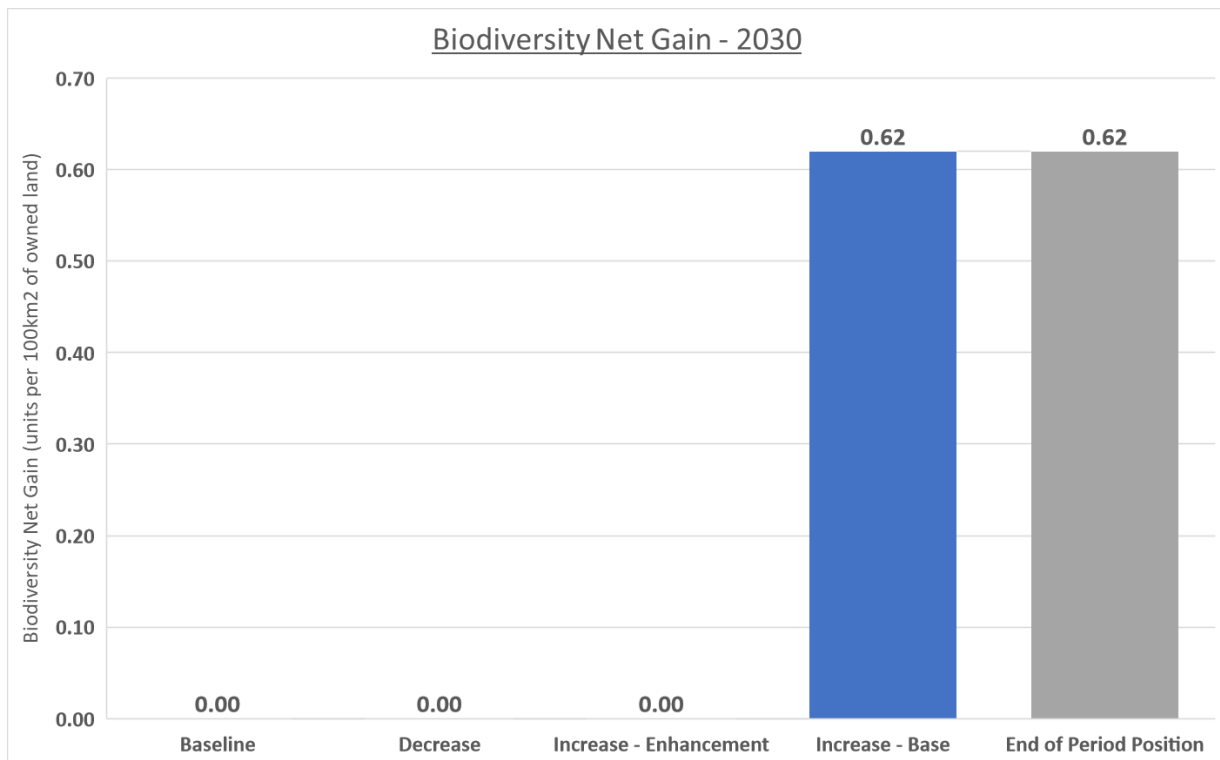


Figure 4 outlines improvement in performance attributed to enhancement and base expenditure. For biodiversity net gain, all improvements will be through base expenditure.

The significant range in the number and type of sites owned by water companies mean that comparisons between companies on this metric are not meaningful. We therefore feel that demonstrating ambition to achieve our own target, agreed with Natural England, is more realistic.

While the environment and biodiversity are topical, they are only a medium-level priority for our customers. This is backed up by Ofwat research. However, given the relatively low investment required, customers support increasing our Biodiversity Grant Scheme and improving the environment.

For more information on this research, see PRT03: Engaging and Understanding our Customers and Communities.

H. Operational Greenhouse Gas Emissions (Water)



This performance commitment incentivises the company to reduce greenhouse gas emissions arising from its operational activities.

In incentivising reductions in company operational greenhouse gas emissions, this performance commitment will also support attainment of the UK Government and Welsh Government's 2050 and interim net zero targets.

Greenhouse gas emissions are expressed in tonnes CO₂e (carbon dioxide equivalent) based on both the change in tonnes CO₂e and the percentage change since 2021-22.

Relevant emissions are calculated using the UK Water Industry Research Ltd (UKWIR) Carbon Accounting Workbook and include selected scope 1 to 3 emissions.

The operational greenhouse gas emissions metric is a new common performance commitment for PR24; however, we did have a similar bespoke performance commitment for PR19.

Current and Past Performance

Rating = Significantly outperforming our PR19 target of 5% reduction by 2024-25.

Whilst there is no comparative data between companies, Table 18 shows that we are currently significantly outperforming our PR19 bespoke performance commitment of a 5% reduction by 2025 from a 2019-20 base. This performance commitment differs from PR24 as it includes reductions in emissions from location-based improvements, such as purchasing electricity on a green tariff, and different scope 1 to 3 criteria.

Table 18: PR19 performance on Operational Greenhouse Gas Emissions

Operational GHG Reduction	2020-21	2021-22	2022-23
PR19 Performance (reduction from 2019-20 base)	24.7%	29.8%	15.2%

Past performance related to the PR24 Performance Commitment, set out in Table 19, shows an increase from 2017-18 to 2022-23.

Increased Distribution Input due to changes in working patterns through Covid increased emissions in 2020-21 compared to previous years.

The increase in emissions in 2022-23, despite no further increase in Distribution Input, relates to the need to run sites less optimally due to changes in water use throughout the day and year. We have seen both higher daily demand and higher peak demand in evenings during the hot summer period than we have seen before. Increased demand at peak periods means abstracting more from sites that are less efficient and would not normally be used as often, resulting in higher emissions per Distribution Input.

More information on our current and past performance is set out in PRT12: Accounting for Past Performance.

More information on the effect of Covid on household usage can be found in PRT05.01: Artesia Review of PCC.

Table 19: Previous year's Operational Greenhouse Gas Emissions performance using PR24 methodology

Operational GHG Reduction	2018-19	2019-20	2020-21	2021-22	2022-23
Tonnes CO₂e	7660	7431	7916	7551	8439
Reduction from 2021-22 baseline	-1.44%	1.59%	-4.83%	Baseline	-11.76%
Distribution Input (MI/d)	174.51	170.39	180.57	178.81	179.28
Kg CO₂e per Distribution Input	120.26	119.16	120.11	115.70	128.96

Challenges to Maintaining Performance

We will continue to see higher peak demand for water in future. Climate change will lead to more periods of hot weather, and this will make optimising our energy consumption difficult. Whilst our Reducing Customer Side Demand (Universal Smart Metering) programme will reduce demand over the next 10 years, we expect a challenge in the first years of AMP7 whilst meter penetration is still low.

We have several enhancement investment cases related to improvements at operational sites. This will bring improved resilience to the sites in the long-term but will result in planned outages in the short-term to make the

changes. Increased outage, especially on energy efficient sites, will lead to a reduction in energy efficiency overall. We plan to mitigate this by completing work outside of peak demand periods, but there will still be an impact.

More information on our enhancement cases can be found in PRT07: Our Investment Plan.

One way to reduce emissions is to move to electric vehicles, something that we have been trialling in AMP7. Whilst we can expect significant cost and emissions savings from moving to electric vehicles in the long-term, currently the higher cost and practical issues related to electric vehicles are a barrier to improvements.

More information on our fleet strategy can be found in PRT04: Delivering for Our Customers and Communities.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

We have set out in our Net Zero Strategy our plans to achieve net zero. Five aspects of the plan will result in a reduction in emissions related to the PR24 Performance Commitment, with numerous other aspects reducing emissions outside of the parameters of the PR24 methodology.

A reduction in emissions through enhancement expenditure will be achieved through the Reducing Customer Side Demand (Universal Smart Metering) programme, where a reduction in both customer usage and customer side leakage will mean less demand for water and therefore reduced energy consumption.

More information on reductions to demand can be found in PRT07.06: Reducing Customer Side Demand (Universal Smart Metering).

All other reductions in operational greenhouse gas emissions related to the PR24 Performance Commitment are associated with base expenditure and include:

- Office energy efficiency through relocating to a new head office.
- Office energy efficiency through upgrades to our network office building.
- Vehicle fuel efficiency aligned to our fleet strategy.
- Operational energy efficiency through assessed improvements to operational assets as they are cost-effectively replaced.

More information on our strategy to reduce emissions can be found in PRT04: Delivering for Our Customers and Communities.

We will also continue to look to innovate to make further reduction to our emissions and are actively involved in several innovation projects. Reducing emissions features heavily in our Innovation Roadmap, which is shown in Figure 8 in the Leakage section.

For more information on our innovation strategy, see PRT10: Innovation to Enhance Our Service Delivery.

PR24 Performance Commitment Level



Target = Reduce emissions by 12.63% from 2021-22 baseline, aligned to our net zero target of 2040.

Customers have told us that they expect water companies to do their bit to tackle climate change and value reductions in emissions. 78% of customers support achieving net zero by using renewable energy. However, concerns were raised over increasing bills to do so, with prioritisation of enhancement spend preferred on other objectives such as water quality and leakage. We therefore have aligned our roadmap so that net zero will not require additional cost from customers, yet remains aligned to delivering net zero by 2040.

For more information on this research, see PRT03: Engaging and Understanding our Customers and Communities.

Our strategy for reducing operational emissions combines elements that relate to the PR24 Performance Commitment and elements outside the methodology, such as market-based reductions and updated grid emission factors. For this reason, our performance commitment target is not comparable with the trajectory of our Net Zero Strategy but we can confirm that the target does align to our net zero by 2040 commitment. Instead, our target for operational emissions for PR24 is 6,597 tonnes of CO₂e, a 12.63% reduction from our 2021-22 baseline.

The different starting points on operational greenhouse gas emissions mean comparisons between companies on this metric are not meaningful. We therefore feel that ambition to achieve our own target, set to align with our ambitious target of achieving our net zero by 2040 ahead of government targets, is more realistic.

Our proposed performance commitment levels for PR24 are set out in Table 20:

Table 20: Proposed Performance Commitment Level: Operational Greenhouse Gas Emissions (Water)

Operational greenhouse gas emissions (reduction from 2021-22 base)	2025-26	2026-27	2027-28	2028-29	2029-30
2021-22 Baseline	7551.00	7551.00	7551.00	7551.00	7551.00
Increase due to climate change	888.00	888.00	888.00	888.00	888.00
Cumulative reduction through enhancement expenditure - Universal Smart Metering programme	462.55	456.17	524.47	578.61	703.27
Cumulative reduction through base expenditure – New Head Office	0.00	0.00	0.00	134.09	134.09
Cumulative reduction through base expenditure – Upgraded Network Office	11.61	11.61	11.61	11.61	11.61
Cumulative reduction through base expenditure – Fleet Strategy	83.85	97.23	121.93	137.70	177.04

Cumulative reduction through base expenditure – Energy Efficiency	-815.99	815.99	815.99	815.99	815.99
Proposed PCL - Tonnes CO2e	7065.00	7058.00	6965.00	6761.00	6597.00
Reduction from 2021-22 baseline	6.44%	6.53%	7.76%	10.46%	12.63%
Distribution Input (MI/d)	171.89	170.55	167.94	163.73	159.44
Kg CO2e per Distribution Input	112.60	113.38	113.32	113.14	113.36

The remaining operational greenhouse gas emissions will be reduced through the decarbonisation of the electricity grid, securing long-term renewable supplies, growing our range of local renewable energy, and in-setting. More information on our strategy to reduce emissions can be found in PRT04: Delivering for Our Customers and Communities.

There will be a temporary increase in emissions related to the building of the Havant Thicket Winter Storage Reservoir. We propose to exclude all emissions related to Havant Thicket, due to uncertainty over delivery dates at the time of submitting our business plan. We want to protect customers against performance commitment outperformance related to late start of building the reservoir to accommodate changes to the Southern Water proposals.

Figure 5: Performance Improvement through Enhancement and Base Expenditure

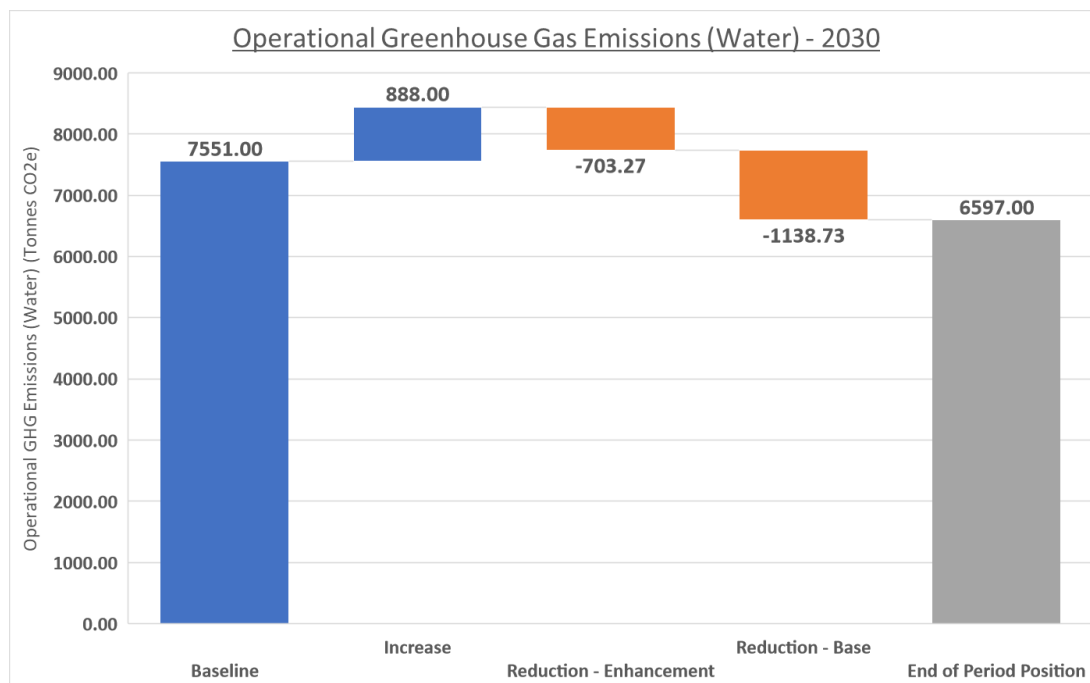


Figure 5 outlines improvement in performance attributed to enhancement and base expenditure. For operational greenhouse gas emissions there will be improvements through enhancement related to demand reduction associated with Reducing Customer Side Demand (Universal Smart Metering) programme, as well as improvements through base expenditure.

I. Leakage

This performance commitment is designed to incentivise us to reduce leakage.

Reducing leakage helps improve the long-term water resources supply-demand balance, reduces the need for water abstraction and increases water supply network resilience.

The leakage performance commitment is calculated as the percentage reduction of three-year average leakage in MI/d 2019-20 baseline. Three-year average values are calculated annual average values for the reporting year and two preceding years and expressed in MI/d.

Annual average leakage is defined as the sum of distribution leakage, including service reservoir losses and trunk main plus customer supply pipe leakage. It is reported as the annual arithmetic mean (referred to as 'average') daily leakage expressed in mega-litres per day (MI/d).



reduce
from the
system
leakage

Current and Past Performance



Reduction of 2.7 MI/d since 2017-18, with upper quartile performance in 2020-21 and 2021-22

Table 21: Past performance on leakage

Leakage	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Performance (Three-Year Average (MI/d))	30.3	30.4	28.4	25.4	25.0	27.6
Industry Position (compared by litres/property/day)	No comparison possible based on consistent data	No comparison possible based on consistent data	No comparison possible based on consistent data	2 nd	3 rd	6 th

Table 21 shows recent leakage performance. Before 2020-21, companies reported leakage through different methods and therefore comparisons on consistent data are not possible before this date. The water companies,

supported by regulators and with the assistance on industry experts, defined a consistent methodology to be used from 2020-21 onwards.

Leakage is heavily impacted by external factors, such as cold weather and ground movement that cause both bursts and small leaks to our network and customer owned supply pipes.

We have worked hard in recent years to significantly reduce leakage. We were proud to be upper quartile in 2020-21 and 2021-22, with our good performance facilitated by investment made on remote detection equipment and increased resource level.

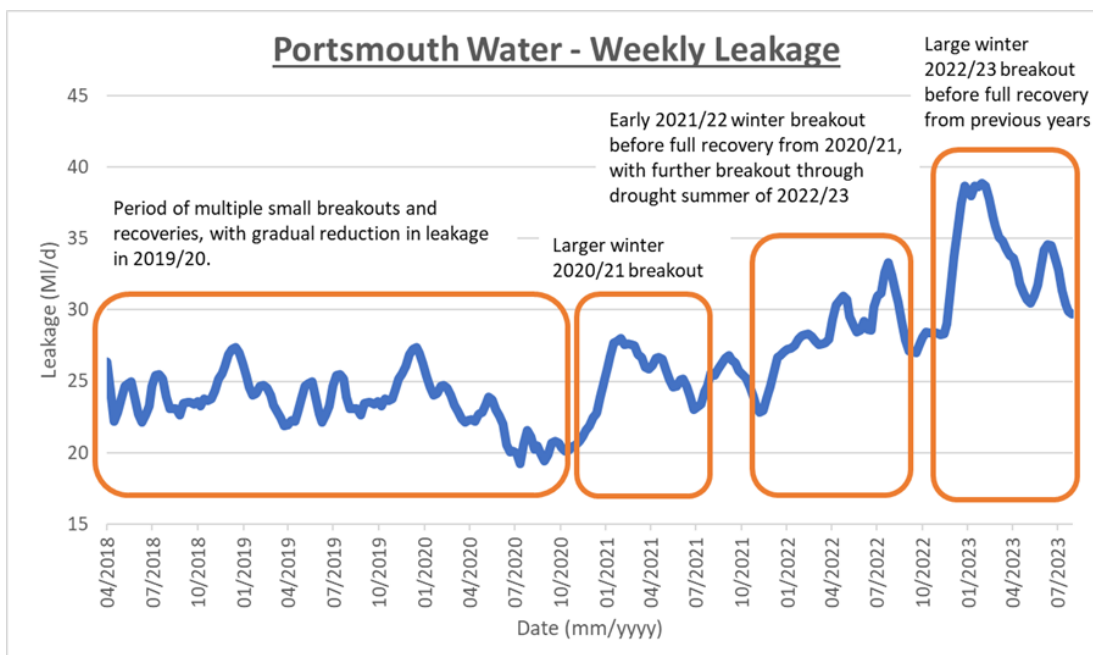
However, our performance deteriorated in 2022-23 due to a sequence of leakage breakout events in both summer and winter months, related to the drought and subsequent harsh winter. Whilst we have increased resources and improved efficiencies to recover from these events, the increased frequency and severity of breakouts has meant that we have not been able to recover fully before the next breakout event.

As an example of the additional effort undertaken, in 2021-22 we found and fixed a total of 2,755 leaks within the network compared to 2,590 in 2019-20. Despite this increase in leaks fixed, leakage increased. The breakout events are shown in Figure 6.

A significant breakout took place with the freeze thaw weather conditions in December 2022. The breakout increased our nightline by over 9 MI/d overnight, with most of this abnormal demand resulting from burst pipes on both company and customer-side. Just under 3 MI/d was swiftly recovered through customer self-repairs and repairs of easily identified bursts on the company network, with an additional 5 MI/d recovered through extensive leakage recovery activity by May 2023. This has resulted in almost a 25% reduction in leakage in four months, however we are still to fully recover to pre-breakout levels. To recover the tail of the impact of this weather event, and fully recover from previous events, an enhanced recovery plan was launched, increasing resourcing and the capability to deploy wider resources earlier in the event of future breakout events. As a result, breakout response planning has improved significantly.

We are still recovering from the latest breakout event; however, we remain in a position of confidence that through focus on Active Leakage Control (ALC) and resources, along with managing the response plan, we can reduce leakage to target levels by 2025.

Figure 6: Weekly leakage performance since 2018



More information on our current and past performance is set out in PRT12: Accounting for Past Performance.

Challenges to Maintaining Performance

Without constant action to detect and repair leaks, the level of leakage will naturally rise. Climate change and the increase in severe weather conditions have impacted the sector's leakage performance at increasing intervals over the course of the past 10 years, making it more and more difficult to maintain leakage at current levels through find and fix methods (Active Leakage Control – ALC).

Climate change is increasing Soil Moisture Deficit (SMD), which in turn leads to higher burst and leakage rates in areas with clay-based soil, which includes our area. Climate change is also resulting in more rapid freeze-thaw events that also cause significant stress on our network.

Water companies are also finding it more difficult and costly to find leaks in certain circumstances. Whilst mains replacement has helped to reduce leakage in general, the use of plastic pipes provides an additional challenge to leak detection. Leaks are predominantly found through acoustic methods, and sound travels significantly further on old metallic pipes than on newer plastic ones. This means that finding leaks on plastic pipes is more difficult and costly.

Fixing leaks has also become more costly, as councils utilise changes in regulations to charge water companies for conducting leak repairs in the road. These additional costs put upward pressure on leak repair budgets.

All these challenges have been included in the plans for achieving leakage reduction.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

We have an independently created optioneering model for leakage that has been in use during AMP6 to reduce leakage, during AMP7 to develop PR19 plans, and enhanced for WRMP24 and PR24. The model balances unit cost and benefit for the range of approaches that are feasible for the business and how they could meet the target outcomes based on the validated natural rate of rise (NRR).

We have carefully assessed the outputs of that model which provides the first pass options for consideration. These options were then reviewed with expert opinion within Portsmouth Water and through our independent partners to ensure that we have a realistic and well-balanced set of options.

To deliver a cost efficient and effective programme of options to tackle leakage a simple process was followed, identifying every option, identifying the most cost beneficial options, assessing the impact of our efficiency in the face of reducing leakage and finally collating a final programme of options.

More information on options rejected at the feasibility stage are included within PRT17.39 rdWRMP24 Appendix 10C: Leakage Strategy - appendix to our [Water Resources Management Plan \(WRMP\)](#).

Feasible options were ranked by cost effectiveness from lowest to highest, with benefits measured in MI/d saved. This is outlined in Table 22 and provides a clear overview of the cost-effectiveness of various leakage reduction strategies, ranging from cost-free options with moderate benefits to higher-cost solutions with more substantial benefits. When addressing water leakage strategies both costs and benefits are equally important for selecting the best options.

Costs have been checked against several suppliers; and developed with assistance of leakage experts. A thorough procurement process will be undertaken before further expenditure is made to ensure the most cost-effective solution at the time of delivery is taken forward.

Table 22: Leakage options cost-benefit analysis

Options	Cost per MI/d	Max. Benefit when leakage at 24 MI/d	Comments
Mains Replacement – First MI/d	£0k	1 MI/d over AMP8	Benefit of mains replacement to ensure stable bursts. Costs associated with mains replacement expenditure.
Customer Supply Pipe Leakage	£0k	4.11 MI/d by 2035	Costs included with Reducing Customer Side Demand enhancement investment case.
Enigma Sweeps	£95k	0.88 MI/d per year.	Most cost-effective solution in heavily metallic DMAs with low NRR or no GPRS or NB-IoT signal. Combined with DMA monitoring, and lift and shift deployment after breakout.
Fixed Acoustic Network – PermaNET+	£108k	3.06 MI/d per year	Most cost-effective solution in heavily metallic DMAs where strong GPRS signal and medium to high NRR.
Fixed Acoustic Network – Plastic Pipes	Expected <£114k	0.55 MI/d per year	Once fully developed for deployment, expected to be most cost-effective solution in heavily plastic DMAs with medium to high NRR, where strong GPRS or NB-IoT signal.
HyQ Sweeps	£114k	0.55 MI/d per year	Most cost-effective solution in all heavily plastic DMAs until Fixed Acoustic Network (plastic pipes) are fully developed, and then still most-cost-effective in DMAs with low NRR or where no GPRS or NB-IoT. Combined with DMA monitoring, and lift and shift deployment after breakout.
Trunk Mains Correlations	£114k	0.66 MI/d per year	Most cost-effective solution on trunk mains.
Fixed Acoustic Network – Permanent+	£126k	2.86 MI/d per year	Most cost-effective solution in heavily metallic DMAs where no GPRS but NB-IoT signal and medium to high NRR.
FIDO Bugs	£168k	0.55 MI/d per year	Next most-effective solution on ALC. Beneficial for quick deployment with unskilled technicians after breakout.

Satellite Imagery	£186k	1.17 MI/d per year	Next most cost-effective solution on both ALC and trunk mains. Beneficial after large summer breakout with dry ground making imagery most effective.
Other Lift and Shift Technology	£196k	0.78 MI/d per year	Next most-effective solution on ALC. Beneficial for quick deployment with unskilled technicians after breakout.
Traditional Sounding Methods	£202k	3.65 MI/d per year	Traditional leakage detection technique using sounding stick. Most inefficient method of ALC.
Mains Replacement – Second MI/d	£225k	1 MI/d over AMP8	Cost to increase mains replacement programme in AMP8 targeting an additional 1 MI/d of leakage reduction.
Enhanced Pressure Management	£840k	0.35 MI/d after installation	Further pressure management of non-cost-effective DMAs purely for leakage benefit
Mains Replacement – Third MI/d	£2833k	1 MI/d over AMP8	Cost to increase mains replacement programme in AMP8 targeting by an additional 1 MI/d of leakage reduction.
Mains Replacement – Fourth MI/d	£4696k	1 MI/d over AMP8	Cost to increase mains replacement programme in AMP8 targeting an additional 1 MI/d of leakage reduction.
Mains Replacement – Fifth and Sixth MI/d	£8177k	2 MI/d over AMP8	Cost to increase mains replacement programme in AMP8 targeting an additional 2 MI/d of leakage reduction.

At the lower cost end, options like Mains Replacement – First MI/d and Customer Supply Pipe Leakage have minimal or no costs and offer substantial potential water savings, making them attractive choices. In these instances, costs are already incurred through other work, and leakage reduction is a secondary benefit:

- 1 MI/d of leakage benefit will occur through replacing mains to maintain a steady rate of bursts, and
- 4.11 MI/d of benefit will come through the Reducing Customer Side Demand (Universal Smart Metering) programme, as an increased amount of customer supply pipe leakage is identified through the smart meter leak alarms.

More information on this reduction can be found in OUT2 and OUT3 data table commentary and PRT07.06: Reducing Customer Side Demand (Universal Smart Metering).

Other ALC options, such as Enigma Sweeps and Fixed Acoustic Network – PermaNET+ exhibit a cost-benefit balance, showing efficiency in specific scenarios. They are utilised in the model as required, chosen in cost-benefit order, to achieve the leakage reduction target chosen by customers. Traditional Sounding Methods and various further Mains Replacement options specifically for leakage reduction (such as Mains Replacement – Second MI/d, Third MI/d, and beyond) indicate significant water savings but come at a higher expense.

A leakage reduction target of 50% by 2040 was determined based on engagement with customers. Through our Plan Choices consultation, customers were given the option of a 50% reduction by 2040, 2045 and 2050, as

shown in the Figure 7. Customers across all demographics chosen the high investment option, to reduce leakage by 50% by 2040.

For more information on this research, see PRT03: Engaging and Understanding our Customers and Communities.

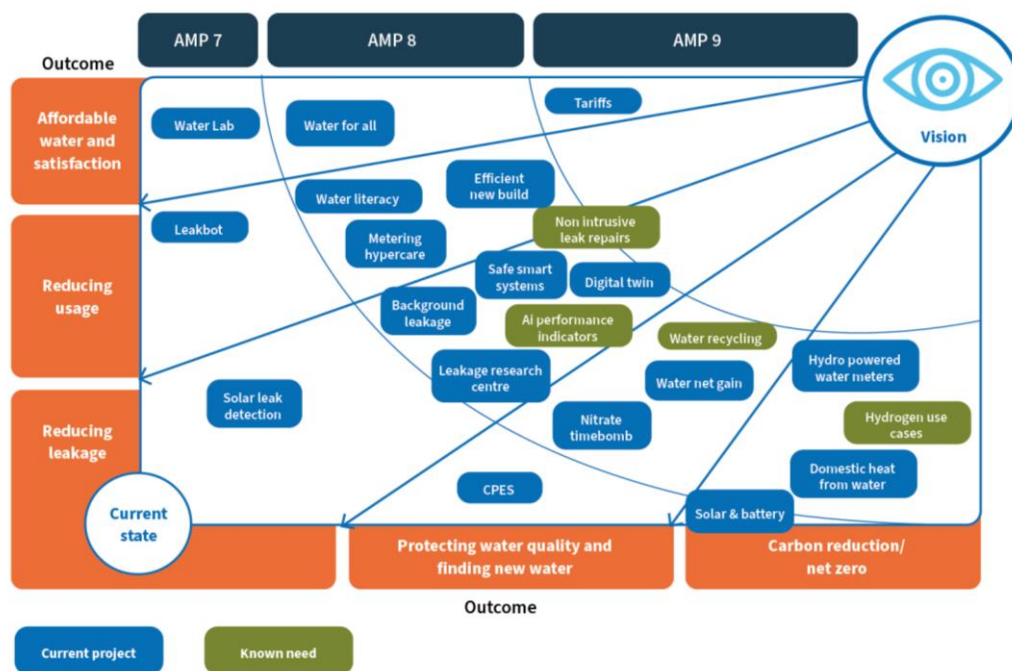
Figure 7: Plan Choices – Leakage Options

Low investment: Meeting our commitments	Medium investment: Maintaining or enhancing our services	High investment: Achieving our Vision
Reduce leakage by 50% by 2050.	Reduce leakage by 50% by 2045.	Reduce leakage by 50% by 2040.
PROS: this is the cheapest option and is in line with government's expectations and our WRMP.	PROS: this is less expensive than our Vision and saves more water than waiting until 2050.	PROS: we achieve our Vision. You've told us reducing leakage is a big priority.
CONS: we won't meet our Vision and it means more water will be lost compared to other options.	CONS: we won't meet our Vision and it's more expensive than waiting until 2050.	CONS: this is the most expensive option.
The total cost over 25 years is £157 million.	The total cost over 25 years is £167 million.	The total cost over 25 years is £178 million.
The average increase on bills per year is £0.00 .	The average increase on bills per year is £0.40 which means bills will increase by £2 over five years.	The average increase on bills is £0.55 which means bills will increase by £2.75 over five years.
This option doesn't increase total bills.		
This option costs £0	This option costs £0.40 each year	This option costs £0.55 each year

We will continue to look to innovate to make further and faster leakage reduction cost-effective and are actively involved in several industry leakage innovation projects. Leakage features heavily in our Innovation Roadmap, which is shown in Figure 8.

For more information on our innovation strategy, see PRT10: Innovation to Enhance Our Service Delivery.

Figure 8: Innovation Roadmap



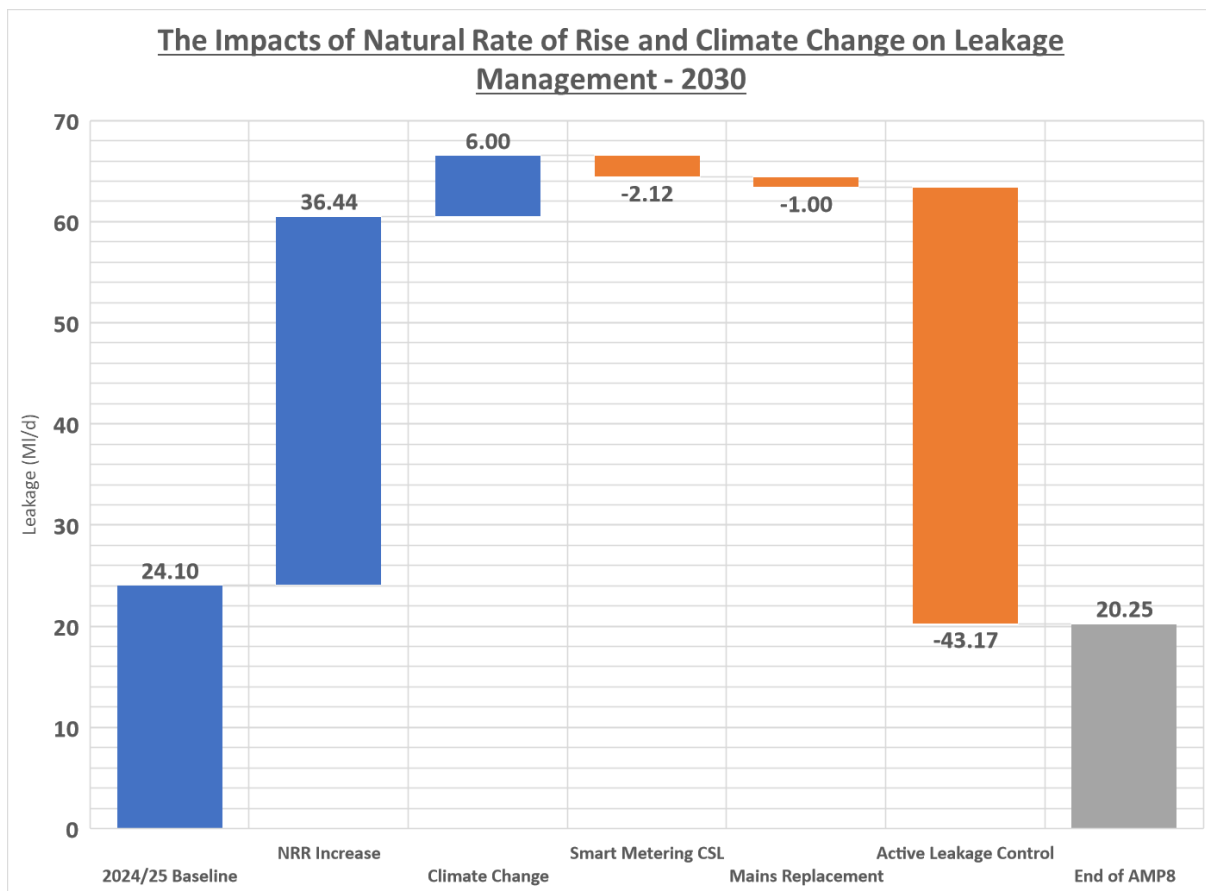
PR24 Performance Commitment Level



Target = Achieve our Water Resources Management Plan target (25.6% reduction from 2019-20 baseline), that aligns with customer driven and most cost-effective reduction

Figure 9 shows that cumulative leakage saving that will be made through both enhancement and base expenditure over AMP8. It includes the expected increase in leakage through NRR and climate change, and the reduction expected from our Reducing Customer Side Demand (Universal Smart Metering) programme, our mains replacement programme, and ALC. Figure 9 shows the challenge water companies have to reduce leakage, with considerable effort required just to maintain levels.

Figure 9: Impacts of Natural Rate of Rise and Climate Change on Leakage Management



Our performance commitment level for PR24 aligns with customer preference and our WRMP and shows a reduction of 25.6% against 2019-20 baseline. This target includes a significant reduction in AMP7 to ensure that leakage level begin AMP8 at levels set through the PR19 Performance Commitment process.

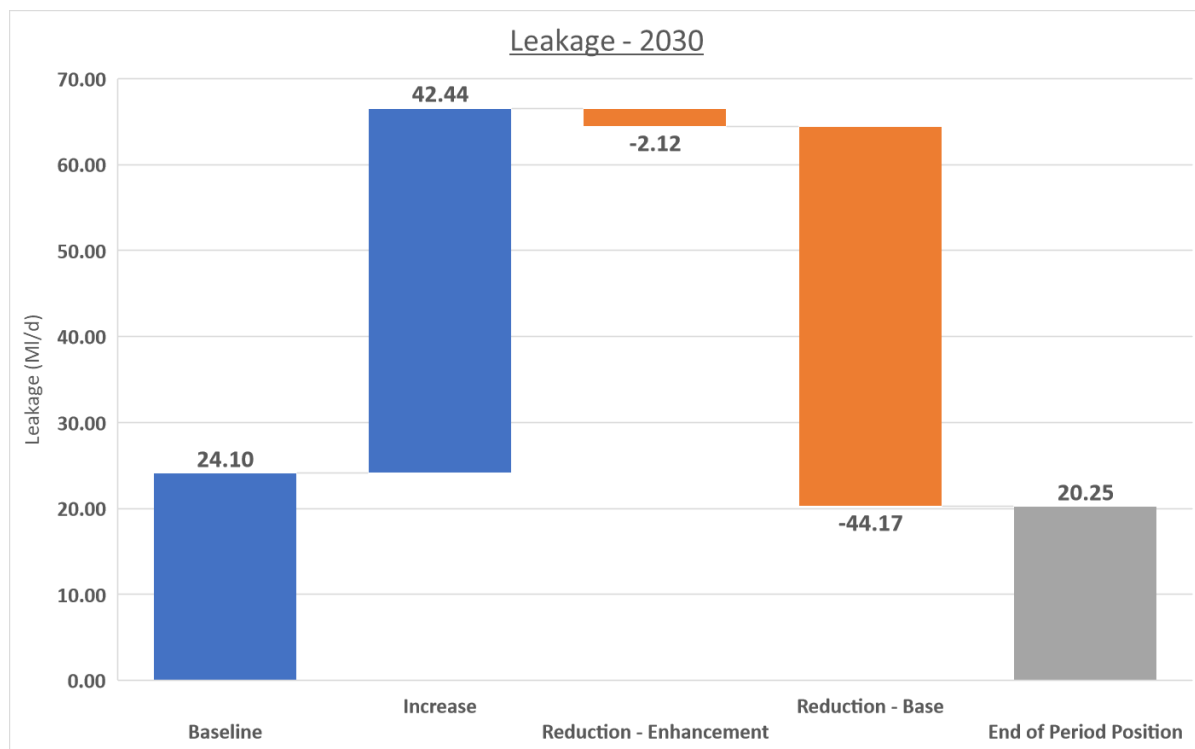
Our proposed performance commitment levels for PR24 are set out in Table 23:

Table 23: Proposed Performance Commitment Level: Leakage

Figure 10 outlines improvement in performance attributed to enhancement and base expenditure. For leakage there will be improvements through enhancement related to demand reduction associated with Reducing Customer Side Demand (Universal Smart Metering) programme, as well as improvements through base expenditure.

Leakage	2025-26	2026-27	2027-28	2028-29	2029-30
Baseline (MI/d)	24.10	24.10	24.10	24.10	24.10
Cumulative increase expected through NRR (MI/d)	7.20	14.40	21.60	28.80	36.00
Cumulative increase expected due to Climate Change (MI/d)	0.65	3.77	4.73	5.11	6.44
Cumulative reduction through enhancement expenditure due to Smart Metering Customer Side Leakage (MI/d)	0.04	0.30	0.75	1.38	2.12
Cumulative reduction through base expenditure due to mains replacement (MI/d)	0.20	0.40	0.60	0.80	1.00
Cumulative reduction through base expenditure due to ALC (MI/d)	9.71	19.17	27.04	34.84	43.17
In Year Leakage (MI/d)	22.00	22.40	22.04	21.00	20.25
Proposed PCL – explained as Three Year Average in MI/d	24.00	22.80	22.15	21.81	21.10
Proposed PCL – explained as % reduction from 2019-20 baseline	15.4%	19.6%	21.9%	23.1%	25.6%

Figure 10: Performance Improvement through Enhancement and Base Expenditure



J. Per Capita Consumption



This performance commitment is designed to incentivise us to help household customers reduce their consumption.

The benefits of reduced per capita consumption (PCC) are to improve the long-term water resources supply-demand balance and reduce the need for water abstraction.

The PCC performance commitment is calculated as the percentage reduction of three-year average PCC in litres per person per day (l/person/d) from the 2019-20 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years expressed in l/person/d.

Annual average PCC means the sum of measured household consumption and unmeasured household consumption divided by the total household population.

Current and Past Performance



Rating = Performance heavily impacted by changes in usage patterns since Covid pandemic

Table 24 sets out our recent performance. We have traditionally had one of the highest PCC values in the industry. Our low bill, which for 2023-24 is £117 compared to an industry average of £215, combined with low meter penetration and inability to compulsory meter until 2025 has affected our ability to reduce PCC, as our customers have very little incentive to use less water.

During AMP7 we have undertaken a full range of water efficiency initiatives to encourage customers to reduce their demand, **which are set out in PRT17.38 rdWRMP24 Appendix 10B - Water Efficiency Strategy - appendix of our WRMP.**

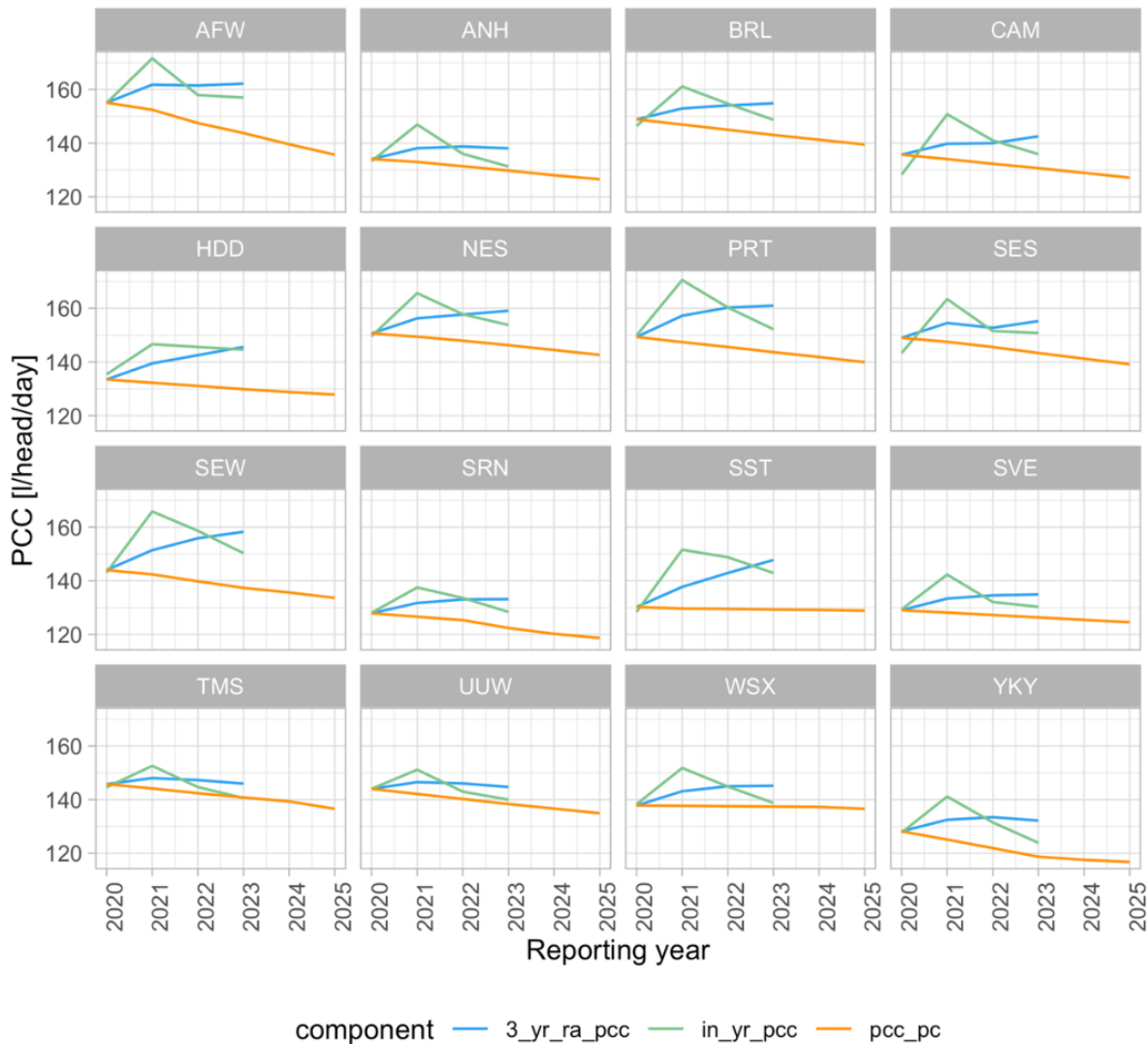
Despite a comprehensive programme of interventions, like all UK water companies, we have struggled to achieve our PCC targets for AMP7. Our PCC performance has been impacted by the effect the global Covid-19 pandemic has had on water use behaviours of our customers, with increased working from home moving some water usage from offices to the home. The UK has also experienced multiple peak demand weather events during the past few years, with extreme highs of temperature and widespread drought conditions.

Table 24: Previous performance on PCC

PCC	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Before 2020-21,
Performance (In Year (l/person/d))	146.8	151.2	149.9	170.5	160.3	152.5	
Performance (Three-Year Average (l/person/d))			149.3	157.2	160.3	161.1	
Industry Position	No comparison possible based on consistent data	No comparison possible based on consistent data	No comparison possible based on consistent data	16 th	16 th	16 th	

companies reported PCC through different methods which meant that comparisons between companies are not based on consistent data. The water companies, supported by regulators and with the assistance on industry experts, defined a consistent methodology to be used from 2020-21 onwards.

Artesia Consulting completed a review of our current PCC levels compared to those anticipated when AMP7 targets were set. Their analysis shows that our PCC has followed a similar trend to other water companies (Figure 11) and that for almost all companies, PCC remains higher than pre-Covid levels. This suggests a range of widespread external factors are influencing an underlying increase in PCC.

Figure 11: All Water Company AMP7 PCC Comparison


During the Covid pandemic we observed immediate increases in customer household water use of around 12% in 2020-21 (compared to average use) and household usage remaining 8% higher than average in 2021-22. Artesia are confident that the increase in PCC was directly related to the Covid-19 pandemic, combined with the hot dry weather during the summer period. The evidence suggests that this is due to:

- Changes in water use behaviours during this period including outside water use and water use within the home.
- People spending longer in their homes each day than before the Covid-19 pandemic arrived.
- People re-locating their water use from their place of work to the home due to furloughs and the need to work from home.

Evidence also suggests that some of these changes in societal practices are persisting, with hybrid working becoming the norm for a significant part of the population. This will result in people spending more hours of the day in their homes, and people spending a significant proportion of the day in a different location to their workplace. Through their Social Science Service, Artesia has observed a clear change in everyday life for some households because of the Covid-19 pandemic, which explains our high 2022-23 PCC figure.

Several participants of the research had new working routines, including increased hybrid working and full-time working from home. This resulted in water using behaviours being relocated into the home that may have previously been conducted at work or outside the home, as well as a decoupling of certain activities from the working days rhythm. For example, laundry completed as a 'work break' during the day instead of slotted around the 9-5 routine, and showers relocated to gyms or completed at home also as a 'work break' or a relaxation/post work activity.

While the Covid-19 pandemic legacy is only now being realised, this evidence reveals what the long-term impacts of the societal upheaval could be. Changes to how people lead their lives have had, and will continue to have, substantial impacts on the amount of water they use, but will also affect when people consume water and why people use it.

We, alongside Artesia and other water companies, have been active in defining a collaborative study to analyse a range of data over the period from 2021 to 2023 to provide specific evidence on the impact of COVID and the other external factors during AMP7. This will also allow more detail models to be developed to improve the prediction of future household consumption under a range of possible scenarios. This project expected to start in Autumn 2023, with outputs expected in 2024.

Artesia's research has also highlighted the effect hot and dry weather had on water usage. This increase in usage in 2022-23 was offset for Portsmouth Water by national and local drought messaging that suppressed summer demand. Our neighbouring water companies had Temporary Use Bans (TUBs) and we conducted extensive drought messaging communications in line with our Drought Plan requirements. We therefore believe that our 2022-23 in-year performance to be lower than we would expect in an average year.

More information on Artesia's review can be found in PRT05.01: Artesia Review of PCC.

More information on our current and past performance is set out in PRT12: Accounting for Past Performance.

Challenges to Maintaining Performance

There are two different types of activity which can reduce customer demand:

- **Physical solutions** that identify and rectify often unknown leakage or wastage of water at a premise or optimise the volume of water used for a task at a household or plumbing / fitting level.
- **Behavioural solutions** that influence how customers consume water. We want customers to choose to reduce their overall usage driven by a personal, ethical, or financial outcome.

Challenges related to physical solutions relate to the delivery of our Reducing Customer Side Demand (Universal Smart Metering) programme. We expect that there will be several water companies installing smart meters in AMP8 and therefore there will be competition for meters, installation resource and customer supply pipe and plumbing repair resource.

More on how we are overcoming this challenge is set out in PRT08: Delivering Our Investment Plan.

Challenges related to behavioural solutions relate to convincing customers to reduce their usage. Customers and stakeholders have raised concern that the need for reducing water is not widely understood and that several customer demographics will find it hard to reduce usage due to personal or religious reasons. This has reinforced the importance of the Proactive Hypercare stage of the Reducing Customer Side Demand (Universal Smart Metering) programme. We have started, and will continue to build upon, a comprehensive and inclusive customer engagement programme related to smart metering to ensure that solutions are developed that are tailored to the differing needs of our customer base.

More information on our customer engagement process is set out in PRT03: Engaging and Understanding our Customers and Communities.

Another challenge related to behaviour is a hot summer. Household demand is always higher in the spring and summer, as people use more water to keep gardens green and fill paddling pools amongst other activities. Summer usage increases water use further during period of prolonged dry and hot weather and can increase average yearly usage by as much as 10 litres per person per day compared to a normal year. This is typically

considered in reporting using a three-year average, meaning higher usage in a hot summer is offset by lower usage in a subsequent wet summer. However, we are now seeing a higher frequency of hot summers which will adversely affect the three-year average. We do expect smart metering and associated water efficiency communications to reduce demand in hot summers, but a hot summer remains a risk to performance.

The amount of transient population within our supply area can also affect performance. As a company situated on the south coast, second homes are prominent in our area. With the wider adoption of flexible working, we have anecdotally seen an increase in the use of these homes as the primary residence. Should current working patterns remain, or flexible working increase further, we can expect increased usage from second homes. We will be monitoring population trends closely to determine changes in transient population.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

A comprehensive list of schemes related to reducing customer usage has been identified through the development of the Reducing Customer Side Demand (Universal Smart Metering) programme.

These schemes and their associated benefits were used to determine PCC reduction targets set in PRT17: Water Resources Management Plans and PRT18: Long-Term Delivery Strategy 2025-2050, and are summarised in Table 25:

Table 25: Summary of PCC Benefits from Reducing Customer Side Demand (Universal Smart Metering) programme

Scheme	AMP8 Benefit (PCC Reduction in litres/person/day)	AMP9 Benefit (PCC Reduction in litres/person/day)
Smart Meter Installation	4.45	8.08
ERP Upgrade	0.71	0.95
GIS Upgrade	0.41	0.56
CRM Upgrade	1.65	2.22
Smart Meter Engagement	0.04	0.06
Support Hub	0.03	0.05
Smart Meter Household Audits	0.09	0.12
Fixing Plumbing Losses	1.34	2.42
Water Efficiency Comms	0.38	0.35
Water Efficiency Awareness Campaign	1.83	1.68

Water Efficiency Platform	0.28	0.26
Standard Household Audits	0.50	0.21
Education	0.07	0.07
Retrofit Gadgets	0.02	0.02
Leak Alarm	0.09	0.00
Pressure Control Devices	0.01	0.12
Optant Metering	0.13	0.02
TOTAL	12.04	17.16

There are also further initiatives planned where benefits are expected post 2035, such as additional ongoing assistance with vulnerable customers and innovative tariffs.

The breakdown of benefits shows the importance of:

- Enabling works such as the ERP, GIS, and CRM upgrades to PCC reduction, as without these upgraded systems the full benefit of smart metering cannot be realised. This is because the current systems do not offer functionality that aligns with the level of data available through a smart meter.
- Ongoing communication and assistance before and after the smart meter installations. Customers have been very clear in research that as the water company is installing the meter, they expect the water company to help them reduce their water use through tailored solutions. These post installation solutions continue to provide further benefit post 2035.
- Government led water efficiency labelling of water using devices. As proved through the energy industry, an excellent way to reduce usage is to ensure that new devices purchased are as efficient as possible.

We are also forecasting PCC reduction through government led interventions such as water efficiency labelling of white goods. This aligns with assumptions made in our WRMP.

We will continue to look to innovate to make further and faster PCC reduction cost-effective and are actively involved in several industry reducing usage innovation projects. Reducing usage features heavily in our Innovation Roadmap, which is shown in figure 8 in the Leakage section.

For more information on our innovation strategy, see PRT10: Innovation to Enhance Our Service Delivery.

PR24 Performance Commitment Level



Target = Achieve our Water Resources Management Plan target (6.4% reduction from 2019-20 baseline), that aligns with customer driven and most cost-effective reduction.

We will see a significant reduction in PCC throughout AMP8 due to the Reducing Customer Side Demand (Universal Smart Metering) programme and government led interventions.

In year PCC will reduce from 157 litres per person per day (l/pers/d) in 2024-25 to 141 l/pers/d in 2029-30, a 10.19% reduction in five years. Our three-year average PCC will reduce from 155.9 l/pers/d in 2024-25 to 146.0 l/pers/d in 2029-30, a 6.35% reduction in five years. Our three-year average PCC considers the current and two preceding years, and therefore in a reducing trend will always be higher than the spot year figure.

Our PCC targets align with our WRMP, and customers support our PCC reduction programme through universal smart metering.

More information on customer support is in both PRT03: Engaging and Understanding Our Customers and Communities and PRT07.06: Reducing Customer Side Demand (Universal Smart Metering).

Our AMP8 figures are higher than our PR19 Performance Commitment due to the increase in household usage since the Covid-19 pandemic, as explained in the Current and Past Performance section and evidenced in **PRT05.01: Artesia Review of PCC.**

We have set out our reduction target in line with Ofwat and WRMP guidance, and state as a reduction from 2019-20 baseline in Table 26. However, we accept that there is uncertainty over the lasting effect of Covid-19 on household usage behaviours, and therefore future PCC forecasts.

It would be unreasonable to ignore the significant effect Covid has had, and will continue to have, on PCC, and therefore we propose that PCC targets for AMP8 should be a reduction from a three-year average 2024-25 baseline (based on actual PCC), instead of 2019-20. A 2024-25 baseline target would consider a step change in usage due to Covid-19, whilst water companies are still incentivised to reduce PCC in AMP7 through the ongoing PR19 Outcomes Delivery Incentives (ODIs) framework.

It is also proposed that the collaborative study with Artesia and other water companies help inform both the setting of PR24 PCC targets, and the review of PR19 targets.

Our proposed performance commitment levels for PR24 are set out in Table 26:

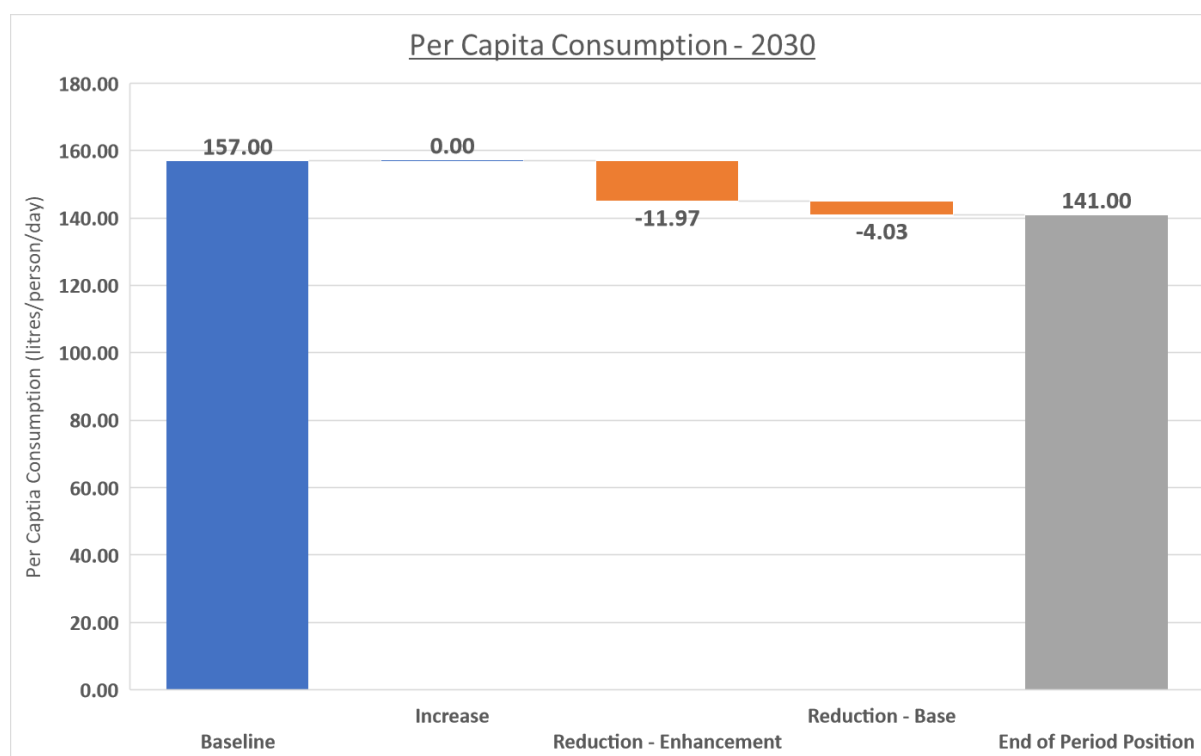
Table 26: Proposed Performance Commitment Level: Per Capita Consumption

PCC	2025-26	2026-27	2027-28	2028-29	2029-30
Baseline (l/pers/d)	157.0	157.0	157.0	157.0	157.0
Cumulative reduction through enhancement expenditure on Reducing	0.7	1.6	4.0	7.5	12.0

Customer Side Demand (Universal Smart Metering) programme (l/pers/d)					
Cumulative reduction through government led initiatives (l/pers/d)	0.8	1.6	2.4	3.2	4.0
In Year PCC (l/pers/d)	155.5	153.7	150.6	146.3	141.0
Proposed PCL – explained as Three Year Average in l/pers/d	156.9	155.4	153.3	150.2	146.0
Proposed PCL – explained as % reduction from 2019-20 baseline	-5.1%	-4.1%	-2.7%	-0.6%	2.2%
Proposed PCL – explained as % reduction from 2024-25 baseline	-0.6%	0.4%	1.7%	3.7%	6.4%

Figure 12 outlines improvement in performance attributed to enhancement and base expenditure. For per capita consumption there will be improvements through enhancement related to demand reduction associated with Reducing Customer Side Demand (Universal Smart Metering) programme, as well as improvements through base expenditure associated with government interventions.

Figure 12: Performance Improvement through Enhancement and Base Expenditure



K. Business Demand



The performance commitment is designed to incentivise us to help business customers reduce their consumption.

The benefits of reduced business demand are to improve the long-term water resources supply-demand balance and reduce the need for water abstraction.

The business demand performance commitment is calculated as the percentage reduction of the three-year average of business demand, in MI/d, from a 2019-20 baseline. Three-year average values are calculated from annual average values for the reporting year and two preceding years, expressed in MI/d.

We are expected to demonstrate we have explored options to deliver water efficiency in collaboration with retailers or other third parties in our annual performance report. Where we do not do this, we will not be eligible for outperformance payments.

Current and Past Performance

Rating = n/a (new measure)

Table 27 sets out our recent performance. Business demand is a new performance commitment for PR24 and comparisons with other water companies are not meaningful as they would be dependent on the mix of business customer types.

Our business demand since 2017-18 has stayed relatively consistent, except for two years affected by the Covid pandemic (2020-21 and 2021-22).

Table 27: Past performance on Business Demand

Business Demand	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Performance (In-Year (MI/d))	33.3	34.4	33.2	27.7	29.7	32.3
Performance (Three-Year Average (MI/d))	-	-	33.6	31.8	30.2	29.9

Challenges to Maintaining Performance

Total business demand is made up of over 14,000 businesses, but a high proportion of usage is from a few large users. This means that future demand is very sensitive to economic activity, and a sudden change in circumstance with one or more of these high users could result in a significant shift in overall business demand.

A proportion of business usage, especially in the agriculture and tourism sectors, is also related to weather conditions and a hot summer possesses a similar risk as for our PCC performance commitment.

We have also seen a rise in plumbing losses in building premises resulting from freeze-thaw events. Whilst we expect these to be resolved relatively quickly by businesses, this would likely not be the case in void properties.

We also continue to experience uncertainty related to the recovery from Covid and economic challenges. We are currently experiencing a downturn in business activity as businesses struggle to survive numerous macroeconomic pressures. However, an upturn in the economy could result in increased business activity and therefore an increase in business water usage. This could result in a small increase in usage associated with several small businesses beginning to trade, or a greater increase in usage from a large water user moving into the supply area.

The complexity of the retail market is also expected to be a challenge to reducing demand. CCW's five-year review of the retail market concluded that most businesses show little interest in engaging with the market and some businesses are not clear of the differing roles of the wholesaler and retailer. Confusion on behalf of the business may result in a reluctance to actively get involved in water efficiency initiatives.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

Table 28 sets out expected performance improvement over the next 10 years. Reduction in business demand is included as part of the Reducing Customer Side Demand (Universal Smart Metering) programme and therefore benefits comes from this enhancement expenditure.

Table 28: Reduction to Business Demand from Enhancement Expenditure

Scheme	AMP8 Benefit (MI/d Reduction)	AMP9 Benefit (MI/d Reduction)
Smart Meter Installation	3.42	0.25
Smart Meter Non-Household Audits	0.01	0.01

Smart meters will be installed for all businesses during AMP8, and it is expected that the business, in collaboration with both the retailer and us, will be able to utilise this data to make informed decisions on water efficiency to save both water and cost.

In collaboration with the retailer, we will also be conducting smart meter audits to further assist businesses as necessary. Smart metering for non-households is recommended by MOSL and supported by retailers.

More information on the initiatives can be found in PRT07.06: Reducing Customer Side Demand (Universal Smart Metering).

PR24 Performance Commitment Level



Target = Achieve our Water Resources Management Plan target (18.8% reduction from 2019-20 baseline), that aligns with customer driven and most cost-effective reduction

Our proposed performance commitment aligns with our WRMP target, which itself is set considering both government targets and expert forecasting analysis from Artesia Consulting.

More information on the forecast can be found in Appendix 4D – Portsmouth Water Non-Household Demand Forecast Update – appendix to our WRMP.

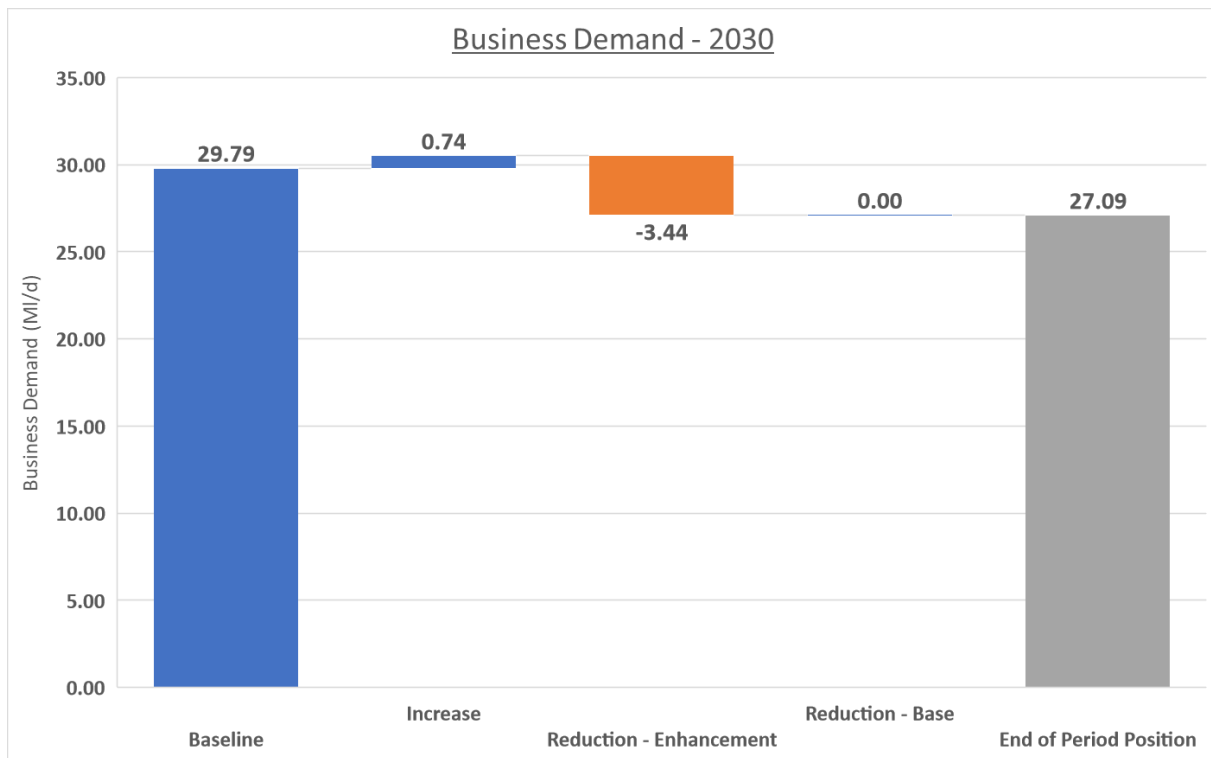
Our proposed performance commitment levels for PR24 are set out in Table 29:

Table 29: Proposed Performance Commitment Level: Business Demand

Business Demand	2025-26	2026-27	2027-28	2028-29	2029-30
Baseline (MI/d)	29.8	29.8	29.8	29.8	29.8
Cumulative increase (MI/d)	0.2	0.1	0.4	0.3	0.7
Cumulative reduction through enhancement expenditure	0.4	1.5	2.5	3.0	3.4
In Year Business Demand (MI/d)	29.6	28.4	27.7	27.1	27.1
Proposed PCL – explained as Three Year Average in MI/d	29.8	29.2	28.5	27.7	27.3
Proposed PCL – explained as % reduction from 2019-20 baseline	11.4%	13.1%	15.1%	17.6%	18.8%

Figure 13 outlines the improvement in performance attributed to enhancement and base expenditure. For business demand there will be demand reductions through enhancement associated with our Reducing Customer Side Demand (Universal Smart Metering) programme, but no improvements through base expenditure.

Figure 13: Performance Improvement through Enhancement and Base Expenditure



L. Serious Pollution Incidents

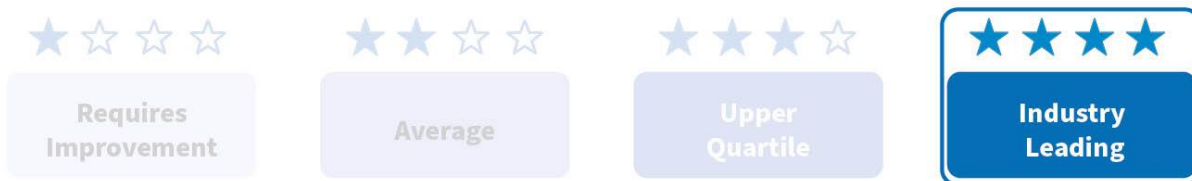


This performance commitment is designed to incentivise us to reduce the number of serious pollution incidents that impact the environment.

Delivery of this performance commitment will improve the quality of the environment by reducing the number of serious pollution incidents that occur.

Serious pollution incidents are reported as the total number of serious pollution incidents (Categories 1 and 2) in a calendar year emanating from a discharge or escape of a contaminant from a water company sewerage asset or water supply asset affecting the water environment. This measure is relevant to both water-only companies and water and sewerage companies.

Current and Past Performance



Rating = No serious pollution incidents in past 6 years

We have had no Category 1 or 2 serious pollution incidents since 2011-12, as set out in Table 30.

Table 30: Past performance on Serious Pollution Incidents

Serious Pollution Incidents	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23

Number of Serious Pollution Incidents	0	0	0	0	0	0
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Challenges to Maintaining Performance

Serious pollution incidents are very rare for us, with none in the last six years. The key challenge is the potential for a large burst main to release a high quantity of chlorinated water into a water course that results in a serious impact on the environment. This is very unlikely to happen as such bursts are very rare, and if they do happen valves are often shut quickly to mitigate against such risks.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

The risk of a serious pollution incident is reduced through expenditure to reduce mains repairs, leakage, and interruptions to supply. This expenditure is outlined in the associated other sections.

PR24 Performance Commitment Level



Target = No serious pollution incidents.

Our proposed performance commitment levels for PR24 aligns with Ofwat expectation that compliance metrics have a target of zero. We do not forecast any serious pollution incidents in AMP8.

Our proposed performance commitment levels for PR24 are set out in Table 31:

Table 31: Proposed Performance Commitment Level: Serious Pollution Incidents

Serious Pollution Incidents (water)	2025-26	2026-27	2027-28	2028-29	2029-30
Proposed PCL – Number of Serious Pollution Incidents	0	0	0	0	0

M. Discharge Permit Compliance



This performance commitment is designed to incentivise us to fully meet our discharge permits.

Meeting discharge permits helps to protect the environment. It is a necessary part of improving the status of the water bodies into which we discharge.

The discharge permit compliance metric is reported as the performance of water treatment works in line with their numeric discharge permit conditions. The discharge permit compliance metric is reported as the number of failing sites and not the number of failing discharges. This measure applies to both water-only companies and to water and sewerage companies.

Current and Past Performance



Rating = Only one compliance failure in past six years

Table 32 shows our recent performance. We have six discharge consents, which are located at the following sites:

- River Itchen WTW into the River Itchen.
- Soberton WTW into the River Meon.
- Westergate WTW raw water run to waste into the Lidsey Rife.
- Eastergate WTW raw water run to waste into the Lidsey Rife.
- Fishbourne WTW into Chichester Harbour.
- Lavant WTW into the River Lavant.

We do not expect this to change in future years.

We have had two failing discharges in recent years. The first was in October 2017 at Soberton WTW where we failed the conditions of the permit. The second was in April 2023 and will be reported in our 2023-24 Annual Performance Report. The second, classified C3, was also at Soberton WTW where we failed to comply with the chlorine conditions associated with the permit. Mitigation has been put in place to ensure no further failures at the site.

Table 32: Past performance on Discharge Permit Compliance

Discharge Permit Compliance	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Total number of failing discharges (water)	1	0	0	0	0	0
Number of numeric discharge permits (water)	6	6	6	6	6	6
Number of sites with failed discharges (water)	1	0	0	0	0	0
Percentage compliance	83.33%	100.00%	100.00%	100.00%	100.00%	100.00%

Challenges to Maintaining Performance

Our sites are set up and monitored to ensure that discharges always meet the conditions of our discharge permits. The key challenge to maintaining 100% compliance is to ensure that our monitoring equipment at water treatment works is working correctly and staff are adequately trained.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

Improvements have been put in place to mitigate against previous failures. We do not expect any future failures at any of our six discharge permit sites.

PR24 Performance Commitment Level



Target = No compliance failures in future years.

Our proposed performance commitment level for PR24 aligns with Ofwat’s expectation that compliance metrics have a target of zero. We do not forecast any failed discharges in AMP8.

Our proposed performance commitment levels for PR24 are set out in Table 33:

Table 33: Proposed Performance Commitment Level: Discharge Permit Compliance

Discharge Permit Compliance	2025-26	2026-27	2027-28	2028-29	2029-30
Total number of failing discharges (water)	0	0	0	0	0
Number of numeric discharge permits (water)	6	6	6	6	6
Proposed PCL - Percentage compliance	100.00%	100.00%	100.00%	100.00%	100.00%

N. Mains Repairs



This performance commitment is designed to incentivise us to appropriately maintain and improve the asset health of the below ground water mains network and demonstrate our commitment to responsible asset stewardship.

This performance commitment helps to ensure that the overall asset health of the water mains network is maintained and improved for the benefit of current and future generations.

It is reported as the number of mains repairs per thousand kilometres of our entire water main network (excluding communication and supply pipes).

Current and Past Performance



Rating = Either lowest or second lowest mains repairs in past 6 years.

Table 34 shows our recent performance. We have consistently had either the lowest or second lowest number of mains repairs per 1,000km of mains and always significantly below the industry average. This is a result of previous base expenditure on renewing mains likely to burst, and extensive pressure optimisation.

Like all water companies, we saw a significant increase in mains repairs in 2022-23, after a year that included both a hot summer and harsh winter. The hot summer and subsequent wet autumn led to extensive ground movement as the ground shrunk and then expanded around our mains. The harsh winter included multiple freeze-thaw events where sudden changes in temperature resulted in additional stress on our network. The average mains repair rate across the industry in 2022-23 was 159 mains repairs per 1000km, almost twice as high as our performance.

Table 34: Past performance on Mains Repairs

Mains Repairs	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Total number of reactive mains repairs	195	166	110	212	120	197
Total number of proactive mains repairs	41	74	58	44	40	85
Total number of mains repairs	236	240	168	256	160	282
Mains repairs per 1000km of mains	70.7	71.0	50.0	76.0	47.4	83.3
Industry Position	2 nd	1 st	2 nd	2 nd	1 st	1 st
Industry Average	149	158	125	154	126	159

More information on our current and past performance is set out in PRT12: Accounting for Past Performance.

Challenges to Maintaining Performance

Mains repairs include both proactive and reactive repairs. Proactive repairs are typically found through leakage detection and therefore as we reduce leakage further, we can expect to find more mains leaks than ever before. Our proactive mains numbers in 2018-19 and 2022-23, both years where we had our highest leakage resource, are examples of the increase that can occur when we increase our leakage detection and repair resources.

We also can expect a higher frequency of years with weather conditions like 2020-21 and 2022-23, with more extreme summers and freeze-thaw events in winter. Whilst we are prepared for the increase mains repairs and will make sure they cause limited impact to customers, the increase in reactive mains repairs in these years are examples of the effect of weather on this metric.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

Table 35 shows reductions to mains repairs expected through base expenditure. Improvements in performance through base expenditure is expected from 2025-26 onwards, through Pressure Reduction Valve (PRV) renewals and the creation of our network Digital Twin. We expect to see a total reduction of eight mains repairs per year once all new PRVs are installed and a reduction of 44 mains repairs once the Digital Twin is fully implemented. More information on these initiatives is within the interruptions to supply section of this document.

Table 35: Reduction in Mains Repairs due to Base Expenditure

Mains Repairs	2025-26	2026-27	2027-28	2028-29	2029-30
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Baseline mains repairs (average 2015-16 to 2022-23)	232	232	232	232	232
Cumulative Reduction from PRV Renewals	4	8	8	8	8
Cumulative Reduction from Digital Twin	0	0	3	6	9
Forecast Mains repairs per 1000km of mains	228	224	221	218	215

PR24 Performance Commitment Level



Target = Maintain our position of having lowest mains repairs in all future years

Our customers have said that they would like us to maintain current performance in this area and that we do not need to go beyond our existing, industry leading, level of reliability. Our previous level of base expenditure on mains renewals and extensive pressure optimisation mean we are in a strong position, however through schemes required for leakage reduction we can expect some performance improvement. We therefore feel the right level of ambition for this metric is to make improvements in line with these benefits.

For more information on customer research, see **PRT03: Engaging and Understanding our Customers and Communities**.

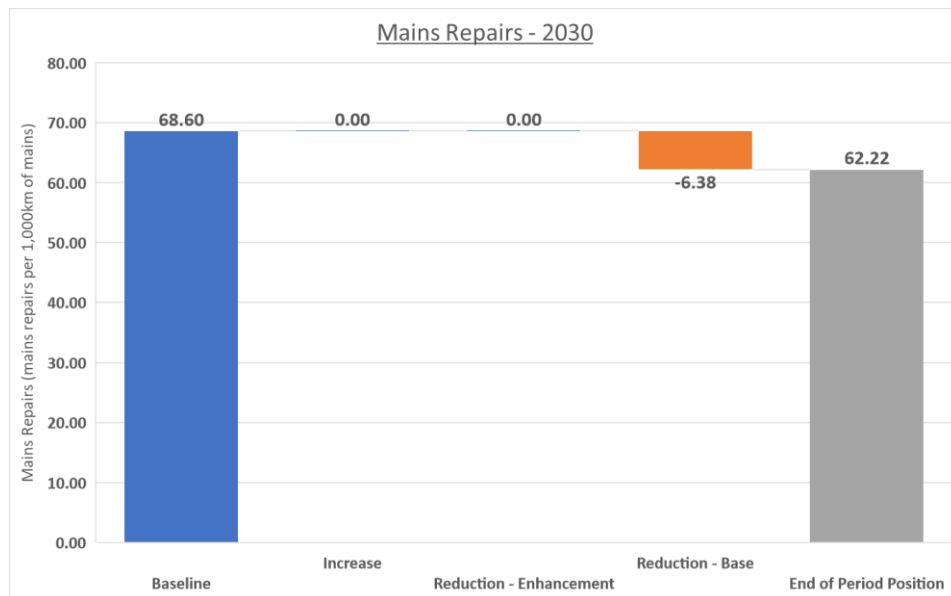
Our proposed performance commitment levels for PR24 are set out in Table 36.

Table 36: Proposed Performance Commitment Level: Mains Repairs

Mains Repairs	2025-26	2026-27	2027-28	2028-29	2029-30
Total number of reactive mains repairs	177	178	177	175	169
Total number of proactive mains repairs	51	46	44	43	46
Total number of mains repairs	228	224	221	218	215
Proposed PCL - Mains repairs per 1,000km of mains	66.8	65.4	64.3	63.3	62.2

Figure 14 outlines improvements in performance attributed to enhancement and base expenditure. For mains repairs, all improvements will be through base expenditure.

Figure 14: Performance Improvement through Enhancement and Base Expenditure



O. Unplanned Outage



This performance commitment is designed to incentivise us to appropriately maintain and improve the asset health of our non-infrastructure water assets and demonstrate our commitment to responsible asset stewardship.

This performance commitment helps to ensure that the overall asset health of our non-infrastructure water assets is maintained and improved for the benefit of current and future generations.

The performance commitment measures the unplanned loss of peak week production capacity and reports this loss as a percentage of the overall company peak week production capacity. It provides an appropriate incentive for us to ensure that treatment works are maintained to reduce the risk that unplanned outage occurs when capacity is required.

Current and Past Performance



Rating = High unplanned outage but no impact to customers

Table 37 sets out our recent performance. The change in methodology from PR19 to PR24 has led to a significant change in our reported performance, although no change in service to customers, where we reported the lowest interruptions to supply and no restrictions on usage in any year.

As a company with almost entirely groundwater abstraction, we occur outage and partial outage issues related to water quality after periods of continuous high rainfall. Water quality issues and partial outages were excluded from the PR19 methodology but are included in PR24.

These outages typically occur outside of peak demand periods as peak demand occurs in periods with no/very low rainfall and therefore they do not pose a risk to customer supply. We have put in place cost-effective mitigation to improve our PR24 reported unplanned outage in future years. However, we still expect an increase compared to the PR19 reporting methodology.

Our PR19 performance was significantly better than our performance commitment of 2.34%.

We have seen a gradual reduction in both our PR19 and PR24 reported unplanned outage in recent years as we continue to target cost-effective improvements. 2022-23 actual outage is an atypical year, where unique

circumstances meant a higher unplanned outage figure than previous years under the PR24 reporting methodology.

Table 37: Past performance on Unplanned Outage

Unplanned Outage	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Peak Week Production Capacity (PWPC) (MI/d)	286.18	292.70	259.19	256.39	280.30	290.52
Unplanned Outage (MI/d) - PR19 methodology	19.89	6.97	2.64	3.20	2.10	3.02
Unplanned Outage (% of PWPC) – PR19 methodology	6.95%	2.38%	1.02%	1.25%	0.76%	1.04%
Unplanned Outage (MI/d) – PR24 methodology	22.23	33.05	26.47	23.21	22.97	26.61
Unplanned Outage (% of PWPC) – PR24 methodology	7.77%	11.29%	10.21%	9.05%	8.20%	10.93%

More information on our current and past performance is set out in PRT12: Accounting for Past Performance.

Challenges to Maintaining Performance

Our challenges to unplanned outage performance relate to our high proportion of groundwater abstraction. Periods of high intensity rainfall can often lead to higher levels of turbidity, which means that we are sometimes unable to abstract the full capacity of water from our aquifers. Due to climate change, we are expecting greater frequency in high intensity rainfall in future, which will increase the risk of partial outages.

Another potential risk to unplanned outage is the emergence of a new water quality risk at a site, such as cryptosporidium at a source where we have not experienced it before. The emergence of a new water quality risk would result in outage at that site until adequate mitigation is put in place to ensure wholesome water. We have plans in place to mitigate against this risk with adaptive solutions such as a mobile UV treatment plant that can be transferred between sites as required, but we would still expect an unplanned outage whilst the plant was put into service.

Efficiencies, Innovations and Alignment to Enhancement Investment Cases

Table 38 sets out expected improvements from base and enhancement expenditure. A high proportion of our current unplanned outage relates to partial outage at our sites. We have plans in place to reduce partial outage from 21.54 MI/d in 2022-23 to 1.78 MI/d by 2024-25 through planned improvements. We do not expect to be able to reduce partial outage below 1.78 MI/d without significant enhancement expenditure.

Unplanned outage not related to partial outage will reduce from 2025-26 onwards due to efficiency improvements related to both base and enhancement expenditure, aligned with our 25-Year Vision target for zero unplanned outage by 2050.

Most of the enhancement expenditure is to mitigate against future risk of increasing unplanned outage, **which are outlined in PRT18: Long-Term Delivery Strategy 2025-2050.**

We will, however, see reduction of unplanned outage associated with turbidity issues at our Aldingbourne treatment works through enhancement expenditure on nitrate removal at Westergate. Over the past four years, we have had two unplanned outages at Aldingbourne, which contributed a total of 0.06 MI/d of outage (0.015 MI/d per year). We expect the enhancement expenditure to be completed by March 2029, and therefore expect a benefit of 0.015 MI/d in 2029-30.

More information on this scheme is in the enhancement investment case PRT07.03: Raw Water Deterioration and Drought Capacity Enhancements.

We also expect to see a reduction in cryptosporidium-related unplanned outage through the installation of an Ultraviolet treatment plant at our West Street treatment works. Over the past six years, we have had two unplanned outages at West Street, which contributed a total of 6.14 MI/d of outage (1.023 MI/d per year). We expect the enhancement expenditure to be completed by March 2029, and therefore expect a benefit of 1.023 MI/d in 2029-30.

More information on this scheme is in the enhancement investment case PRT07.02: Raw Water Resilience Enhancements.

We have split further improvements in base into three sections, which are improvements to:

- Chlorine-based outages.
- System-based outages.
- Turbidity and power-based outages.

We will see improvements to asset management root-cause processes result in a reduction in chlorine-based outages. We will see a 5% reduction from our current performance per year, with no unplanned outages from March 2045 onwards.

We will also see improvements to routine maintenance of non-infrastructure assets, resulting in a reduction in system-based outages. We will see a 5% reduction from our current performance per year, with no unplanned outages from March 2045 onwards.

Whilst we do not currently expect improvements to turbidity and power-based outages without significant enhancement expenditure, we expect that through innovative technologies these improvements can be made through base expenditure from 2045 onwards and will ensure that we reach our target of no unplanned outage by 2050.

Table 38: Reductions in Unplanned Outage from Enhancement and Base Expenditure

Unplanned Outage	2025-26	2026-27	2027-28	2028-29	2029-30
Baseline Unplanned Outage (MI/d)	6.855	6.855	6.855	6.855	6.855
Cumulative reduction to Aldingbourne based outages due to turbidity (MI/d)	0.000	0.000	0.000	0.000	0.015
Cumulative reduction to West Street based outages due to cryptosporidium (MI/d)	0.000	0.000	0.000	0.000	1.023
Cumulative reduction to Chlorine Based Outages (MI/d)	0.130	0.260	0.390	0.520	0.649
Cumulative reduction to System Based Outages (MI/d)	0.032	0.064	0.095	0.127	0.159
Forecast Unplanned Outage	6.693	6.531	6.370	6.208	5.009

PR24 Performance Commitment Level



Target = Reduction from 10.93% in 2022-23 to 1.69% unplanned outage by 2029-30

A significant improvement in unplanned outage will occur, as we mitigate against outage related to water quality issues. Most of this reduction will occur in 2024-25, as we reduce partial outages, with further improvements to non-partial outages due in AMP8.

Customers support maintaining the current level of water reliability and did not support additional expenditure to improve service in this area. Therefore, with exception of benefits associated with enhancement investment cases required for statutory reasons, we propose to make improvements through base expenditure only. We therefore have not included cost-ineffective schemes to reduce unplanned outage below 1.69%.

For more information on customer research, see PRT03: Engaging and Understanding our Customers and Communities.

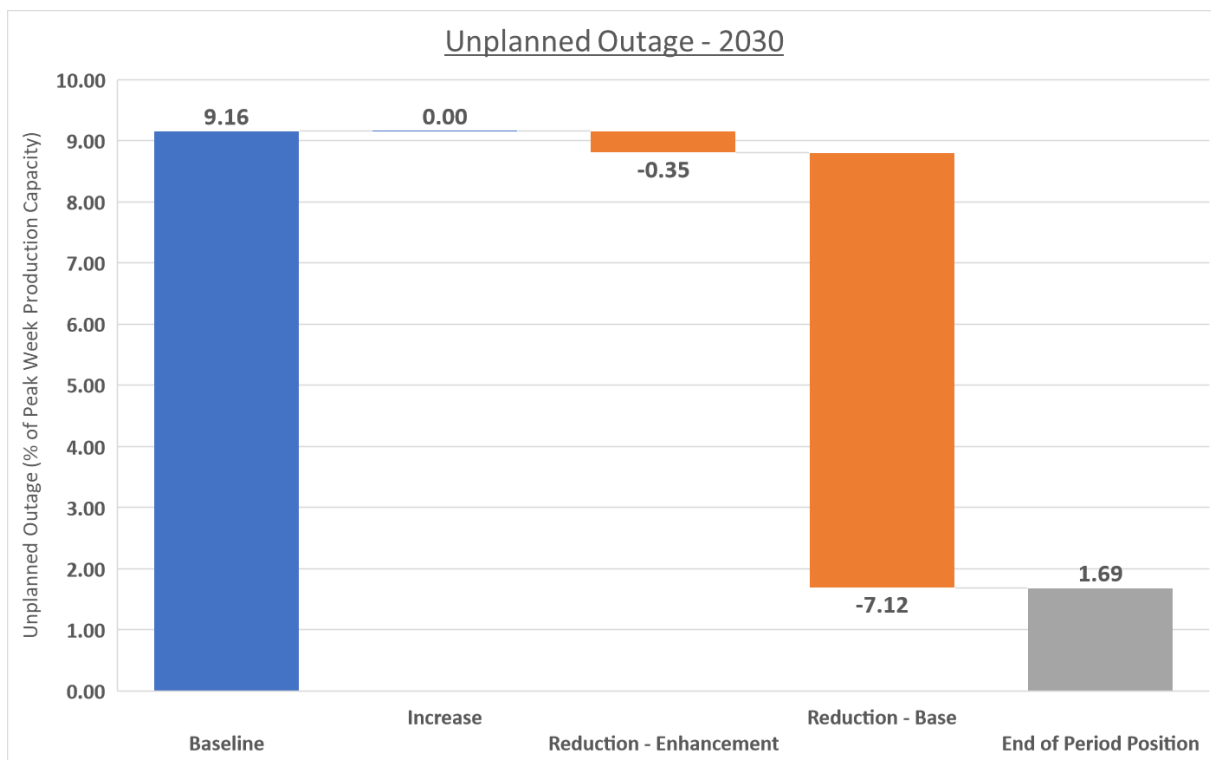
Our proposed performance commitment levels for PR24 are set out in Table 39.

Table 39: Proposed Performance Commitment Level: Unplanned Outage

Unplanned Outage	2025-26	2026-27	2027-28	2028-29	2029-30
Peak Week Production Capacity (MI/d)	290.52	290.52	296.52	296.52	296.52
Unplanned Outage (MI/d)	6.693	6.531	6.370	6.208	5.009
Proposed PCL - Unplanned Outage expressed at % of Peak Week Production Capacity	2.30%	2.25%	2.15%	2.09%	1.69%

Figure 15 outlines improvement in performance attributed to enhancement and base expenditure. For unplanned outage, there are improvements through enhancement expenditure related to Raw Water Resilience Enhancements, and improvements through base expenditure.

Figure 15: Performance Improvement through Enhancement and Base Expenditure



P. Marginal Benefits and Outcomes Delivery Incentive (ODI) Rates

For PR24 Ofwat initially proposed to set ODI rates for all companies based on its common research into customer valuations. Ultimately this approach proved not to be successful in producing robust results for all companies. Ofwat therefore revised its approach and adopted a ‘top-down’ approach based on allocating a pre-determined amount of revenue, expressed in terms of RoRE. This top-down methodology was initially proposed by Bristol Water in its paper ‘How we could simplify ODI rates’, published in Ofwat’s Future Ideas Lab.

The revised approach adopted by Ofwat has several steps as described below:

- (i) Allocate a target annual % of RoRE at risk to each ODI based on its relative priority.
- (ii) Calculate the performance range over which the incentives apply, based on an analysis of historic P10 and P90 probabilities.
- (iii) Calculate an initial ODI rate for each company based on dividing (i) by (ii).
- (iv) Calculate the median reward/penalty rate and use this as the reward/penalty rate for all companies.

We understand that the rationale for step number (iv), in which the rates for each company are averaged (which was not part of the original Bristol Water proposal) is to address a perceived risk that incentives at the margin to improve performance might not be strong enough if based solely on the rates calculated using the target % of RoRE.

In practice it has the effect of meaning that the actual RoRE risk faced by companies diverges from the target level determined in Step (i).

The effect of this is illustrated in Table 40, by reference to the water quality (CRI) performance commitment. The target % RoRE for CRI determined in step (i), based on relative customer priorities is 0.6%. Companies in the table are ordered by the % RoRE implied by the averaged ODI rates.

Table 40: Compliance Risk Index – RoRE Risk Company Comparison

Company	% RoRE – averaged rates	% RoRE averaged rates as a multiple of target RoRE (0.6%)
Portsmouth	1.49%	2.48
South Staffs/Cambridge	1.31%	2.18
Affinity	0.86%	1.43
SES	0.85%	1.42
Hafren Dyfrdwy	0.82%	1.36
Bristol	0.74%	1.23
Northumbrian	0.67%	1.11

Southern	0.64%	1.07
Yorkshire	0.60%	1.00
United Utilities	0.60%	0.99
Severn Trent	0.59%	0.98
South East	0.52%	0.87
South West	0.51%	0.84
Dwr Cymru	0.50%	0.83
Anglian	0.46%	0.77
Thames	0.45%	0.75
Wessex	0.38%	0.64

As can be seen, for most companies, the RoRE is within a reasonable range when compared with the target RoRE. However, for us the divergence is highly material and results in a RoRE range that is almost 2.5 times greater than intended. A similar relationship applies across all ODIs, meaning the aggregate ODI risk faced by us is far greater than for any other company and far greater than the target ODI risk determined by Ofwat.

The relationship between the target RoRE and the averaged rate is a mathematical consequence of the size of a company's RCV relative to its population (or other scale metric). For a company with a large RCV per capita the averaging process applied in Step (iv) of Ofwat's methodology will reduce the revenue at risk, while for a company with a small RCV per population, the opposite will be true. Where RCV per population diverges materially from the average, so the averaged ODI rates will diverge from materially from the intended level.

Table 41 shows the wholesale water RCV for each company (as of 31 March 2023) divided by the population for 2021-22, ordered from the lowest to the highest per capita RCV. As can be seen, we have, by some margin, the lowest RCV per head of population of any company in the sector at £260 compared to a (weighted) average of £684.

Table 41: Wholesale water RCV per head of population

Company	RCV (£m)	Population (000's)	RCV per population
Portsmouth	£193m	741	£260
South Staffs/Cambridge	£516m	1,738	£297
Affinity	£1,714m	3,797	£451

SES	£334m	735	£454
Hafren Dyfrdwy	£99m	208	£473
Bristol	£645m	1,232	£523
Northumbrian	£2,599m	4,486	£579
Southern	£1,566m	2,597	£603
Yorkshire	£3,459m	5,356	£646
United Utilities	£4,773m	7,329	£651
Severn Trent	£5,623m	8,495	£662
Average			£684
South East	£1,664m	2,253	£739
South West	£1,860m	2,427	£766
Dwr Cymru	£2,469m	3,156	£782
Anglian	£3,989m	4,781	£834
Thames	£8,715m	10,068	£866
Wessex	£1,346m	1,330	£1,012

Because the amplification of ODI rates is a consequence of the size of the RCV per capita (or in some cases per property), it impacts all ODIs in the same way (except for mains repairs which has a more complex calculation method and discharge compliance which is not averaged). The consequence is that the aggregate ODI risk faced by us is very materially larger than that intended by Ofwat, at 11.44% compared to a target of 5.1%. This is set out in Table 42.

Table 42: Aggregate ODI risk for Portsmouth Water

Outcome Delivery Incentive (ODI)	Target % RoRE	Actual % RoRE
Per Capita Consumption		
Leakage	1.30%	3.23%
Business Demand		
Interruptions to Supply	0.60%	1.41%
Compliance Risk Index	0.60%	1.49%
Water Quality Contacts	0.60%	1.49%
Discharge Permit Compliance	0.50%	0.50%
Mains Repairs	0.50%	0.48%
Serious Pollution Incidents	0.50%	1.62%
Unplanned Outage	0.50%	1.22%
TOTAL	5.10%	11.44%

The consequence of this amplification of RoRE is both that shareholders (in the case of underperformance) and customers (in the case of outperformance) bear a proportionally much higher risk than those of other companies. This results in an overall balance of risk and reward which is skewed in favour of ODIs at the expense of other incentives.

Our Proposed Solution

We do not believe there is any objective justification for our shareholders to bear ODI risks that are almost 2.5 times that of the average company. In these circumstances it would be very difficult for our Board to provide assurance that this business plan represents a reasonable balance of risk and reward, commensurate with the allowed cost of capital which applies to all companies.

We therefore propose that in our case Ofwat should use the Portsmouth-water specific rates calculated in step (iii) of the methodology.

As Table 42 above shows, for most companies there is not a material difference between the averaged rates and the target RoRE %. For all but two companies the averaged rates lie within a range of +/- 50% of the target RoRE. The two exceptions are Portsmouth Water and South Staffs/Cambridge Water. We believe it would be reasonable for Ofwat to apply a cross-check on the output of the common methodology to ensure that it lies within a reasonable range of the target RoRE. For companies that are within a reasonable tolerance of the target RoRE range the methodology should be applied in full. For outliers such as Portsmouth Water, use of the company-specific rates provides an obvious solution to address the distortion.

Impact on Customers

The elevated ODI rates which are derived from the averaging of the calculated ODI rates represent a risk both for shareholders and customers.

We currently have the lowest bills in the sector (which to a significant degree is a consequence of our low RCV), with an average bill in 2022-23 of £107. This means that the impact of outperformance on our customers' bills is proportionally far greater using the averaged rates.

To illustrate this, in Table 43 below we show the impact of P10 performance (as defined in Ofwat's analysis) on water quality, using Ofwat's averaged rates. As can be seen, our customers would see an increase of 3.4% in their bill, compared to an increase of 1.8% for the average customer. In contrast, the use of a Portsmouth Water specific rate gives a bill impact far close to that for the average company.

Table 43: Impact of outperformance on customer bills

Outcome Delivery Incentive (ODI)	Bill Impact	% Bill Increase
Portsmouth Water (company specific rates)	£1.56	1.4%
Portsmouth Water (averaged rates)	£3.66	3.4%
Average company	£3.66	1.8%

The picture is even more extreme for the suite of demand ODIs, where performance at the P10 level would result in an increase in customer bills of 7.7% (compared with an average of 4.4%). Again, this amplification applies across nearly all our ODIs meaning our customers could theoretically see very large bill increases.

Impact on Incentives to Outperform/Avoid Underperformance

Ofwat has explained that the reason for the averaging of ODI rates is to ensure that the incentive for each company to outperform its performance commitment targets is broadly equal. This means that if the marginal cost of delivering a service improvement is the same across companies, each will face the same incentive to improve service.

It is clearly the case that if the ODI rates are set lower using a company specific ODI rate, as we propose for Portsmouth Water, then the incentive for outperformance (and avoidance of underperformance) will be lessened. There is a trade-off between fairness for our shareholders and our customers and the strength of incentives at the margin. Ofwat's overall approach of using a top-down RoRE allocation implies that it believes most weight should be put on the fairness criteria over equalising marginal incentives.

In terms of the relationship between ODI rates and marginal cost of delivering improvements, we note that one of the reasons Ofwat decided to pursue the approach it has adopted is that the calculation of marginal cost of delivering service improvements is extremely difficult. In practice, service improvements are often delivered via changes in operating regimes – for example faster responses to supply interruptions – which may be low or no cost. Where investment is required to deliver service improvements, the nature and cost of this this will often be very company-specific and therefore the marginal cost of a service delivery improvement will vary markedly between companies and at different points along the supply curve. This was clear from the widely varying marginal costs that companies submitted as part of their PR19 business plans.

In that context, where the marginal cost of delivering service improvements is both highly uncertain (and in many cases may be close to zero) and highly variable between companies, an approach which seeks to equalise marginal benefits across companies should not, in our view, be given significant weight where it has the effect of materially distorting the RoRE range faced by companies.

We believe our proposed approach represents a sensible cross-check on the output from the method. Incentives to outperform are retained but it avoids the risk that incentives are distorted and that the overall package of risk and reward is out of balance, by attaching too great a proportion of the overall shareholder return to ODIs. It also avoids the risk of excessive increases in customer bills – especially in the context of Portsmouth Water having the lowest bills in the sector, which means that percentage increases in bills for our customers are far higher than for customers of other companies.

Our Proposed Marginal Benefits and Outcome Delivery Incentive Rates

Based on our solution set out above, we propose the following marginal benefit and ODI rates:

Table 44: Proposed Marginal Benefit and ODI Rates

Outcome Delivery Incentive (ODI)	Rate Used	Marginal Benefit Rate (£m)	Benefit Sharing Factor (%)	ODI Rate (£m)
Interruptions to Supply	PW Ofwat Rate	0.121129	70%	0.084790
Compliance Risk Index	PW Ofwat Rate	0.110196	70%	0.077137
Water Quality Contacts	PW Ofwat Rate	1.107629	70%	0.775340
Biodiversity	PW Rate	2.298667	70%	1.609067
Operational Greenhouse Gas Emissions (Water)	PW Rate	0.001549	70%	0.001084
Leakage	PW Ofwat Rate	0.209745	70%	0.146822
Per Capita Consumption	PW Ofwat Rate	0.153714	70%	0.107600
Business Demand	PW Ofwat Rate	0.209745	70%	0.146822
Serious Pollution Incidents	PW Ofwat Rate	0.600569	70%	0.420398

Discharge Permit Compliance	PW Ofwat Rate	0.099454	70%	0.069618
Mains Repair	Average Ofwat Rate	0.042230	70%	0.029561
Unplanned Outage	Average Ofwat Rate	0.481711	70%	0.337198

In Table 44, 'PW Ofwat Rate' is where we have used our proposed solution. 'Average Ofwat Rate' is where we have used the rate proposed by Ofwat, and 'PW rate' is where no Ofwat rate was available, and we have set out our own. More information on how we have calculated our marginal benefits and ODI rates is set out in the table commentary for table OUT7.

Q. Bespoke Performance Commitments

We do not propose any bespoke performance commitments.

We agree that bespoke performance commitments should only be for where there are local circumstances that do not apply to most other companies or where a company provides poor service on a common issue where other companies' performance is generally adequate. We do not feel that we have any performance commitments that meet these criteria.

We do believe that for PR29, embedded greenhouse gas emissions (water) should be included as a common performance commitment. We support companies that have mature data in this area putting forward a bespoke performance commitment for PR24. However, due to the relative immaturity of our data, a performance commitment for Portsmouth Water is not feasible. We commit to improving our embedded greenhouse gas emissions data over the next few years to ensure we can robustly report for PR29.

R. Enhanced Performance Commitments

We do not propose any enhanced performance thresholds or enhanced ODI rates, but support enhanced outperformance targets for interruptions, leakage, and per capita consumption.

We believe that enhanced performance thresholds should be set considering targets set by all companies and therefore feel Ofwat are best placed to set these targets.

We believe enhanced ODI rates should be set at the appropriate level to incentivise achieving enhanced performance thresholds, and that would mean they can only be determined once thresholds have been set.

S. Price Control Deliverables (PCDs)

We set out our proposed enhancement expenditure within PRT07: Our Investment Plan. We have seven enhancement investment cases in total, which are outlined below. (More information can be found in their associated documents):

- PRT07.01: Security resilience and eCAF compliance
- PRT07.02: Raw water resilience enhancements (disinfection)
- PRT07.03: Raw water deterioration & drought capacity enhancements
- PRT07.04: The isolation and recovery of service reservoirs

- PRT07.05: WINEP & protecting the environment
- PRT07.06: Reducing customer side demand (universal smart metering)
- PRT07.07: Lead strategy implementation

In this section we set out the proposed PCDs associated with these enhancement expenditure schemes.

PRT07.01: Security resilience and eCAF compliance

Description of Price Control Deliverable

The scheme relates to improvements in the digital security of operational technology systems to align with the new Enhancement Cyber Security Framework (eCAF). This new requirement was introduced by the Drinking Water Inspectorate (DWI) and confirmed by Ofwat in their letter to Water Companies, during the PR24 process, on 5th July 2023.

Measurements and Reporting

The proposal relates to securing operational sites against malicious and/or inadvertent interventions, that may otherwise compromise the ability of the site to provide water into supply, or potentially compromise the wholesomeness of that water. In complying with the eCAF, we will demonstrate compliance with the standard required by the regulator under the NIS (2018) regulations. We will track progress through updates to the DWI and report progress to both the DWI and in our Annual Performance Report.

Condition on Allowances

The Cyber Assessment Framework (CAF), introduced during AMP7 and the Enhanced Cyber Assessment Framework (eCAF) are now required to be achieved by 31 March 2028. The PCD will be measured as number of sites that meet eCAF standards by this date.

Assurances

We have initiated an independent expert reassessment by Portsmouth Water of its Operational Technology assets and their physical and digital vulnerabilities. Our enhancement expenditure includes for Portsmouth Water to adopt IEC62443 using Safety Levels (SL), as appropriate to achieve eCAF compliance. Adoption of an internationally recognised standard will provide the additional robustness and discipline necessary to maintain eCAF compliance, whilst also ensuring new capabilities and refurbishments can be properly specified to suppliers and contractors. We can confirm that an independent expert will provide assurance on whether we have achieved eCAF compliance at each site.

Price Control Deliverable Payment Rate

Table 45 sets out our proposed PCD payment rate. We have 23 sites that require £15.454m of enhancement expenditure to meet eCAF compliance. We propose that each site is considered as a unit of output with an apportioned cost of £0.672m each. We propose that for each unit not delivered, we give back to customers the full cost plus an additional 5%. This means that our PCD payment rate would be £0.706m per site that is not eCAF compliant by 31 March 2028.

Table 45: Price Control Deliverable Payment Rate - PRT07.01: Security resilience and eCAF compliance

eCAF Cost	Number of Sites	Cost per Site	Penalty Factor	PCD Payment Rate
£15.454m	23	£0.672m	5%	£0.706m

Impact of Performance in Relation to Performance Commitments

We forecast that this enhancement investment will have an intangible benefit on a range of performance commitments, as set out in the investment case PRT07.01: Security resilience and eCAF compliance. However, we have not included any quantifiable improvements to any performance commitments.

Forecast Deliverables

The forecast deliverables by year are set out in table 46.

Table 46: Forecast Deliverables - PRT07.01: Security resilience and eCAF compliance

Deliverable	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
eCAF Compliance (cumulative)	Site	0	0	23	23	23

PRT07.02: Raw water resilience enhancements (disinfection)

Description of Price Control Deliverable

The investment case relates to the provision of Ultraviolet (UV) Treatment plants and on-site emergency connection facilities for the treatment of Cryptosporidium and, in one case (Slindon), contact time support. The work is necessary to secure the outputs of Water Treatment Works (WTW) into the future, and to protect against environmental factors over which Portsmouth Water has no, or very limited, influence or control.

Measurements and Reporting

The investment case includes four related investments, all of which are supported by the DWI.

The investment makes permanent a temporary UV plant at the **West Street WTW** and repurposes that asset for future use.

The investment provides a cost-effective solution for a WTW at **Slindon**, where elevated outputs are required only intermittently under drought order conditions. The option achieves this by providing a UV plant that can be quickly relocated, for the duration of the event, from a WTW (Maindell) that cannot be operated during drought conditions.

The investment provides an '**emergency**' containerised UV plant that can be quickly installed at other WTW's as the risk emerges and the need arises. This provides a pre-engineered facility that can be deployed by Portsmouth Water at any site where UV control may be required. It is supported by the DWI.

The investment provides a mechanism to quickly install the containerised unit without delays due to groundworks and other infrastructure requirements. This **arrangement**, fitted at a critical site, considerably reduces the execution time associated with fitting the emergency UV plant (noted above).

We will track progress of investments through internal project management, measure completeness against being able to use the investments and report both to DWI and in our Annual Performance Report.

Condition on Allowances

We can confirm that all four investments will be completed in AMP8. The PCD will be measured as number of separate investments (out of four) that have been completed by 31 March 2030.

Assurances

We can confirm that an independent expert will provide assurance on whether we have completed the investments.

Price Control Deliverable Payment Rate

We have four separate investments that require a total £14.601m of enhancement expenditure. Due to the disparity in costs between different investments, we propose a separate PCD for each investment. We propose that for each investment not delivered, we give back to customers the full cost plus an additional 5%. The details of each PCD payment rate are set out in Table 47.

Table 47: Price Control Deliverable Payment Rate - PRT07.02: Raw water resilience enhancements (disinfection)

Raw Water Resilience Scheme	Cost of Investment	Penalty Factor	PCD Payment Rate
West Street UV	£9.493m	5%	£9.967m
Maindell and Slindon UV	£3.029m	5%	£3.181m
Emergency UV	£1.553m	5%	£1.631m
Fast Deployment Arrangements	£0.526m	5%	£0.552m

Impact of Performance in Relation to Performance Commitments

We forecast that this enhancement investment will have intangible benefits on a range of performance commitments, as set out in the investment case PRT07.02: Raw water resilience enhancements (disinfection).

We have also included a quantifiable improvement to unplanned outage from the West Street UV investment, which are set out in the Efficiencies, Innovations and Alignment to Enhancement Investment Cases outage section above. We do not expect any additional improvements post 2030.

Forecast Deliverables

The forecast deliverables by year are set out in Table 48.

Table 48: Forecast Deliverables - PRT07.02: Raw water resilience enhancements (disinfection)

Deliverable	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
Raw Water Resilience	Investment	0	0	0	0	4

Scheme
(cumulative)

PRT07.03: Raw water deterioration & drought capacity enhancements

Description of Price Control Deliverable

This investment case relates investment to mitigate against sites where the concentration of nitrate in the abstracted water has risen, and continue to rise, such that Portsmouth Water will not be able to supply drinking water below the prescribed and statutory limit of 50mg/l.

Measurements and Reporting

The scheme includes five related investments, all of which are supported by the DWI.

The nitrate challenge relates to two areas. The first is the 'Eastergate' group of sites. This set comprises sites at Aldingbourne, Eastergate, Westergate and Slindon. The sites feed the Littleheath service reservoir.

All these sites are intimately related by the manual blending arrangements within the group to achieve acceptable nitrate levels exiting the Littleheath reservoir. The scheme includes the provision for **automated blending** to make the current manual arrangements more robust.

There is also currently a reliance on Aldingbourne as a source of low nitrate water used for blending within the group. The investment case also proposes on-site **nitrate treatment at Westergate** to mitigate against this single mode failure.

We also experience **turbidity challenges at Eastergate** which preclude the use of the site following moderate to heavy rainfall. This in turn adversely affects the output from the Eastergate group, increasing reliance on other members, and affects the blending strategy. The scheme includes further investigation work necessary to identify the cause and remedy it if it can be simply achieved.

In addition to nitrate, to meet the assumptions of the dWRMP24, the site at Slindon is required to work at elevated flows during drought conditions. **Enhancements to the Slindon site** are required to meet the higher flow conditions, which are only allowable under a drought order license.

The second nitrate challenge relates to the 'Lovedean' site, where the investment would mitigate against rising nitrate levels in water from Lovedean by **blending with water from Worlds End WTW** via the Nelson service reservoir. Blending would take place at the Catherington and Clanfield service reservoirs.

We will track progress of investments through internal project management, measure completeness against being able to use the investments and report both to DWI and in our Annual Performance Report.

Condition on Allowances

We can confirm that all five investments will be completed in AMP8. The PCD will be measured as number of separate investments (out of 5) that have been completed by 31 March 2030.

Assurances

We can confirm that an independent expert will provide assurance on whether we have completed the investments.

Price Control Deliverable Payment Rate

We have five separate investments that require a total £14.756m of enhancement expenditure. Due to the disparity in costs between different investments, we propose a separate PCD for each investment. We propose that for each investment not delivered, we give back to customers the full cost plus an additional 5%. The details of each PCD payment rate are set out in Table 49.

Table 49: Price Control Deliverable Payment Rate - PRT07.03: Raw water deterioration & drought capacity enhancements

Raw Water Deterioration Scheme	Cost of Investment	Penalty Factor	PCD Payment Rate
Eastergate Group Blending Control	£0.851m	5%	£0.894m
Slindon Enhancements	£1.292m	5%	£1.357m
Westergate Nitrate Treatment	£10.659m	5%	£11.192m
Eastergate Turbidity Investigation	£0.417m	5%	£0.438m
Lovedean Blending	£1.536m	5%	£1.613m

Impact of Performance in Relation to Performance Commitments

We forecast that this enhancement investment will have intangible benefits on a range of performance commitments, as set out in the investment case PRT07.03: Raw water deterioration & drought capacity enhancements.

We have also included a quantifiable improvement to unplanned outage from the Westergate nitrate treatment investment, which are set out in the Efficiencies, Innovations and Alignment to Enhancement Investment Cases outage section above. We do not expect any additional improvements post 2030.

Forecast Deliverables

The forecast deliverables by year are set out in Table 50.

Table 50: Forecast Deliverables - PRT07.03: Raw water deterioration & drought capacity enhancements

Deliverable	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
Raw Water Deterioration Scheme (cumulative)	Investment	0	0	0	0	5

PRT07.04: The isolation and recovery of service reservoirs

Description of Price Control Deliverable

This investment case is to establish measures that allow reservoirs to be effectively isolated from supply whilst customers supplies are maintained. It better allows inspection and maintenance works to be carried out with the minimum risk to water quality or service outages.

Measurements and Reporting

The scheme includes mitigation against the reservoir outages by electrically manipulating the output of existing pumps such that they provide the correct flows and pressures to satisfy customer demand whilst the reservoir is out of service. In practice, this involves **fitting variable speed drives linked to pressure, via a programmable controller**. Where enhanced sampling facilities are required to separately sample each chamber of a multi-chamber reservoir then these will be provided accordingly.

We will track progress against each service reservoir through internal project management, measure completeness against being able to isolate each service reservoir and report both to DWI and in our Annual Performance Report.

Condition on Allowances

We can confirm that the scheme will be completed in AMP8. The PCD will be measured as number of separate service reservoirs that have isolation and recovery capabilities installed by 31 March 2030.

Assurances

We can confirm that an independent expert will provide assurance on whether we have completed the isolation and recovery capabilities at each service reservoir.

Price Control Deliverable Payment Rate

Our proposed PCD payment rate is set out in Table 51. We have 13 service reservoirs that require a total of £3.480m of enhancement expenditure. We propose that each service reservoir is considered as a unit of output with a proportioned cost of £0.268m. We propose that for each unit not delivered, we give back to customers the full cost plus an additional 5%. This means that our PCD payment rate would be £0.281m per site that has not had isolation and recovery capabilities installed by 31 March 2030.

Table 51: Price Control Deliverable Payment Rate - PRT07.04: The isolation and recovery of service reservoirs

Total Cost of Scheme	Number of Service Reservoirs	Cost per Site	Penalty Factor	PCD Payment Rate
£3.480m	13	£0.268m	5%	£0.281m

Impact of Performance in Relation to Performance Commitments

We forecast that this enhancement investment will have intangible benefit on a range of performance commitments, as set out in the investment case PRT07.04: The isolation and recovery of service reservoirs.

We have also included a quantifiable risk mitigation to interruptions to supply from the scheme, which are set out in the Efficiencies, Innovations and Alignment to Enhancement Investment Cases interruptions section above. We expect these improvements will mitigate against a rise in interruptions to supply from 2030 onwards.

Forecast Deliverables

The forecast deliverables by year are set out in Table 52.

Table 52: Forecast Deliverables - PRT07.04: The isolation and recovery of service reservoirs

Deliverable	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
Isolation and Recovery of Service Reservoirs (cumulative)	Service Reservoir	0	0	0	0	13

PRT07.05: WINEP & protecting the environment

Description of Price Control Deliverable

This scheme relates to the activities we will undertake to deliver our obligations under the Water Industry National Environment Programme (WINEP) for AMP8. This includes the investigation of most of our source catchments to assess our abstraction activities' possible impact on the Water Framework Directive classification on waterbody status. This includes the possible impact within those catchments currently and in the future.

Measurements and Reporting

Nine out of 10 investigations will take place during AMP8 with a small residual carry over to AMP9. This is a profile that has been agreed with the Environment Agency after significant challenge. Our enhancement investment case of **nine WINEP investigations** in AMP8 complies with our statutory requirements.

We will measure and track progress through established WINEP reporting methodology, and report to the EA and in our annual performance report.

Condition on Allowances

We can confirm that the scheme will be completed in AMP8. The PCD will be measured as number of WINEP investigations completed by 31 March 2030.

Assurances

We can confirm that an independent expert will provide assurance on whether we have completed the WINEP investigations, with further assurance by the Environment Agency.

Price Control Deliverable Payment Rate

Our proposed PCD payment rate is set out in Table 53. We have nine WINEP investigations that require a total of £4.389m of enhancement expenditure. We propose that each investigation is considered as a unit of output with a proportioned cost of £0.488m. We propose that for each unit not delivered, we give back to customers the full cost plus an additional 5%. This means that our PCD payment rate would be £0.512m per investigation that has not been completed by 31 March 2030.

Table 53: Price Control Deliverable Payment Rate - PRT07.05: WINEP & protecting the environment

Total Cost of Scheme	Number of Investigations	Cost per Site	Penalty Factor	PCD Payment Rate
£4.389m	9	£0.488m	5%	£0.512m

Impact of Performance in Relation to Performance Commitments

We forecast that this enhancement investment will have intangible benefit on a range of performance commitments, as set out in the investment case PRT07.05: WINEP & protecting the environment, however we have not included any quantifiable improvements to any performance commitments.

Forecast Deliverables

The forecast deliverables by year are set out in Table 54.

Table 54: Forecast Deliverables - PRT07.05: WINEP & protecting the environment

Deliverable	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
WINEP Investigations (cumulative)	Investigations	0	0	0	0	9

PRT07.06: Reducing customer side demand (universal smart metering)

Description of Price Control Deliverable

This scheme relates to the delivery of a smart network, including customer meters, providing rich data to both customers and Portsmouth Water. In turn this will support the overall reduction of demand for water required by the Water Resource Management Plan and support our future relationship with customers.

Measurements and Reporting

The investment consists of **installing AMI smart metering for all households and non-households** within AMP8 and AMP9, together with the creation of a comprehensive smart data network and the infrastructure to provide insights into customer usage, leakage and supporting assessment of the water balance.

As the largest investment in AMP, and the one with the biggest customer impact, we will measure and track the number of meters installed through a detailed internal process that will include monthly Executive and Board review and will report progress in our Annual Performance Report.

Condition on Allowances

We can confirm that the scheme will be completed in AMP9, however significant progress will be made in AMP8. The PCD will be measured as number of meters installed in each year, as set out in forecast deliverables table.

Assurances

We can confirm that number of meters installed will be externally assured each year.

Price Control Deliverable Payment Rate

Our proposed PCD payment rate is set out in Table 55. We will install a total of 172,200 meters by 31 March 2030, at a cost of £74.726m. This cost includes both meters and enabling systems. We propose that the cost per meter includes enabling systems to protect customers against non-delivery of total enhancement investment expenditure. We propose that each meter installed is considered as a unit of output with a proportioned cost of £0.000434m. We propose that for each unit not delivered, we give back to customers the full cost plus an additional 5%. This means that our PCD payment rate would be £0.000456m per meter that has not been installed by 31 March 2030.

Table 55: Price Control Deliverable Payment Rate - PRT07.06: Reducing customer side demand (universal smart metering)

Total Cost of Scheme in AMP8	Number of Meters Installed in AMP8	Cost per Meter	Penalty Factor	PCD Payment Rate
£74.726m	172,200	£0.000434m	5%	£0.000456m

Impact of Performance in Relation to Performance Commitments

We forecast that this enhancement investment will have intangible benefit on a range of performance commitments, as set out in the investment case PRT07.03: Raw water deterioration & drought capacity enhancements.

We have also included a quantifiable improvement to leakage, per capita consumption, and business demand, which are set out in the relevant Efficiencies, Innovations and Alignment to Enhancement Investment Cases sections above. We do expect further improvements post 2030, **which are set out in PRT17: Water Resources Management Plan and PRT18: Long-Term Delivery Strategy 2025-2050.**

Forecast Deliverables

The forecast deliverables by year are set out in Table 56.

Table 56: Forecast Deliverables - PRT07.06: Reducing customer side demand (universal smart metering)

Deliverable	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
Universal Smart Metering (cumulative)	Meters	3,200	24,500	61,400	112,119	172,200

PRT07.07: Lead strategy implementation

Description of Price Control Deliverable

This scheme relates to the replacement of customer owned lead pipes in schools and nurseries. The scheme is supported by customers and represents an ambitious plan for AMP8 that goes beyond the minimum statutory obligations. Building on an existing strategy the scheme addresses lead pipes at schools and nurseries, protecting some of the companies most vulnerable customers.

Measurements and Reporting

The investment consists of **replacing all lead pipe up to the institutions first tap** at primary schools, nurseries, middle deemed primary schools, 16-plus schools, all-through schools, and secondary schools.

We will measure and track the number of institutions with lead removed through a stringent internal process that will include quarterly executive and board review and will report progress in our annual performance report.

Condition on Allowances

We can confirm that the scheme will be completed in AMP8. The PCD will be measured as number of institutions with lead removed in each year, as set out in forecast deliverables table.

We propose a condition that if all institutions have been contacted and that less than 60 either have lead pipes, or that they do not wish for the lead to be removed, that we remove the penalty factor from the PCD penalty rate.

Assurances

We can confirm that number of institutions where lead pipes have been removed will be externally assured each year.

Price Control Deliverable Payment Rate

Our proposed PCD payment rate is set out in Table 57. We will remove lead from a total of 60 institutions by 31 March 2030. The estimated cost of the lead removal is £9,000 per removal, resulting in a total of £054m. There are also costs associated with studies, project management and communications which mean the total enhancement scheme has a cost of £1.941m. We propose that the cost per lead removal includes associated activities to protect customers against non-delivery of total enhancement investment expenditure. We propose that institution where lead is removed be considered as a unit of output with a proportioned cost of £0.032350m. We propose that for each unit not delivered, we give back to customers the full cost plus an additional 5%. This means that our PCD payment rate would be £0.033968m per institution where lead has not been removed.

Table 57: Price Control Deliverable Payment Rate - PRT07.07: Lead strategy implementation

Total Cost of Scheme	Number of Institutions with Lead Removed	Cost per Institution	Penalty Factor	PCD Payment Rate
£1.941m	60	£0.032350m	5%	£0.033968m

Impact of Performance in Relation to Performance Commitments

We forecast that this enhancement investment will have intangible benefit on a range of performance commitments, as set out in the investment case PRT07.07: Lead strategy implementation, however we have not included any quantifiable improvements to any performance commitments.

Forecast Deliverables

The forecast deliverables by year are set out in Table 57.

Table 58: Forecast Deliverables - PRT07.07: Lead strategy implementation

Deliverable	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
Lead Removal in Institutions (cumulative)	Institution	12	24	36	48	60

4. GOVERNANCE AND ASSURANCE

Production of this supporting document has been undertaken in accordance with internal governance and assurance procedures and processes. Third party assurance has also been provided by Jacobs Global Consultancy.

This comprised initial drafting by an internal Lead Author, under the direction of an Executive Owner who retains Executive responsibility for the document content including robustness and accuracy.

The document has undergone three stages of internal review and third-party assurance before being signed off by the Board. Internally this has included:

- (a) Executive Owner,
- (b) Nominated Executive,
- (c) Internal Executive Review Team including the CEO and CFO.

Details of the third-party assurance, including findings/opinion, can be found in PRT15.04.

Jacobs Global Consultancy assurance considered Performance Commitment target setting and review of assurance should be considered alongside assurance of Outcomes tables.

The Board has been engaged in the development of the business plan and its content through subject specific discussions at monthly PR24 Steering Committee meetings that have taken place since late 2021. The Board support our alternative marginal benefit and ODI rates. Minutes of relevant meetings are included in PRT15: Board Assurance, Appendix PRT15.01.

PRT05 APPENDIX



APPENDIX

[PRT05.01: Artesia Review of PCC can be found by clicking here.](#)



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